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HW 19021-DEL

HAN-34327-DEL

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OSITORY POOL

SECTION Atmospheric Releases

HANFORD WORKS MONTHLY REPORT

727769

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FOR

DEM N/A

SEPTEMBER 1950

Compiled By

Classification Cancelled (Change to

Division Managers

Declassified with deletions

34327

By Authority of

October 20, 1950

WA Snyder 2/2/92

HANFORD WORKS
RICHLAND, WASHINGTON

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Operated for the Atomic Energy Commission

by the
General Electric Company
under

Contract # W-31-109-eng-52

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By *J.P. [redacted]*

Date *5/17/73*

U.S. AEC Division of Classification

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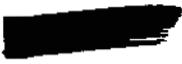
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HW 19021-D26
October 20, 1950

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GENERAL SUMMARYSEPTEMBER 1950MANUFACTURING DIVISIONSProduction Divisions

A total of 70 tons of metal was discharged at the goal concentration, with 30 tons being pushed at 150 percent of the goal value and 10 tons at 37 percent of the goal. The operating efficiency was 80 percent, being adversely affected by the continuance and completion of the nozzle replacement program at D pile and by a loss of 110 operating hours at H pile during installation and testing of the P-13 (ANL-140) project.

The nominal pile operating levels at month end were 335 MW at B pile, 320 MW at D pile, 305 MW at F pile, and 400 MW at H. The D pile actual level at month end was varying between 295-320 MW because of low reactivity believed caused by a small water leak.

The H-10 program was completed in its initial phase with a total of 796 tubes charged. The DR pile loading was 72 percent complete at month end, and plans were completed for initial operation on October 3, 1950.

A total of 76 tons of acceptable slugs was canned at a yield of 91.6 percent. A new record machining yield of 80.9 percent was set. The melt plant produced 15 tons of billets at a yield of 85.5 percent. The solid metal yield from scrap was a new record at 94.2 percent.

A total of 106 batches was started in the Canyon Buildings, 106 were processed through the Concentration Buildings, and 105 through Isolation. The minimum decay time of dissolved metal was 75 days. The average purity of completed batches was 98.5 percent.

Plant Utilities and Maintenance Divisions

While the D Area pile nozzle replacement, van stone, and tube clearance program was in progress, piping changes were made in 115-D Building for the purpose of serving DR pile as well as D pile.

The 1950 Area Road Maintenance Program was completed. Sixty miles of plant area roads were seal coated.

The electrical peak demands for the month were: Process -- 6,550⁷ KVA; Village -- 20,850 KVA. The increase in process demand was caused by DR; the Village increase was due to seasonal trend.

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General Summary

DECLASSIFIEDTECHNICAL DIVISIONSPile Technology Division

The H-10 loading in the H Pile was enlarged to 796 tubes during the month. The nominal 825 tube loading will be approached cautiously to avoid premature discharge of U-235 in consequence of reactivity considerations.

Start-up preparations at the DR Pile involved shift coverage by physicists during loading to dry and wet criticals and during a coefficient test on a small wet pile.

Critical mass experimental work was concentrated on spherical geometries. Differences between spheres and cylinders have been in accord with expectations.

An apparent difference in diffusion lengths in exponential piles, depending on arrangement of the sources, was under study at month end.

An unlocated water leak in the D Pile has involved important operating difficulties. About 70 inhours of reactivity have been lost in an erratic manner.

Studies indicate quite conclusively that omission of upstream dummy slugs from process tubes have contributed to general accelerated corrosion of the tubes and that the dummy slugs should be replaced in the near future.

Data on graphite samples mined from the H Pile show that the use of undersized process tube blocks is extremely beneficial.

The Navy Test Rig (ANL-140) operated satisfactorily without fuel during September, and fuel loading was scheduled for early October.

Metallurgical studies of uranium which had been reprocessed after previous Hanford irradiation are reported.

The dilatometer for demonstrating the degree of transformation of canned slugs was given extensive field tests during September.

P-10 extraction operations were shifted to the evening and night shifts during the month to avoid operations concurrent with erection of a new 300 foot stack adjacent to the building. Lack of irradiated slugs for processing permitted the production lines to be used for development work during part of the month. Slug manufacture reverted to a one shift operation; new facilities permitted all slugs to be welded at the site during September rather than at 300 Area.

New basic health standards for P-10-X, involving major upward revision of permissible tritium concentrations, resulted in the immediate conclusion that stripping lines were not required for P-10-X for health considerations, though they may be desirable for economic reasons. Two glassblowers were contaminated in excess of current working limits at Building 108-B, but the exposures were well below the new basic health standards.

In P-10 development work, revision of the first glass line is in progress and procurement of metal pumps to permit the glass lines to deliver product at

General Summary

atmospheric pressure has been initiated. Process studies to permit handling of the back-log of air contaminated product and continued testing of the furnace system for the metal extraction line represented important investigations. Meantime, metallurgical studies of the process have shown the possibility of hydrogen contamination by diffusion inward through the hot furnace walls.

Separations Technology Division

Production testing of methods of shortening time cycles in the Concentration Buildings has succeeded in reducing all process steps below the desired nine-hour cycle, with no significant adverse effects on product yields. Process testing directed toward total elimination of plutonium solution evaporation between Isolation and Purification is still continuing. Production testing of methods of Building 234-5 Purification supernatant recovery and Casting skull recovery is being initiated.

A total of 101 solvent extraction runs was carried out during the month on Redox and Metal Recovery process development, essentially completing all "cold" packed and pulse column studies necessary for firming up previously submitted design specifications. The solvent extraction semi-works units in Building 321 were shut down at the end of the month and placed in stand-by condition for start-up and use in the S Division training program scheduled to begin in February, 1951. The major activity of the Development Section in the interim period will be devoted to the preparation of Technical Manuals and Start-up Operating Procedures for the Redox and TBP Production Plants, as well as to accelerated equipment development studies.

In the research laboratory, BiPO₄ plant studies have confirmed the feasibility of a field proposal to reduce time cycles and process volumes by changing the routine method of reworking the lanthanum fluoride by-product waste slurry, but have not been able to confirm the desired improved removal of iodine from dissolver solution by air-sparging. Continued improvement of results in the studies of "Electroless" plating of nickel on uranium and the arsenate coupling of Redox to metal fabrication has been obtained. The use of MnO₂ in place of Filtrol for Redox head-end scavenging has been further explored. TBP process studies have been directed toward measurements of the performance of various solvent diluents and the properties and mechanisms of reaction products in the TBP systems.

In the 234-5 process development laboratory, a large batch of Casting skulls has been dissolved and readied for recycling to the Isolation process by production test. Methods of precipitating plutonium (IV) oxalate and substitute reducing agents for hydriodic acid reduction of plutonium to the (III) state have been continued in investigation. Preparations are being made to start the autoradiographic examination of finished plutonium cores for coating thickness measurements, as requested by Los Alamos.

Stack gas filter life-testing has been continued in pilot plant models. The first dissolver off-gas Fiberglas filter and silver reactor to be installed at B Plant have been undergoing mock-up tests in the Bldg. 272-E shops. Revisions for improved performance, indicated by the preliminary tests, are being carried out for completion by mid-October.

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General Summary

DECLASSIFIEDTechnical Services Division

The P-10 Program continued to require increasing support from both the Analytical Section and the Technical Shops. In the former, analyses of by-product and product, together with the determination of ionization factors, accounted for the 40-odd mass spectrometric analyses completed during the month on a two-shift basis. Most of the glass shop capacity continued on P-10 work with all of the experienced glass blowers on a 6-day week. By month-end it was apparent that the Bldg. 101 Shops also would have to begin a 6-day work week because of the load being imposed by the P-10 Program.

The review of the Rosener preliminary plans and specifications for the Radio-chemistry Bldg. was completed and arrangements were made through D & C for certain essential design changes. These will raise the architect-engineer fee about \$3,400 but should result in a construction cost reduction of about \$50,000. Most of this saving will result from the adoption of constant-volume type laboratory hoods. No extension in design time will be involved.

A. E. C. approval was obtained for Project C-394, Part II, which covers preliminary construction work on the Hanford Works Laboratory site, and this field work was initiated by D & C. Preparation was essentially completed on the project proposal covering the design of the Mechanical Development Bldg., and the construction of its shell for use by contractor forces during erection of the laboratory buildings. Technical liaison work continued on the design scoping of the Pile Technology Building, and considerable time was spent with D & C in connection with their estimation of the building's cost as presently planned.

HEALTH INSTRUMENT DIVISIONS

Additions and deletions to the total force resulted in a net decrease of eight employees for the month. Four Class I Special Hazard Incident Investigations were reported.

Operational Division surveys of area work locations showed no serious deviation from satisfactory hazard control. Misadventures that did occur did not result in significant radiation exposure of personnel.

Routine activity density measurements by the Control groups of the Biology and Development Divisions on samples of air, water, soil, vegetation, and wildlife showed the usual pattern of activity deposition. As expected, deposition of I^{131} increased in accordance with the shortened metal cooling period.

PLANT SECURITY AND SERVICES DIVISIONS

There were no major injuries during the month. There have been two major injuries during the year 1950 for a frequency rate of 0.179.

There were seven minor fires during the month. No loss resulted.

Approval has been received and an architectural contract let for the construction of a new wing of the Administration Building.

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General Summary

Volume of work in the Office Services Divisions decreased slightly during the month.

Retention and disposal schedules have been completed on approximately 75 percent of all plant records. The balance of schedules will be ready for approval during October.

Estimated savings resulting from Office Methods Division activities were \$4,875 of which \$4,300 will be on a recurring annual basis.

Three new patrol posts were added during the month and one discontinued.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

The number of applicants interviewed increased from 1,229 during August to 1,442 during September. Of these applicants, 337 were individuals who applied for employment with the Company for the first time. In addition, 204 new applications were received through the mail. Open non-exempt, non-technical requisitions increased from 247 at the beginning of the month to 280 at the month end. Total plant roll decreased from 7,839 to 7,795. Turn-over rate increased from 1.57% in August to 2.60% in September. This increase was due primarily to employees returning to school and entering military service. During September, 69 new requests for transfers to other type of work were received in the Employment Office. Fifty employees were transferred during the month. Field recruitment of stenographers resulted in offers being made to 3 in Spokane, Washington, 8 in Denver Colorado, 10 in Chicago, Illinois, and 9 in St. Paul and Minneapolis, Minnesota. Field recruitment of designer-draftsmen resulted in 53 being interviewed in Denver Colorado, and 12 in St. Paul and Minneapolis, Minnesota; however, no offers were made to any of these individuals pending a review of their qualifications by interested divisions.

During September a history of Employee Benefit Plans for the period from September 1946 to September 1950 was prepared in conjunction with the over-all plant history presently being compiled in Schenectady. Three employees retired during September and two employee deaths occurred. One hundred forty-two visits were made to employees confined either at Kadlec Hospital or at home, and fifty-four salary checks were delivered to employees by a representative of the Employee Services Group during September. At the end of September there were 600 reservists on our rolls, and 587 of these have been categorized by the Joint Manpower Mobilization Committee. All deferments requested for reservists have been granted. At the end of September there were 827 employees registered under the Selective Service Act of 1948 with 106 being classified as 1-A. Deferments have been requested for 63 employees with 17 being granted and 46 still pending. Twenty-seven suggestion awards, totaling \$405, were made during September. These suggestions resulted in an estimated savings of \$5,746.67. Ninety compensation claims were reported to the Department of Labor and Industries, and two property damage and two bodily injury claims were reported to the Travelers Insurance Company during the past month. One compensation claim was settled during September with an estimated savings of \$19,765.55 for the Company.

During the week of September 25-29, the 40-Hour Supervisor's Training Program was again made available for supervisors and 58 supervisors attended this session. A few revisions have been made over the program from last year to keep the material on a current basis. Two issues of the Hanford Works SAGE

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were distributed during September. The final meetings of the special program for Medical Division employees were held during the month with 15 supervisors and 156 non-exempt employees participating. A special program on the revised Instructions Letter No. 87, "Weekly Time Cards and Weekly Clock Cards", and Instructions Letter No. 155, "Workweek -- Method of Scheduling and Making Payment for Weekly Paid Employees", was presented to 317 supervisors in order that they would become familiar with the policies and procedures outlined in these instructions letters. On September 22, 1950, the first of a trial test program for non-exempt employees, covering 17 subjects in 8 hours, was conducted with 15 non-exempt employees in attendance. Since this type of program has been found to be effective and desirable, a complete program for all non-exempt employees will be prepared.

Upon completion of negotiations, a contract was executed on September 12, 1950, between the Company and the Building Service Employees International Union Local #201. Establishment of specific workweeks for operations weekly employees was accomplished and made effective September 18, 1950. On September 14 and 15 we received two petitions from the NLRB seeking recognition of the HAMTC as bargaining representative of Health Instrument Inspectors A & B and Laboratory Assistants, A, B, and C, and also the Village Firemen of Richland and North Richland.

Negotiations with the Sheet Metal Workers were concluded on September 17, 1950, with the assistance of the Federal Mediation and Conciliation Service. A work stoppage of one day (September 18) resulted when the Union members met in Pasco to approve the Settlement. The extended and very difficult negotiations with the Office Workers were concluded and the Agreement formally signed on September 15, 1950. The Federal Mediation and Conciliation Service in Washington, D. C., inquired regarding the submission of a panel of five arbiters from which the fifth man could be selected for the settlement of the Daylight Saving Time dispute. Atkinson-Jones replied that they had been unable to secure a meeting with the Unions but stand ready and willing to complete arbitration. Negotiations with the Technical Engineers were held on September 12 and 20, 1950. The Union has set October 9 as a deadline for the completion of negotiations beyond which date they will go on a "hunting trip". A meeting is scheduled for October 9. Negotiations of an initial agreement with the Machinists are in progress. The next meeting is scheduled for October 4. Atkinson-Jones has made a survey of Machinist rates in Eastern Washington which should determine the justification for the \$2.75 demand (present rate, \$2.35). Notice of a desire to open their present Schedule "A" was received from the Ironworkers, Cement Finishers and Roofers Unions. Edmund P. Erwen (Erwen Construction Company) has replaced George Grant (Morrison-Knudsen) on the Project Negotiating Committee. Travel to Los Alamos, New Mexico to obtain a comparative evaluation of methods used in the resolution of certain Union Relations problems and travel to Houston, Texas to attend the A. F. of L. convention was performed by a member of this Division.

Reimbursement approval was received for the setting up of a preferential rate for former exempt employees changed to a non-exempt status and also for the payment of retroactive pay to employees incorrectly classified as exempt and changed to non-exempt. Instructions were forwarded to Payroll for the retroactive payment of money due members of the Auxiliary Fire Brigade. Discussions continued in connection with a request for reimbursement for an increase in job rates of stenographers and secretaries. There were 125 requisitions for

General Summary

new help reviewed, 305 merit and automatic increases were processed and approved, and 136 additions to the weekly roll were approved.

The Works NEWS played an important part in service both to the community and to the plant through its promotion campaign on Community Chest this year. A 12-page issue was published on September 29, two pages of which were devoted entirely to publicizing the various activities which Community Chest contributions help support.

The Public Functions Supervisor also represented General Electric in the Community Chest Drive in Richland by serving as the publicity chairman for the town campaign.

Two letters of a new series which do not deal with controversial subjects were prepared by Special Programs and submitted to the General Manager for his signature prior to distribution. Designed to acquaint Hanford Works employees with accomplishments the Company is making in its operation of Hanford Works and pointing out that these accomplishments are the result of the efforts of all G-E people at Hanford Works, these letters will be prepared and submitted for approval by the General Manager from time to time--not at regular intervals--in order that the informality of this series can be retained.

A total of 55 releases of information was made by the News Bureau during the month of September, 49 of which were sent to the "local list."

One of the outstanding public relations activities, intended to assist in clearing up misinformation concerning the way in which construction contractors may obtain work in the Hanford project was conducted through the medium of a talk by a member of the Contract Division at a convention of Architectural Engineering firm representatives at Yosemite, California. This offered an opportunity to distribute factual information at the convention and the news releases to newspapers based on the talk given.

The News Bureau and Special Programs were active during the month in publicizing and preparing classified advertising to advise of the requirements for personnel at Hanford Works.

The Women's Feature Writer, reclassified a publicity writer during the month, aided in the Community Chest campaign. Five feature stories about agencies in Richland which receive benefit from Chest funds were written for local newspapers by this employee. In addition she prepared four Women's Pages for publication during September in the Works NEWS and various other special feature stories for the plant newspaper.

A Hanford Works speaker addressed the Pasco Chamber of Commerce during September, and 12 papers of technical nature were received and cleared for use before public groups by the Public Functions. In addition this section handled the obtaining and distribution of 41 General Electric films for showing before plant groups and community groups during the month.

Hanford Works Photo House added the processing of motion picture film containing classified subjects to its functions during the month of September. Although this processing requires considerable care, technical experience, and knowledge,

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General Summary

it was found to be more economical to perform the work in the Photo House regularly. During September, a record of 4,935 prints was produced. This represented an increase of 958 over August, 1950.

The office handbook for use by stenographers and typists at Hanford Works was brought near to the completion point during September. Final approval was received on the book and arrangements were completed for having it printed. This accomplishment of Special Programs concludes a lengthy period of writing, designing, and obtaining of finished commercial art from the Division's commercial artist.

PURCHASING AND STORES DIVISIONS

The dollar value of orders placed during the month was \$2,100,202.97 which represents approximately 33 1/3 percent increase over the previous month.

The Technical Divisions, through the Separations Division, authorized acceptance of Type 304 ELC (0.030% carbon maximum) stainless steel as a substitute for Type 317 except in those few instances where Type 317 will be specified on a "no substitute" basis. This action was necessary in order to help conserve Columbium of which there is a critically short supply.

Aid was rendered to our fabricators in connection with locating scarce materials by shipment of material from our stocks and locating other materials on the open market.

Orders for 1,408 tons of stainless steel were placed under a Voluntary Allocation Program worked out with the stainless steel producers. Representatives of the Purchasing Division, including the Divisions' Manager and Assistant Manager, made trips to the vendors' plants on both the East and West Coasts to expedite placement and shipment of orders for equipment for Projects C-187-D and C-362.

Five additional stainless steel nitric acid tank cars and two rubber lined phosphoric acid tank cars were obtained from the Army Transportation Corps on a "no recall" basis.

During the month, 2,882 purchase requisitions were processed through screening with the result that 1,847 items were supplied from Plant stocks thus obviating the necessity for purchase from outside sources.

A shipping order for 4,500,000 board feet of surplus lumber was received on the Commission during the month. This lumber was in sizes which could not be used on the project.

Warehouses No. 1, 2, and 8 at the Pasco Depot were evacuated during the month and turned over to the Army. The Commission has requested the Army's permission to continue to use Warehouses No. 5 and 6 for the storage of controlled materials and equipment.

All stainless steel in the excess category has been withdrawn and isolated for possible future use. This will necessitate physical and chemical analysis in many instances.

A total of 38 carloads and 491 truckloads of surplus materials and equipment was shipped from the project during the month.

General Summary

Negotiations with the Milwaukee Railroad resulted in a rate reduction of 92 cents per ton on coal moving from Roundup and Keene, Montana to Hanford. This reduction will result in annual savings of approximately \$92,000.

The Interstate Commerce Commission issued Service Order No. 865, effective September 20, 1950, increasing demurrage charges. This is the second change issued during the year. H. W. Instructions Letter No. 156 was issued in order to call this increase to the attention of all concerned.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges during the month amounting to \$25,928.70.

Work continued in the development of preliminary design information for the proposed Central Warehouse.

MUNICIPAL, REAL ESTATE, AND GENERAL SERVICES DIVISIONS

There was a decrease of 42 employees in the Divisions during the month. This reduction was due, in part, to the discontinuance of seasonal grounds maintenance crews.

Effective September 18, 1950, the Community Divisions were reorganized and are now known as the Municipal, Real Estate and General Services Divisions. A re-division of the responsibilities and duties of the Community Divisions was made as well as redistribution of personnel.

The rearrangement of the Operating and Construction Budgets to fit in with the new reorganization was begun in September.

Total housing applications pending: 389.

R. J. Skewes Furniture Store and KALE Radio Station opened business offices in Richland during the month.

The collection of garbage from residences was reduced to once weekly as of September 30, 1950, for the duration of the winter months.

During the month, 36 prisoners were processed through the Richland Jail.

MEDICAL DIVISIONS

The roll decreased from 285 to 279.

Dr. Norwood attended the A. E. C. Medicine and Biology Laboratory Directors' Scientific Meeting at Los Alamos. Mr. Bakko attended the American Hospital Association national convention in Atlantic City. Three hospital staff members attended the Washington State Hospital Association meeting in Spokane.

No major injury and only one sub-major injury was sustained by G. E. employees.

The health topic for the month considered the psychological aspects of employee relations and should nicely augment the supervisory training program now in progress.

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Sickness absenteeism increased slightly from 1.34% to 1.40% while total absenteeism increased from 2.01% to 2.15%.

In spite of our excellent safety and sickness absentee record, our rejection of new applicants for physical reasons this year has been less than 1%, and 8 $\frac{1}{2}$ % of our new employees were physically handicapped requiring special placement in order that they might work safely.

Kadlec Hospital average daily census increased from 82 to 84.8 (73.2 adults and 11.6 infants). The census was 64.8 a year ago.

Nursing hours per patient day were 3.64 for the mixed services and 4.40 for obstetrics.

There was an increase in communicable diseases but none were of the major serious type. Home nursing visits increased 90%, largely due to increase in upper respiratory infections and school services.

The net cost of operating the Medical Divisions (before assessments to other divisions and Workmen's Compensation) was \$87,496, a decrease of \$5,025 and \$18,236 below the budget figure. The decreased cost was largely due to increased revenue.

The net cost of operating Kadlec Hospital was \$24,552, a decrease of \$2,505 and \$4,700 below the budget estimate. This improvement was largely due to increased revenue.

GENERAL ACCOUNTING DIVISION

Instructions were received from AEC and work was commenced in connection with reviews of budget estimates. Past procedures were modified in accordance with instructions received, and letters of explanation together with required schedules were prepared for distribution to division heads.

Review of methods used in assessing costs to other divisions was continued and additional revisions were made which will result in a more equitable allocation of costs. Work in connection with the development of new assessment procedures is continuing. Detailed write-ups are being prepared for each division outlining proposed methods of assessments to be based on fixed or standard rates.

In addition to numerous minor assignments, Internal Auditors reviewed receiving procedures relative to tank car and bulk shipments, investigated records and procedures in connection with Memo Sales to Employees, and continued the audit of procedures and records relative to the handling of excess materials.

During the month, certain revisions were made in Consolidated Construction Work in Progress report, Source of Construction Costs report, Summary of Costs report, and Inventory report. These revisions resulted in an improvement in the presentation of information and the inclusion of additional data.

Hanford Works Instructions Letter No. 87 was issued in September covering revised procedures for reporting time worked. These revisions were necessary as a result of a change in assignment of work weeks and change in payment practices as covered by H. W. Instructions Letter No. 155 which was also issued in September. The new procedure was made effective September 18, 1950

General Summary

and revised weekly time cards and revised weekly clock cards were used beginning on that date.

Meetings were held in September with members of Supervisory--Management groups during which representatives of Union Relations and Payroll Divisions explained the reasons for changes in the work week and payment practices, and the necessity for revised procedures for reporting time worked.

Calculation of retroactive payments to Auxiliary Firemen was begun in September in accordance with the agreement reached between Hanford Atomic Metal Trades Council and General Electric Company. Payroll Division employees worked overtime on Saturday, September 30, 1950 on this work.

Newly hired Business Graduates are being given training in all accounting sections through a within-division Job Rotation Program. During September, three employees were on these rotating assignments.

Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of August as compared with September, may be summarized as follows:

	<u>August</u>	<u>September</u>
<u>Disbursements</u>		
Material and Freight - GE	\$1 140 394	\$1 063 856
Payrolls - GE (Net)	1 857 632	2 214 615
Payments to Subcontractors	2 739 002	2 509 282
Other	913 286	861 842
Total	<u>\$6 650 314</u>	<u>\$6 649 595</u>
<u>Receipts</u>		
Rents	\$ 110 833	\$ 109 477
Hospital	35 295	39 810
Telephone	14 318	14 400
Bus Fares	9 192	8 078
Other	19 467	32 697
Total	<u>\$ 189 105</u>	<u>\$ 204 462</u>
<u>Net Disbursements</u>	<u>\$6 461 209</u>	<u>\$6 445 133</u>

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General Manager G. R. Prout
Manager, Schenectady Office E. R. Prentice
Assistant General Manager F. K. McCune
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(Technical and Education Matters)
Assistant to the General Manager J. R. Rue
Assistant to the General Manager and Manager of
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Manager, Design and Construction Divisions W. E. Johnson
Manager, Manufacturing Divisions C. N. Gross
Manager, Technical Divisions 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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FORCER REPORT SEPTEMBER 1950

	<u>EXEMPT</u>		<u>NON-EXEMPT</u>		<u>TOTAL</u>	
	<u>8-31-50</u>	<u>9-29-50</u>	<u>8-31-50</u>	<u>9-29-50</u>	<u>8-31-50</u>	<u>9-29-50</u>
<u>GENERAL</u>	18	18	24	26	42	44
<u>LAW</u>	2	2	3	3	5	5
<u>DESIGN & CONST. DIV'S.</u>						
Construction	2	2	37	38	39	40
Const. Acctg.	10	10	58	60	68	70
Design	219	225	211	214	430	439
No. Richland	16	17	83	82	99	99
<u>MANUFACTURING DIVISIONS</u>						
General	16	15	4	6	20	21
Proj. Eng'r. Control	25	28	22	23	47	51
Proj. Eng'r. Design	46	49	75	74	121	123
Proj. Eng'r. Minor Const.	26	14	19	10	45	24
Mfg. Acctg.	7	7	49	48	56	55
<u>Operating Div's</u>						
"SP"	72	75	282	281	354	356
"S"	111	117	370	393	481	510
Power	84	87	480	471	564	558
<u>Mechanical Div's.</u>						
Maintenance	51	56	359	358	410	414
Electrical	51	54	259	256	310	310
Instrument	51	52	189	201	240	253
Transportation	58	60	603	594	661	654
<u>TECHNICAL DIV'S.</u>						
Administrative	4	4	2	2	6	6
Pile Technology	102	109	92	87	194	196
Separations Technology	103	103	53	55	156	158
Technical Services	124	123	352	343	476	466
<u>MEDICAL</u>	46	48	239	231	285	279
<u>H. I. DIVISIONS</u>						
General	5	5	4	4	9	9
Operational	57	57	171	161	228	218
Development	31	33	73	70	104	103
Biology	28	28	35	35	63	63
<u>ACCTG. DIV'S.</u>						
Gen. Acctg. Payroll	9	9	62	69	71	78
Gen. Acctg. Acctg.	18	17	80	82	98	99
<u>EMPLOYEE & COMMUNITY RELATIONS DIV.</u>	30	30	63	61	93	91
<u>PLANT SECURITY & SERVICE DIV'S.</u>						
Patrol & Security	55	54	538	534	593	588
Safety & Fire	38	37	106	107	144	144
Gen. & Off. Serv.	23	23	205	202	228	225
<u>PURCHASING & STORES DIV'S.</u>						
Purchasing	41	46	64	66	105	112
Stores	21	21	252	234	273	255
<u>COMMUNITY DIV'S.</u>	209	209	512	470	721	679
TOTALS	1809	1844	6030	5951	7839	7795

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HW 19021-DEL

PERSONNEL DISTRIBUTION SEPTEMBER 1950

	100-B	100-D	100-F	100-H	101	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	Total
<u>GENERAL</u>												
Clerical											18	18
Total											26	26
											44	44
<u>LAW</u>												
Clerical											2	2
Total											3	3
											5	5
<u>DESIGN & CONST. DIVIS.</u>												
<u>CONSTRUCTION</u>												
Supervisors												
Clerical										2		2
Total										38		38
										40		40
<u>CONST. ACCTG.</u>												
Supervisors										10		10
Clerical										60		60
Total										70		70
<u>DESIGN</u>												
Supervisors										15	36	53
Engineers & Inspectors							1			19	100	153
Other exempt							28			14	5	19
Draftsmen											62	62
Clerical										28	119	152
Total							4			76	322	439
							33					
<u>NO. RICHLAND REALTY</u>												
Supervisors										17		17
Janitors										37		37
Clerical										16		16
Others										29		29
Total										99		99

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100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200 E Area	200-W Area	300 Area	Plant General Area	3000 Area	700-1100 Area	Total
-	-	-	-	-	-	-	-	-	-	11	11
-	-	-	-	-	-	-	-	-	-	4	4
-	-	-	-	-	-	-	-	-	-	6	6
-	-	-	-	-	-	-	-	-	-	21	21

MANUFACTURING DIV'S.

GENERAL

Supervisors
 Engineers
 Clerical
 Total

PROJ. ENG'R. CONTROL

Supervisors
 Engineers
 Clerical
 Others
 Total

PROJ. ENG'R. DESIGN

Supervisors
 Engineers
 Draftsmen
 Clerical
 Others
 Total

PROJ. ENG'R. MINOR CONST.

Supervisors
 Engineers
 Craftsmen
 Clerical
 Tech. Grads.
 Total

MFG. ACCTG.

Supervisors
 Clerical
 Total

-	-	-	-	-	-	-	1	-	-	7	8
2	-	-	-	-	-	-	4	-	-	14	20
-	-	1	-	-	-	-	-	-	-	16	17
-	1	1	-	-	-	-	-	1	-	4	6
2	2	-	-	-	-	-	5	1	-	41	51
-	-	-	-	-	-	2	-	-	1	19	22
-	-	-	-	-	-	1	-	-	3	22	27
-	-	1	-	-	-	6	-	-	4	44	55
-	-	1	-	-	-	-	-	-	-	9	10
-	-	2	-	-	-	-	-	3	-	6	9
-	-	-	-	-	-	9	-	3	9	100	123

1	-	-	-	-	-	-	1	2	-	1	5
-	-	4	-	-	-	2	1	2	-	-	9
-	-	1	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	2	1	4	-	1	9
1	-	5	-	-	-	4	3	1	-	2	24

-	-	-	-	-	-	-	-	-	-	7	7
-	-	-	-	-	-	-	-	-	-	48	48
-	-	-	-	-	-	-	-	-	-	55	55

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HW 19021-DEL

	100 B	100-D	100 F	100 H	101	200 E	200 W	300	Plant	700	1100	Total
	Area	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	Total

MANUFACTURING DIV'S.
OPERATING DIV'S.

Supervisors	9	19	7	8	-	-	-	13	-	-	2	58
Supv. in Training	-	5	1	-	-	-	-	1	-	-	-	7
Engineers	1	-	-	-	-	-	-	-	-	-	9	10
Operators	34	63	34	33	-	-	-	97	-	-	-	261
Clerical	2	4	2	2	-	-	-	5	-	-	3	18
Others	-	-	1	1	-	-	-	-	-	-	-	2
Total	46	91	45	44	-	-	-	116	-	-	14	356

"S"
Supervisors
Supv. in Training
Engineers
Operators
Clerical
Others
Total

Supervisors	-	-	-	-	-	16	37	-	-	-	3	56
Supv. in Training	-	-	-	-	-	8	13	-	-	-	14	35
Engineers	-	-	-	-	-	-	11	-	-	-	15	26
Operators	-	-	-	-	-	131	212	-	-	-	-	343
Clerical	-	-	-	-	-	7	17	-	-	-	4	28
Others	-	-	-	-	-	6	15	-	-	-	1	22
Total	-	-	-	-	-	168	305	-	-	-	37	510

POWER
Supervisors
Engineers
Operators
Clerical
Others
Total

Supervisors	12	20	12	12	-	6	7	6	2	-	1	78
Engineers	-	1	-	-	-	-	1	-	7	-	-	9
Operators	75	114	74	74	9	23	48	10	7	-	-	434
Clerical	-	1	1	1	-	-	1	-	6	-	1	11
Others	4	5	4	5	-	-	5	1	2	-	-	26
Total	91	141	91	92	9	29	62	17	24	-	2	558

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100-B Area 100-D Area 100-F Area 100-H Area 101 Area 200-E Area 200-W Area 300 Area Plant General Area 700-1100 Area Total

MECHANICAL DIV'S.
MAINTENANCE

Supervisors	1	8	6	2	-	4	12	5	5	2	45
Engineers	-	-	2	-	-	-	2	1	-	6	11
Craftsmen	19	63	40	21	-	36	76	44	33	-	332
Clerical	-	1	3	1	-	1	5	2	2	1	16
Others	-	-	1	1	-	3	2	1	1	-	10
Total	20	72	52	25	-	44	98	53	41	9	414

ELECTRICAL

Supervisors	2	1	1	5	-	1	6	2	16	11	45
Engineers	-	-	-	2	-	-	1	1	2	3	9
Craftsmen	17	18	13	15	2	12	13	11	62	26	189
Clerical	1	-	1	1	-	-	1	1	4	26	35
Operation	4	4	4	4	-	-	-	-	13	-	29
Others	-	-	1	1	2	13	21	15	2	66	3
Total	24	23	19	28	2	13	21	15	99	66	310

INSTRUMENT

Supervisors	1	4	2	3	-	2	6	8	1	3	30
Engineers	-	1	-	-	-	-	3	11	1	6	22
Craftsmen	15	25	16	13	-	15	33	49	-	13	179
Clerical	-	1	1	1	-	1	2	6	2	3	17
Others	-	-	-	-	-	-	-	5	-	-	5
Total	16	31	19	17	-	18	44	79	4	25	253

TRANSPORTATION

Supervisors	3	5	1	1	-	2	1	1	8	34	56
Engineers	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	162	162
Journeyman	9	9	3	5	-	2	4	-	21	67	120
Trainmen	-	-	-	-	-	-	-	-	-	18	25
Service men	5	13	2	2	-	2	3	3	19	1	67
Clerical	1	1	1	1	-	1	1	1	21	1	29
Equipment Operators	14	10	3	5	-	3	7	4	24	28	98
Others	9	14	2	2	-	12	4	2	9	39	93
Total	41	52	12	16	-	22	20	11	127	353	654

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HW 19021-DEL

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General Area	3000 Area	700-1100 Area	Total
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TECHNICAL DIVISIONS
ADMINISTRATIVE

Supervisors	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	6	6

PILE TECHNOLOGY

Supervisors	3	1	1	1	1	-	-	13	-	-	-	20
Metallurgists & Engineers	17	6	3	7	-	-	-	36	-	-	-	69
Physicists	1	1	2	3	2	-	-	11	-	-	-	20
Tech. Grads. & Engr. Assts.	8	-	1	5	-	-	-	8	-	-	-	22
Technologists	5	-	-	-	-	-	-	-	-	-	-	5
Laboratory Assts.	24	4	1	6	4	-	-	10	-	-	-	49
Clerical	3	1	-	2	-	-	-	5	-	-	-	11
Others	-	13	-	-	-	-	-	-	-	-	-	13
Total	61	24	8	7	7	-	-	83	-	-	-	196

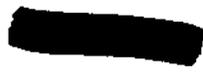
SEPARATIONS TECHNOLOGY

Supervisors	-	-	-	-	-	1	4	16	-	-	1	22
Chemists & Chem. Engr.	-	-	-	-	-	5	11	64	-	-	1	81
Tech. Grad.	-	-	-	-	-	1	1	5	-	-	-	7
Clerical	-	-	-	-	-	-	3	7	-	-	1	11
Chem. Operators	-	-	-	-	-	-	1	22	-	-	-	23
Others	-	-	-	-	-	-	1	13	-	-	-	14
Total	-	-	-	-	-	7	21	127	-	-	3	158

TECHNICAL SERVICES

Supervisors	1	-	-	2	4	6	14	25	-	-	3	55
Chemists & Engr.	2	1	1	-	8	1	12	38	-	-	5	68
Technologists, Tech. Grads.	4	-	-	2	-	10	-	30	-	-	16	62
Lab. Assts.	3	-	-	5	-	31	63	40	-	-	-	142
Clerical	-	-	-	1	-	4	4	31	-	-	50	90
Others	-	-	-	-	-	29	-	16	-	-	4	49
Total	10	1	1	10	12	81	93	180	-	-	78	466

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	100-B	100-D	100-F	100-H	101	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	
Supervisors	-	-	-	-	-	-	-	-	-	1	28	29
Physicians	-	-	-	-	-	-	-	-	-	2	10	12
Others Exempt.	-	-	-	-	-	-	-	-	-	-	7	7
Technicians	-	-	-	-	-	-	-	-	-	3	15	18
Nurses	2	6	4	1	-	4	7	2	-	2	54	82
Clerical	1	-	1	-	-	-	1	-	-	10	46	59
Others	-	-	1	-	-	-	-	-	-	1	71	72
Total	3	6	5	1	-	4	8	2	-	19	231	279

MEDICAL
 Supervisors
 Physicians
 Others Exempt.
 Technicians
 Nurses
 Clerical
 Others
 Total

H. L. DIVISIONS
GENERAL

Supervisors	-	-	-	-	-	-	-	-	-	-	5	5
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	9	9

OPERATIONAL

Supervisors	1	1	1	2	-	1	7	9	-	-	2	24
Engineers	4	8	3	3	-	4	7	3	-	-	1	33
Clerical	-	-	-	1	-	-	1	1	-	-	-	3
Others	14	15	15	13	-	17	35	40	9	-	-	158
Total	19	24	19	19	-	22	50	53	9	-	3	218

DEVELOPMENT

Supervisors	-	-	-	-	-	3	7	4	-	-	-	14
Engineers	-	-	-	-	-	3	7	8	-	-	1	19
Clerical	-	-	-	-	-	1	2	2	-	-	2	5
Others	-	-	-	-	-	14	28	12	-	-	11	65
Total	-	-	-	-	-	21	44	26	-	-	12	103

HW 19021-DEL

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General Area	3000 Area	700-1100 Area	Total
<u>H. I. DIVISIONS</u>												
<u>BIOLOGY</u>												
Supervisors			7									
Engineers			21									21
Clerical			3									3
Others			32									32
Total			63									63

ACCOUNTING DIV.

GEN. ACCTG.

Supervisors
Other exempt
Clerical
Total

Supervisors	1	15	16
Other exempt	1	9	10
Clerical	20	131	151
Total	22	155	177

EMPLOYEE & COMM. RELATIONS

Supervisors
Employee Rel. Counselor
Other Exempt
Clerical
Others
Total

Supervisors	22	22
Employee Rel. Counselor	1	1
Other Exempt	7	7
Clerical	48	48
Others	13	13
Total	91	91

PLANT SECURITY & SERVICE DIV'S.

PATROL & SECURITY

Supervisors
Other Exempt
Patrolman
Clerical
Seamstress
Tech. Grad.
Total

Supervisors	5	6	5	5	9	7	7	4	53
Other Exempt							1		1
Patrolman	50	65	67	49	118	70	2	35	513
Clerical							16	2	18
Seamstress							2		2
Tech. Grad.							1		1
Total	55	71	72	54	127	77	29	41	588

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	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General Area	3000 Area	700-1100 Area	Total
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PLANT SECURITY & SERVICE DIV'S.

SAFETY & FIRE

Supervisors	5	-	-	-	-	4	4	4	8	-	4	28
Engineers	-	2	-	1	-	2	-	2	-	-	2	9
Firemen	45	-	-	-	8	-	14	15	3	-	15	100
Clerical	-	1	-	1	-	1	-	1	-	-	2	6
Tech. Grads.	-	-	-	-	-	1	-	-	-	-	-	1
Total	53	3	2	2	8	4	18	22	11	-	23	144

GEN. & OFF. SERVICES

Supervisors	-	-	1	-	-	1	2	1	1	-	17	23
Laundry Operators	-	-	-	-	-	-	2	-	-	-	1	3
Janitors & Servicemen	7	5	5	5	1	4	16	12	4	-	35	94
Clerical	-	-	-	-	-	-	-	-	-	-	28	28
Others	-	-	-	-	-	-	28	-	-	-	49	77
Total	7	5	6	5	1	5	48	13	5	-	130	225

PURCHASING & STORES DIV'S.

PURCHASING

Supervisors	-	-	-	-	-	-	-	-	-	-	16	16
Other Exempt	-	-	-	-	-	-	-	-	15	-	15	30
Clerical	-	-	-	-	-	-	-	-	-	-	60	60
Rotational Trne.	-	-	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	15	-	97	112

STORES

Supervisors	2	-	-	-	-	-	-	-	-	3	16	21
Clerical	13	-	2	-	-	1	-	-	-	30	47	93
Others	28	-	-	-	-	-	-	-	-	20	93	141
Total	43	-	2	-	-	1	-	-	-	53	156	255

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HW 19021-DEL

	100-B	100-D	100-F	100-H	101	200-E	200-W	300	Plant	3000	700-1100	Total
	Area	Area	Area	Area	Area	Area	Area	Area	General	Area	Area	Total
Supervisors	-	-	-	-	-	-	-	16	-	-	113	129
Other Exempt	-	-	-	-	-	-	-	-	-	-	17	17
Fireman	-	-	-	-	-	-	-	26	-	-	37	63
Patrolman	-	-	-	-	-	-	-	15	-	-	28	43
Journeyman	-	-	-	-	-	-	-	-	-	-	166	166
Servicemen	-	-	-	-	-	-	-	-	-	-	38	38
Truck Drivers	-	-	-	-	-	-	-	-	-	-	45	45
Power Operators	-	-	-	-	-	-	-	-	-	-	45	45
Clerical	-	-	-	-	-	-	-	-	-	-	68	68
Others	-	-	-	-	-	-	-	-	-	-	65	65
Total	492	511	423	337	39	500	1006	882	377	1445	2753	7795

COMMUNITY DIVISIONS

- Supervisors
- Other Exempt
- Fireman
- Patrolman
- Journeyman
- Servicemen
- Truck Drivers
- Power Operators
- Clerical
- Others
- Total

GRAND TOTAL

MANUFACTURING DIVISIONSSEPTEMBER 1950SUMMARYProduction Divisions

A total of 70 tons of metal was discharged at the goal concentration, with 30 tons being pushed at 150 percent of the goal value and 10 tons at 37 percent of the goal. The operating efficiency was 80 percent, being adversely affected by the continuance and completion of the nozzle replacement program at D pile and by a loss of 110 operating hours at H pile during installation and testing of the P-13 (ANL-140) project.

The nominal pile operating levels at month end were 335 MW at B pile, 320 MW at D pile, 305 MW at F pile, and 400 MW at H. The D pile actual level at month end was varying between 295-320 MW because of low reactivity believed caused by a small water leak.

The H-10 program was completed in its initial phase with a total of 796 tubes charged. The DR pile loading was 72 percent complete at month end, and plans were completed for initial operation on October 3, 1950.

A total of 76 tons of acceptable slugs was canned at a yield of 91.6 percent. A new record machining yield of 80.9 percent was set. The melt plant produced 15 tons of billets at a yield of 85.5 percent. The solid metal yield from scrap was a new record at 94.2 percent.

A total of 106 batches was started in the Canyon Buildings, 106 were processed through the Concentration Buildings and 105 through Isolation. The minimum decay time of dissolved metal was 75 days. The average purity of completed batches was 98.5 percent.

Plant Utilities and Maintenance Divisions

While the D Area pile nozzle replacement, van stone, and tube clearance program was in progress, piping changes were made in 115-D Building for the purpose of serving DR pile as well as D pile.

The 1950 Area Road Maintenance Program was completed. Sixty miles of plant area roads were seal coated.

The electrical peak demands for the month were: Process - 61,550 KVA, Village - 20,850 KVA. The increase in process demand was caused by DR, the Village increase was due to seasonal trend.


C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

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HW-19021-DEL

MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF SEPTEMBER 1950

Richland, Washington
October 10, 1950

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

INVENTOR

TITLE

A. W. Hildebrandt
(Instrument Division)

Slope Alarm and/or Control
for Leeds & Northrup Micromax
Instruments

R. E. Connally

Source of Proportional Counter
Pulses for Testing and Compar-
ing Pulse Amplifiers



C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

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WITH DELETIONS**

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DECLASSIFIED

HW-19021-DEL

**DECLASSIFIED
WITH DELETIONS**

² 1200261

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Section 10 Approved By:

W. K. Woods
W. K. Woods, Division Head
File Technology Division
Technical Divisions

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WITH DELETIONS

30

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October 5, 1950

P DIVISIONSEPTEMBER, 1950I. GENERAL

The B, D, F and H Piles operated throughout the month except for the outages listed under Area Activities. Power levels were as follows: B Pile - 335 MW, D Pile - 320 MW, F Pile - 305 MW, H Pile - 400 MW, with the exception that from September 24 to September 27, D Pile level was reduced to 295 MW due to low excess reactivity. The piles operated with a "time operated" efficiency of 82.2%.

The H-10 program, initiated in June (document No. HW-18221-A) was continued during the month at H Pile, a total of 796 tubes having been loaded. No unusual operational effects other than those previously reported have been observed.

Two record yields were attained in the 300 Area during the month of September. A yield of 80.9% was established for machining of 4" pieces from alpha rolled rods and a melt plant efficiency of 94.2% for solid yield.

Work was completed during the month on the preparation of DR Pile for startup. Pile loading was commenced on September 21 in accordance with the program outlined in Document No. HW-18903. Charging was 72% complete at month end.

The D Pile Program for Van Stone Flange reconditioning and installation of aluminum inlet and outlet nozzles was completed and the pile started up on September 7.

P Division

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - September, 1950
 Beginning of month - 354
 End of month 356
 Net increase 2

J. E. Greever, E. T. Hubbard, H. A. Laybourn, and C. G. Lewis were promoted from Shift Supervisor to Area Supervisor effective September 18.

H. G. DeVoss was promoted from Supervisor-in-Training to Shift Supervisor effective September 1.

Two Technical Graduates and one Chief Operator were promoted to Supervisors-in-Training effective September 1.

One Technical Graduate was assigned to the P Division and two Technical Graduates were transferred from the P Division to the Pile Technology Division.

Six operators were hired in the 300 Area; three operators from the 300 Area and two operators from the 100 Areas terminated voluntarily.

One Steno.-Typist C and one Field Clerk C were hired to fill existing vacancies.

Personnel for 100-DR was obtained through transfers within the P Division according to a prearranged plan.

III. AREA ACTIVITIES

<u>File Summary</u>	<u>File B</u>	<u>File D</u>	<u>File F</u>	<u>File H</u>	<u>File DR</u>
Time Operated (%)	93.9	63.9	92.6	78.3	
Operating Efficiency (%)	91.2	62.9	90.6	75.1	
*Power Level (MW)	335	320	305	400	
*Inlet Water Temperature (°C)	16.4	16.0	16.4	16.3	
*Outlet Water Temperature (Maximum °C., 10 tubes, 0.240" zone)	61.3	59.6	59.9	64.5	
Number of Scrams	0	0	0	1	
Number of Purges	1	1	1	2	
CO ₂ Consumption (cu. ft.)	58,344	**124,596	73,032	33,333	***81,806
Metal Discharged (tons)	17.77	35.60	20.32	37.28	
Inhours Gained (this month)	-10	-70	-43	-17	
*Inhours Poisoned	596	595	512	130	
*Inhours in Rods	71	16	55	144	
CO ₂ Concentration	97%	98%	93%	91%	

* Month end figures.

** High gas loss due to purges to raise gas purity following extended outage.

*** Includes gas used for initial purge to raise purity to 90%.

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P Division

PILE BUILDING

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Outage Breakdown

<u>Date of Outage</u>	<u>Scheduled</u>		<u>Unscheduled</u>	<u>Length of Outage (Hours)</u>
	<u>Metal Discharged</u>	<u>Maintenance</u>		
(1) 9-1-50		D		154.9
(2) 9-4-50	H			98.1
9-7-50	B			22.2
9-12-50	B			21.6
(3) 9-13-50	H			58.1
9-13-50	F			24.3
(4) 9-16-50			H	1.4
9-20-50	D			28.6
(5) 9-27-50	D			51.7
9-28-50	F			29.6

- (1) Completion of Van Stone and nozzle replacement program.
- (2) Outage extended for installation and testing of P-13 equipment.
- (3) Outage extended for additional testing of P-13 equipment.
- (4) Unit scrambled when panellit alarm could not be reset.
- (5) Outage length increased to allow further testing for water leak in pile.

Operating Experience

Production tests having operational significance are reported below:

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

<u>1.485"</u>	<u>1.490"</u>
4674-D	4574-B
4674-F	

105-103-P (Corrosion Rates at Elevated Temperatures)
 Twenty-two tubes in F Pile operated throughout the month with reduced flow in accordance with the provisions of this test. No unusual conditions were observed.

105-316-P (Charging High Exposure P-10-A into H-10 Tubes - Supplement A)
 Tubes 1884-H and 1885-H, containing H-10 loading including previously exposed P-10-A slugs, were discharged on September 14. The special equipment developed for handling such discharges functioned satisfactorily.

P Division

- 105-338-P (Pile Test of Special Step Plug and Gas Seal)
 VSR thimble number 20 was removed from D Pile and a fluted step plug containing boron steel balls was installed. Tests have shown it possesses satisfactory shielding properties.
- 105-354-P (Installation and Operation of ANL-140 - P-13 Project)
 The special tube was installed in H Pile on September 5. Some difficulty was experienced in getting a satisfactory pressure test of the tube. Tests of the completed installation were made during outages of September 4 and September 13, and a test run using a dummy fuel element was begun on September 15. Since that date, there have been no P Division operational difficulties. The two outages of September 4 and September 13 were extended at the request of the Technical Divisions in order that the work necessary for placing the ANL-140 test equipment in operation could be completed. The production loss directly attributable to the extra outage time required by the ANL-140 experiment was as follows:

September 4 outage -	72 hours
September 13 outage -	<u>38 hours</u>
Total to date	110 hours

- 105-361-P (Power Level Increase, D Pile)
 The D Pile operated at 320 Mw during the month except during the latter part of the month when operation at a reduced level of 295 Mw was necessitated by a reduction in excess reactivity due to a process water leak.
- 105-373-P (Tube Block Boring at DR Pile)
 The bore of the front sections of the graphite channels of tubes 2580-DR, 2581-DR, 2680-DR, and 2681-DR were enlarged and the tubes replaced during the month.
- 105-377-P (Power Level Increase, B Pile - Supplement A)
 The B Pile power level was maintained at 335 Mw except for a slight reduction during the first part of the month due to high exit water and high graphite temperatures. This condition was corrected by a re-distribution of the poison pattern on September 12, and operation was continued throughout the month at 335 Mw.

During September, 12 tubes of special request material were charged into the Hanford Piles for irradiation. Also, 15 tubes of irradiated special request material were discharged for subsequent shipment off site. Three casks containing irradiated special request material were shipped off site. In addition, 16 tubes were charged with "B" material and nine tubes were discharged and shipped off site.

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P Division

A total of 70.18 tons of uranium slugs was discharged during the month at an average concentration of current goal value, 30.36 tons at nominal of 150% of the current goal value, and 10.44 at 37% of current goal value. The latter was discharged in order to enlarge the original H-10 pattern at H Pile of 600 tubes to the currently approved pattern of 825 tubes.

DR Pile charging operations proceeded in accordance with the program outlined in Document No. HW-18903. Dry critical was attained on September 23 with 312 tubes charged. Wet critical was attained on September 24 with 589 tubes charged. A small wet-pile coefficient test was run on September 29 at approximately a 30 MW power level with 725 tubes loaded. No unexpected operating conditions were observed.

Mechanical Experience

All horizontal and vertical rods are in satisfactory operating condition at month end except the following:

- a. Horizontal Rod #A at D Area binds at 190 to 195 inches but is operable.
- b. Vertical Rod #20-D binds and has been tied out of service following thimble removal and installation of the ball type 3X step plug (PT-105-338-P).
- c. Horizontal Rod #2-F cannot be withdrawn beyond 300 inches. Corrections are planned for the next extended outage of F Pile.
- d. Vertical Rod #13-F binds in the guide and is tied out of service. Repairs have been deferred pending the procurement of a special guide.
- e. Vertical Rod #27-F is scammable but does not operate satisfactorily under power. Repairs have been deferred pending the procurement of a special guide.
- f. Vertical Rod #37-F binds in travel. A knuckle jointed, flexible rod is being fabricated for installation in this position.

The program of Van Stone Flange repairs and replacement of stainless steel nozzles with aluminum nozzles on the D Pile which was started August 21 was completed on September 7. Below is a summary of the Van Stone Flange repairs made during this outage:

Front Flanges below 0.030" residual thickness	- 0.85%
Rear Flanges below 0.030" residual thickness	- 0.54%
Tubes requiring additional sum clearance (3/8" minimum)	- 6.39%

One tube was replaced and four more remain to be replaced because of insufficient sum clearance.

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On September 7, after startup of the D Pile, the moisture analysis of the pile atmosphere plus the discovery of water in the drip legs indicated a water leak in the pile. A dew point survey of the plenum chambers indicated a section of the pile which contained a high moisture content. The pile was shut down on September 20 and 99 process tubes were hydrostatically tested. The only leak discovered was at the rear nozzle of tube 2667-D where it was found the no positive seal existed between the Van Stone Flange and the nozzle rlange. This leak was corrected by adding an additional gasket.

Following startup after the September 20 outage at D Pile, it was evident that a water leak still existed. Additional plenum chamber surveys indicated a possible leak in the loop header. During the outage of September 27, the loop header and individual process water cross headers serving rows 46 through 27, as well as certain suspect individual tubes, were pressure tested. All results were negative. At month end a small leak, yielding approximately 15 gallons of water per day at the driers, still exists in the pile. Efforts will be continued to locate and correct this leak.

During the extended outage at D Pile ending September 7, repairs to the D Pile chute liners and the 115 tunnel tie-in required for gas circulation to DR Pile were completed.

Tubes 1973-H and 2451-H were replaced and returned to normal service during the month.

File Development

A special attachment was designed for the rear nozzles at the B Pile to isolate the water from any tube and carry it off to a crib built for the purpose. This development is designed to take care of contaminated effluent water from any tube in which a ruptured slug might occur, thereby preventing possible contamination of the 107 retention basin, and minimizing down time required for cleaning the retention basin.

Gas Processing Building

During the month, one turbine-blower was removed from 115-B for use in the 115-D-DR installation.

The gas system of the DR Pile was activated on September 21, 1950. Purging operations raised gas purity to 90% CO₂ by September 23. Purity had increased to 96% at month end.

Special Hazards

Frequency of solids purges was increased at H Pile in an effort to reduce the contamination encountered on the rear face during discharge operations. This method has been found to be reasonably effective.

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P Division

Air-borne contamination in the B Pile water sample rooms was reduced to tolerable limits by the installation of hoses on the water discharge lines plus a waterseal at the point where they discharge to the sewer.

Project Status

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

- C-306 (Front Face Shielding Caps)
D and DR Piles completed. B Pile scheduled for October.
- C-330 (Improved Ventilation Building 313-314)
Testing of the facilities is in progress. Results to date are favorable.
- C-339 (Rolling Mill)
This project is being terminated in accordance with a directive received from the Atomic Energy Commission on August 3, 1950.
- C-347 (Nozzle Replacement)
The installation of nozzles has been completed at D Pile. It is planned to begin work on B Pile during October.
- C-355 (Pile Clearance, Near Side)
B Pile work has been postponed indefinitely. No estimate has been made on D and F Piles.
- M-711 (Algae Filter)
Operation of the filter was continued throughout the month.
- M-713 (Flexible Vertical Rod)
Work still delayed due to low shop priority.
- M-723 (Repairs to 107-B Basin)
Scheduled for October.
- C-321 (Effluent Diversionary Outlet)
Preparation of project proposal continues.
- B-544-R (Steel Process Sewer, 105-107-B)
Further investigation is required before recommendations can be made. These investigations will be made during the October outage at B Area.
- B-814 (CO₂ Bulk Handling Facilities)
Project proposal preliminary drafts prepared and approved.
- B-806 (Flexible Horizontal Rod)
Design development work continues.

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B-1841 (Ball 3X System)
Testing of present designs have established feasibility.
Further development work continues.

C-342 (DR Water Plant)

Part II - Modification to Building 115-7

The work authorized in this project is completed with the following major exceptions:

1. Installation of the electric driven blowers in No. 4 Drier Room and No. 3 Blower Room and acceptance testing of this equipment.
2. Replacement of the temporary turbine driven blower in No. 5 Drier Room with the electric driven blower ordered for the job and the testing of the installation. This blower and the two above mentioned blowers are scheduled to arrive October 6, 1950.
3. Complete the installation and calibration of the necessary instrumentation associated with these rooms.

The remaining work will require approximately 750 man-hours and is scheduled for completion by October 28, 1950.

C-388 (P-10X)

New information on permissible emission of P-10 to the surroundings (see HW-18979, Basic Health Standards, P-10 -- Elaboration of Stack Discharge Criteria, H. M. Parker to J. S. McMahon, September 19, 1950), on by-product gas analysis and on the nature of the stripping process indicate that the stripping facility probably will be reduced in size or may be eliminated entirely. Consequently, the Project Engineering Divisions have been requested to undertake certain studies (see HW-18855, P-10X Program, J. H. Warren to J. S. McMahon, September 13, 1950) to establish the feasibility of and economic justification for installing the P-10X production facility in 108-B Building. These studies are expected to be complete about October 15, 1950.

300 AREA METAL FABRICATIONProduction Statistics

Production for the month of September was as follows:

Billets Produced	15 Tons
Rods Machined	94 Tons
Bare Pieces Machined	76 Tons
Acceptable Pieces Canned	76 Tons

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P Division

Melt Plant

The casting yields were as follows:

	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
Billet (Avg. per furnace run)	85.6	85.5	74.3
Billet (Yield from total scrap processed)	89.0	90.9	83.7
Solid Yield	93.9	94.2	89.6

The solid yield for September was the highest yield attained in the Melt Plant to date. The billet yield was 0.1% lower than the record yield established in August. The higher yields have been made possible by the continued good quality of the TXB used in the Melt Plant furnace charges.

Machining

The machining yields were as follows:

	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
	79.2	80.9	78.1

The yield for September is a new record yield of 4 inch slugs machined from rolled rods. The machining of long, good quality, rods assisted in attaining this yield.

Chip Recovery

The chip recovery yield was as follows:

	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
	88.6	88.2	88.7

The entire chip recovery process was operated four shifts and the press was operated an additional eight shifts. A total of 30,812.5 pounds of TXB was produced.

Oxide Burning

The material burned was as follows:

	<u>Weight Out - Pounds</u>		
	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
	9,591	6,053	141,607

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P Division

Oxide on Hand at Month End (Metal Content)

To be burned	705 pounds
To be analyzed	5,620
To be shipped	<u>7,116</u>
Total	13,441 pounds

Canning Operation

The canning yield was as follows:

	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
	91.6	91.6	93.3

Canning rejects, by cause, were:

	<u>Per Cent</u>		
	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
Non Seating	2.5	2.4	1.4
Marred Surface	1.6	2.1	1.8
Al-Si on Outside of Can	2.1	0.7	1.0
Frost Test	0.3	0.6	0.8
Bad Welds	0.5	1.0	0.7
Miscellaneous	<u>1.4</u>	<u>1.6</u>	<u>1.0</u>
Total	8.4	8.4	6.7

The canning yield for September remained the same as for August. An increase in marred surface and bad weld rejects, as well as the continued high percentage of non seating rejects, prevented an improvement in the over-all yield. All three types of rejects are attributed to the training of new canning personnel. The reduction of Al-Si rejects may be attributed to the increased percentage of Scovill cans used during the month. In addition, 416 steel sleeves, having a smaller diameter, were received for use in conjunction with Victor aluminum cans. Results to date indicate that these sleeves will effectively reduce Al-Si rejects to about 1% when using Victor cans.

Special Request Pieces Canned

<u>Request No.</u>	<u>Content</u>	<u>No. of Pieces</u>
P-10-A	Lithium Aluminum Alloy	933

Slug Recovery

	<u>Per Cent Recovered</u>		<u>Ave. Wt. - Lbs.</u>	
	<u>September</u>	<u>To Date 1950</u>	<u>September</u>	<u>To Date 1950</u>
1200272 Z Slugs	85.8	84.4	3.900	3.902
X Slugs	12.1	13.7	3.855	3.858
Rejects	2.1	1.9	--	--
10 Total	<u>100.0</u>	<u>100.0</u>		

P Division

Inspection and Testing

Autoclave results were as follows:

	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
	0.26/M	0.41/M	0.20/M

Sixteen autoclave failures occurred during the month. Twelve were complete failures and four were partial. Examination of these failures revealed that a large percentage was caused by poor brazing and welding techniques. Concentrated efforts are being made toward the training of new personnel to eliminate such failures.

No slugs were found to be penetrated at 0.010" during the month.

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

	<u>Per Cent Usable</u>		
	<u>August</u>	<u>September</u>	<u>To Date 1950</u>
Aluminum Caps	99.7	99.5	98.1
Aluminum Cans	93.4	97.5	93.6
Steel Sleeves	*	100.0	85.3

* No new sleeves were inspected during August.

A large percentage of the cans inspected during the month were Scovill cans. The quality of these cans continued to run exceptionally high.

A shipment of 416 steel sleeves, having smaller diameters, was received and inspected for use in conjunction with Victor cans. All of the sleeves were of acceptable quality.

Material Handling

During the month, 100 tons of billets were shipped to Simonds Saw and Steel Company for alpha rolling. In addition, 7.5 tons of solid uranium scrap were shipped to Los Alamos.

No U₂₃₅ alloy slugs were received during the month. A total of 1.242 pieces were transferred to the 100 Areas for pile loading during September, making a total of 7.204 pieces to date. Ten bare pieces were returned to ORNL.

A total of 42 tons of gamma extruded canned slugs was shipped to 100-DR for use in the initial loading of DR Pile. Six additional tons of this material was transferred to the Technical Divisions for exponential tests in the 101 Building. This leaves a balance of 89 tons in storage.

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P Division

305 Test Pile

The test pile was shut down during the first three weeks of the month to calibrate the control rod and complete necessary preventive maintenance work. Overhaul work was performed on the galvanometer, control rod Selsyn, ion chambers, control rod drive and the air conditioning equipment.

A total of 211 tests were made during the month. Ninety-five tests were run on slugs, 48 tests on eggs, 48 tests on P-10-A, 5 tests on graphite, and the following tests on special work requests:

<u>Request No.</u>	<u>Title</u>	<u>No. of Tests</u>
130	To measure absorption cross section of special request ORNL-111.	2
151	To test soap powder used in 303 Area for borax content.	1
152	To irradiate gold and copper foils for calibration counters.	1
154	To measure absorption cross section of a sample of Aquadag.	2
155	To measure absorption cross section of Aquadag.	2
156	To measure absorption cross section of samples of Al-Si and Tin from canning pots.	6
157	To irradiate foils.	1

The average dih for canned slugs tested during the month was -0.244 as compared with -0.183 in August. Considerable work has been done to determine the cause for lower trends in slug reactivity during recent months, however, no conclusive evidence has been found.

Special Hazards

No unusual conditions developed during the month.

Development

During the month, the program for making extensive time saving revisions to the four welding machines was completed. This work was started in March and has resulted in a time savings of 18% on this operation.

Tests were made during the month to determine the effectiveness of introducing air into the exhaust side of the finishing pump in the Melt Plant to dilute the concentration of hydrogen in the exhaust

P Division

line. Sixteen samples taken at various times during the melting cycle indicated that the introduction of air reduced the hydrogen from as high as 14.2% to less than 0.5%. Based on these results, it is planned to install permanent equipment for introduction of air into the vacuum pump as standard operating procedure.

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October 4, 1950

S DIVISION

SEPTEMBER, 1950

OPERATING SECTION

I. GENERAL

One hundred six charges were started in the Canyon Building, one hundred six charges were processed through the Concentration Building and one hundred five charges were completed through the Isolation Building. The average purity for completed charges was 98.5%.

	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Number of charges started in Canyon	53	53	106
Number of charges completed thru 22h	53	53	106
Number of charges completed thru 23h	52	53	105

The average cooling time for metal processed was approximately 75 days. The average overall time cycle for the process in meeting the production schedule and processing of an acid wash from each plant was 13.2 hours based on a 29 day production month.

Canyon and Concentration Building Production Performance Data - (9-1-50 thru 9-30-50, inclusive)

<u>For Completed Charges</u>	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Percentage of starting product in waste:			
This month	3.0 (a)	2.9 (a)	3.0
Last month	2.9 (b)	2.9 (b)	2.9
Cumulative to date	4.0 (c)	3.8 (c)	3.9
Percentage of starting product recovered:			
This month	96.9	95.7	96.3
Last month	95.2	94.8	95.0
Cumulative to date	96.8	95.6	96.2

S Division

	<u>B Plant</u>	<u>T Plant</u>	<u>Combined</u>
Percentage of starting product accounted for:			
This month	99.9	98.6	99.3
Last month	98.1	97.7	97.9
Cumulative to date	100.8	99.4	100.1
Gamma decontamination factor (Log.)			
This month	6.91	7.20	7.03
Last month	7.17	7.32	7.24
Cumulative to date	7.33	7.35	7.34

(a), (b), (c): Includes waste from processing recycle. The recycle wastes are estimated as: (a) 0.025%-T Plant; 0.017%-B Plant. (b) 0.022% T Plant; 0.012%-B Plant. (c) 0.076%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (9-1-50 to 9-30-50, inclusive)

	<u>Prepared for</u>		<u>Retained Material</u>		
	<u>Shipment</u>	<u>Recycle Waste</u>	<u>Samples</u>	<u>Balance</u>	
Average for this month	92.4	6.07 -0.08	-0.015	98.4	
Average for last month	94.0	6.07 -0.17	-0.015	99.9	
Average to date	95.7	4.75 0.05	0.012	100.5	

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	483
End of month	510
Net increase	27

Changes which occurred:

- 1 new hire (monthly roll)
- 1 transfer to another division (monthly roll)
- 4 transfers from another division (monthly roll)
- 2 transfers from another division (Technical Graduates - weekly roll)
- 1 new hire (weekly roll)
- 20 transfers from another division (weekly roll)

O. V. Smiset, Asst. Chief Supervisor, was transferred to Manufacturing General, September 1.

R. W. Chiles, B. V. Snow and W. Tressler were promoted from Supervisors-in-Training to Shift Supervisors, September 1.

B. W. Marsh, Jr. was transferred from the weekly roll as a Supervisor-in-Training, September 1.

D. Corbell, M. C. Jacobs, and A. J. Waligura were transferred from the Technical Division as Supervisors-in-Training, September 1.

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S Division

J. F. Stevens was transferred from the Technical Division as an Engineer on Assignment, September 1.

W. P. Nicklason, Senior Supervisor, was transferred from 221-T to the Expansion Section, September 11.

L. A. Berry, Shift Supervisor, was transferred from 221-B to the Expansion Section, September 18.

A. R. Deas, Shift Supervisor, was transferred from 221-T to the Expansion Section, September 18.

D. McDonald, Area Supervisor, was transferred from 234-5 operations to 221-B September 12. After a brief training period he will be placed in charge of the 221-B operation. O. F. Beaulieu will transfer at the first of October to the 234-5 operation for training.

D. C. Ashbaugh, Shift Supervisor, was transferred from the Expansion Section to the Process Control Group, September 15.

III. AREA ACTIVITIES

Production Performance

Due to the short production month (twenty-nine days for B and T Plants and twenty days for the Isolation Building) fifty-six charges were scheduled to be started in each of the Canyon Buildings. Each plant fell short of this schedule by three runs due to both process and mechanical difficulties. In B Plant Canyon during the first two weeks of the month there was a series of cloudy product solutions which required above normal holding periods for resampling and longer time cycles for processing the slightly higher volumes which were made necessary by extra nitric acid required for clearing the product solutions; some time was lost, also, due to failure of the drive motor on the centrifuge in B cell at the Concentration Building. In T Plant most of the lost time can be attributed to a very difficult rework in the lanthanum fluoride step, because of mechanical difficulties with the F-2 centrifuge and down time in F cell to complete paralleling of the F-2 and F-22 centrifuges.

Extraction Waste Losses - B and T Plant

Significant data on extraction waste losses are tabulated below:

	<u>B Plant</u>		<u>T Plant</u>	
	<u>September</u>	<u>August</u>	<u>September</u>	<u>August</u>
Analyses before rework	1.61	1.32	1.32	1.39
Analyses after rework (throw-away)	1.18	1.10	0.99	0.99
Average MWD/Ton	417	412	422	408

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Acid Washes - B and T Plants

Acid washes, started through extraction at the end of August, were completed through one parallel line in the Canyon Building and through the Concentration Building in both B and T Plants. Product recovery was normal at all points except through B and F cells in the T Plant Concentration Building where the acid preflush picked up 36% of a standard charge. The cause of this high retention of product is under investigation. The data below detail the product recovery for the two washes:

<u>Run</u>	<u>Extraction</u>	<u>Sect. 12 & 2nd 1st Cycle</u>	<u>221 Cycle</u>	<u>224 Bldg.</u>	<u>224 Bldg.</u>	<u>Total thru Process</u>	<u>Preflush B & F Cells</u>
B-10-08-AW-1	7.71	13.0	4.15	24.86	13.33	38.19	17.90
T-10-08-AW-1	7.52	11.16	8.18	26.86	9.52	36.38	36.71

Production Tests - B and T Plants and Isolation BuildingCoating Waste Losses (Production Test 221-B-8)

An evaluation of the use of water flushing of bare slugs following slug decoating operations was continued. Data obtained to date indicate that a small savings of product can be realized by use of water flushes instead of 5% nitric acid flushes.

Lanthanum Fluoride Byproduct Precipitation Time Cycle (Production Test 224-B-5)

It was determined during the month that all the recycle material which is returned from the Isolation Process and which will in the future be returned from the 234-5 Building cannot be adequately handled by the addition of recycle to alternate charges processed through the Concentration Building. This phase of the production test has been discontinued, and other methods for shortening the time cycle will be developed. During the month, however, simple piping changes were effected in D cell in each Concentration Building which made possible precipitating the rework cake in the cake dissolution tank and jetting the slurry from there to the centrifuge. Because this enables the carrying out of the precipitation for the succeeding run in the precipitator tank concurrent with the rework centrifugation, the time cycle was shortened by 1.7 hours. This brings the time cycle for the D cell process to 10.5 hours.

Lanthanum Fluoride Product Precipitation Time Cycle (Production Test 224-T-14)

The use of more concentrated chemical reagents and faster addition of reagents to the process were continued for the lanthanum fluoride product step in the Concentration Buildings. Erratic analytical results were experienced in this step at T Plant during the last two weeks of the

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month, but this is believed to originate from mechanical difficulties rather than from process chemistry problems.

Thermal Decomposition of Peroxide in Supernatants from Peroxide Precipitations (Production Test 231-11)

No process difficulties were experienced in carrying out thermal decompositions of peroxide in the Isolation Building supernatants while using an 80 minute heating cycle to attain 70°C. At month end decompositions were successfully being carried out using a heating cycle of 60 minutes to attain 70°C.

Parallel Operation of F Cell Centrifuges - B and T Plants

With the completion of the required piping rearrangements and control panel installation for F cell in T Plant, the two centrifuges in this cell were placed in parallel operation. A nine and one-half hour time cycle for this step has been achieved as well as a slight improvement in waste losses. Completion of similar work at the B Plant Concentration Building is expected within a month.

WASTE DISPOSAL

First Decontamination Cycle Waste Storage - B Plant

With the filling of the X-105-B tank, first cycle waste from B Plant was rerouted to the X-107-BX series. The X-106-B tank is to be held empty as a feed tank for the first cycle evaporator.

Metal Waste Line Leak in Diversion Box - T Plant

During the month a leak developed at a jumper flange in the 154-TX diversion box at the T Plant metal waste line. The leak was repaired by replacement of the jumper. Approximately 800 gallons of neutralized metal waste solution which leaked into the diversion box drained to the catch tank and will be jetted at a later date to the metal waste storage tanks.

Waste Status

The status of the Waste Storage areas as of September 30, 1950 is shown in the following table.

B Plant

Bldg. 241 Tanks	Waste	Percentage Full				Reserve Capacity in Batches to Process				
		B	C	BX	BY	B	C	BX	BY	Total
x101,2,3	Metal	100	100	100	54.8	0	0	0	294	294
x101,2,3,4	Metal	-	-	-	-	-	-	-	-	-
x104,5,6	Metal	-	100	100	0.5	-	0	0	647	647

S Division

B Plant

Bldg. 241 Tanks	Waste	Percentage Full				Reserve Capacity in Batches to Process				
		B	C	BX	BY	B	C	BX	BY	Total
x105,6,7,8	Metal	-	-	-	-	-	-	-	-	-
x201,2,3,4	Metal	-	100	100	-	-	-	-	-	-
x107,8,9	Metal	-	-	-	-	-	-	-	-	-
x111,12	Metal	-	-	-	0	-	-	-	433	433
x104,5,6	1st Cycle	67.2	-	-	-	149	-	-	-	149
x107,8,9	1st Cycle	100	100	66.7	0.5	-	0	151	646	797
x109,10,11, 12	1st Cycle	-	-	-	-	-	-	-	-	-
x110,111,12	1st Cycle	-	100	66.7	-	-	0	151	-	151
x110	1st Cycle	-	-	-	0	-	-	-	217	217
x115,118	1st Cycle	-	-	-	-	-	-	-	-	-
x104,5,6	2nd Cycle	-	-	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	92.6	-	-	-	40	-	-	-	40
x113,14,16, 17	2nd Cycle	-	-	-	-	-	-	-	-	-

T Plant

Bldg. 241 Tanks	Waste	Percentage Full			Reserve Capacity in Batches to Process			
		T	U	TX	T	U	TX	Total
x101,2,3	Metal	100	100	-	0	0	-	-
x101,2,3,4	Metal	-	-	66.5	-	-	292	292
x104,5,6	Metal	-	100	-	-	0	-	-
x105,6,7,8	Metal	-	-	0	-	-	866	866
x201,2,3,4	Metal	-	-	-	-	-	-	-
x107,8,9	Metal	-	100	-	-	0	-	-
x111,12	Metal	-	-	-	-	-	-	-
x104,5,6	1st Cycle	100	-	-	0	-	-	-
x107,8,9	1st Cycle	100	-	-	0	-	-	-
x109,10,11, 12	1st Cycle	-	-	82.7	-	-	153	153
x110,111,12	1st Cycle	-	100	-	-	0	-	-
x110	1st Cycle	-	-	-	-	-	-	-
x115,118	1st Cycle	-	-	0	-	-	433	433
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	97.2	-	-	14	-	-	14
x113,14,16, 17	2nd Cycle	-	-	0	-	-	1046	1046

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DECLASSIFIEDMECHANICAL PERFORMANCECanyon Equipment Failures - B and T Plants

A description of equipment failures in B and T Plant Canyons is given below:

- a) In T Plant the precipitator to centrifuge "A" jet assembly in Section 19 failed at the jet inlet and was replaced. The failed assembly was repaired and is held as a spare.
- b) In T Plant the spray in the Section 18 precipitator failed and was replaced. The defective assembly was repaired and is held as a spare.
- c) In T Plant the jet assembly for transfer of waste solution from Section 18 to the waste neutralization tank in Section 15 became plugged and was replaced. Attempts will be made to repair this assembly.
- d) In B Plant a leak which developed on a connector flange on the transfer line from the Section 8 centrifuge to cake dissolution tank was stopped by reimpacting.

Concentration Building Mechanical Difficulties - B and T Plants

- 1) The distributor in Cell A precipitator at B Plant failed and required replacing.
- 2) The drive head bearing on the E Cell centrifuge in B Plant failed and the motor-drive head assembly was replaced. Repairs will be made to the failed assembly.
- 3) During the month the bowl for the F-2 centrifuge in T Plant was replaced in an effort to reduce vibration which this machine generates in one phase of the operating cycle. Since the motor and drive head for this machine had been replaced previously, all the moving parts are now new equipment. Despite these changes, the vibration has continued and, although no definite defect has been found to date, it is suspected that some slight misalignment exists in the A frame. Considerable effort has been made by the Maintenance Division to determine the nature of the defect, and attempts to correct the condition, such as experimentation with alignment, stiffening of the frame and adding more bracing to the pipe in F cell have been made with little success. It has been found that through careful operating techniques the vibration can be avoided, so use of the machine has continued.

IV. SPECIAL HAZARDSCanyon Air Contamination - B Plant

1200202 Investigation of exceptionally high fission product counts found in air samples from the B Plant canyon in August was continued. It was

established that the radioactive material involved was largely iodine originating from cell L tanks during the neutralization and sparging cycles for cell drainage wastes. Sealing of the cracks between the cell cover block over Section LR to contain the fumes and sealing of the cracks between the trench cover blocks to produce more air flow into the cells has reduced the magnitude of this hazard.

Isolation Building Stack Gas Contamination

A hundred fold increase in product content of air being discharged by the 903 exhaust system from the Isolation Building led to investigation of the air discharge filters for Cell 2. It was found that the CWS type filter in the "A" position had become loose in the adapter. Since correction of this defect, the product content of the 903 system has been normal.

V. PROCESS CONTROL

Dissolver Off-Gas Filter (Proj. C-337) and Silver Reactor (Proj. C-378)

The first filter and silver reactor unit was completed during the month and tests were being conducted in the mock up cell in 200 East Area Shops at month end. Preliminary results indicate that several minor changes will be necessary before installation in a dissolver cell. It is estimated that all the required revisions will be completed during the first week in October and installation will be made in B Plant during the week of October 9.

Fabrication of three additional units is progressing on schedule.

First Decontamination Cycle Waste Evaporation (Project C-369)

First Cycle Waste Evaporation facilities, Project C-369, responsibilities were transferred from the S Division Expansion Section to the S Division Process Control Group during the month.

Design - The project design is 81% complete with 82% of the money allocated to design expended. Fifteen tracings have been approved by the S Division and thirteen approved prints received.

Construction - Preliminary construction was started by the CPFF contractor forces on September 18 after a special hazards disclosure by H. I. representatives. A temporary fence enclosing the construction area has been erected. At month end excavation for water lines, building foundations and a steam condensate line to the 241-T retention basins was in progress.

Special Sampling

The following special samples were handled during the month:

- a) A 100 ml sample of dissolver solution was obtained from 221-T and

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shipped to the Separations Technology Division, Chemical Research Group, 300 Area.

- b) A 100 ml sample of dissolver solution was obtained from 221-T and shipped to ANL.

VI. EXPANSION SECTION

General

In view of the current shortage of ferro-columbium stabilized stainless steels and the difficult procurement situation it has been agreed that substitutions of tantalum-columbium stabilized or 304 ELC (extra low carbon) stainless steels will in general be acceptable for the present construction program. The Manufacturing Divisions have however requested that, if at all possible, stainless steel containing ferro-columbium (old formula) be installed in those critical positions of the plants (piping through concrete, trench piping, etc.) which do not lend themselves to replacement.

TBP Project (C-362)

General

1. Work Authority No. C-362 (7) was received on September 15. This Work Authority released for construction the following:

- a) U Area Preparation
- b) First Metal Waste Removal System
- c) 277-U Mock-Up Facilities

Atkinson & Jones Construction Co. is designated as the subcontractor to perform this work.

2. Modification No. 4 of Directive HW-160 was received during the month. The directive modification states that while the A.E.C. has not completed its review of Project Proposal No. C-362, an interim authorization to incur additional costs in the amount of \$13,075,000 is granted to permit construction of the subject facilities to proceed without delay. This brings the total funds authorized for construction to \$20,000,000.

Essential Materials

1. A letter has been written to the Purchasing and Stores Division outlining Essential Material Requirements, and specifications as stipulated by the Separations Technology Division, for Project C-362 and requesting them to proceed with the procurement of these materials. The minimum stock of essential materials that are to be maintained as a general policy is 2 months supply of liquid chemicals, and 4 months supply of dry bulk chemicals.

2. Four concerns have expressed interest in supplying nitric acid as required for the Project. Bids are to be requested from these four interested concerns during the coming month.

Design

A) Phase I - Metal Removal - One Cascade

1. Sixty-one detailed prints were received during the month. These prints were all approved with comments being of a minor nature.
2. A Phase I drawing schedule, revised to include 104-U and 107-U cascades, was received from Kellex. The schedule listed 481 drawings for this Phase.

B) Phase II - Metal Removal - Remaining Cascades

1. Design Proposal, Phase II, Waste Metal Removal Systems, was received from Kellex during the month. It should be noted that while all structures and equipment in the U Area Tank Farm are being combined under Phase I for the purpose of design and procurement, the Design Proposal contains references to these cascades as a Part of Phase II inasmuch as they remain a part of that Phase from a contractual standpoint. As originally conceived, separate dissolution and blending facilities were to be installed in 241-T and TX. Only one system is now proposed to serve both 241-T and 241-TX.

The Proposal has been reviewed and discussed by S Division, D&C Divisions, and Kellex Richland representatives. Inasmuch as the Proposal was based on Phase I design, all parties concerned are essentially in agreement with the contents of this Proposal. Final discussions will be held upon arrival of Kellex representatives from New York during the coming month.

2. The most recent Kellex drawing schedule lists 28 scope drawings for Phase II.

C) Phase III - Design of Underground Pipe Lines

1. The P & M Division of the D&C Divisions is continuing the design of this Phase. The piping layout prints are currently being altered to bring them in agreement with the latest Phase IV scope design.
2. The problem of the necessity of encasing, in addition to providing cathodic protection, the six line underground inter-area transfer system was submitted to the H.W. Standards Committee for review and recommendation. The Committee concurred with the presently approved design for encasement.

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D) Phase IV - Reactivation and Conversion of 200-U for TBP

1. Kellex has agreed to eliminate sealed for life bearings on the canyon cell equipment. All cell equipment will be equipped with conventionally lubricated bearings. In some cases, where lubrication jumpers can not be installed, a remotely operated mechanical lubricator will be provided.
2. Major scope revisions approved during the month were:

Revision Request No. C-362-2: to decrease the number of nitric acid storage tanks in the 211-U Area from 12 to 9.

Revision Request No. C-362-3: to delete the entire decontaminated UNH storage facility in the 211-U Area.

Revision Request Nos. C-362-12 and C-362-13: addition of flash tanks, thermo-compressors, and feed pre-heaters to the 211 and 224 Building evaporator steam systems.
3. Detailed design is continuing for the 277-U Mock-Up Building. Twenty-three of the 54 construction prints have been approved to date.

Development

1. A purchase requisition was issued to Proportioners Inc. to design and fabricate a prototype column pulse generator with a pulse frequency variable between 25 and 90 pulsations per minute. Overall size of the mechanism is proposed at 50" to 45" in plan and 105" in height. Kellex has indicated that this size mechanism can be fitted into the column cells. It is expected that detail design will be completed during the coming month.
2. The Peerless Pump Co. expects to ship the prototype multi-stage centrifugal pump on October 12, 1950.
3. Simulated runs on a single long tube evaporator conducted by the Technical Divisions showed satisfactory results. It was found that scale formed on the tube could be dissolved in water. Meetings of Kellex, Swenson Co. and G.E. engineers were held during the month to discuss evaporator design. All concerned agreed that the changes listed below would be made in the evaporator design:
 - a) The cyclone separator was eliminated and a vane type top mounted separator was substituted. This substitution minimizes the equipment space requirements.
 - b) The method of controlling the evaporator liquid level was changed to provide throttle valve control in the discharge line rather than the fixed liquid "jack-leg" system.

- c) The vapor disengagement height was increased.
- d) The overall height of the unit was increased. This necessitated removing an additional 6" from the cell cover blocks. The thickness of the cover blocks is now $2\frac{1}{2}$ ".
- e) The removal of the cyclone separator allowed the size of the vapor line to be decreased from 20" to 14" in diameter.
- f) The horizontal condenser will not be remotely removable from the remainder of the unit, but will be connected by a flange for semi-contact removal.

Construction

1. Phase IV - 277-U Mock-Up Building

Construction was started on September 20, 1950. Layout work, grading, and excavation, for footings and electrical conduits, has been started.

2. Phase V - Stripping of 221 and 224 Buildings

- 1. The 10 ton crane to be used during equipment removal was moved from White Bluffs to 211-U. It is expected that this crane will be installed during the coming week.
- 2. To date, no progress has been made in moving cell cover blocks or cell equipment from U Area.

UO₃ Project C-361

Design

- 1. The Project Proposal for C-361, Metal Conversion Facilities, was approved by the Atomic Energy Commission on September 14, 1950. Directive HW-158, Modification No. 3 was received. The Modification authorized General Electric Company to incur costs not to exceed \$1,805,000 for the design and construction of the UO₃ Plant. The costs include the transfer of capital property having an estimated book value of \$14,000.
- 2. The following major changes were made in the design of the UO₃ Plant facilities during the month. In general, the changes are based upon information obtained from Mallinckrodt personnel during review of the UO₃ Plant scope at St. Louis.
 - a) Elimination of the slide valves in powder handling and the adoption of "Gemco" or similar spherical valves.

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- b) Elimination of the transfer of recovered 40% HNO_3 to the 211 tank farm because of dissolved and entrained UO_2 . This material will be rerouted into the 60% fractionators at the appropriate plate and be collected as 60% acid and sent to 241-WR system.
 - c) A new design for the furnace control electrical system, estimated to be some \$25,000 cheaper than the previous design is to be adopted. This design consists of a modified off-on manual control system rather than a saturable reactor control system.
 - d) The agitator power control system for the pots is to be replaced with a temperature control system. The temperature of the pot material will be measured by means of a thermocouple inserted through the hollow agitator drive shaft.
3. It is estimated that 75% of the 361 equipment and material is now on order, and an additional 20% will be requisitioned during the coming week.

Redox (Project C-187-D)DesignArchitect-Engineer (Kellex Corporation)

1. "Approved for Construction" prints showing the process piping in the silo operating and silo sampler gallery were received during the past month. With the exception of a few normally operated valves located too high for convenient operation, the piping was generally acceptable.
2. "Approved for Construction" drawings of the 291-S Building (excluding vendors drawings of the ventilation stack) were received during the past month. The facility will be essentially as designed by the Architect-Engineer. Previous comments have suggested combining the facility with the 291-S turbine house; however, a field change request has been issued for the installation of pressure taps and orifice flanges in the off-gas lines for future flow measurements.
3. Because of the fact that the Architect-Engineer portion of the Redox design is approaching completion, a change from a comment basis to a field change request basis for all "Approved for Construction" prints was made on September 20. This arrangement eliminates the classification of comments, and requires that requests for changes be specific in indicating the type of change to be made and the exact details of the resulting arrangement. All field change requests originating in the Manufacturing Divisions will be processed through the Design Division.

4. There has been some concern in the Manufacturing Divisions over the relatively large number of bellows type expansion joints appearing in the cell and silo jumper design, since these joints represent not only a potential leak point in the jumper but also a departure from the intention of fabricating all cell and silo jumpers of Schedule 40 stainless steel pipe. It appears now that many of these bellows type joints are intended not to absorb thermal expansion but to allow sufficient differential movement in the ends of short, stiff jumpers during impacting and loosening to compensate for "kick-off" distances inherent in the Redox type pipe connectors. In addition, a number of recent revisions to cell jumper drawings have indicated that certain operating nuts of connectors in specific jumpers are to be painted red to indicate the order in which impacting should be carried out. It is understood that this scheme is deemed necessary to assure proper mating of the jumper with the male nozzle during jumper impacting.
5. The test procedures for the "Red Devil" acid injection pump and the Architect-Engineer design of acid organic mixing chamber have been agreed upon by the Separation Technology Division, the Design Division, and the S Division and it is expected that these tests will be carried out in the 321 Building in the near future.
6. Comment issues of acceptance test procedures prepared by the Architect-Engineer are now being received. These procedures are the subject of regularly scheduled weekly meetings for the discussion of the procedures and incorporation of appropriate comments from all interested Divisions. Procedures received to date concern for the most part standard electrical equipment and standard instrumentation in the building.

G. E. Design

1. Design work is now in progress by the 200-W Project Engineering group on Hanford type samplers which will be used in 42 sampling positions of the 202-S Building. Revisions to the Architect-Engineer's design of sampler were completed late last month under the guidance of a member of the Expansion Group who was sent to New York specifically for the purpose. Minor alterations to the Penberthy Injector Company purchase orders for sampler jets have been made in order that the jet units can be more easily adapted to the Hanford type box design.
2. Due to the current shortage of Type 317 SCb steel, investigations are currently underway to determine an adequate substitute for stainless steel in the ANN storage tanks of the 211-S Area. The use of a substitute material in this location will reduce the stainless plate requirements in the 211-S Area from approximately 150 tons to 30 tons; the latter figure representing nitric acid storage tank material requirements. Information is currently being gathered on the properties of Tygon, rubber, Neoprene, and Koroseal

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as lining materials for steel tanks to determine their suitability for this service.

3. Investigations are continuing to determine a suitable type of tracing to be applied to the UNH transfer line between the 203-S Building and the 224-U Building. The current plans involve the use of thermostatically controlled heating cable included in the lagging of the pipe, however, investigations are now underway to determine the suitability of low voltage, high frequency currents routed directly through the pipe and solution much in the manner of the procedures used for thawing frozen water lines.
4. An operating equipment numbering system for the cell and silo equipment and connectors, cell and silo jumpers, and equipment of the outside facilities has been established by the S Division and transmitted to the Design Division. Insofar as possible the system follows the general pattern established in the present building with departures due to the complexity and large variety of equipment that is found in the S Area.
5. A meeting was held during the past month between the representatives of the Separations Technology Division, the S Division, and the Accountability Section for the purpose of outlining a program to establish SF Accountability procedures for the Redox plant and to discuss the general accountability features to be found in the process. A chart prepared by the S Division indicating accountability areas within the process has been forwarded to the Accountability Section for their use in establishing the various records and overall accounts for the process.

Construction

1. 202-S Building

Kick plate installation continued during the past month and is now estimated to be 79% complete. All lower level (92' elevation) kick plates have been placed and the concrete in these areas poured. Top kick plates (100' elevation) in cells E and F have been installed.

Concrete placement is estimated to be 42% complete. Pouring of footings continues for the south service side and the pouring of the pipe gallery floor is essentially completed. The storage gallery and the air tunnel have been cleaned and are now ready for the pouring of the finished floors in these areas. The first concrete pour has been made at the 3rd floor level of the Aqueous Make-Up Section of the building.

2. 211-S Building

The preliminary grading in the 211-S Area is essentially completed.

3. 277-S Building

This building is estimated to be 75% completed. Total completion is awaiting the arrival of steel for the mock-up structures within the building, rolling doors for the R. R. entrances, and trolley pick-up wires for the 10 ton crane.

4. 241-S Building

Work on the 240-S Waste lines is estimated to be 7% completed. Excavation work in the 241-S Area is estimated to be 92% completed. Concrete pads have been poured for tanks 101, 104, 105, 107, 108, and 110 and the asphalt seal has been applied to the tanks 107 and 110. Excavation work is in progress for the retention basins and the accompanying cooling water sewer. Concrete pouring is in progress on the walls of the 151 diversion box.

This work is seriously behind schedule. We understand that action is being taken by the Design and Construction Divisions to expedite this job.

5. 291-S Building

The stack contractor, Custodus Company, has arrived on the site and work is in progress on the 291 stack. Concrete pouring continues on the sand filter and a portion of the tar seal has been applied to the outside walls.

6. Outside Lines

The estimated completion of the outside lines is as follows:

Water	33%
Railroad	50%
Septic Tank and Tile Field	88%
Gate House	96%
Process Sewers	2%
Steam Lines	51%

7. Pipe Shop

The assembly of the remaining kick plates is being carried out in the pipe shop and preliminary pipe bending for cell jumpers has been started. Some difficulty has been encountered in warping of electrical connector adaptor sleeves as they are welded into the kick plates; however, this difficulty has now been corrected by changing the method of applying the weld.

Training and Procedures1. Training

The Redox-TBP training school at Bldg. 321 was shut down on September

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3. Supervisory personnel are released thereby in both the Chemical Development Section and "S" Division for the preparation of manuals and procedures for Redox and TBP start-up. The training school will be re-activated, on an expanded basis, on February 15, 1951.

Lecture material is now in preparation for the lecture series accompanying the Redox-TBP training school. A schedule of lectures will be issued in October.

2. Procedures

a. General

Revised schedules for the preparation of manuals, construction checking procedures, and operating procedures are being prepared, and will be in effect next month.

b. Redox

An Introductory Manual to the Redox plant is in preparation, and parts of it have been issued for comment. This manual is scheduled for completion on December 1st. It is written for operating supervision entering the Redox-TBP training school, with the objective of helping the transition from BiPO₄ plant operation to the new operation by discussing new features of the Redox plant. It is also intended to give supervision-in-training an overall picture of the Redox plant before detailed design study and construction checking is undertaken.

c. TBP - UO₃

An Introductory Manual to the TBP plant, similar to that described above for the Redox plant is in preparation and sections have been issued for comment.

POWER DIVISION
SEPTEMBER 1950

GENERAL

New low coagulant feed rates for September were established, with average feed rates varying from 5.4 ppm to 7.5 ppm. Water treatment for the month was entirely satisfactory.

PERSONNEL AND ORGANIZATION

No. of Employees on Payroll - September

Beginning of month	566
End of month	<u>558</u>
Net Decrease	8

The indicated net decrease is the result of the termination of eight employees, the removal from payroll of one employee on account of illness, and the transfer into the Division of one employee.

Five weekly roll employees were promoted to Shift Supervisors.

The staffing of the DR Water Plant Area with operating and supervisory personnel was completed during the month.

100 AREAS

Satisfactory progress was made on the deaerator dismantling project C-172 in the 185 Deaerator Buildings in the 100-D and 100-F Areas. Much of the exposed piping above the building roofs has been removed.

Normal process water pressure was resumed in the 100-D Area 190 Process Pump House on September 7.

The No. 1 pump motor in the 190 Process Pump House in the 100-F Area failed during an attempted start on September 13, when two motor coil phase leads burned out. Repairs were completed and the unit returned to service on September 15.

In the 100-D Area, work continued on the removal of excess equipment from the 108 Chemical Mixing Building, and the transfer of needed equipment to the 185 Deaerator Building. This is in connection with the C-396 Project.

The work of reducing the impeller diameter of the 183 Filter Plant process water pumps was completed on one additional unit in the 100-D Area, making a total of three units completed at this location. Two units have been completed in the 100-B Area, and all units completed in the 100-F and 100-H Areas as previously reported.

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The No. 8 pump motor in the 190 Process Pump House failed on September 26 when a motor coil on one phase group burned out. Repairs were completed on September 27 and the unit returned to service on September 28.

In the 100-H Area, the 14-inch export line to the 105 Pile Building was removed from service from 2:00 p.m. to 9:45 p.m. on September 1 and from 2:40 p.m. to 3:30 p.m. on September 4 to repair leaks which had developed in three of the bell and spigot pipe joints.

200 AREAS

Construction work for the installation of an additional raw water pump in the 282 Reservoir Pump House in the 200 West Area was started on September 6.

Work continues on the installation of manholes and duct work for the new generator at the 284 Power House in the West Area. Batteries, controls and the battery charging MG set have been moved into the new battery room.

On September 21, repairs were completed to the low pressure steam line in the 200 East Area, which was damaged by a service truck on August 29.

300 AREA

The water demand at the 321 Building has decreased sufficiently that all requirements may be supplied from the Sanitary Water System. Accordingly, the No. 3 and No. 4 wells have been discontinued from service.

101 SHOPS

On September 1, the water pan overflowed on air conditioner unit No. 1-B, allowing water to enter the ventilating duct work. Several blocks of graphite became wet before the overflow was brought under control.

On September 18, twenty-four hour day boiler house operation was resumed to provide heat for the Shops Building.

WHITE BLUFFS ICE PLANT

Electrical trouble on the distribution system resulted in a power outage from 9:15 p.m. on September 16 to 1:10 a.m. on September 17.

100-DR CONSTRUCTION - PROJECT C-342

Trip-out and capacity tests were conducted in the 190-DR Process Pump House on September 27 to obtain operating characteristic

Power Division

data and to determine the effect on the 100-D Area systems.

A cumulative cost report for total Design and Construction costs has been issued by the Design and Construction Divisions, showing that as of August 31, 1950, expenditures and commitments amounted to \$12,944,829 for Project C-342. This amount represents approximately 72 percent of the new indicated total cost to complete. The project, as of the same date, was estimated by the Atkinson-Jones Company to be approximately 85 percent completed. Directive No. 138, Modification No. 8, reduced authorized funds for this project from \$20,700,000 to \$18,000,000.

General operation of power equipment in the 100-DR Area was assumed by the Power Division at 8:00 a.m. on September 26, with considerable work remaining to be completed by construction forces.

In the 190-DR Process Pump Room, all process pumps are now in good running condition. The pressure control instruments and overpressure regulators have been set and placed in service. Work is progressing on the installation of heating and ventilating equipment and on insulating steam lines. Difficulty has been experienced with poor drainage from the building and work is in progress to improve this condition.

In the 184-D Boiler House, the dry out and boil out of the new No. 5 boiler has been completed. Steam and water piping between the new boiler and existing lines have been completed and placed in service. Work is still in progress on the installation of soot hopper piping.

The 183-DR Filter Plant was placed on automatic control on September 28. The filter backwash system controls have been set and the system placed in service. Work is in progress on the heating and ventilating equipment, chemical conveyor, hoists, locker room, and the sanitary water system.

POWER ENGINEERING SECTION

The coal storage piles in all areas were surveyed for inventory records.

W. R. Conley was transferred to 100-DR Area for assistance in starting up the Water Plant.

Engineering assistance has been furnished for the design of power facilities of the 200 West Area.

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POWER DIVISION STATISTICS

From September 1, 1950
Through September 30, 1950

A R E A S

		100-B	100-D	100-F	100-H
<u>RIVER PUMP HOUSE (Bldg. 181)</u>					
	(max)	392.0	383.8	370.2	375.8
River elevation mean sea level	(min)	387.3	379.6	366.1	371.4
	(avg)	389.4	381.1	367.6	372.9
River temperature	avg. °F.	62.9	64.0	64.4	64.4
Water to Reservoir	gpm avg. rate	40,705	38,650	37,136	48,679
Water to Bldg. 183-DR	gpm avg. rate		13,870		
<u>RESERVOIR (Bldg. 182)</u>					
Water to Filter Plant	gpm avg. rate	34,042	31,763	32,900	41,726
Water to Condenser System	gpm avg. rate	4,583	*4,635	3,377	**6,263
Water to Export System	gpm avg. rate	2,080	2,252	859	640
	gpm normal rate	5,831	5,831	5,831	5,831
Chlorine added #1 inlet	pounds	19,283	22,216	25,000	19,500
<u>FILTER PLANT (Bldg. 183)</u>					
Filtered water Power House	gpm avg. rate	227	281	224	200
Filtered water to Process	gpm avg. rate	32,077	27,119	29,660	36,187
Filtered water to construction	gpm avg. rate	--	--	--	--
Filtered water to DR Process	gpm avg. rate	--	1,387	--	--
Filtered water Fire & San.	gpm avg. rate	292	231	271	121
Chlorine for Water Treatment	pounds	5,717	3,474	2,000	4,500
	ppm avg.	1.77	1.89	2.04	1.41
Lime for Water Treatment	pounds	20,000	30,000	26,000	37,750
	ppm avg.	1.6	2.6	2.2	2.5
Coagulant Water Treatment	pounds	66,600	70,000	68,540	111,100
	ppm avg.	5.4	6.1	5.8	7.4
Raw Water pH	pH avg.	8.00	7.90	7.90	7.90
Finished Water pH	pH avg.	7.71	7.73	7.71	7.74
Alkalinity, M.O. - Raw	ppm avg.	58	58	60	62
Finished	ppm avg.	55	51	58	64
Residual Chl. - Settled	ppm avg.	.29	.27	.19	.20
Finished	ppm avg.	.13	.10	.14	.11
Iron - Raw	ppm avg.	.05	.06	.05	.07
North Clearwell	ppm avg.	.015	.016	.010	.013
South Clearwell	ppm avg.	.015	.017	.012	.015
Hardness - Finished	ppm avg.	69	66	62	70
Turbidity - Raw	ppm avg.	2.0	3.0	2.0	2.0
Filtered	ppm avg.	0	0	0	0
*Condenser Water to DR Inc.	gpm avg. rate		1,803		
** Process Waste Dilution Inc.	gpm avg. rate				2,114

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Power Division Statistics

From September 1, 1950.

Through September 30, 1950

		100-B	100-D	100-F	100-H	
<u>POWER HOUSE (Bldg. 184)</u>						
Maximum Steam Generated	lbs./hr.	132,000	270,333	126,000	140,000	
Steam Generated - Total	M pounds	84,704	95,079	80,780	67,150	
	Avg. rate	lbs./hr.	117,481	131,871	112,039	93,134
225 psi Steam Plant (est)	M pounds	71,478	80,276	68,151	56,592	
15 psi Steam Plant (est)	M pounds	351	351	351	351	
Coal Consumed	Tons	4,723	5,764	5,225	4,445	
Coal in Storage (est)	Tons	35,838	38,094	32,108	31,272	

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

Water Flow	gpm avg.rate	31,827	26,869	29,410	35,937
Chemicals consumed:					
Dichromate	pounds	21,600	17,900	20,000	27,000
Sodium Silicate	pounds	0	0	0	0
Chemical Analysis:					
pH	pH avg.	7.60	7.62	7.65	7.65
Dichromate	ppm avg.	1.8	1.9	1.8	1.8
Dissolved Iron	ppm avg.	--	--	--	--
Free Chlorine	ppm avg.	--	--	--	--

PROCESS PUMP ROOM (Bldg. 190)

Total Water Pumped	gpm avg.rate	31,652	26,694	29,235	35,762
	gpm nor.rate	32,604	33,700	31,300	40,800
Water temperature	avg. °F.	66.3	66.5	66.7	66.6

VALVE PIT (Bldg. 105)

Chemicals consumed:						
Solids	pounds	1,400	0	900	4,200	
Chemical Analysis:						
A, B, C, & D Headers						
	<u>Standard limits</u>					
pH	7.5-7.8	pH (max)	7.65	7.70	7.70	7.65
		(min)	7.60	7.60	7.60	7.60
		(avg)	7.60	7.62	7.65	7.61
Na ₂ Cr ₂ O ₇	1.8-2.2	ppm (max)	2.0	2.0	2.0	2.0
		(min)	1.7	1.7	1.7	1.7
		(avg)	1.8	1.8	1.9	1.8
Iron		ppm (max)	.015	.035	.020	.020
		(min)	.005	.005	.005	.010
		(avg)	.010	.013	.011	.035
Chlorides		ppm avg.	1.7	1.9	1.9	1.6

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Power Division Statistics

From September 1, 1950

Through September 30, 1950

200 AREAS

200-E 200-W

RESERVOIR (Building 282)

Raw Water Pumped	gpm avg. rate	2,690	3,149
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FILTER PLANT (Building 283)

Filtered Water Pumped	gpm avg. rate	337	700
Chlorine Consumed	lb.	197	320
Alum Consumed	lb.	1,199	2,762
Chlorine Residual - Sanitary Water	ppm	.40	.40

POWER HOUSE (Building 284)

Maximum Steam Generated	lbs./hr.	31,000	53,000
Steam Generated - Total	M lb.	13,875	27,292
Steam Generated - Ave. Rate	lb./hr.	19,244	37,853
Coal Consumed (est)	Tons	1,036	1,706
Coal in Storage (est)	Tons	6,869	19,733

300 AREA

POWER HOUSE (Building 384)

Maximum Steam Generated	lb./hr.	14,000
Steam Generated - Total	M lb.	7,448
Steam Generated - Avg. Rate	lb./hr.	10,330
Coal Consumed - Total (est)	Tons	560
Coal in Storage (est)	Tons	1,916

SANITARY AND FIRE SYSTEM

Sanitary Water from 3000 Area	gal.	29,493,100
Well Water Pumped - Total	gal.	6,306,500
Total Water Per Day	gal/day	1,193,320
Total Water	gpm avg. rate	829
Chlorine Residual	ppm	.40

MISCELLANEOUS AREAS

WHITE BLUFFS

Ice Manufactured	lbs.	780,000
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101 SHOPS

Coal Consumed	Tons	30
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INSTRUMENT DIVISION
MONTHLY REPORT

SEPTEMBER, 1950

GENERAL

The employment situation improved materially during the month but still lags far behind the needs to meet future commitments. Although several have been added to the rolls with minimum security clearance only a slight delay has been experienced in obtaining formal clearances. Seventeen new employees were added to the rolls and nineteen others have been called to report.

There were two voluntary terminations; one a Craft Foreman, the other a mechanic, and two removals from payroll for sick leave.

Bids for the construction of a new Instrument Maintenance and Development Building in the 300 Area were opened on September 26. Since the lowest of the seven bids exceeded the appropriation for this project it will be necessary to request approval of the A & B Committee for additional funds.

100 AREAS (Reference: Document HW 19052)

Preparation of equipment for the start up of 100-DR was met by shifting of manpower from other areas and by expending approximately 85 man-days of over-time work. With the addition of new hires and the progression of the start-up of 100-DR, the manpower situation has improved considerably.

100-B Area

An unusual amount of difficulty is being experienced with the VSR thimble thermocouples. Poor method of bonding thermocouple conduit to the thimble in original installation is suspected as the cause.

Additional manpower has been assigned to the F-10 project to follow leak detection work. It appears that approximately 30 man-days per week will be a normal requirement for P-10 at 108-B.

100-D Area

Erratic readings on the galvanometer were traced to the "D" hole chamber. Water was found in the thimble and the chamber was badly corroded. Installation of a new chamber cleared up the difficulty.

The nozzle replacement program was completed on September 2. Three additional thermocouples were repaired and two were replaced.

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HW-19021-DEL

Following the nozzle replacement, an excessive amount of moisture was removed from the driers. Dewpoint readings were taken and two complete surveys of lines from the rear face were made. Plotting of the data indicated the leak to be originating near the top front side. Efforts to isolate the leak during the September 27 shutdown were unsuccessful.

100-F Area

One old and two new type quadrant monitoring chambers are now in service.

The new Orsat gas analyzer system has been installed but the nitrogen carrier procedure will not be put into effect until a suitable pressure reducer is obtained.

All counting room equipment in building 108-F is now in operation.

Work necessary to change to spherical units on Project P-11 has been completed and trial runs indicate satisfactory instrument performance.

Two men have been assigned to full time work in Building 101, Hanford. In addition to the requirements of the Technical Division, work will be required on air conditioning and boiler house for the Power Division.

100-H Area

The P-13 pile tube was installed after removal of the "A" hole thimble on the scheduled shutdowns of September 4 and 13, completing this project.

Installation of isolation valves for the process tube pressure monitor gauges was completed.

BGSTN thermocouples 15, 16, 25, 26 and 50 were found to be open circuited at an inaccessible point beyond the junction box.

Revision of the water softener control system in Building 184 is 90% complete.

100-DR Area

All functional tests preliminary to start up have been performed to the satisfaction of the operating divisions. Additional time will be necessary for final adjustments and calibrations that will not interfere with operating schedules.

Shutdown Experience

There were no shutdowns in any 100 Areas due to instrument failure.

1208300

200 AREAS (Reference: Document HW-19053)

Project C-337 and C-338 - Silver Reactor and Gas Filter

All instrument equipment has been received and initial tests in mock-up completed. Project approximately 50% complete.

Project C-384

Instrument work for parallel operation of F2 and 22 in 224-T and B completed.

Project C-395

Installation of instrumentation for parallel operation of cells 19 and 20 in 221-T has been completed.

Installation of instruments in 221-B has not been started. Project is approximately 35% complete.

Z Plant Production Instruments

The HF system in Building 234-5 has shown creditable operation for the past six weeks. The only apparent reason for improvement is increased oxygen supply pressure and continuous use.

Installation of special rotameters constructed of MFP-10 has been completed and preliminary tests indicate satisfactory performance.

Leakage of HF fumes from warped doors of reactor furnaces is causing rapid deterioration of thermocouples and connectors inside Hood 8.

Gasket failure on a reactor vessel in Hood 10 caused contamination to be spread in the vicinity of the neutron counters. The instrument ventilating blower caused the instruments to become grossly contaminated. Final disposal has not been affected.

M. G. Petersen returned from Schenectady after two months of assistance to the General Engineering and Consulting Laboratories on Project 432. Upon termination of direct assistance to G.E. & C.L. it was agreed that Mr. Petersen would act as the engineering representative of that group in the installation and start-up of instrumentation on the remote mechanical line in Building 234-5.

300 AREA (Reference: Document HW-19054)

MANUFACTURING SECTION

P-2900-58891 - Fabrication of Neutron Spectrometer

Instrument Division assignments on the second phase of this work are nearing completion.

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DECLASSIFIEDM-7610-58891 - 6 Kanne Chambers

These chambers were completed, tested and delivered early in September.

P-3831-58891 - Toepler Pump Control Units

Construction schedules require the delivery of 6 units by October 15, and 6 units per month thereafter until 30 are delivered. To date procurement of materials has hindered full utilization of manpower.

DEVELOPMENT SECTION

Design of the liquid level indicator for P-11 project is complete and fabrication is in process.

Manufacture of shop made components for the IBM installation in 100-DR is being promoted on a priority basis.

Orders have been placed for gas analyzers for the In-Pile Controlled Atmosphere experiment.

DESIGN AND CONSTRUCTION GROUP - 760 BUILDING (Ref: Document HW-19064)Project C-300 (100-G Area)Heat Transfer Test, Project 17

Recent additional instrument requirements results in only 95% completion of this project.

Temperature Mapping

The first mercury jet switch is under test by the Instrument Development Group. Other work is slowed by lack of delivery of major components.

Project C-187-E (Redox)

The Schutte and Koerting stainless steel rotameter was tested and gave satisfactory metering performance but needed several mechanical improvements. They have agreed to incorporate the desired features.

Project 204-B (Addition and Alteration to Hospital Building)

Instrument design specifications relative to ventilating equipment have been made to conform to latest requirements.

Project C-362 (Tributyl Phosphate Process)

Application sheets covering instruments required have been completed and distributed. The Instrument Group will make up preliminary requisitions and specifications for graphic panels for use by Kellex in establishing final specifications and requisitions.

Project C-349 (Hot Semi-Works)

All instrument drawings are completed and approximately 50% have been approved. Preliminary instrument specifications have been issued for review.

Project C-198 (234-5 Building)

Phase II - The Development Laboratory program has been reactivated. Instrument drawings of hood pressure monitors are to be completed by October 16.

Phase III - Schenectady drawings were revised to include regulated voltage supplied to all instrument panels.

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HW 19021-DEL

MAINTENANCE DIVISION

SEPTEMBER, 1950

The Maintenance Division had 11, 145 mandays of work on hand at the close of the month. This represents a 32 day backlog for the present force.

100 Areas

100-D

The shutdown of the "D" pile for extensive repairs which started on August 21 was completed on September 3. During this period all stainless steel process tube nozzles were replaced with aluminum nozzles. All process tube end flanges were inspected for deterioration due to galvanic action and 28 were reflanged for this reason. Also, end clearance of the gun barrels to the process tube flanges was checked and it was found necessary to cut off 128 gun barrels and reflange the process tube.

While the "D" pile was inactive, extensive changes were completed to the piping in the 115-D gas purification building, permitting it to service the "D" pile as well as the "J" pile.

The installation of the Groves emergency water control valve was completed in the 105-DR Building. The initial installation had not been satisfactory and after consultation with manufacturer's representatives, the design of the main valve was altered and specially designed pilot valves procured. The presently installed arrangement is entirely satisfactory in operating characteristics.

100-H

The installation and testing of the Argonne Naval Test Unit (P-13) was completed this month during scheduled shutdowns of the "H" Pile.

100-B

The work in connection with revision and extension of P-10 facilities is progressing satisfactorily. The initial phases P-10-A and B are substantially complete. The P-10-D phase progress is dependent on design and material procurement as well as completion of the stack by a sub-contractor.

200 Areas

Separations Areas:

The work in connection with the rehabilitation of the third floor laboratories in East and West Area Canyon Buildings has been completed for the Technical Division.

Modification of the "D" cell in the Concentration Buildings in East and West

1208304

Areas, to improve the production time cycle, has been completed.

As a result of failure due to intergranular corrosion, replacement of sections of the 3" caustic supply line between the canyon tank farm and the concentration building in the West Area were made.

Shop work has been completed on first unit of the canyon building off-gas filter and silver nitrate reactor. This complete unit is presently in the East shop rack-up cell for testing by the Technical Division personnel, and will be installed for operation at the completion of this testing.

234-5 Building:

Failure due to fracture made it necessary to fabricate a replacement tantalum decant tube for process hood #5.

A three position tripod was installed in process hood #25, duplicating a similar installation previously made in hood #26. This specially developed tripod improves the quality of the coating of the final product piece.

In order to reduce the time required to pump down the process vacuum system in hood #26, a larger MC-300 diffusion pump was installed. Other revisions included a line of sight water cooled baffle and removal of water cooling from the 6" valve in the system. The overall result of these changes are improved operating characteristics and reduction of maintenance attention needed.

Work progressed on the installation of the second bell jar position in process hood #25. Delivery of materials on order and currently due to arrive will permit the completion of this installation.

300 Area

Slug Preparation

Revisions to #3 and #4 slug can welders have been completed. This completes the present program of modernizing of this equipment.

An air operated rod feeder has been fabricated and installed on a Gisholt slug turning lathe on a trial basis. This will eliminate manual manipulation of the new longer rods, reducing operating time and eliminating an injury hazard.

Technical Laboratories

Room 95 in the 3706 Laboratory was converted to a radio-chemical laboratory by relocating one hood and installing another hood. Also, sinks, benches, tables and cabinets were installed.

Operation of the 321 Building has been suspended for a period of several months. Shift coverage by maintenance personnel has been discontinued since the only work in progress will be revisions to installed equipment.

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ELECTRICAL DIVISION

SEPTEMBER, 1950

GENERAL

The backlog of work at the month end was 10,121 mandays, a decrease of 474 from the previous month, mainly in the production areas where work associated with several major projects is nearing completion. This is approximately 39 mandays per non-exempt employee.

Project C-381 (Radio Chemistry Building), complete electrical drawings and specifications were reviewed and changes recommended in line with Hanford Works standard practices.

Project C-1870 (202-S Building in U Area), waste line plans were reviewed and recommendation made for the elimination of cathodic protection of aerial stainless steel pipe lines. Substantial savings are then effected through the application of electric heat instead of steam heating.

Plans for the cathodic protection of hot semi-works waste lines were developed with the Project Engineering Divisions.

Project B-856 (Supervisory Control on the 115 KV System) was reviewed and final recommendations made for the supervisory control of Benton and South Richland Bonneville Power Administration stations.

The final of a series of special manufacturers tests of ten million KVA interrupting capacity oil circuit breakers were completed on General Electric breakers at Grand Coulee on September 23 and 24. The special operating conditions developed for the series of tests permitted continued operation of the 100 Areas.

The power demands for the month were:

	<u>Date</u>	<u>Time</u>	<u>Sept. Demand</u>	<u>Comparative August Demand</u>
Process Load	9-26-50	4:00 p.m.	61,550 KVA	55,500 KVA
Village Load	9-29-50	9:00 a.m.	20,850 KVA	11,700 KVA

Combined chart for the peak demand is attached. Of the increase in demand, 6000 KW results from DR Water Plant testing and initial operation. The Village increase is due to seasonal trends and to an unusually cold morning on September 29.

AREA ACTIVITIES

Two additional 800 HP Westinghouse process water pump motors failed (No. 8 in 190-B and No. 1 in 190-F) at coil group end connections. Successful repairs were made without rewinding.

The following three items of Project P-10 in Building 108-B were completed:

1200306

- (1) Installation of motor generator and necessary auxiliary equipment for "vital power" system.
- (2) Final revision of line No. 5.
- (3) Mass spectrometer and analytical laboratory installations.

In 100-D Area, extensive assistance was given to construction forces preparatory to start-up of 100-DR Water Plant, and also during the final adjustment and acceptance tests of the 189-D "Heat Test" equipment.

All electrical work of Phase 2 of Projects P-11 and P-13 is complete.

Action of HF fumes on insulation of hinge wires of furnace hoods in Building 234-5 is being corrected by the substitution of Teflon insulating tubing which resists the corrosive action of the fumes.

In the 300 Area, swing shift coverage was eliminated, releasing one Electrician for other work in the area and saving approximately \$4,500 per year.

The 300 Area fire alarm system was cut-over to new overhead lines.

TRANSMISSION AND DISTRIBUTION

Extensive work was done in Richland to supply service to contractors and facilities and to allow for street widening and improvements on Goethals, Duane and Casey Streets.

Project C-177 was completed except for minor dismantling and clean up work. The 300 Area was cut over to the new substation and is currently being fed from the 115 KV line, Richland side. The 66 KV lines feeding the 300 Area were taken out of service September 9.

Installation of the cubicles and potheads in 151-D and 151-H for the 13.8 KV tie line between 100-DR and 100-H is 92 percent complete. The 13.8 KV tie line built by construction forces has been accepted.

A 50 KVA transformer and secondary service at 100-F Fish Hatchery was installed to relieve existing overloaded circuits and to provide excess capacity for later service to a new fish hatchery building.

TELEPHONE SECTION

A study was made to determine the cause of dialing faults into the White Bluffs and 200 Area exchanges and recommendations were made that the manufacturer (North Electric Company) be required to make certain corrections in their trunking equipment.

Work was completed for the remote alarm system for Building 234-5 with the necessary ties to Building 770-B in Richland.

A study was made of the traffic in the 4100, 4200 and 4400 PBX groups and plans were completed for vacating the 4400 group and rewiring the connectors to provide for additional one and two party service.

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HW 19021 - Del

Electrical Division

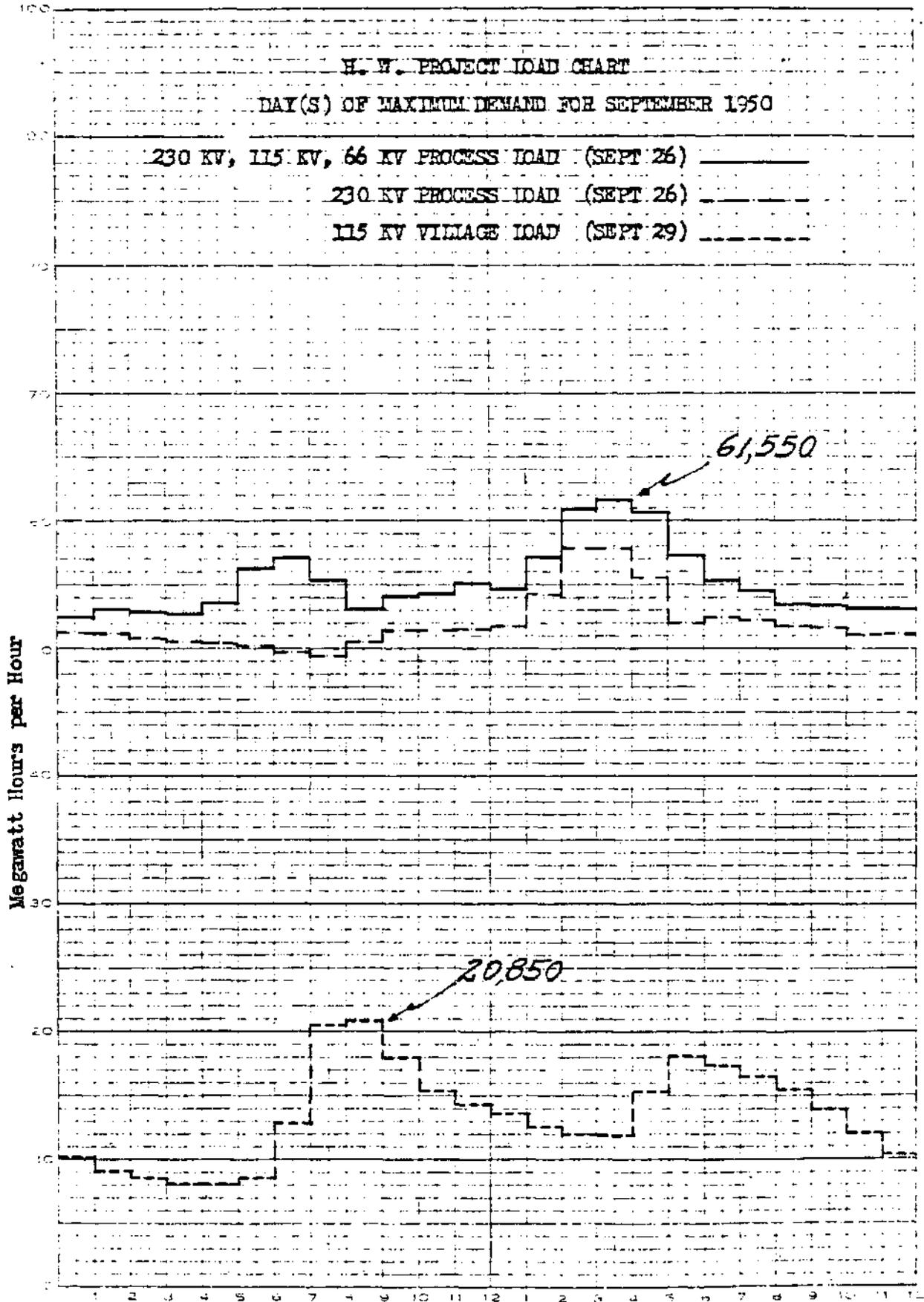
Work was accelerated on Project C-276 in the 300 Area. All trunk cable splices in the vault at the new 300 Area exchange were completed. Two BD-202 terminals were installed on the T-5 cable west of the 300 Area to provide a by-pass for 50 pairs around the new exchange.

The following is a summary of current telephone service rendered by the Richland Exchange:

	<u>Lines in Service</u>	<u>Stations in Service</u>	<u>Vacant Lines</u>
Richland	3,691	5,885	309
Project Total	5,038	7,328	962



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TRANSPORTATION DIVISION
MONTHLY REPORT
SEPTEMBER 1950

[REDACTED]

GENERAL

A second meeting with the Atomic Energy Commission regarding operational and policy matters in connection with the Village Local and Plant Area Bus Systems was held on September 15. Factual data developed by the Transportation Division was presented. A final meeting yet to be scheduled will be held to complete discussions on bus operation within the Village. After this has been accomplished a summary report will be prepared by the Transportation Division.

Transportation Division personnel forces decreased by 1 exempt and 13 non-exempt employees during the month from 666 to 652 by 5 new hires, 1 transfer in, 1 re-activation - personal illness, 10 transfers out, 9 terminations and 2 de-activations - personal illness.

RAILROAD ACTIVITIES

Commercial cars handled during September increased approximately 34% over August with the continuation of large volume coal receipts. Process service continued at a high level with all movements being completed as scheduled. Cars handled in September including process movements totaled 1,843 compared with 1,615 in August, 1,162 in July, 2,180 in June, 3,164 in May, 3,132 in April, 2,978 in March, 1,443 in February and 1,223 in January.

The following recapitulation indicates the number of commercial cars handled:

Carload Movements - General Electric Company

<u>Loads In</u>	<u>Empties In</u>	<u>Loads Out</u>	<u>Empties Out</u>
563	55	56	605

Carload Movements - Subcontractors and Others

	<u>Loads In</u>	<u>Empties In</u>	<u>Loads Out</u>	<u>Empties Out</u>
Atkinson-Jones Co.	31	-	-	30
Asbestos Supply Co.	1	-	-	1
Associated Engineers	1	-	-	1
Chief Joseph School	1	-	-	1
Combustion Engineers	0	-	-	1
F. J. Early	22	-	-	20
E. P. Erwen	1	-	-	1
Gladding McBean Co.	0	-	-	1
V. S. Jenkins	0	-	-	1
Korten's Music Co.	1	-	-	1
Morrison-Knudsen Co.	3	-	-	3
Richland Fuel & Lbr. Co.	7	-	-	6
Rust Engineers	2	-	-	2
Uptown Theatre	2	-	-	2
U.S. Army 519th Anti-Aircraft Btln.	4	-	-	4

Transportation Division

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Interstate Commerce Commission Service Order No. 865 effective September 20 at 7:00 a.m. increased demurrage penalty rates and at the same time reduced credit days ordinarily earned under the average agreement.

Completed annual inspections and service to all cask cars and transformer car 10-B-3635. Hydrostatic tests and main reservoir relief valves were removed, cleaned, tested and reset on locomotives 39-3722, 39-3730 and 39-3732. Orifice tests were made to air compressors on locomotives 39-3719, 39-3722, 39-3725 and 39-3726.

Railroad track maintenance and rehabilitation work continued on a normal basis throughout the five sections. Conducted a preliminary inspection of new track construction to the 183DR Building on September 7. Final inspection and acceptance was made on September 12. Surfacing was in progress on the 100-B coal track, near Helena, 200-West Area, Mile Post B-17 to B-20 and in the vicinity of A-23, "B" line east of Yakima River Bridge, and Richland Yard requiring 3,129 man-hours. Replaced 368 defective cross ties and 7 switch ties in the 100-B coal track; 400 cross ties and 142 switch ties in 200-West Area; 577 cross ties and 255 switch ties in the 100-F Area requiring 2,114 man-hours.

AUTOMOTIVE ACTIVITIES

The Area Bus System transported 6.4% fewer passengers in September than in August. This reduction is the result of the 30 day month which included Labor Day. The following tabulation indicates the passenger volume by shifts and total revenue received during the month.

<u>No. 1</u>	<u>No. 2</u>	<u>No. 3</u>	<u>Total</u>	<u>Revenue</u>
24,466	50,874	48,371	123,711	\$ 6,185.55

The following is a comparative breakdown of average daily bus trips to the Plant Areas:

Passenger busses - 100-B Area	10
Passenger busses - 100-D Area	10
Passenger busses - 100-F Area	11
Passenger busses - 100-H Area	11
Passenger busses - Hanford	5
Passenger busses - 200-East	12
Passenger busses - 200-West	17
Passenger busses - 300 Area	7
Passenger busses - Riverland	3
Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	2
Passenger busses - North Richland	3
Passenger busses - Pasco	26
700-300 Area Shuttle	3
Inter-Area Passenger Service	3
Inter Area - Express Service	1
Inter Area Mail Service	1

Classification ~~Controlled~~ Changed to
RESTRICTED
 By Authority of the ~~Board of~~ OPERATIONS
 OFFICE, NON-TECHNICAL DOCUMENT I
 VIEW BOARD. W. J. Newton, Chair.
 Date: 12-18-54

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Transportation Division

By Authority of
VIEW BOARD.

Effective September 25, simultaneous with the return to Standard Time, the Richland to North Richland bus service serving the 8:00 a.m. to 4:45 p.m. Monday through Friday shift in North Richland was discontinued.

Special bus service throughout the Plant Area was rendered on September 20, 21 and 22 to prospective buyers who are inspecting tract houses. This service was requested by the Stores Division.

The Village Bus System transported 3.1% fewer passengers in September than in August. Volume of service rendered is indicated in the following statistics:

Total passengers, including transfers	33,920
Total bus trips	3,570
Total bus miles	19,635
Total revenue	\$ 2,579.75

Off-Plant automobile trips (Company business and/or official visitors) totaled 161.

The following tabulation indicates the services rendered by the Drivers' Test Unit:

Applicants:	Male	63	Number retested	0
	Female	12	Number rejected	0
		75	Number tests given	75
	Permits issued:	Limited to driving with glasses	20	
		Unlimited	55	
			75	
	Permits reissued		35	

The following tabulation indicates the volume of fuel distribution by the Equipment Maintenance Section:

	<u>Gasoline</u>	<u>Diesel Fuel</u>	<u>50 Cetane</u>	<u>Kerosene</u>	<u>White Gas</u>
Stock at start of month	36,230	15,451	9,262	2,318	111
Received during month	114,249	20,695	23,532	1,105	350
Total	150,479	36,146	32,794	3,423	461
Delivered to Area Stations	98,318	19,597	24,693	891	264
Stock at end of month	52,161	16,549	8,101	2,532	197

The following tabulation indicates the Plantwide usage of automotive equipment:

<u>Code</u>	<u>Type</u>	<u>No. of Units</u>	<u>Total Mileage</u>
1A	Sedans	363	541,012
1B	Busses	155	220,715
1C	Pickups	487	291,859
1D	Station Wagons	102	83,559
1E	Armored Cars	12	886
1G	Weapon Carriers	39	15,458
68 Series	Trucks	323	122,377
		1,481	1,275,866

1208313

PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT

DATE SEPTEMBER 15, 19 50

(\$000,000) HIGH SPOT ESTIMATE ONLY
 [] WORK PROGRESS DURING PERIOD
 [] WORK PREVIOUSLY DONE

100 AREA PROJECTS

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROVAL REQUEST DATE	APPROVED BY COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A1034	5-29	105BD	DISMANTLING OF EQUIPMENT IN THE DEMINERALIZING AND DEAERATING PLANTS	POWER	C-172	360,200	7-11-47	7-11-47	7-11-47	3-31-48	4-4	4-7	4-7	100	SUBCONTRACT WORK PROGRESSING	
A532	1-7	108F	BIOLOGICAL LABORATORY, PARTS I AND II	M. I. PILE TECH.	C-192	1,121,000	3-31-49	4-1	4-1	3-29	4-3	4-6	4-6	100	WORK PROGRESSING	
A1046	6-14	105D	NEUTRON SPECTROMETER	P	C-290	17,100	2-5-48	9-9	9-14	10-4	10-11	10-11	10-11	100	EXTENSION OF TIME GRANTED	
A1060	7-29	100BD	INCREASED SHIELDING - FRONT NOZZLE CAPS	P	C-306	88,000	10-6-48	10-11	11-10	11-10	11-30	12-2	6-17-49	100	MATERIAL NOW BEING RECEIVED	
A1057	4-20	105BF	EFFLUENT DIVERSIONARY OUTLET (105-107 B & F)	P	C-321	153,000	1-12-49	1-14	1-26	1-26				100	PROJECT BEING REVISED. DESIGNS APPROVED. WORK SCHEDULED FOR 1952	
A1093	3-17	105BF	P-11 PROJECT	P	C-340	328,000	5-23-49	5-20	6-1	6-1	6-28	7-1	7-12	100	DESIGN WORK ON SECOND UNIT DELAYED FOR 30 DAYS	
A1100	5-27	105BD	NOZZLE GALVANIZING AND REPLACEMENT	P	C-347	775,000	8-15-49	8-15	10-12	10-12	12-28	1-4-50	1-13	100	DELIVERY SLOW BECAUSE OF FABRICATION DIFFICULTIES	
A1110	7-21	105BD	PILE CLEARANCE - INNER ROO ROOM WALLS 105BD	P	C-355	40,600	9-26-49	9-26	12-13	12-14	1-18-50	1-19	2-8	100	WORK SCHEDULED IN B AREA EXTENDED SHUTDOWN	
A1129	2-2	108B	P-10-B (COLD FACILITIES)	P	C-368	95,000	3-1-50	3-21	3-21	3-22	4-24	5-1	5-23	100	FIELD WORK IN PROGRESS	
A1125	11-23	105H	P-13 - FIRST HANFORD PILOT CHANNEL TEST RIG (AHL #140)	P	C-372	130,000	3-31-50	3-31	4-11	4-12	5-23	5-25	6-12	100	REQUEST BEING SUBMITTED FOR ADDITIONAL FUNDS. WORK PROGRESSING	
A1130	2-3	108B	P-10-A EXPANSION	P	C-383	300,000	4-12-50	4-13	4-20	4-20	5-29	6-1	6-9	100	IN PARTIAL USE	
A1141	6-25	108D	P-10-X PRODUCTION PLANT	P	C-388	100,000	7-13-50	7-14	7-14	7-14	7-18	7-18	7-20	100	DESIGN SCOPING IN PROGRESS	
A1141	6-25	108D	REMOVAL OF EQUIPMENT FROM BLDG. 108-D	P	C-396	109,000	7-13-50	7-14	7-14	7-14	7-18	7-18	7-20	100	WORK PROGRESSING	
A1068	10-29	105	DEVELOPMENT OF FLEXIBLE VERTICAL SAFETY ROOBS	P	M-713	18,500	5-18-49	5-18	5-27	5-27	7-19	7-22	9-26	100	WICK-UP ROD MANUFACTURE DELAYED FOR MORE URGENT WORK	
A1104	6-7	107B	REPAIRS TO 107 BASIN (IMMEDIATE PROGRAM ONLY)	P	M-723	18,100	9-15-49	9-15	10-12	10-12	10-25	10-27	12-2	100	AWAITING EXTENDED SHUTDOWN	
A1135	3-13	108B	P-10-C, PART I (METAL PROTOTYPE UNIT AUTHORIZED EST. - ENTIRE COST)	P	M-761	200,000	8-7-50	8-17	8-30	8-31			5-10	100	DESIGNS PROGRESSING. \$50,000 OF FIELD WORK IN PROGRESS	
A1116	9-30	111B	HEALTH MONITORING AND STORAGE FACILITIES	P	M-769	16,100	3-20-50	3-20	4-28	4-28	5-23	5-23	8-7	100	FABRICATION BY MAINTENANCE DIV.	
A575	5-1	105DR	PILE TECHNOLOGY STORAGE & TEST BUILDING	P		(95,000)								100	AWAITING INFORMATION FROM TECH. DIVISION	
A588	7-31	105F	HOT MAINTENANCE MACHINE SHOP	M. I.		(21,000)								100	DESIGN IN PROGRESS	
A1059	6-29	100B	INSTALL STEEL PROCESS SEWER 105B - 107B	P		(550,000)								100	LEAKAGE STUDIES CONTINUING	
A1086	2-4	1008F	HIGH TANK CONTROL VALVES	P		40,000								100	PROJECT PREPARATION DELAYED FOR LACK OF MANPOWER	
A1118	10-14	105F	DOWNCOMER REPLACEMENT	P		(100,000)								100	HELD UP FOR HIGHER PRIORITY WORK	
A1119	10-17	100	COAL METERING FACILITIES	POWER		31,400								100	TEMPORARILY HELD IN ABEYANCE	
A1122	11-9	100	DEVELOPMENT OF FLEXIBLE HORIZONTAL CONTROL ROOBS	P		(50,000)								100	WORK TO BE RESUMED	

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COMBINED TOTAL OF AUTHORIZED AND PENDING 100 AREA WORK \$12,173,600

PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT 200 AREA PROJECTS

DECLASSIFIED
DATE

(\$000,000) HIGH SPOT ESTIMATE ONLY
 [] WORK PROGRESS DURING PERIOD
 [] WORK PREVIOUSLY DONE

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROVAL REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE PER CENT COMPLETE	FIELD WORK PER CENT COMPLETE	REMARKS
2469	12-30	200	UNDERGROUND GEOLOGICAL & HYDROLOGICAL INVESTIGATION PROGRAM INCLUDING TEST WELLS & OTHER FACILITIES	H.I.	C-326	36,800	5-25-50	5-25	6-13	6-14	7-5	7-10	7-13	100	100	DELAYED FOR HIGHER PRIORITY WORK
2460	12-23	221TB	EQUIPMENT FOR DISSOLVER OFF-GAS FILTRATION PART 11	S	C-337	158,000	12-14-49	12-13	12-20	12-23	1-30-50	2-9	2-16	100	100	WORK PROGRESSING
2446	7-19	200E	HOT SEMIWORKS COMPLETE PLANS & SPECS. PARTS I & II	TECH.	C-349	150,000	2-1-50	2-8	2-8	2-15	3-2	3-16	3-24	100	100	DESIGNS PROGRESSING
2513	8-30	234-5	AUXILIARY HOOD ENCLOSURE FOR PART I, BLDG. 234	S	C-366	49,000	2-20-50	3-6	3-21	4-11	4-14	4-14	4-26	100	100	PROJECT AWAITING AUTHORIZATION FABRICATION OF ENCLOSURE BEING PERFORMED BY OUTSIDE VENDOR
2491	5-13	200W	EVAPORATION FACILITIES FOR WASTE SOLUTIONS (200W)	S	C-369-R	489,000	6-23-50	6-23	7-11	7-12	8-18	8-24	9-1	100	100	WORK INITIATED
2490	5-13	221TB	100% REMOVAL FACILITIES FOR DISSOLVER OFF-GAS (200W)	S	C-378	149,000	3-9-50	3-9	3-31	4-12	5-9	5-12	5-23	100	100	WORK PROGRESSING
2501	9-2	224TB	REARRANGEMENT OF F CELL EQPT. BLDGS. 224 T & B	S	C-384	30,000	4-12-50	4-12	4-25	5-10	6-2	6-15	6-20	100	100	WORK PROGRESSING
2540	5-11	234-5	ADDITIONAL UNIT TO SUPPLEMENT THE OPERATION OF HOOD #25, BLDG. 232	S	C-392	25,500	6-1-50	6-1	6-17	6-28	7-14	7-19	7-25	100	100	WORK PROGRESSING
2501	9-2	221TB	PARALLEL OPERATION, SECTIONS 19 & 20, BLDGS. 221 T & B	S	C-395	91,165	6-26-50	6-26	7-20	8-4	8-8	8-8	8-15	100	100	WORK PROGRESSING
2544	6-2	221TB	CONDUCTIVITY METERS FOR CELL DRAINS, BLDGS. 221 T&B	S	C-397	21,700	7-12-50	7-12	8-2	8-10	8-28	8-31	9-5	100	100	WORK BEING SCHEDULED
2543	6-1	231	EXPERIMENTAL COATING HOOD, BLDG. 231, 200W AREA	SEP. TECH.	C-398	53,000	8-8-50	8-8	8-9	8-9	9-12	9-14		100	100	WORK BEING SCHEDULED
2554	12-23	222U	OFFICE AND STORAGE ANNEX TO BLDG. 222U	H.I.	M-755	2,700	10-26-49	10-26	11-22	11-25	12-7	12-7	2-21-50	100	100	SUBCONTRACT AWARDED 7-3-50 WORK PROGRESSING
2504	7-22	271TB	INSTALLATION OF LABORATORY FURNITURE IN BLDGS. 271 T & B	TECH. SERV.	M-766	13,600	4-25-50	4-25	5-9	5-10	5-31	6-2	6-14	100	100	WORK PROGRESSING
2520	1-16	234-5	LOADING FACILITIES FOR RECYCLED MATERIAL BLDG. 234	S	M-802	19,000	4-24-50	4-24	5-9	5-10	6-5	6-5	7-14	100	100	WORK INITIATED INFORMAL REQUEST FOR ENGRG. DESIGN AWAITING AUTHORIZATION
2570	3-15	200W	CONSOLIDATED MAINT. SHOPS	MAINT.	H-813	15,000 (310,000)	9-12-50	9-12	9-12	9-12				100	100	DESIGN WORK PROGRESSING
2571	4-7	200W	ANIMAL EXPOSURE CHAMBER	H.I.		(45,000)								100	100	DESIGNS POSTPONED BY S-DIVISION PROJECT PROPOSAL TO BE SUBMITTED AT A LATER DATE
2593	7-22	234-5	DUCT LEVEL FLOOR COVERING AND SAFETY SHOWERS	S		(150,000)								100	100	DESIGN IN PROGRESS
2533	4-11	234-5	PROCESS WASTE DISPOSAL SYSTEM	S		(50,000)								100	100	NOT STARTED
2546	7-28	221TB	EQUIPMENT FOR SETTLING AND CRIBBING OF SECT. 5 WASTES	S		(25,000)								100	100	
2547	8-15	235	PROJ. FOR COATING UNIT HOOD #26	S		(25,000)								100	100	

COMBINED TOTAL OF AUTHORIZED AND PENDING 200 AREA WORK \$4,440,465

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PROJECT ENGINEERING DIVISIONS MID-MONTHLY STATUS REPORT 300 AREA PROJECTS

(\$100,000) HIGH SPOT ESTIMATE ONLY
 [] WORK PROGRESS DURING PERIOD
 [█] WORK PREVIOUSLY DONE

DATE SEPTEMBER 15, 19 50

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROVAL REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A3061	8-14	313-314	IMPROVED VENTILATION - BLDGS. 313-314	P	C-330	200,000	█	12-8-49	12-8	12-28	12-18	12-1-50	2-1	2-10	98	WORK DELAYED FOR LACK OF MAN-POWER
A3062	2-9	314	ROLLING MILL (\$60,000 AUTHORIZED EST. TOTAL COST 12-13 FOR ENGINEERING)	P	C-339	60,000	█	5-23-49	5-23	5-27	6-1	12-13	12-23	12-23	98	PROJECT WORK TERMINATED REPORTING ENGINEERING DATA TO DATE
A550	9-15	300	ADDITION TO BLDG. 3745	H.I.	C-354	20,300	█	11-8-49	11-8	12-1	12-1	12-19	12-23	3-2-50	98	SUBCONTRACT AWARDED 7-3-50 WORK PROGRESSING DESIGN COMPLETE WORK TO BE SUBCONTRACT
A528	11-14	300	INSTRUMENT MAINTENANCE & DEVELOPMENT BLDG. 3717-B	INST.	C-377A	111,000	█	4-26-50	3-25	4-28	5-10	6-6	6-6	6-19	98	AWAITING AUTHORIZATION
E432	1-11	300	ELECT. POWER SERVICE TO HANFORD LAB.	ELECT.	C-404	38,500	█	8-24-50	8-24	9-12	9-12				98	FORMAL REQUEST FOR DETECTOR INSTALLATION AWAITING APPROVALS
A510R	10-10	3701	300 AREA BARGE HOUSE ADD. PREVIOUSLY AUTH. INF. REQ. URANIUM DETECT. INSTALL. PRESENT EST. INF. REQ.	SERV. TECH.		19,500	█	9-8-50	9-8						98	AWAITING INFORMATION TECH. DIV.
A54B	8-29	300	SOLVENT STORAGE FACILITIES - BLDG. 3706	SERV. TECH.		19,400	█	9-15-50							98	AWAITING APPROVALS
A574	4-28	300	ADDITION TO BLDG. 3702	TECH. SERV.		22,000	█								98	PROJECT IN PREPARATION
A582	6-9	300	MFG. DIVISION ADMINISTRATION BLDG.	TECH. SERV. ALL MFG.		(70,000)	█								98	PROJECT IN PREPARATION
E434	1-13	300	EXPERIMENTAL INDUCTION HEATING FACILITIES BLDG. 3732	PILE TECH.		52,800	█								98	DESIGNS BEING FURTHER DECISIONS ON WORK TO BE DONE
A3083	7-21	313	SEGREGATION OF FLUORIDE SLUDGE	P		(10,000)	█								98	AWAITING APPROVALS
A3085	6-28	RIVER	HIGH TANK RIVERLAND	TRAN.		50,000	█	9-11-50	9-11						98	AWAITING APPROVALS
COMBINED TOTAL OF AUTHORIZED AND PENDING 300 AREA WORK \$754,000																

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PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN
100 AREAS

DATE SEPTEMBER 15, 1950

E. R. NO.	DATE RECD.	DIV. RESP.	BLDG. OR AREA	D E S C R I P T I O N	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	R E M A R K S
					LAST MO.	THIS MO.		
A-1001	9-1-49		100	"AS-BUILT". DWGS. SINCE 9-1-46	30	30		WRK PROGRESSING
A-1002	2-1-50	TECH. & P	105	G.E.C. STUDY	30	30		EXTENDED STUDY BY STANDING CCNMITTEE
A-1074	11-2-49	P	115BDF	DESIGN MOISTURE EXTRACTION EQUIPMENT FOR GAS SYSTEM	0	0		NOT STARTED
A-1128	2-1-50	P	100H	DESIGN GRAPHITE MONITORING PUSH RODS	50	70	10-15-50	P.S.N.S. BEING CONTACTED AS POSSIBLE FABRICATOR
A-1132	2-8-50	P	105	ROTARY TUBE CUTTER	85	90	10-1-50	FIRST TRIAL SATISFACTORY; OTHER TEST SCHEDULED
A-1140	6-1-50	P	107B	INVESTIGATE SEWER LEAKS	15	40	9-30-50	IN PROGRESS

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PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN
 200 AREAS

DATE SEPTEMBER 15, 1950

120832

COR NO.	DATE REC'D	DIV RESP.	BLDG OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO		
2266	10-28-49	-	200EW	"AS-BUILT" DWGS. SINCE SEPT. 1, 1946	45	45	12-31-50	ONLY URGENT CORRECTIONS BEING MADE TO DWGS. AT PRESENT
2532	4-6-50	S	221T	CHANGE DWGS. FOR CONNECTORS IN SECT. 6-R	10	100		DESIGN COMPLETE
2534	4-17-50	S	234-5	DESIGN NEW SHAFT FOR WASTE SUMP TANK AGITATORS	20	20		DESIGN WAITING ON MANPOWER
2535	4-17-50	S	222TB	DESIGN HOOD FOR LIQUID WASTE ASPIRATOR	25	25		DESIGN WAITING ON MANPOWER
2541	5-15-50	S	234	DESIGN VACUUM BREAKER FOR EVAPORATOR BLDG. 234	80	80		DESIGN BEING REVIEWED BY S-DIV.
2542	5-29-50	-	222TB	DESIGN AIR COND. EQUIP. FOR ROOM 19	0	100	9-6-50	DESIGN COMPLETE
2545	6-13-50	M	2704E	DESIGN PIPING FOR TWO FIRE HOSE STATIONS	0	0		NOT STARTED

PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN

300 AREA

DATE: SEPTEMBER 15, 1950

120832

E. R. NO.	DATE REC'D.	DIV RESP.	BLDG OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO.	THIS MO.		
A-3002	9-1-49		300	"AS-BUILT" DRAWINGS SINCE 9-1-46	0	0		ONLY URGENT CORRECTIONS BEING MADE AT PRESENT
A-3070	10-28-49	TECH. SERV.	3706	STUDY VENTIL. REQUIREMENTS TO PROVIDE 40% HUMIDITY AND 2 MINUTE AIR CHANGE	0	0		FURTHER WORK WILL NOT BE REQUIRED
A-3088	2-13-50	P	314	STUDY GATE TYPE CRUCIBLE, MELT PLANT	80	80	12-1-50	WORK POSTPONED UNTIL TEST OF SIDE PCUR CRUCIBLE IS COMPLETED
A-3090	3-7-50	P	314	HCCO FOR OUTGASSING FURNACE	70	70	10-30-50	WORK DELAYED FOR MORE URGENT WORK
A-3092	4-28-50	P	314	STOKES PUMP EXHAUST GAS TEST	90	100	9-5-50	TESTS COMPLETED WITH SATISFACTORY RESULTS OBTAINED

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DECLASSIFIED

PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN
PLANT GENERAL

DATE - SEPTEMBER 15, 1950

E. R. NO.	DATE RECD.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO.	THIS MO.		
887-R	9-11-50	POWER		SURVEY VOLUME - 100, 200 AREA COAL PILES	-	10		WORK PROGRESSING AS REQUIRED
A-537	4-8-49	TRAN.	ALL	SURVEY FOR MAINTENANCE OF ALL RAILROADS INSIDE RESTRICTED AREAS	56	70	11-15-50	WORK PROGRESSING AS REQUIRED
A-553	9-7-49	-	ALL	ARCHITECTURAL STANDARDS	15	15		WORK PROGRESSING AS REQUIRED
A-569	3-2-50	TECH. & MFG.	300	ENGRG. REPORT ON 300 AREA DEVELOPMENT STUDY	35	35	12-15-50	WORK PROGRESSING AS REQUIRED
A-578	5-22-50	D.& C.	200	200E-W WASTE TIE-LINE (LAYOUT ONLY)	76	80	10-15-50	WORK PROGRESSING
A-581	6-9-50	TRAN.	-	DESIGN BUS HEATING SYSTEM	85	85	9-1-50	CANCELLED BY TRAN. DIV. 8-23-50
A-583	6-13-50	TRAN.	100H	PAINT SPRAY BOOTH INSTALLATION	25	25	9-15-50	CANCELLED BY TRAN. DIV. 8-23-50
A-585	6-29-50	S	ALL	STRESS ANALYSIS PROCESS CASK CAR	40	40	9-1-50	HELD UP BY HIGHER PRIORITY WORK
A-587	7-21-50	TRAN.	-	ROAD STRIPPING - 300 AREA BARRICADE	60	100		COMPLETED
A-591	8-24-50	MFG.	-	STATISTICAL CHARTS - MFG. DIVISIONS	-	15		WORK PROGRESSING AS REQUIRED
A-592	9-5-50	AEC	-	PRELIMINARY SURVEY - HOUSING ADDITION	-	65		WORK PROGRESSING AS REQUIRED
E-439L	1-12-50	-	ALL	ELECTRICAL AS-BUILTS (LAYOUT WORK ONLY)	36	37		AS REQUIRED
E-406L	8-1-49	ELECT.	1100	ADDITIONS TO VILLAGE DIST. - LAYOUT ONLY FOR PROJECT C-341	98	98		WORK PROGRESSING AS REQUIRED
A-1001L	5-26-49	-	100	AS-BUILTS - 100 AREAS - LAYOUT ONLY	80	80		WORK PROGRESSING AS REQUIRED
2266L	1-13-50	-	200EW	AS-BUILTS (LAYOUT WORK ONLY)	80	80		WORK PROGRESSING AS REQUIRED
A-3002L	12-7-49	-	300	AS-BUILTS - 300 AREA - LAYOUT ONLY	70	71		WORK PROGRESSING AS REQUIRED
4365D	12-2-49	P	-	PROCESS/CHARTS - 300 AREA (FOR IND. ENGRG. GROUP)	70	70		WORK PROGRESSING AS REQUIRED

PROJECT ENGINEERING DIVISIONS
ELECTRICAL DESIGN
PLANT GENERAL

DATE SEPTEMBER 15, 1950

1208323

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO		
A-480RE	8-11-50			CONSOLIDATION OF TRANSPORTATION FACILITIES	0	0	5-1-51	
A-505E	8-19-49	-	ALL	ELECTRICAL STANDARDS - DESIGN & DRAFTING STAFF WORK				
A-546E	8-19-49	TECH.	200E	HOT SEMIWORKS	55	75	10-1-50	WORK PROGRESSING
A-562SE	2-27-50	STORES	ALL	CENTRAL STORES WAREHOUSE	10	10	12-1-50	WORK HELD UP
A-565E	3-23-50	H. I.	700	BIC ASSAY LABORATORY	10	10	1-1-51	WORK PROGRESSING
A-570E	7-20-50		200W	CONSOLIDATED MACHINE SHOP	5	10	1-1-51	WORK PROGRESSING
A-582E	8-11-50		300	ADMINISTRATION BLDG.	0	0	2-1-51	
A-588E	8-11-50		105F	MAINTENANCE SHOP	0	0	1-1-51	
E-413	6-21-50	ELECT.	ALL	SUPERVISORY CONTROL ON 115KV LINES	15	25	10-1-50	WORK PROGRESSING
E-428	11-1-49	ELECT.	HANF.	DISMANTLE DISTRIBUTION LINES AND TELEPHONE CABLE - HANFORD	10	10		PRELIMINARY WORK STARTED
E-432	1-11-50	ELECT.	300	ELECTRICAL POWER - HANFORD LAB.	15	50	10-1-50	WORK PROGRESSING
E-435	2-10-50	ELECT.	RICH.	ELECTRICITY METERING - RICHLAND	25	40	6-1-51	HELD UP
E-439	7-14-50		100	"AS-BUILT" - 100 AREA				HELD UP
E-441	7-14-50		200	"AS-BUILT" - 200 AREA				HELD UP
E-442	7-14-50		300	"AS-BUILT" - 300 AREA				HELD UP
E-443	7-14-50		700-1100	"AS-BUILT" - 700-1100 AREA				HELD UP
E-444	7-14-50		ALL	"AS-BUILT" - POWER LINES				HELD UP
E-445	7-14-50		ALL	"AS-BUILT" - TELEPHONE				HELD UP
A-1130E	2-16-50	TECH.	100B	P-10-A EXPANSION	95	100	9-15-50	COMPLETED
A-1135E	4-2-50	TECH.	100B	P-10-D ADDITIONAL HOT FACILITIES	45	70	11-1-50	WORK PROGRESSING
2490E	2-15-50	P	200EW	IODINE REMOVAL FACILITIES	100	100	7-17-50	WORK PROGRESSING (DESIGN COMPLETE, FIELD WORK TO DO)

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PROJECT ENGINEERING DIVISIONS
ELECTRICAL DESIGN
PLANT GENERAL

~~CONFIDENTIAL~~

DATE SEPTEMBER 15, 1950

E. R. NO.	DATE RECD.	DIV. RESP.	BLDG OR AREA	D E S C R I P T I O N	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	R E M A R K S
					LAST MO	THIS MO		
2491E	9-14-49	S	200EW	FIRST CYCLE EVAP. FAC. - 241 T-X, ELECTRICAL DESIGNS	10	70	10-15-50	WORK PROGRESSING
2501E	2-17-50	S	200EW	F CELLS - BLDG. 221 T & B	90	100	9-1-50	COMPLETED
2540E	7-22-50		200W	COATING UNIT - HOOD 25, BLDG. 234-5	-	0	11-1-50	HELD UP
2543E	7-22-50		200W	EXPERIMENTAL COATING HOOD - BLDG. 231	-	5	12-1-50	HELD UP
2544E	6-12-50	S	200EW	CONDUCTIVITY METERS 221 T-B	5	5	9-15-50	WORK PROGRESSING
A-3061E	12-10-49	TECH.	314	INCREASED VENTIL. - ELECT. DESIGNS ONLY	0	0	9-15-50	WORK PROGRESSING

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PROJECT ENGINEERING DIVISIONS
INDUSTRIAL ENGINEERING

ALL AREAS

DATE SEPTEMBER 15, 1950

E R NO	DATE RECD	DIV RESP	BLDG OR AREA	D E S C R I P T I O N	PERCENT ENGINEERING COMPLETE		EST. COMPL DATE	R E M A R K S
					LAST MO	THIS MO.		
1141	6-16-50	DESIGN	100	P-10-X FEED SLUG HANDLING P-10-X FUEL SLUG HANDLING P-10-X FUEL SLUG SHIPPING P-10 EXTRUSION	95 75	100 80		WORK COMPLETED 8-28-50 WORK PROGRESSING, SCOPE INCREASED WORK PROGRESSING, SCOPE INCREASED WORK PROGRESSING WORK DEFERRED
4363	3-21-50	P.E.D.	ALL	PROJECT ENGRG. DIV. PERSONNEL ANALYSIS	90	90		
4365	4-15-49	P	300	INDUSTRIAL ENGINEERING - P-DIVISION OPTIMUM BILLET DIMENSION DETERMINATION REDUCED CUT-OFF TOOL WIDTH MELT PLANT MATERIAL HANDLING AMORTIZATION PERIODS 303 PROCESS & ESSENTIAL MATERIALS CHIP RECOVERY EXPOSURE STUDY "LONG ROD" MACHINING & STRAIGHTENING MATERIAL HANDLING CREW METHODS 8" SLUG ECONOMICS SLUG REPROCESSING ECONOMICS	70 90 20 30 0 30 10 0 -	70 90 20 30 0 35 80 0 100 100		NEW TOOLS ORDERED WORK PROGRESSING WORK PROGRESSING WORK COMPLETED 8-25-50 WORK COMPLETED 8-31-50
4370	11-1-49	P	100	INDUSTRIAL ENGINEERING - P-DIVISION CHARGE-DISCHARGE METHODS SUGGESTION EVALUATION FOR P.C. GROUP NOZZLE REPLACEMENT STUDY CREW REQUIREMENTS, 105 AREA S.W.P. STUDIES	60 55 2 20 5	65 55 100 25 5		WORK PROGRESSING WORK COMPLETED WORK PROGRESSING
4374	12-20-49	S	200	INDUSTRIAL ENGINEERING - S-DIVISION CREW REQUIREMENTS 234-5 BLDGS. METHODS IMPROVEMENT 234-5	0	0	12-20-50	
4378	2-5-50	S	202S	LUBRICATION SPECIFICATIONS - REDOX	0	0	4-1-51	(THESE JOBS CANCELLED. WILL BE REACTIVATED IN EARLY PART OF 1951.)
4379	2-3-50	S	234-5	LUBRICATION SPECIFICATIONS - M.R.	0	0	8-1-51	
4381	2-3-50	S	221U	LUBRICATION SPECIFICATIONS - T.B.P.	0	0	8-1-51	
4382	3-2-50	S	200	LUBRICATION SPECIFICATIONS - U03	0	0	6-1-51	
4383	3-6-50	POWER	ALL	FUEL OIL STUDY	98	98	8-18-50	REVIEWING FINAL REPORT
4386	3-13-50	MFG.	ALL	STUDY DEVELOPMENT AND ROUTINE	0	0	3-13-51	SERVICE AND SURVEY
4388	11-15-49	CONTROL	ALL	ANALYSIS OF HEAVY DUTY LACQUERS	80	90	9-1-50	WORK PROGRESSING

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PROJECT ENGINEERING DIVISIONS
INDUSTRIAL ENGINEERING
ALL AREAS

DATE SEPTEMBER 15, 1950

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	D E S C R I P T I O N	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	R E M A R K S
					LAST MO.	THIS MO.		
4390	5-9-50	CONTROL	100	LUBRICATION SPECIFICATIONS 105H	75	95	8-30-50	WRK PROGRESSING
4391	5-12-50	CONTROL	ALL	INDUSTRIAL LUBRICATION PROGRAM	35	50	11-10-50	WORK PROGRESSING
4392	5-17-50	MAINT.	ALL	METALLIZING J.I.	75	75	9-1-50	WRK PROGRESSING
4393	5-19-50	POWER	100	LUBRICATION SPECIFICATIONS - 100DR	75	80	8-15-50	WORK PROGRESSING
4394	6-6-50	P.E.D.	100	GRAPHITE STORAGE FACILITIES	25	25		WORK DEFERRED
4395	6-28-50	MFG.	ALL	MANUFACTURING DIVISIONS PROCEDURES	10	12	12-1-50	WORK PROGRESSING
4398	6-25-50	S	ALL	CORROSION TESTS - STAINLESS STEEL	15	15	9-1-50	WRK INITIATED
4399	7-13-50	CONTROL	ALL	CONTROL DIVISION PROCEDURES	5	5	2-1-51	WORK INITIATED
4400	6-28-50	MFG.	ALL	MANUFACTURING DIVISIONS REPORTS	0	0	2-1-51	WORK DEFERRED
4401	8-18-50	MFG.	ALL	WORK ORDER CONTROL STUDY	-	50	9-15-50	WRK PROGRESSING

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**PROJECT ENGINEERING DIVISIONS
COST ESTIMATING WORK SCHEDULE
WORK RECEIVED AND COMPLETED
ALL AREAS**

DATE SEPTEMBER 15, 1950

JOB NO.	BLDG OR AREA	DESCRIPTION	PERCENT ESTIMATING COMPLETE		DATE REC'D.	DATE REQ'D.	DATE COMPL.	AMOUNT	REMARKS
			LAST MO.	THIS MO.					
C-192	100F	BIOLOGY LAB. - EQUIPMENT	-	100	8-15-50	8-24-50	8-22-50	3,600	EST. TO H.E. HYLBAK
C-347	105	REPLACE NOZZLES - COST TO COMPLETE	-	100	8-31-50	8-31-50	8-31-50	120,500	EST. TO V.W. WOOD
C-349		HOT SEMIWORKS - FILTER FAC.	-	100	9-10-50	9-12-50	9-11-50	100,000	EST. TO H.E. HYLBAK
C-349	200E	S/S FLOOR COVERING - CELLS A, B & C	-	75	9-8-50	9-14-50			
C-369	200W	1ST CYCLE EVAPORATION FAC.	-	100	8-21-50	8-22-50	8-22-50	VARIOUS	EST. TO E.M. JOHNSTON
C-369	-	COST OF CELL ITEMS	-	100	8-21-50	8-22-50	8-22-50	50,300	EST. TO E.M. JOHNSTON
C-377	300	INSTR. MAINT. & DEV. BLDG. - FAIR COST EST.	-	80	9-1-50	9-15-50			
C-379	105	P-13 - COST TO COMPLETE	-	100	8-31-50	9-8-50	8-31-50	25,000	EST. TO V.W. WOOD
C-388	100	P-10-X HANDLING CASKS - 8 ALTERNATES	-	100	8-23-50	8-25-50	8-30-50	VARIOUS	EST. TO F.A. BOWMAN
C-388	100	P-10 PROGRAM - SPECIAL BUCKETS - 2 ALTERNATES	-	100	8-25-50	8-29-50	8-29-50	VARIOUS	EST. TO H.P. SHAW
C-388	100	P-10 DECONTAMINATION BLDG. - 3 ALTERNATES	-	100	8-28-50	8-31-50	9-1-50	VARIOUS	EST. TO H.P. SHAW
C-388	100	P-10-X OUTSIDE FACILITIES - 3 ALTERNATES	-	100	8-29-50	8-30-50	8-30-50	VARIOUS	EST. TO H.P. SHAW
M-761	108B	P-10-D STEAM SUPPLY	-	100	8-23-50	8-23-50	8-23-50	4,500	EST. TO H.P. SHAW
A-510	300	URANIUM DETECTORS & BADGE HOUSE ALTERATIONS - 2 ALTERNATES	-	100	8-28-50	8-30-50	8-30-50	VARIOUS	EST. TO H.F. PETERSON
A-565	-	BIO ASSAY LAB. EST. REVISIONS - 2 ALTERNATES	-	100	9-7-50	9-8-50	9-8-50	VARIOUS	EST. TO H.F. PETERSON
A-570	200W	CONSOLIDATED MAINTENANCE SHOP	50	50	7-20-50				HELD UP
A-574	3702	PROPOSED ADDITION	-	100	9-5-50	9-11-50	9-5-50	29,000	EST. TO H.E. HYLBAK
A-577	-	ASB. SHINGLES - AREA BADGE HOUSE - 11 ESTIMATES	-	100	9-12-50	9-20-50	9-13-50	15,729	EST. TO H.F. PETERSON
A-582	300	MFG. DIV. ADMIN. BLDG. - 300 AREA	-	75	8-21-50	8-29-50			HELD UP

**PROJECT ENGINEERING DIVISIONS
COST ESTIMATING WORK SCHEDULE
WORK RECEIVED AND COMPLETED
ALL AREAS**

DATE SEPTEMBER 15, 1950

JOB NO.	BLDG. OR AREA	DESCRIPTION	PERCENT ESTIMATING COMPLETE		DATE REC'D.	DATE REQ'D.	DATE COMPL.	AMOUNT	REMARKS
			LAST MO.	THIS MO.					
A-588	105F	MAINT. SHOP FOR CONTAMINATED WORK	-	0	9-8-50	9-22-50			
E-432	300	ELEC. SERVICE FOR HANFORD LAB. (REV.)	90	90	8-10-50	8-16-50		38,500	EST. TO E.J. BARRETT
E-432	-	PRIMARY ELEC. POWER LINE - HANFORD LAB.	-	100	8-19-50	8-21-50		38,500	EST. TO H.F. PETERSON
E-434	3732	EXPER. INDUCTION HEATING - REV.	-	100	9-7-50	9-8-50		52,800	EST. TO C.S. BUCHOLZ
A-1057	100	PIPING TO WASTE CRIBS - 3 ALTERNATES	-	100	8-23-50	8-23-50		VARIOUS	EST. TO H.P. SHAW
A-1138	105	CO ₂ STORAGE FAC. - LIQUID	-	100	8-18-50	8-23-50		36,500	EST. TO V.W. WOOD
A-1138	105	CO ₂ STORAGE FAC. - BULK	-	100	8-12-50	8-23-50		45,000	EST. TO V.W. WOOD
A-1140	105-107B	3 ALTERNATES - REHABILITATION EFFLUENT LINE	-	100	9-6-50	9-8-50			EST. TO J.L. SPENCER
2542	222	AIR CONDITIONING PAD	-	100	9-6-50	9-9-50		1,900	EST. TO E.M. JOHNSTON
H59264	3000	TELEPHONE EXCHANGE FENCE	0	0	8-15-50	8-16-50		1,250	EST. TO ELECT.
-	100	UNCOVERING COSTS - 42" CONC. PIPE - ALTERNATES	-	100	8-24-50	8-24-50		VARIOUS	EST. TO H.P. SHAW

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SEPTEMBER 15, 1950

RECAP - ALL AREAS

PROJECT COSTS

	100	200	300	GENERAL	TOTAL
AUTHORIZED	\$ 3,691,900	\$ 1,295,465	\$ 405,800	\$ 4,249,700	\$ 9,642,865
AWAITING APPROVAL	1,041,500	2,555,000	122,400	126,600	3,845,500
WORK IN PREPARATION	<u>7,440,400</u>	<u>590,000</u>	<u>222,800</u>	<u>4,215,700</u>	<u>12,468,900</u>
TOTALS	\$12,173,800	\$4,440,465	\$ 751,000	\$8,592,000	\$25,957,265
LAST MONTH'S TOTALS	\$12,523,300	\$4,215,465	\$ 729,300	\$9,215,800	\$26,683,865

PROJECT COMPLETED DURING MONTH:

EST. COST \$470,500

C-138 - CONVERSION OF RICHLAND EXCHANGE TO AUTOMATIC DIAL OPERATION

SUBCONTRACTS IN FORCE: \$ 406,176

SUBCONTRACTS PREPARING: \$3,073,000

TECHNICAL DIVISIONS

10-10-50

September 1950

SUMMARYFile Technology Division

The H-10 loading in the H Pile was enlarged to 796 tubes during the month. The nominal 825 tube loading will be approached cautiously to avoid premature discharge of U-235 in consequence of reactivity considerations.

Start-up preparations at the DR Pile involved shift coverage by physicists during loading to dry and wet criticals and during a coefficient test on a small wet pile.

Critical mass experimental work was concentrated on spherical geometries. Differences between spheres and cylinders have been in accord with expectations.

An apparent difference in diffusion lengths in exponential piles, depending on arrangement of the sources, was under study at month end.

An unlocated water leak in the D Pile has involved important operating difficulties. About 70 inhours of reactivity have been lost in an erratic manner.

Studies indicate quite conclusively that omission of upstream dummy slugs from process tubes have contributed to general accelerated corrosion of the tubes, and that the dummy slugs should be replaced in the near future.

Data on graphite samples mined from the H Pile show that the use of undersized process tube blocks is extremely beneficial.

The Navy Test Rig (ANL-140) operated satisfactorily without fuel during September, and fuel loading was scheduled for early October.

Metallurgical studies of uranium which had been reprocessed after previous Hanford irradiation are reported.

The dilatometer for demonstrating the degree of transformation of canned slugs was given extensive field tests during September.

P-10 extraction operations were shifted to the evening and night shifts during the month to avoid operations concurrent with erection of a new 300 foot stack adjacent to the building. Lack of irradiated slugs for processing permitted the production lines to be used for development work during part of the month. Slug manufacture reverted to a one shift operation; new facilities permitted all slugs to be welded at the site during September rather than at 300 Area.

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New basic health standards for P-10-X, involving major upward revision of permissible tritium concentrations, resulted in the immediate conclusion that stripping lines were not required for P-10-X for health considerations, though they may be desirable for economic reasons. Two glassblowers were contaminated in excess of current working limits at Bldg. 108-B, but the exposures were well below the new basic health standards.

In P-10 development work, revision of the first glass line is in progress and procurement of metal pumps to permit the glass lines to deliver product at atmospheric pressure has been initiated. Process studies to permit handling of the back-log of air contaminated product, and continued testing of the furnace system for the metal extraction line represented important investigations. Meantime metallurgical studies of the process have shown the possibility of hydrogen contamination by diffusion inward through the hot furnace walls.

Separations Technology Division

Production testing of methods of shortening time cycles in the Concentration Buildings has succeeded in reducing all process steps below the desired nine-hour cycle, with no significant adverse effects on product yields. Process testing directed toward total elimination of plutonium solution evaporation between Isolation and Purification is still continuing. Production testing of methods of Bldg. 234-5 Purification supernatant recovery and Casting skull recovery is being initiated.

A total of 101 solvent extraction runs was carried out during the month on Redox and Metal Recovery process development, essentially completing all "cold" packed and pulse column studies necessary for firming up previously submitted design specifications. The solvent extraction semi-works units in Building 321 were shut down at the end of the month and placed in stand-by condition for start-up and use in the "S" Division training program scheduled to begin in February, 1951. The major activity of the Development Section in the interim period will be devoted to the preparation of Technical Manuals and Start-Up Operating Procedures for the Redox and TBP Production Plants, as well as to accelerated equipment development studies.

In the research laboratory, BiPO₄ plant studies have confirmed the feasibility of a field proposal to reduce time cycles and process volumes by changing the routine method of reworking the lanthanum fluoride by-product waste slurry, but have not been able to confirm the desired improved removal of iodine from dissolver solution by air-sparging. Continued improvement of results in the studies of "Electroless" plating of nickel on uranium and the arsenate coupling of Redox to metal fabrication has been obtained. The use of MnO₂ in place of Filtrol for Redox head-end scavenging has been further explored. TBP process studies have been directed toward measurements of the performance of various solvent diluents and the properties and mechanisms of reaction products in the TBP systems.

In the 234-5 process development laboratory, a large batch of Casting skulls has been dissolved and readied for recycling to the Isolation process by production test. Methods of precipitating plutonium (IV) oxalate and substitute reducing agents for hydriodic acid reduction of plutonium to the (III) state have been continued in investigation. Preparations are being made to start the autoradiographic examination of finished plutonium cores for coating thickness measurement, as requested by Los Alamos.

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Stack gas filter life-testing has been continued in pilot plant models. The first dissolver off-gas Fiberglas filter and silver reactor to be installed at B Plant have been undergoing mock-up tests in the Bldg. 272-E shops. Revisions for improved performance, indicated by the preliminary tests, are being carried out for completion by mid-October.

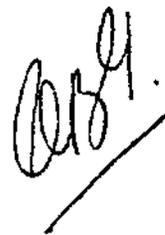
Technical Services Division

The P-10 Program continued to require increasing support from both the Analytical Section and the Technical Shops. In the former, analyses of by-product and product, together with the determination of ionization factors, accounted for the 40-odd mass spectrometric analyses completed during the month on a two-shift basis. Most of the glass shop capacity continued on P-10 work, with all of the experienced glass blowers on a 6-day week. By month-end it was apparent that the Bldg. 101 Shops also would have to begin a 6-day work week because of the load being imposed by the P-10 Program.

The review of the Rosener preliminary plans and specifications for the Radiochemistry Bldg. was completed, and arrangements were made through D & C for certain essential design changes. These will raise the architect-engineer fee about \$3,400, but should result in a construction cost reduction of about \$50,000. Most of this saving will result from the adoption of constant-volume type laboratory hoods. No extension in design time will be involved.

A.E.C. approval was obtained for Project C-394, Part II, which covers preliminary construction work on the Hanford Works Laboratory site, and this field work was initiated by D & C. Preparation was essentially completed on the project proposal covering the design of the Mechanical Development Bldg., and the construction of its shell for use by contractor forces during erection of the laboratory buildings. Technical liaison work continued on the design scoping of the Pile Technology Bldg., and considerable time was spent with D & C in connection with their estimation of this building's cost as presently planned.

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October 9, 1950

PILE TECHNOLOGY DIVISIONSEPTEMBER, 1950VISITORS AND BUSINESS REPORTS

John Mosley, Los Alamos National Laboratory, was here September 1 and 2 for P-10 Consultation.

S. Patton, Jr., Oak Ridge National Laboratory, was here September 5 through 9 to discuss canning of uranium slugs.

H. W. Bousman, General Engineering and Consulting Laboratory, was here September 18 through 22 for P-10 Consultation.

J. Marsden, Knolls Atomic Power Laboratory, was here September 18 through 20 for P-10 Consultation.

D. H. Ahmann and Z. D. Sheldon, Knolls Atomic Power Laboratory, were here September 18 through 21 for P-10 Consultation.

F. E. Crever, D. E. Garr, W. A. Hartman, and D. H. Marquis, General Engineering and Consulting Laboratory, were here September 28 through 29 for P-10 Consultation.

B. B. McInteer, Los Alamos National Laboratory, was here September 28 through 29 for P-10 Consultation.


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

W. W. Koenig visited Allegheny-Ludlum Steel Corp. on September 1; duPont on September 5 and 6; AFMCO, Rustless Division, on September 6; Electro-Metallurgical Corp. on September 7; and International Nickel Co., Inc on September 7; for technical investigation of substitutes for T-347 stainless steel.

J. F. Sullivan visited Fairchild Airplane and Engine Corp., NEPA Division, on September 18 through 20 for consultation and design of special request ORNL-138.

A. B. Carson visited A.E.C., New York, on September 14 and 15 to attend a meeting of the Reactor Safeguard Committee.

H. A. Zuhr visited Oak Ridge National Laboratory on September 11 and 12 to discuss leak detection and vacuum equipment. He also visited Knolls Atomic Power Laboratory and General Engineering and Consulting Laboratory on September 13 through 15 for P-10 Consultation.

A. T. Taylor visited Knolls Atomic Power Laboratory and General Engineering and Consulting Laboratory on September 11 through 15 for P-10 Consultation.

ORGANIZATION AND PERSONNEL

	<u>August</u>	<u>September</u>
Physics Section	42	44
Engineering Section	58	59
Metallurgy Section	33	36
P-10 Project	59	55
Administration	<u>3</u>	<u>4</u>
	195	198

One technical graduate and one physicist were hired for the Physics Section. One engineering assistant and one laboratory assistant terminated.

Dr. G. E. McCullough, formerly of Knolls Atomic Power Laboratory, was hired as section chief of the Engineering Section. Three additional engineers were hired during the month. Two laboratory assistants terminated and one technical graduate on the Rotational Training Program transferred to a new assignment.

In the Metallurgy Section, one engineer transferred to the Technical Services Division and one laboratory assistant and an engineer terminated. Two technical graduates transferred into the Metallurgy Section and one chemist and two metallurgists were hired during the month.

In the P-10 Section, one laboratory assistant terminated and one technical graduate on the Rotational Training Program transferred to a new assignment. Two laboratory assistants changed from the P-10 Project to the Physics Section

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File Technology Division

and one laboratory assistant went into the Metallurgy Section. One field clerk transferred into the Section from Accountability.

One field clerk was transferred from the Accountability Section into Administration.

PILE PHYSICS

DR File Startup

The DR File was initially brought to a critical condition with no water in the cooling tubes and with a dry reflector. The pile was chain reacting with 312 tubes loaded in a pattern 20 tubes wide and 15 full layers high with 12 tubes in the sixteenth layer. Exact critical was found to be 15.78 layers which is the same as was found for E Pile within the probable errors of the measurements.

A determination was next made of the critical size with water in those process tubes which contained metal but with the reflector maintained in a dry condition. Under these conditions, critical was obtained with a rectangular pattern 30 tubes wide and containing 539 loaded tubes. The difference in size between the two critical sizes indicates that the reactivity effect

month end amounted to 70 to 80 inhours. Unusually large amounts of water are being removed from the pile atmosphere by the dryers. No definite regions of reduced power have been found such as have accompanied previously observed process tube leaks. Search for the source of the water was continuing at month end.

A discharge of metal exposed to 600 MWD/ton in the F Pile produced a reactivity loss in agreement with trends established by discharges of lower exposure material.

A normal reactivity coefficient test was carried out at the B Pile and analysis of the results was in progress at month end.

Plutonium Critical Mass Experiments

Modification of the equipment to allow measurements in spherical reactors was completed. A twelve inch diameter sphere, with full water tamper was made critical with a mass of 760 ± 4 grams at a concentration of 50 grams Pu/liter. Criticality was also achieved in a thirteen inch sphere but results of the chemical assay were not available at month end. Plutonium concentration is known to $\pm 0.5\%$ as a result of the assays. This is the largest source of uncertainty in the present experiments.

The twelve inch sphere was critical with 3% less plutonium than an equilateral cylinder of equal volume, in agreement with predictions of calculation.

The effect of the safety tube used in the spherical experiments was determined, as was the control rod strength. Both were adequate to satisfy all safety requirements.

Test Pile

By improvements in the mechanical system of the control rod drive and in the Selsyn system the reproducibility of the rod position has been increased from ± 0.01 inch to ± 0.0005 inch. Since the control rod strength is 1.0 in per inch the in precision has been increased accordingly. Recommendations have been made for additional improvements to forestall a future decline in precision.

Calvanometer performance has been increased by the repair of one galvanometer, a rearrangement of the galvanometers, and replacement of the old scales by new, more legible, ones.

The largest source of error in Test Pile measurements is now the correction for atmospheric pressure changes. This problem was receiving active attention at month end.

Exponential Experiments

The thermal neutron diffusion length in purified graphite has been measured using two different neutron source arrangements. The two values obtained differed considerably and the reason for this difference is being investigated.

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File Technology Division

During the course of this investigation a new foil exposure technique has been developed. In previous practice the foil was exposed flat and then rolled into a cylinder about the counting tube for counting. Foils were damaged beyond usable condition by four or five such rollings and unrollings. In the new technique the foil is placed permanently in a cylindrical graphite holder in which it is exposed and counted. It will thus last indefinitely and can be reused many times. This makes it worthwhile to standardize a set of foils for precision measurements.

Special Request Program

A total of 15 P-10-A slugs and 9 other special requests were charged during the month, while 128 P-10-A pieces and 8 other special requests were being discharged. Seventy-three of the P-10-A pieces discharged were not yet up to the exposure for normal discharge and they will be recharged at a later date. The discharge of the pieces was necessitated by reactivity losses at the B, D, and F Piles. A total of 100 ih has been lost to the P-10 program leaving a total of 1099 inhours.

Nineteen special requests are now on hand awaiting charging.

A tube in the B Test Hole facility of the D File, in which five samples were stuck, has been removed. The samples will be recovered at an early date.

Xenon Cross Section Measurement

Apparatus is being constructed to enable a determination of the variation in the neutron capture cross section of xenon with neutron velocity. The xenon will be produced by the fission of enriched uranium in a chemical form which will permit large evolution of the gaseous fission products. The xenon will then be separated by use of charcoal traps. The apparatus will have to be operated by remote control because of the radiation hazard.

Actual measurement of the cross section will be carried out by use of the neutron spectrometer which is substantially complete and is scheduled for installation at the first shutdown of the DR File.

Shielding

Gold and copper foils have been exposed in a special shielding plug of stepped form and containing no hole installed in place of the usual stepped plug around a test hole. Preliminary analysis of the results shows that radiation streaming in cracks, which invalidated much previous shielding work, is absent in the present arrangement.

Instrument Development

The magnet coil has been wound for the magnetic spectrometer and machining of the iron assembly is nearly complete.

Development is proceeding on the dynamic pulse counter. A completely magnetic suspension for the disk assembly has been fabricated and tested. Its performance was superior to the partial magnetic suspension previously tested.

**DECLASSIFIED
WITH DELETIONS**Reactivity

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

	<u>B Pile</u>	<u>D Pile</u>	<u>F Pile</u>	<u>H Pile</u>
In rods	71 in	16 in	55 in	144 in
In xenon poison	500	472	541	650
In Special Requests				
Experimental stopped plug was installed in the #20 position at the D pile September 4. This plug has large spiral flutes through which boron steel would be introduced in emergency as a third safety. Before the plug was installed the drain slot at the bottom of the rod hole was plugged with bismuth.				
In bismuth	123	94	109	53
In plant assistance	20*	45	7	5
In dummy columns	0	17	28	53
In overall coefficient	<u>-279</u>	<u>-290</u>	<u>-296</u>	<u>-180</u>
Total cold, clean reactivity	838	793	847	744

* This item of 20 inhours is due to the loading of depleted uranium as provided in Production Test 105-330-P. It was inadvertently omitted in the July and August tabulations. The B Pile total for those months should correspondingly be increased by 20 inhours.

The B Pile lost 10 inhours, the D Pile 59 inhours, the F Pile 43 inhours and the H Pile 17 inhours during the month. The loss at D was attributed to water in the pile atmosphere while one-half of the F Pile loss was occasioned by a sizeable discharge of 600 MWd/ton metal. The H Pile loss was associated with an increase in the H-10 loading. Remaining losses were due to normal metal discharges.

ENGINEERINGD Pile Nozzle Replacement

All stainless steel nozzles at the D Pile were replaced with aluminum-silicon alloy nozzles during the latter part of August and the first week of September on the basis of experimental work which had shown that the severe corrosion of the ends of the process tubes was due to the galvanic couple between the aluminum and stainless steel.

Uranium Slug Stability

A program to expose 40 tons of standard slugs to 600 MD/Ton is nearly complete. Thirty-one tons have been discharged without incident. Measurements of 200 of these slugs have shown no instability due to the increased enrichment.

Process Tube Corrosion

A total of 30 tubes of the H pile were inspected to determine if corrosion is occurring in the inlet portion of the tubes where there are no dummies. Corrosion products were found in tubes in all zones, with the greatest incidence occurring in the smaller orifice zones. There were no signs of any

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Four process tube bores at the DR Pile were oversized to increase the front fringe zone tube block graphite temperature to demonstrate the feasibility of this method in preventing or reducing the rate of damage in the cooler fringe zones.

Fabrication and testing of equipment for controlled temperature exposure of graphite was continued.

Nuclear Annealing

Damaged graphite subjected to nuclear annealing at a pile exposure temperature of 335°C continued to show improvement after an exposure of about 210 calendar days. The physical expansion, X-ray spacing, and thermal conductivity properties showed comparable improvement.

Graphite Thermal Conductivity

The thermal conductivity gradient along the three 4-foot sections of the filler layer keyway bars from the D Pile was completed. Values of K range from a minimum of 0.0125 cal/cm/sec/deg C at a position opposite tube rows 94 and 95, to a maximum value of 0.0248 cal/cm/sec/deg C opposite tube row 81. These results are in excellent agreement with the reported X-ray crystal expansion gradient, and confirm the previous conclusion that the maximum damage regions exist in the cool fringe zones of the pile.

Stored Energy

Additional total stored energy data were obtained from the Bureau of Standards on samples mined from metal process tube positions at the D Pile during the last 1 1/2 years; these data show conclusively that the increases in carbon dioxide concentration from 40% to 100% during this period were effective in annealing the graphite in the central zone of the pile, even in the relatively cool bore regions. A sample obtained in October, 1949, had 618 cal/gm stored energy and a sample obtained in May, 1950, 447 cal/gm. This reduction in stored energy is considerably greater than could result from the temperature increase alone and represents a very definite gain in safety of operation of the piles.

Graphite Oxidation

Tests are in progress to determine the effects of progressive oxidation on the mechanical properties of graphite to set an upper limit on allowable burnout.

Calculations based on available literature are in progress to determine the rates of the various reactions involved in the carbon dioxide, carbon monoxide, graphite equilibrium. Calculations have been made which show the possible effect of stored energy on the equilibrium constants of the system. The presence of stored energy in the graphite constitutes a change in heat content from that in the standard state; this was found to affect the values of the equilibrium constants for the system by large amounts, for example, at 500°C, the CO equilibrium concentration is changed from 2% to 18%.

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The design of the "in-Pile" controlled temperature test hole heater has been completed and essential gas analysis equipment has been ordered. Tests of the graphite sample containers, the circulating pump, the materials of construction, and heat transfer are in progress.

KAPL Fuel Element Tests

Beta slug R-6 was discharged from Tube 1077-F on September 13 after an exposure of 33 days. Current irradiations are:

<u>Slug</u>	<u>Tube</u>	<u>Current Exposure (days)</u>	<u>Scheduled Exposure (days)</u>
R-1	1071-F	181	234
R-5	0865-F	101	224

KAPL Alpha Slugs

SR-40-7-18, which was the last of a series of Alpha slugs from KAPL, was opened and shipped. Considerable difficulty was encountered because the platinum sample capsule was bound in the B¹⁰ container.

KAPL Creep Test

Front face shielding slugs and a special nozzle have been completed for use with this test. A charging trough for the front face overhead crane is virtually complete. Slugs and instruments are scheduled to arrive early in October.

ANL Naval Reactor Fuel Element Test

The pressure tube with a foil holder and dummy test section was installed in the "A" Hole of the H File on September 4 to 8. The equipment was first checked using process water and then (after completion of hydrostatic tests, scram circuit tests, and erection of shielding) was changed over to recirculating distilled water on September 15. Operation was satisfactory during the remainder of the month at _____ and at temperatures which were varied

METALLURGY

Uranium Billet Casting

A concerted effort to increase melt plant yields and metal quality resulted in an increase of about 8% in billet yield (ratio of good billets produced to furnace charge) in August over that for July. Gains resulted principally from (a) reduction in stopper-rod breakage through loading the crucible with the heavy part of the charge at the bottom, and general exercise of care in charging; (b) improvement in pickling and handling procedures for TX and TXB material; and (c) increasing to two minutes the waiting time between pouring the casting and adding the cap. The effect of these improved procedures upon metal quality will not be known until the billets have been processed and tested for reactivity.

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Tests designed to determine the causes of reduced reactivity of both Hanford cast and virgin uranium have been delayed for the past three weeks while the test pile is being overhauled.

Uranium Canning

Thirteen autoclave failures occurring since September 13 were examined to determine the cause of failure. Four were due to penetration through the side wall; the remainder were caused by poor brazes underlying a fault in the weld. The program of training welding operators to reject slugs with poor brazes has been augmented, and emphasis has been placed upon improving operational techniques which are conducive to the production of poorly brazed slugs. In addition, inspection practices have been reviewed and made more rigorous to decrease the likelihood of slugs with leaky jackets being accepted.

A method of effecting further recovery of tin from the crystalline wastes of the present recovery process has been developed on a laboratory scale and is reported in Document HW-18663.

The discovery that many regular production slugs are undergoing dimensional changes during canning to a degree different from that reported in PT-313-107-M, Supplement A (Document HW-17062), which was the basis for the reduction of machined slug dimensions (Document HW-12072), has led to investigations of the causes for and the effects of such variability. The suspicion that excessive diameter increases might be contributing to the incidence of non-seat rejects was allayed by making comparative diameter measurements (after stripping) on 24 non-seat reject slugs and 30 rejected for other causes. No significant diameter difference was found between the two groups of slugs. (Document HW-18905).

Uranium Metallurgy

In connection with the investigation of the recent decrease in uranium reactivity, an orientation study was made on a number of slugs from four lots of rods. There was considerable variation in the degree of orientation within the lots but there was no difference between lots. However, all lots were found to have significantly less orientation than metal rolled in early 1949. Dilatometric data on pieces from a given lot correlated directly with the x-ray data. The results indicate that slugs machined from this metal on the average would undergo a smaller diameter increase during canning than the more highly oriented metal rolled earlier.

Metallographic data are being obtained on the small Battelle rods rolled various amounts at temperatures of 300 to 600°C. These data will be included in the report covering the orientation of these rods.

Wet chemical analyses of the uranium -0.3 atomic per cent chromium rod fabricated at Battelle from a 25 pound melt show a considerable amount of segregation. Based on earlier metallographic work, the variation in composition is sufficient to produce a variable grain size in the rod. Grain structure of rod adjacent to the areas from which the chemical samples were taken will be checked.

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DECLASSIFIEDDilatometry

Tests were continued on the production dilatometer installed in Building 313. The effect of variables such as time in bath, temperature of bath, and method of stirring were studied. At 200°C, it was found that the time in the bath had to be greater than six minutes.

The initial statistical test on testing and sampling variables in the laboratory dilatometric test for slugs has been completed. It was found that: (1) slug length within the production tolerances was unimportant, (2) time in the bath was insignificant after about five minutes with the types of oil and stirring used, (3) higher temperatures gave greater expansions and greater differences in expansion between transformed and untransformed metal, and (4) the amount of expansion was significantly affected by the degree of transformation. With the completion of this test, a statistical test to establish the relationship between expansion and degree of transformation will be run.

KAPL Assistance to Hanford

No further tests have been made using the Metals Comparator for checking the degree of transformation of canned uranium slugs since this method was previously proven to be unreliable. Further checks will be made, however, to verify the ability of the Metals Comparator to measure the percentage transformation in bare slugs.

Studies of the effect on the melting point by adding a 70% Mg-30% Al mixture to the standard aluminum - 3.5% lithium alloy is now nearly complete. Liquidus and solidus curves have been obtained for compositions up to the eutectic temperature and preparations are now underway to determine the lengths of time required for melting in a test designed to simulate the conditions at Hanford.

Radio Metallurgy

Several Plaster of Paris replicas that were made of a badly bowed Class 5 slug that stuck in the 105-F pile revealed that the warp occurred on one-half the slug; the remaining half appeared to be straight. Warp measurement could not be made in the underwater warp gage because of the excessive bowing. This slug will be held for future metallographic examination.

A report discussing the method for obtaining tensile and hardness samples from radioactive aluminum tubing was issued as Document HW-18785.

An experimental set-up to evaluate the use of leaded-glass (6.4 g/cc) in a direct viewing microscope has been made. A 10" long cylinder of Penberthy glass was placed between lens and the lens focused upon diatoms. Photographs taken at 600x showed imperfections that were discernible in the glass but it is felt that better glass might be obtained for direct viewing. Such a system with 4" of EDF optical glass (50% PbO) produced a very clear photograph of the same diatom at 600x.

Methods for determining the electrical resistance of radioactive metals was investigated. A Kelvin bridge has been obtained for set-up experiments that will measure resistances in the order of 100 ± 0.1 microhm.

A sample Truarc retaining ring has been received and tested as a possible means of holding cell plugs in their ports. Some minor modification of the plug and the Truarc ring are necessary to achieve proper holding and release of the plugs.

An air blower has been installed on the mock-up cell to make ventilation experiments.

The investigation to determine the cause of the failure of the slug found in tube 0569-B in November, 1943, has revealed that there was poor brazing of the Al-Si around the cap. Several small holes were found in the weld that connected to the improperly brazed areas so that water was admitted to the slug and corrosion products were formed to force the cap from the slug.

P-10 Alloy

Twenty-one pairs of cold P-10-A slugs have been analyzed on separate gas lines to check the reproducibility of hydrogen analyses. One of each pair was run on the 300 Metallurgy line and the other on the 100-B line. While the range and average of the analyses made by 100-B and 300 Metallurgy were about the same, there was no correlation between the results on the individual pairs. The variation of the data on pairs is similar to that found on duplicate samples run on separate lines at 100-B.

Observations made in connection with the operation of the 300 Metallurgy line indicate that diffusion of hydrogen through the wall of the furnace tube may be responsible in part for the variability of analyses. It has been noted that: (1) blank runs on tubes containing no sample are inconsistent, (2) hydrogen can be obtained from a slug remachined from the residue of a previous run, (3) hydrogen can be obtained on a repeat run of a previous day's sample, (4) hydrogen can be obtained from an empty, hot furnace tube previously degassed but cannot be obtained from a cold furnace tube, and (5) the rate of hydrogen evolution from a hot, empty tube is increased from two to five times by spraying water on the furnace tube. The apparatus will be redesigned to eliminate the possibility of hydrogen diffusion through the furnace tube wall to determine if this is a significant factor.

An investigation of the corrosion rates of 347 stainless in P-10-A alloy at various temperatures was initiated. This work was prompted by a failure of a furnace tube on a cold extraction line when the temperature inadvertently rose above that normally used.

Examination of 305 reactivity data on P-10-A slugs indicated that metal currently being produced is within the established limits with regard to uniformity; hence the present method of producing P-10-A billets is apparently satisfactory.

Corrosion

Corrosion tests on stainless steels T-309 SCB, T-347 and T-304 ELC in liquid, vapor and condensing vapor environments of RAW-neutralized (HW-5 Flowsheet) under boiling conditions, have been completed. Under the test conditions these materials showed corrosion rates $< .03$ mils penetration/year.

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Kennometal K-501 (tungsten carbide, Pt binder) and Haynes Stellite L-605 (Co base) were exposed to Redox streams I/X, I/AC and I/AF and to 60% HNO₃ under static conditions at room temperatures. Low corrosion rates, < 0.19 mils penetration/year were recorded although some greenish corrosion product was observed on the K-501 specimen. L-605 when exposed to boiling 60% HNO₃ exhibited high corrosion rates on the order of 46 mils penetration/year.

Stainless steel T-420 was exposed to RAF (EW-3 Flowsheet) under stagnant conditions at room temperatures and a corrosion rate of 3.2 mils penetration/year was recorded. Under dynamic conditions, severe corrosion was encountered.

A test program is under way to evaluate the corrosion resistance of T-347 CbTa, T-304 F1C and T-321 stainless steels to Hanford Process Streams and several standard corrosion tests.

A report, Corrosion of Redox Waste Storage Tank Construction Materials, was issued as Document EW-13595.

Special Requests

The following Special Request pieces were processed and/or tested for pile loading during September:

ANL 160	8 process tube pieces	ORNL 109	8 test hole samples
ANL 166	2 process tube pieces	ANL 156	8 process tube pieces
ANL 173	8 process tube pieces	ANL 157	1 process tube piece
WAPD 103	4 containers of instruments for use in in-pile experiments.		
ORNL 134	1 process tube piece (leaker, to be returned)	ANL 158	3 process tube pieces

Miscellaneous

Crushing and thermal shock tests were made on some pressed nickel-boron carbide balls being considered for third safety control of the piles. The balls withstood a water quench from 500°C and required a load of 2400-3600 pounds for crushing.

A number of steel and uranium samples nickel plated by a chemical deposition process were examined metallographically.

Samples from two uranium rods fabricated from reprocessed (by Redox methods) metal were studied metallographically in the "as rolled" and "canned" conditions. Initially the metal had a cold worked structure and after canning the structure was similar to normal uranium canned by the triple-dip process. The amount of inclusions was no greater than is present in normal metal; however, the hardness was about ten points Rockwell B greater and the metal less dense than normal uranium. The orientation of the "as rolled" rods was different than normal in



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that a strong duplex pattern in which both the (110) and (020) poles tended to lie parallel to the rod axis was observed. Generally the (110) orientation has never been as pronounced as the (020) type of orientation in production rod. The average individual slug reactivity was much lower than that for normal uranium but fell within the range calculated for the U²³⁵ depletion ascribed to this material.

Activity on the Pile Technology Building is currently centered on assistance in the preparation of a project proposal. Data on space, personnel, and equipment are being tabulated and information on the metallurgical program proposed for the building is being prepared.

P-10 OPERATIONS

Extraction Operations

During the month, two glassblowers assigned to construction and repairs on the production equipment were contaminated in some manner to 35 μ c/liter and 20 μ c/liter. The MPC for personnel is currently stated as 17 μ c/liter. These men were reassigned to non-product work on 10/2/50 to permit their biological decay to levels below the MPC.

One non-standard incident of a potentially hazardous nature was experienced during the month. A mercury filled manometer was broken and an operator received contact with the contaminated mercury. Urinalysis on samples taken from the operator on the two days following the incident were not significant in terms of personnel contamination.

The first samples for the determination of composition by mass spectroscopic methods were taken from production extractions and delivered to the analytical group during the month. Analysis of product fraction is still reported on the basis of the Regnault density and calibrated ion chamber method.

The facilities (equipment and manpower) of the production extraction group were placed at the disposal of the development group on 9/25/50 since the backlog of irradiated slugs had been reduced to a planned minimum on that date. The next production operations are planned for the week of October 16, 1950.

Extraction operations, and all other work involving quantities of P-10 product greater than 1 cc were transferred to 4-12 and 12-8 shifts on 9/11/50 to permit erection of the 300-foot stack during daylight hours without protective equipment. At month's end, the stack had been pushed up to 187.5 feet.

of product fractions were made to Los Alamos during the month.

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The purity of the 33 batches of product extracted during the month is as follows:

Slug Manufacturing Operations

During the month, 3174 slugs were machined, canned, welded, and sent to the 300 Area for inspection and testing.

The revised monthly production goal, set at 1250 slugs per month, has necessitated a reduction of the manufacturing force to five men. Four of the ten people previously assigned to this work were transferred to other locations in the Pile Technology Division, and one man terminated voluntarily.

The status of P-10-A slugs in 300 Area as of 9/25/50 is as follows:

To be tested	5358
Tested, OK for Pile Use	1130
Tested and held for additional testing	<u>761</u>
Total	7749

A severe corrosion condition was encountered again in the vacuum pump used in the P-10-A casting process. Previous measures, installed for the correction of this difficulty, have been proven to be inadequate. Other revisions to the vacuum equipment are planned to eliminate the corrosion problem on the pump.

P-10 DEVELOPMENT

P-10 Health Standards

A recent revision of the basic health standards for P-10 by the local Health Instrument Divisions has increased the concentration of P-10 in the body from 20 μ c per liter to 65 μ c per liter at the permissible limit. For plant personnel exposed eight hours per day, the permissible atmospheric concentration of P-10 has been increased from 1×10^{-6} μ c/cc to 40×10^{-6} μ c/cc; a reasonable working limit becomes 4×10^{-6} μ c/cc. The permissible daily stack emission of P-10 has been increased from 30-150 curies per day to 30,000 curies per day, providing that a major part of the latter is released batchwise; a reasonable working limit of releasing uniformly several hundred curies per day of P-10 has been established.

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The new permissible concentrations contain two safety factors: (1) all P-10 released to the atmosphere is considered as the oxide or is considered as converted to oxide in the lungs, conditions which are probably not true; P-10 oxide (which is used as the basis of all calculations) is more hazardous than P-10 gas by a factor of 10 to 100 and (2) the elimination of P-10 from the body is assumed to be at the same rate as ordinary water; recent experiments have indicated that the biological half-life of P-10 is smaller than that of ordinary water. On the other hand, the new permissible concentrations assume no incorporation of P-10 whatever in body tissues, an assumption which still must be verified.

The new health standards (which at the present writing are applicable only to P-10-X and have not as yet been formally approved for current P-10 operations) have a profound effect on the P-10 production program, the Hanford P-10 development program, and the supporting activities of the Knolls Atomic Power Laboratory and the General Engineering and Consulting Laboratory. The stripping of P-10 from by-product streams of the production operations is no longer required for health hazard control; stripping for economical reasons remains to be evaluated but this can be developed in a logical manner, not as an emergency program.

Experimental Extraction Line

During the month, the glass experimental extraction line continued to evaluate the use of ion chambers to measure the P-10 content of by-product gases. The ion gages are working satisfactorily on synthetic P-10 mixtures between 5.0% and 0.5% P-10. Excellent checks are being obtained with ion chambers whose electrodes are close together and with chambers whose electrodes are far apart but which have substituted a wire grid for the normal outside cylindrical electrode. With P-10 concentrations of approximately 0.1%, anomalous results are being obtained so that further checking is required.

A number of thermocouple gages have been calibrated to be placed on the production lines downstream from the palladium windows such that the efficiency of separation and the efficiency of Toepler pump operation can be measured.

Extraction Furnace Testing

To date, two simulated runs have been made in the test furnace. In the first run, a normal charge of unirradiated P-10 slugs was processed; in the second run, a layer of lead was melted in the pot before the charge of unirradiated P-10 slugs was added. Both melts were completed satisfactorily; sectioning of the processed pots is underway. Much more information must be obtained before the furnace system can be considered acceptable.

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The first revised glass production line should be completed October 9, 1950. This first line will not include such development items as the flexible metal bellows (to reduce stresses between large component parts) and the Toepler pump external level sensing coils since these items have not been developed in time. Later lines (of the five to be modified) will include these designs. As of this date, the two items mentioned above are considered to be adequately developed such that procurement and construction is underway.

Procurement of ten metal Toepler pumps has been initiated. These pumps are a General Engineering and Consulting Laboratory design and will be fabricated by the Hanford Technical Shops. One pump will be installed on each of five glass lines to permit filling with P-10 to atmospheric pressure a Los Alamos designed, metal shipping container. Existing glass Toepler pumps can discharge gas only at one-third of an atmosphere pressure.

During the last week in September, no P-10 production was made due to the unavailability of irradiated feed slugs. During this period and during the first two weeks of October, numerous plant assistance type tests are being performed in the three available production lines. These include:

- a. A test of furnace conditions and gas evolution rates and volumes using P-10 slugs, lead slugs (for heat transfer), and magnesium-aluminum slugs (for lowered melting point).
- b. A test of the leakage of helium through the palladium valves using a leak detector.
- c. A test of the gas evolution characteristics of slugs exposed to a level of approximately

The development of a system to remove air from approximately 5-10,000 units of air contaminated product is underway using methods suggested by the Knolls Atomic Power Laboratory. Cold tests are being performed at Hanford using air and hydrogen and employing both palladium black and uranium beds. Early in October, the feasibility of this system will be indicated following which an addition will be made to an existing glass production line to permit recovery of air contaminated product. Following purification in this alternate system, the product will be passed through a palladium valve before bottling and shipment to Los Alamos; air contaminated product cannot be passed directly through the palladium window due to the detrimental action of oxygen and nitrogen on palladium.

Analytical Developments

The analysis of P-10 in the by-product gas remaining after separation (at 400°C. through a palladium window for a reasonable period of time) has been performed on the mass spectrometers at Los Alamos and at Hanford, using uranium adsorption at the Knolls Atomic Power Laboratory, and using diffusion through a palladium window and measurement of diffused product with a thermocouple gage also at the Knolls Atomic Power Laboratory. The results are somewhat

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erratic and must be interpreted in many cases since the various methods are sensitive to P-10 existing in certain forms and not in others and since certain analyses cannot differentiate between hydrogen and P-10. The best current summary indicates that separation through palladium will leave P-10 in the by-product

Additional analyses will be obtained.

To assist in determining the thoroughness of separation, a sample of by-product gas will be injected directly into a Kanne Chamber and the gas recirculated until equilibrium conditions result. In this manner, the same instrument which monitors P-10 concentrations in air will be used to measure the total quantity of P-10 released to the atmosphere.

Anomalous results have been obtained with the Hanford mass spectrometer. Submission of samples has been stopped until the instrument can be calibrated more carefully, until auxiliary facilities can be provided, and until the sampling system can be reviewed and corrected where required.

Project P-10-D

Project P-10-D, "Hot Development Facilities", is proceeding on schedule.

At month end, the erection of the 300-foot stack was approximately at the 200-foot level. Concrete work on the stack should be completed by October 19, 1950. During the period from October 22, 1950, to November 11, 1950, no P-10 will be produced due to a shortage of P-10 slugs; during this period, ventilation revisions will take place and the tie-in to the new stack will be made.

The air monitoring (Kanne Chamber) system for the third floor of Building 108-B has been moved to its final position on the fourth floor, freeing space in the projected permanent mass spectrometer room. Temporary housing has been erected in the latter space to house the emission spectrometer when it arrives from the Knolls Atomic Power Laboratory. The mass spectrometer cannot be permanently relocated until interfering ventilation exhaust fans are removed.

Design has started on Project P-10-D, Part II, "Additional Hot Development Facilities". This project will include all the development facilities not included in Project P-10-D, Part I, such as the stripper line (if economically desirable), additional office space, instrument shop, mechanical development shop, etc.

Project P-10-X

With the revision in health standards, the necessity of including stripping lines in the P-10-X Project has been questioned. Without stripping lines, the possibility of installing P-10-X facilities in Building 108-B definitely exists. Temporarily, scoping of Project P-10-X in Building 108-D has been terminated and scoping of an installation in Building 108-B has started. Feasibility of this transfer should be indicated in October, 1950.

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KAPL Research and Development

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The Knolls Atomic Power Laboratory has indicated the feasibility of stripping P-10 from by-product gases

During the remainder of 1950, the Knolls Atomic Power Laboratory will continue with the research and development of such a stripping line and will work with the General Engineering and Consulting Laboratory in evaluating engineering feasibility. An economic study of the desirability of providing a stripping line then can be made.

During the month, troubles were encountered in the use of the emission spectrometer as an analytical tool. Analyses were not reproducible and readings on the instrument would drift several per cent; it is believed that these effects are due to self-adsorption of the gas and to gas being liberated from the glass during excitation. Corrective measures are being undertaken. The emission spectrometer arrival at Hanford has been moved back to late October or early November, 1950.

Delivery of the buoyancy balance at Hanford was delayed until early October, 1950, to permit personnel to analyze the by-product samples sent to Schenectady from Hanford.

G.E. and C.L. Supporting Activities

The construction of the metal extraction line by the General Engineering and Consulting Laboratory is proceeding on schedule.

The helium recirculating system for operation of the Toepler pumps is proceeding under low priority and may not be finished in time to accompany the line proper to Hanford on December 1, 1950. However, this recirculation system is not required for initial cold run-in of the line.

The test model of the metal Toepler pump is undergoing a life test; no trouble has been encountered after 300 hours operation.

The separator, including the palladium coil, has been fabricated.

The evacuation system has been pretested and has been found satisfactory.

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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.

<u>Inventor</u>	<u>Title</u>
W. T. Kattner	Recovery of Tin from Melts of Eta Bronze Crystals and Entrained Tin. (Document No. HW-18663).
D. C. Pound	Cylindrical Graphite Permanent Foil Holder.
J. T. Carleton G. E. Duvall	Heating of Fringe Graphite by Dispersion of Fissionable Material.

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

WKW: jr

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October 10, 1950

SEPARATIONS TECHNOLOGY DIVISIONMONTHLY REPORT
SEPTEMBER, 1950VISITORS AND BUSINESS TRIPS

W. G. Stockdale and J. A. Suddeth, Oak Ridge National Laboratory, visited the Hanford Works Sept. 18 and 19 for consultations on Stack Gas filtration.

L. Silverman and A. Rosano of Harvard University conferred with the Division on Sept. 19 and 20 regarding air filtration.

H. K. Jackson, A. C. Jealous, R. B. Lindauer, and E. C. Stewart of Oak Ridge National Laboratory visited here from Sept. 26 through 29 for TBP process consultations.

L. L. Burger, H. H. Hopkins, R. B. Richards, and W. E. Roake attended the American Chemical Society Meeting at Chicago from Sept. 4 through 8.

Argonne National Laboratory was visited by L. L. Burger and H. H. Hopkins from Sept. 6 through 8 and R. B. Richards on Sept. 7 for TBP process consultations.

F. J. Leitz, R. B. Richards, W. E. Roake, and F. W. Woodfield attended a SFRU conference at the Knolls Atomic Power Laboratory on Sept. 11 and 12.

F. W. Woodfield attended an A.I.Ch.E. Meeting in Minneapolis on Sept. 13.

The General Engineering & Consulting Laboratory was visited by F. J. Quinn from Sept. 6 through 15 and R. A. Carlson from Sept. 25 through Oct. 6 for testing of the 432 Project.

J. T. Stringer visited Proportioneer's, Inc., Providence, R.I., on Sept. 7 and 8 for TBP equipment consultations and G.E. & C.L. on Sept. 11 and 12 for Long-range Bearing Program conferences.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	<u>August</u>	<u>September</u>
Administration	2	2
Special Assignment	1	1
Research Section	37	37
Development Section	90	90
Process Section	<u>27</u>	<u>28</u>
	157	158

Development Section: One Chemical Engineer was terminated and one Technical Graduate was added to the rolls as a new hire. One Chemical Engineer was promoted to Asst. Group Head in the Chemical Engineering Group.

Process Section: One Metallurgist was added as a new hire.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

The metal solution storage tanks used for batch make-up (6-1) have been recalibrated for use with manometers for weight determination. The manometer was put into use at T Plant with Run T-10-09-H35. Although it is too early to determine the effect of this installation, it is expected that better control in making up batches will result. The 6-1 Tank manometer will be put in service at B Plant in the near future. The second-cycle Product Solution Tank (19-4) at T Plant was also recalibrated. The new calibration and manometer were put into service with Run T-10-09-H-25.

Concentration Buildings

Production Test 224-B-5, designed to shorten the lanthanum fluoride by-product precipitation time cycle, has been completed through the formal items. Poor and erratic decontamination during the latter part of the test, however, has led to postponement of conclusions. A sufficient number of runs have been processed under standard procedure to indicate that the higher activity of material leaving the Concentration Building is due to factors other than production test conditions.

The Metathesis cell (F Cell) modification to permit reworking of the Metathesis waste through a spare centrifuge and tank has been completed at T Plant. Use of this equipment started with Run T-10-09-H-25. The average loss for twelve runs was 0.02%, while the average for the T-10-08 Series, using only one centrifuge, was 0.06%. The best cycle obtained was 7 hours.

Isolation Building

The F-1 solution has in the past been determined by chemical methods. Starting with Runs B-10-09-H-4 and T-10-09-B-5, this determination has been made by counting methods. The average material balance through the Isolation Building

for twenty-three T Plant runs processed in Cell 2 with chemical P-1 assay was 100.9%. The twenty-three runs following with radio P-1 assay averaged 97.6%. In Cell 3 processing B Plant runs, twenty-three runs with chemical assay averaged 99.4% while the twenty-four runs following averaged 98% with P-1 radio assay. Although the appropriate isotope corrections were made, these results indicate further study is required.

Purification and Fabrication Building

Production Test 231-10, Supplement A, (HW-18659) has been completed in the 234 Building. In accordance with this test, AT solutions in the 231 Building were evaporated to the point where one gram of product was contained in 3.03 ± 0.15 grams of solution. Fifty Sample Cans containing this material were processed in the 234 Building for this test. A report on this Production Test has been issued, recommending that the 231 Building adopt this limited evaporation as a standard operating procedure.

Production Test 234-1 (HW-14215) was started in September with X-10-9 Lot 5. This production test includes Recovery Area procedures for the destruction of oxalic and hydriodic acids in oxalate supernates. During the evaporation of the first lot in accordance with this production test, large amounts of solids appeared in the evaporator when the volume was approximately three to four liters. Although no caustic backup from the scrubber had been reported during the processing of this lot, analyses indicated that the solids were sodium nitrate. Consequently, this first evaporation will not be considered in evaluating Production Test 234-1.

Production Test 234-2 (HW-19005) was prepared and ready for approval at month's end. This production test outlines procedures for the laboratory dissolution of casting skulls, peroxide precipitations on the resulting solution in 231 Building, and routine processing of this material in the 234 Building.

The run books for the 234 Building were revised during September. No process revisions were incorporated but greater operating efficiency should result in the use of the new run books. Data recording in the new run books is required only at times when the operator has had to remove his hands from the operating gloves to proceed with the next step.

The average reduction yield for the month of September was 97.5%. Yields for June, July, and August were 98.6, 98.4, and 98.2%, respectively. Nearly 50% of the reductions made in September were made without turnings. Yields for runs in which turnings are omitted are generally calculated to be lower than when they are included, due to the arithmetic of the calculation.

A copper gasket used with the reduction bomb gave way during the processing of Run Y-10-9-10. A rapid and violent escape of slag and vapors from the inside of the bomb occurred at the time the gasket failed. This run was composed of three batches of fluoride and contained no recycle. The button weight indicated a 92.5% yield, but the button had a rough surface on top and appeared to have small bits of slag imbedded in the upper surface. While this occurrence was being investigated, succeeding runs indicated that abnormally vigorous reactions were taking place. Reduction bomb lids appeared to be slightly eroded, but no gasket failures occurred. A review of the operating procedures and an investigation of all raw materials and equipment used for this operation

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were made. During the course of the latter investigation, it was found that some valves on the argon line leading to Hood 10 had been left closed at the time new argon cylinders were attached. This may well have resulted in air remaining in the bomb after the purging operation. Early Los Alamos reports state that the Reduction reaction is quite vigorous when carried out in an air or nitrogen atmosphere. When the argon line valves were opened and line purged, no indication of vigorous reactions were noted in subsequent reductions.

The average c/q summation for the month of August for light element impurities, excluding contributions of carbon and oxygen, was 0.41. Corresponding figures for the months of May, June, and July were 0.38, 0.48, and 0.48, respectively.

Sketches for revision of some of the parts of the trimming tool in Hood 22 have been prepared. The "S" Division has written a work order to have these revised parts fabricated in 272-Z. It is expected that the incorporation of these revised parts will make the trimmer usable. Hand trimming has been used for some time and results in occasional nicking of the primary plane.

REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Solvent Extraction Studies: General

Studies completed during September in an 8-inch diameter RA Pulse Column confirmed the basis for the TBP Metal Waste Recovery Plant RA Column specifications. A total of 101 solvent extraction studies was completed during the month in the 3-inch and 8-inch diameter pulse columns operated as RA, RC, and RO contactors under simulated TBP Metal Waste Recovery plant conditions using "cold" uranium to evaluate various ranges of feed composition, plate geometry, and operation.

Nine Redox process studies were carried out in a 5-inch diameter IID Simple Column and in an 8-inch-5-inch diameter dual-purpose IB Column. These studies indicated that the column design specifications in HW-14572 are adequate for processing up to 3.75 short tons of uranium per day (instantaneous rate) and that the substitution of ferrous ammonium sulfate-sulfamic acid for ferrous sulfamate does not affect uranium waste losses in IIDW or in IBP by a significant amount.

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One de-entrainment study using 2 ft. of "York" wire mesh in a 16-inch diameter vapor-stripping column indicated no significant improvement over 1-in. by 1-in. Raschig rings.

Highlights of new information from the above studies are reported below:

An 8-inch diameter pulse column was operated as an RC Column employing plates which were polythene-faced on the lower side. Results of this "hybrid" plate performance were:

1. Total flooding capacity of the RC Column employing the above plates was 900 ± 100 gal./((hr.)(sq.ft.)), giving the same capacity as 0.079-in. diameter holes in stainless steel plates in the 3-inch I.D. pulse column.
2. H.T.U. values of 0.9 ft. were obtained at 1/2-inch. and 1/4-inch amplitudes using the above plates at volume velocities from 400 to 800 gal./((hr.)(sq.ft.)) with uranium waste losses of less than 0.02%.
3. H.T.U values of 1 ft. with uranium waste losses of less than 0.1% (reported in Chemical Development Section August Report, HW-18857) have been attained in the 8-inch pulse column with a "standard" cartridge (0.125-in. diameter holes, 23% open, 2-in. spacing). Design information based on RC studies using "hybrid" plates in a 1-in. diameter glass pulse column and in an 8-in. diameter stainless steel pulse column is too scant to permit development of sound production plant RC Column specifications.

Operation of the 8-inch pulse column employing a standard cartridge (0.125-in. diameter holes, 23% open, 2-in. spacing) as a simple RA Column confirmed the linearity of increase in H.T.U. with increase in column diameter. Highlights of the RA performance were:

1. H.T.U. values increased less with increased volume velocity at 1-in. amplitude than at 1/2-in. or 0.7 in. amplitude with a value of 1.3 ft. between 1000 and 1500 gal./((hr.)(sq.ft.)).

A 3-in. glass pulse column has been operated at conditions comparable to those employed in 8-in. and 16-in. pulse columns using R&FS feed prepared to simulate supernate from BiPO₄ process first extraction cycle waste, soft sludge, TBP-HW #4 Flowsheet composition, and TBP-HW #4 Flowsheet composition spiked with coating removal solution. One study was made in an RA-RC pass to test the effect of elevated column temperature. A series of RC studies was made to evaluate the use of H₂SO₄ in RCX. The column has also been used for further scouting studies with perforated plates arranged in cartridges, as indicated below:

- a. "Standard" plates: 54 plates spaced 2-in. apart, 9.1-ft. "effective" packed height, 1/8-in. holes, 23% perforated area.
- b. Large wall clearance: Standard plates as above except that plates were turned to 2-7/8-in. diameter allowing a 1/16-in. thick annulus or approx. 8% of the column cross section around the edge of the plates.
- c. 4-inch spacing: 28 plates spaced 4-in. apart, 9.4-ft. "effective" packed height, 1/8-in. holes, 23% perforated area.

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- d. "Nested" plates: 135 plates spaced 1/4-in. apart, 9 plates per nest, 15 nests, 5-in. spaces between nests, 1/8-in. holes, 23% perforated area, "effective" packed height 9.0 ft.

The above new types of plates have been tested to supplement earlier attempts made to develop pulse column geometries giving either substantially improved uranium extraction or increased capacity relative to the above "standard" plates. New information is summarized below:

1. Processing of simulated underground stored supernate, (0.08 M UNH, 0.3 M PO₄⁼) at an R_AF_S:R_AX ratio of 1:1 gave waste losses of more than 4% to R_AW. A larger solvent-to-feed volume ratio is required to process this type of feed.
2. Processing of an R_AF_S of composition calculated to simulate HNO₃ dissolution of soft sludge (Na₄UO₂(CO₃)₃ to NaUC₂PO₄ = 1:1, wt. basis) gave an H.T.U. of 0.9 ft. and a waste loss of less than 0.01%.
3. Operation at 0.7-in. ampl. and 86 cycle/min. frequency gave R_A H.T.U. values and waste losses slightly greater than those obtained at 1-in. ampl. and 70 cycles/min., confirming observations made on the 3-in. R_A Pulse Column.
4. Addition of coating removal solution, equivalent to 100% of the coating material on uranium slugs, as dilution water in an R_AF_S preparation resulted in an increase in waste loss from 0.07 to 0.14% and in H.T.U. from 1.15 to 1.25 ft. in R_A operation at 1500 gal./(hr.)(sq.ft.), 0.7-in. ampl., and 86 cycles/min. frequency. No unusual emulsification was noted in this run.
5. Heating R_A and R_C feeds to 110 ± 10°F. gave no change in solvent extraction performance, indicating that some saving in cooling R_AF and concentrating R_CU may be achieved in production plant operations if no R_A Column plate corrosion problem is incurred by using hot feed.
6. The use of H₂SO₄ in R_CX instead of HNO₃ indicates that optimum H.T.U. and waste loss may be attained at 0.01 M H₂SO₄, or equivalent optimum H.T.U. and waste loss may be attained using 0.01 M HNO₃. No advantage is evident to make the use of H₂SO₄ more attractive.
7. Use of "nested" plates (above) gave no significant change in capacity or H.T.U. in R_A or R_C Column operation.
8. The effect of 1/8-in. clearance on the diameter of standard plates in the 3-inch diameter R_A and R_C Columns was to increase waste losses approximately four-fold to 0.13 and 0.15%, respectively, at plant operating conditions. In a 20-inch or 30-inch diameter plant column the effect of a 1/8-in. clearance on the plate diameter would probably be negligible, since the annular opening around the plates would be approximately 1% of the column cross section.

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A 5-inch diameter column packed with 15 ft. of 1/2-in. by 1/2-in. Raschig rings was operated as a IID Column simple extraction section under Redox HW #1 Flowsheet conditions (HW-13320). New information from these studies is summarized below:

1. The IA simple extraction section flooding capacity determined at 2200 ± 200 gal./hr. (sq.ft.), sum of both phases, in 1/2-in. by 1/2-in. Raschig rings was duplicated for IID conditions at 2200 ± 200 and 2300 ± 200 gal./hr. (sq.ft.), using ferrous sulfamate and ferrous ammonium sulfate-sulfamic acid additives, respectively.
2. H.T.U. values (over-all water-film basis) for the IID simple extraction section with either ferrous sulfamate or ferrous ammonium sulfate-sulfamic acid were determined as 1.3 to 1.4 ft. at 1000 to 2000 gal./hr. (sq.ft.) in 1/2-in. by 1/2-in. Raschig rings.

The 8-in.-5-in. combination dual-purpose IB Column was operated under Redox HW #1 Flowsheet conditions to evaluate the effect of a feed distributing and mixing cone on column capacity and to determine the effect of ferrous ammonium sulfate on uranium lost to the IBP stream. The column was packed with 1/2-in. by 1/2-in. Raschig rings: 2-ft. in the 8-in. diameter extraction section and 15-ft. in the 5-in. diameter scrub section. The mixing cone, when used, was installed in an 8-in. diameter unpacked section above the IBF feed inlet. New information from these studies follows:

1. The total flooding capacity of the IB Column scrub section packed with 1/2-in. by 1/2-in. Raschig rings is reduced from 2600 ± 300 to 2000 ± 200 gal./hr. (sq.ft.) when a feed mixer and distributor of design similar to the "Cone Distributor" in Kellex Dwg. H-2-8904 is used. With or without the cone, flooding started at the top of the scrub section and propagated downward.
2. No significant difference in waste losses of uranium to IBP resulted when ferrous ammonium sulfate-sulfamic acid solution was substituted for ferrous sulfamate.

Construction and Maintenance - 321 Bldg.

The 16-in. column was removed and the 5-in.-8-in. combination IB Column was installed for final Redox studies. The new column was equipped with differential pressure taps. The IBF mixing cone was installed for the IB runs after Redox IID operations were concluded in the same column. A space heater was installed in the tank farm trench to avoid winter freeze-ups. The restricted storage area and the solvent storage area east of 321 Building were relocated to allow for new construction in that area.

Maintenance work on the Demonstration Unit consisted mainly of items of a routine nature, such as pump repacking and gasketing, valve repair, and routine instrument maintenance. A broken coupling on the ROX pump was replaced and repacking of the Roth pump was necessary during runs at elevated temperatures because of softening of the polythene. Steam lines were connected to the heat exchangers on the Fisher pumps to permit heating of the feeds for runs at elevated temperature. Three different cartridges were installed in the 3.0-in. pulse column.

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Scale-Up Unit maintenance items consisted of routine pump repacking, instrument maintenance, and repair to the O-5 WF recorder. The O-1 agitator bearing was replaced and the MCF controller system overhauled. The 10-in. top was installed on the 8-in. column. The 8-in. and the 16-in. pierced plate cartridges were dismantled and stored. Raschig rings were removed from the stripper above the aqueous distributor and four 6-in. sections of "York" stainless mesh "de-entrainment" packing were installed. The aqueous feed inlet was relocated immediately below the "York" packing.

Life testing of the 8-in. pulse generator continued throughout the period without incident except for installation of the 10-in. top on the 8-in. column.

Bldg. 321 Operation

The training program for "S" Division personnel has been discontinued until February, 1951. All "S" Division personnel have been returned to their Division.

TBP solvent extraction studies in the Demonstration Unit were completed with a series of runs in the 3.0-in. pulse column under various operating conditions employing three different cartridges. Flushing is in progress preparatory to placing the unit in a stand-by status.

Scale-Up Unit operation consisted of a series of runs under various operating conditions on the TBP flowsheet. Following this series, hexone was reintroduced to the system and studies on IB and IID operation in the Redox flowsheet were made. A series of long IA and IC-type service runs was made for uranium recovery and shutdown of the unit is now in progress.

Equipment Development

Submerged Pump No. 2, a G.E. & C.O. turbine pump suspended on a two-foot torque tube containing one process fluid-lubricated bearing of 60% carbon - 40% Fluorothene "B" at its lower end, was returned to life-testing in RAX (12.5 vol. per cent TBP in Shell Spray Base) solution following a complete overhaul and replacement of worn parts resulting from one year's operation in 2.0 M $Al(NO_3)_3$ solution.

Submerged Pump No. 3, a Roth Model 147 turbine pump suspended from a 10-foot vertical torque tube and driven by a drive-shaft with Stellite #6-coated journals supported on two process fluid-lubricated Graphitar No. 2 bearings, has completed the equivalent of 3.5 months' continuous operation in intermittent service with water at a variety of flow rates and discharge heads as required by the flow meter testing operation to which it is coupled.

Submerged Pump No. 4, a Roth Model 147 turbine pump suspended from a 10-foot torque tube containing two water-lubricated Graphitar No. 2 bearings and upper and lower seals of Graphitar No. 30A (stationary) and Stellite (rotating), to isolate the water-filled torque tube from the process fluid, operated for 2.5 months pumping an aqueous solution of Rhodamine "B" dye to permit measurement of leakage inward to the torque tube. After 56 days, the shut-off head decreased from 237 to 210 feet. Examination disclosed slight wear (1.5 mils) at the outboard head dam. Shortly after reassembly the inward seal leakage rose sharply (overflowed the seal fluid addition burette) and the discharge at shut-off diminished 14%. Examination revealed that the lower bellows had come into contact with the drive shaft, which caused failure of the bellows.

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Roth D-93 Turbine Prototype Pump, driven by a 10-ft. vertical shaft guided by two process fluid-lubricated bearings consisting of a boron carbide bushing-to-Stellite journal (lower bearing) with a 2-mil. diameter clearance and Graphitar No. 2 bushing-to-stainless steel journal (middle bearing) with a 2-mil. diameter clearance, has operated uneventfully in water-saturated hexone for 19 days at 1750 rev./min., discharge pressure of 70 p.s.i.g. (206 ft.), total flow of 7.92 gal./min. and a bearing flow (both) of 0.7 gal./min.

Peerless TD Prototype Turbine Pump, driven by a 10-ft. drive-shaft support on Graphitar process fluid-lubricated guide bearings and equipped with a Peerless dual seal employing boron carbide seal faces flooded with water under a static head of 25 ft., has completed 15 days of uneventful operation pumping water-saturated hexone at a flow of 5.5 gal./min., discharge head of 147 ft. The shut-off head was remained constant at 214 ft. Average seal leakage over the test period has been 6.8 ml./hr.

Peerless 4"-IA, a deepwell-type turbine pump with boron carbide bearings and with a Peerless double seal redesigned to incorporate Stellite No. 12-to-Graphitar 30A seal faces operating in a static reservoir of water, has operated 10 days pumping a simulated neutralized, concentrated RAW solution at a controlled temperature at $82 \pm 2^\circ\text{C}$.

Schutte & Koerting Prototype Rotameter. The testing and evaluation was completed and the conclusions with respect to this instrument's deficiencies were transmitted (letter dated 8/15/50 from R. B. Richards and R. E. Smith to D. E. Irons). The transmitting rotameter and Foxboro recorder-controller were returned to the vendor for his further development.

Foxboro D/P Cell Orifice Meter. The mechanical testing to simulate plant handling was repeated, following a complete check of the instrument for maximum mechanical tightness coupled with cementing all possible nuts and screws with Duco cement.

Recalibration in the hydraulic test stand followed, which indicated no loss of accuracy in excess of the limits of accuracy of the calibration procedure. Extended operation (20 days) with water has revealed a drift of +5% from the initial zero setting.

Experimental studies with the Agile welding torch for fabricating polyethylene have shown that (1) solid butt welds can be made on sheets up to 1/8-inch thickness, (2) for butt welds on thicknesses greater than 1/8 inch, the sheet must be beveled, (3) lap welds are limited to sheets 1/8-inch thick or less. Lapping of sheets of polyethylene to flame sprayed polyethylene is possible but reduces the bond strength of the flame-sprayed polyethylene in the area adjacent to the weld.

Two 5-in. x 5-in. x 8-in. concrete blocks jacketed with 16-ga. black iron and flame-sprayed with unmodified polyethylene have been immersed in 20% HNO_3 , using a conductivity meter to determine current flow between steel jacket and container. After 14 days, there has been no change in the conductivity, which is 2.4×10^7 ohms.

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Two Redox scavenger runs employing fast-precipitated MnO_2 , calculated to be present at 6.5 g./l. in dissolver metal solution, were made in the Bird 12-inch solid bowl centrifuge, operated to give 1650 x gravity. The first run employed agitation in the feed tank to suspend the MnO_2 and a feed rate equivalent to an average bowl hold-up time of 9.6 minutes. The second run omitted agitation in the feed tank and employed a 20-minute hold-up time. Clarities on the first run varied from 11.5 to 59.5 per cent relative to light transmission of water at 645 millimicrons wavelength. The clarities in the second run varied from 32 to 86.5. The effect of hold-up time at 1650 x gravity in a laboratory cup-type centrifuge was demonstrated by raising the clarity of a semi-works sample from 42 to 87.5 per cent after a 40-minute hold-up.

Process Chemistry

The path of chlorine in the vapor from the RCU concentrator in the nitric acid recovery and concentrator unit was simulated by operation of an all glass Brauns bubble plate column equipped with plate sampling facilities. There was no detectable chloride within the fractionator and material balance data indicate all of the chloride entering in the vapor phase feed (0.007 g./l. Cl, 20 g./l. HNO_3) was in the fractionator overhead. There was some variation in the composition of the vapor feed during the 31-hour run; a second run with provisions for a constant composition vapor feed will be made.

Conversion of concentrated RCU (B.P. = 127°C.) to UO_3 by addition of small increments to a large amount of UO_3 maintained at the decomposition temperature (210°C.) is being studied in an electrically heated autoclave. In the first run 100 grams of RCU concentrate were added rapidly to 380 grams of UO_3 . The resulting mixture overloaded the agitator which was found to be jammed with large cemented masses. In the second run, 177 grams of RCU concentrate were added dropwise to 400 grams of UO_3 initially at 220°C. The temperature was raised to 260°C. during the 2-hour decomposition period. Lump formation was not apparent during this period. Examination of the mass after 16 hours cooling without agitation revealed numerous hard masses. The ratio of U: NO_3 and HCl insolubles (U_2O_8) is being determined. Based upon the results to date, it is apparent that the time cycle is too large for a continuous-type process. The effect of more intense agitation, higher temperatures, and smaller ratio of RCU to UO_3 will be investigated.

SEPARATIONS PROCESS RESEARCH

Removal of Iodine from Dissolver Solution

Further attempts to remove iodine from simulated dissolver solution by air-sparging tracer solutions have met with little success. Addition of 0.375 M $NcNO_2$ or 0.01 M ferric iron to iodide-spiked simulated dissolver solution did not aid in the subsequent removal of iodine by air-sparging. There is some indication that iodine removal by air-sparging is more effective from solutions containing more HNO_3 than dissolver solution and from dissolver solution to which sulfuric acid has been added. It is recognized that under the latter conditions some further dissolving of the uranium heel occurs. These observations may be of some interest if sparging can be started before dissolving is complete.

Preliminary attempts to remove iodide from simulated dissolver solution by scavenging agents have been made. With an initial iodide concentration of 0.005 M, lead iodide was not effective as a carrier. Cuprous iodide, precipitated when cupric sulfate was added to iodide-spiked simulated dissolver solution containing an excess of sulfite, removed 80-90% of the active iodine.

Bismuth Phosphate Concentration Process Studies

The proposal to recycle the lanthanum fluoride by-product cake rework solution to the bismuth phosphate by-product precipitation step, rather than to the lanthanum fluoride product precipitation step as currently done, has been further studied using plant solutions. In runs simulating plant conditions through the lanthanum fluoride product precipitation step, plutonium losses obtained with the proposed modification were very nearly the same as when the current flowsheet was followed. Thus, the results obtained to date indicate that no appreciable increase in plutonium losses need be anticipated if the proposed modification were incorporated in the concentration process flowsheet.

Neutralization of Distillate for Cribbing

The tendency of limestones to become "passive" (i.e., coated with insoluble materials) on extended contact with dilute acid has been studied by passing alternately 0.01 and 0.1 M HNO_3 through small beds of the crushed stone. Of three samples studied, two became "passive" after only a few throughputs of the 0.1 M HNO_3 , such that subsequent pH adjustment of 0.01 M HNO_3 was inadequate. The third sample ("Aragonite," Utah Calcium Products Co.) showed less tendency to become coated. After ca. 64 throughputs of 0.1 M HNO_3 , the pH of the effluent was still 6.3 when 0.01 M HNO_3 was passed through the crushed limestone (sized to $>1/4"$ $<3/8"$) at about 40 ml. per minute per liter of bed.

"Electroless" Nickel Plating Studies

An increase in plating efficiency has been obtained by rather extensive equipment alterations. The lifetime of the plating bath has been nearly doubled by using an enclosed plating bath which has facilities for continuous pH control, reagent addition and filtration.

Steel pieces have been nickel-plated for metallurgical examination of the plate itself. Layering of the plate (although mechanically quite strong) is still observed when the plate is formed either in enclosed alkaline or acidic baths, although an improvement in homogeneity of the plate has been observed.

The temperature of the plating bath has been increased from 80° to 90°C. where the plating rate is 1.6 times as great.

234-5 Research - Plutonium(IV) Arsenate Process

The formation of an insoluble lanthanum compound during the precipitation of Pu(IV) arsenate using F-10-F material has been found to be responsible for the failure of the metal reduction run reported earlier (EW-18380). Small-scale laboratory experiments have indicated that lanthanum contamination can be avoided by proper choice of precipitation conditions. When good lanthanum - plutonium separations are obtained with F-10-F material, it is found that at least two hours stirring at room temperature are required to reduce the

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plutonium loss to a few per cent. Further, the plutonium loss is greater than that observed for pure plutonium nitrate solutions. In the attempt to discover the constituent responsible for this difference in behavior, precipitations of Pu(IV) arsenate have been made in the presence of Fe^{+++} , La^{+++} , K^+ , and SO_4^{--} . No significant differences have at present been attributed to any of these ions. Further work is being continued to find means of lowering the plutonium loss and increasing the rate of precipitation.

MnO₂ Scavenging of Hanford Dissolver Solution

The adsorption of zirconium and niobium from dissolver solution by MnO₂ has an inverse hydrogen ion dependence. One scavenging of dissolver solution with 6.5 g/l MnO₂ removes 99.3% and 98.6% of the zirconium and niobium activities, respectively, when the original acidity is -0.33 M HNO₃ (final acidity ca. -0.10 M). At an initial acidity of +0.35 M HNO₃, 90.7% and 87.6% of the zirconium and niobium activities, respectively, were scavenged by 6.5 g/l MnO₂. Intermediate adsorptions were found within the above acidity limits.

Although it is not anticipated that two successive MnO₂ precipitations would be made upon a single batch of dissolver solution, a recycle procedure for a second MnO₂ precipitate has been developed. The recycle consists of dissolving the MnO₂ in excess H₂O₂, destroying the excess H₂O₂ by heat, returning the resulting manganese (II) solution to a fresh batch of dissolver solution containing permanganate (MnO₂ then precipitates), and then destroying the excess permanganate with chromium (III).

With an excess of chromium (III), some permanganate is reduced to manganese (II), such that the amount of MnO₂ formed is less than that anticipated from the permanganate content alone. Since some MnO₂ is formed when dissolver solution is heated in the presence of permanganate (i.e., the ruthenium removal step), it is important to know the permanganate content before the addition of chromium (III) in order that large excesses of chromium (III) can be avoided; otherwise, the amount of MnO₂ formed is uncertain. It should be noted that these same difficulties are encountered with any reducing agent that might be chosen, since MnO₂ is, in itself, a strong oxidizing agent.

TBP Decontamination Studies

Extraction and scrub studies to determine decontamination as a function of diluent in TBP extractions were extended to include AMSCO-149-92-Br and Standard Oil Company Special Base Oil as diluent. The studies were performed in the same manner as those reported previously (HW-18740-H) involving CCl₄, Shell Spray Base, Gulf BT, and Stoddard Solvent as diluents. Gross beta decontamination through an extraction and three scrubs was about the same for the Special Base Oil as for the four diluents previously reported. Decontamination with AMSCO-149-92-Br as diluent was poorer by a factor of four than with the Special Base.

Since AMSCO-149-92-Br contains large amounts of unsaturates and aromatics, one might have expected a larger difference in decontamination than was observed. On the other hand, in extraction and scrub studies in which various pure hydrocarbons representative of aliphatic unsaturates, cyclic unsaturates and aromatics boiling in the kerosene range were added to 12-1/2 volume per cent TBP - CCl₄ previous to contacting, no deleterious effect on decontamination was observed.

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Dibutyl phosphate, present in the organic phase (12-1/2 volume per cent TBP - CCl_4), does have a pronounced effect on decontamination. Gross beta decontamination through an extraction and three scrubs was decreased by factors of 100, 4,000, and 10,000 when dibutyl phosphate was present to the extent of 0.01, 0.1, and 1.0 volume per cent, respectively. These results emphasize the need for excluding traces of dibutyl phosphate from TBP extractants.

Chloride Removal from RAW

Studies have been concluded on the satisfactory removal of chloride (to less than 0.05 g/l Cl) from the RAW stream of the TBP metal recovery process by peroxy sulfate. At 55°C. the chloride was found to be oxidized quantitatively to chlorine, no chlorate or perchlorate being formed after three hours of contact. At the boiling point (105°C.) the decomposition of peroxy sulfate in chloride-free RAW is rapid and complete in 15 minutes for 0.08 M peroxy sulfate. At 55°C. the decomposition rate is lowered such that a 0.04 M peroxy sulfate solution is only 10 to 20% decomposed in three hours. The presence of stainless steel was found to have little or no effect upon the decomposition rate of peroxy sulfate.

Butyl Acid Phosphate Chemistry

The distribution E_2^0 of DBP between 15% TBP in AMSCO 125-90W and water was found to vary with the concentration of DBP in the range of 0.14 to 6.2 g/l DBP, such that a log-log plot gives a straight line of slope 1.6. The solubility of water in DBP at 25°C. was found to be 32 g/l. The distribution of UNE (5 g/l UNE) was measured between aqueous 3 M HNO_3 and AMSCO 125-90W containing 10 to 25 g/l of DBP. A plot of $\log E_2^0$ (UNE) versus \log (DBP) gave a slope of 2.0, which indicates that two DBP units react with each UO_2^{2+} and, since the organic soluble compound $\text{UO}_2/\text{OPO}(\text{OBU})_2/2$ is known, is consistent with the possibility that DBP exists as a monomer at these concentrations. The latter is somewhat surprising, since the viscosity of dibutyl phosphoric acid (99.1 wt. % DBP, 0.9 wt. % water) was found to be 54 centipoises at 25°C., compared to 3.3 centipoises for TBP. This difference in viscosity could be explained by polymerization of the DBP through hydrogen bonding, similar to that found in carboxylic acid. However, the extent of this polymerization appears to be a function of the concentration of the DBP, since the molecular weight of DBP as measured in benzene by the freezing point method indicated molecular weights of 410 and 272 for 1 M and 0.1 M DBP solutions, respectively, compared to a formula weight of 210.

Nitration of TBP - Diluent Extractants

RAW (15% TBP in AMSCO 149-92 Br) was contacted with aqueous 3 M nitric acid and 0.01 M nitrite at 60°C. for five hours. Some nitration occurred as measured by nitrogen analysis on the treated RAW, since the nitrogen content was reduced only to 0.31 from 1.17% by washing once with 10% carbonate and once with 10% caustic. The nitrated product prior to washing had the appearance of the "red oil" observed by the Chemical Development Section. Further work includes attempted nitration of other diluents and of pure TBP, and infrared measurements of the decomposition products.

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234-5 PROCESS DEVELOPMENT

After the skulls produced in the remelting and casting operation in the 235 Building have been stored for a considerable length of time, some of the metal is changed to a green powder. The identity of the green powder is not known with certainty and the chemistry of its formation also is not known. It is believed, however, that the green material is formed by the reaction with water vapor in the air, and is either the hydroxide or a hydrated oxide. Less than forty per cent of a sample of green powder was dissolved by boiling in 16 M HNO₃ for one hour. When 0.01 mols of HF were added to the hot solution (250 ml), a very vigorous reaction took place. Complete dissolution of the portion of the powder previously not dissolved took place within a minute. On the basis of the Pu assay of the final solution and the weight of the original sample, the molecular weight of the starting material was found to correspond approximately to Pu(OH)₄ or PuO₂·2H₂O. The ease with which the green powder can be dissolved suggests that it may be desirable to convert the skulls to this form before dissolution in a recovery process. Experimental work will be carried out in this direction.

Thirteen skulls from the 235 Building were dissolved in boiling 16 M HNO₃ - 0.04 M HF to give a solution which will be used in a production test to determine the suitability of the 231 Building as a recycle point for this material. Recovery based on the weight of Pu in solution has averaged 90.3% of the weight of skull material charged. Since ten of the thirteen skulls were oxidized to an appreciable extent, periodic additions of HF to the hot nitric acid were made instead of adding the entire amount at the start of the dissolution. The results indicate that a shorter time may be required to dissolve the skulls by this procedure; this method may also lead to less corrosion of the vessel used for the dissolving.

Very short corrosion tests were made to determine the effect of the boiling 16 M HNO₃ - 0.04 M HF mixture on Pyrex glass and 25-12 Cb stainless steel. These tests were made in the absence of Pu, and the penetration rates are, therefore, probably higher than if skull material were present. Pyrex has a penetration rate of almost an inch per year based on the weight loss during the first half-hour of immersion of a glass coupon in the boiling acid mixture. The 25-12 Cb container holding the coupon and acid had a penetration of almost one-half inch per year during the same interval. This is based on the area in contact with the liquid and an iron analysis of the mixed acids. It was also assumed that the iron content of the alloy was 60%, and the amount of alloy dissolved could be based on the iron content of the solution.

Similar corrosion tests in which the HF was replaced by sodium fluosilicate (16 M HNO₃ - 0.04 M Na₂SiF₆) did not give significantly different penetration data for either pyrex or 25-12 Cb. It had previously been found that the addition of sodium fluosilicate to concentrated nitric acid was as effective in the dissolution of skull material as using HF.

Pu(IV) oxalate was precipitated on a five-gram scale under conditions which should give minimum solubility of the oxalate. A precipitate with a bulk density of 0.5, which settled rapidly, was obtained by making the strike at a temperature of 80-90°C. with the slow addition of oxalic acid. The supernatant solution, however, was found to contain 0.64 gm/liter of Pu; this represents a loss of almost three per cent. This loss is almost ten times greater than that obtained from Pu(III) oxalate. The Pu(IV) oxalate was readily converted to fluoride, which gave satisfactory yield of metal.

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Separations Technology Division

Studies by the Analytical Research Group showed that Pu(VI) and Pu(IV) in HCl solutions could be reduced by hydroxylamine hydrochloride to Pu(III) in twenty minutes (EW-18344). Laboratory-scale (5-gram) tests were made with plutonium(IV) nitrate solutions at acidities of 0.5 M, 1.0 M, and 1.5 M with hydroxylamine hydrochloride. Hydroxylamine nitrate would have been used but was not available. After twenty minutes of agitation, the color of the solution in each case had changed from green to blue, the characteristic color of Pu(III) solutions. The oxalates were then precipitated by the procedures used when HI is the reducing agent. The bulk density of the settled precipitates was between 0.40 and 0.45, but the rate of settling was quite slow. Whether the slow settling rate is caused by the presence of the chloride will be determined by experiment.

A review of the stoichiometry of the reactions involved in the direct hydro-fluorination of Pu(III) oxalate to PuF₄ indicates that a volume ratio of O₂/HF of 1:4 is required. This is a considerably larger ratio than was used in the experimental work previously reported. It is therefore planned to install a new rotameter in the oxygen line in the laboratory equipment that will permit the required oxygen/HF flow rate to be maintained. It is hoped that the use of the higher oxygen/HF ratio will lead to further shortening of the time cycle for the conversion of oxalate to fluoride.

STACK GAS DISPOSAL

The third filter life-test has been continued. Check determinations were made on the 3 and 6 lbs./ft.³ packings of the 115-K Fiberglas operating at a superficial velocity of 25 ft./min. These units required 39 and 26 grains per square foot of filter area, respectively, for a pressure drop increase of 4.0 inches of water. The results are in good agreement with the values obtained with previous test filters - 38 grains/ft.² for the 3 lbs./ft.³ packing and 25 grains/ft.² for the 6 lbs./ft.³ packing.

The Fiberglas media were packed in the second dissolver off-gas filter. The filter formulation is listed below:

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Separations Technology Division

<u>Filter Bed Strata</u>	<u>Type Fiberglass</u>	<u>Bed Depth</u>	<u>Packing Density</u>
Clean-up Layer	AA	1 inch	1.2 lbs./ft. ³
Third Layer	115-K	20 inches	6.0 lbs./ft. ³
Second Layer	115-K	10 inches	3.0 lbs./ft. ³
Bottom or First Layer	115-K	12 inches	1.5 lbs./ft. ³

The first silver reactor and Fiberglass filter, to be installed in the B Plant dissolver cell, have been placed in mock-up test in the 272-E Building. It was determined that the original position (top of the reactor column) of the thermohm activating the current supply to the electrical heater resulted in extremely poor temperature stability throughout the reactor column. This was caused by an excessive temperature lag across the packing. A high degree of thermal stability has been obtained by relocating the thermohm to the plenum chamber at the bottom of the reactor. At a gas flow rate of 100 cfm, approximately 8 hours are required to bring the reactor assembly to the operating temperature (200°C.).

KAPL ASSISTANCE TO HANFORD

KAPL-1 - SFRU Redox Studies

During the month, six additional Redox runs were carried out in SFRU. The first two of these runs, which were the last of the original scouting series established earlier, were studies of both ozonization and Filtrol scavenging, as applied to the A.N.L. Flowsheet. Long induction periods for ruthenium ozonization were again indicated, so $KMnO_4$ catalyst was added after 23 hours, resulting in 85% ruthenium removal at the end of 30 hours total time. Considerable difficulty was experienced with the IA Bank plugging with Filtrol leaking through the scavenging step.

The third run, a repeat of the KAPL Hybrid Flowsheet, again gave unexplainedly higher losses than other flowsheets, although much lower than the original run. The last three runs were part of a new series recently programmed (see Document No. HW-18887) to study the head-end treatment problems. In these runs, 93% of the ruthenium was volatilized in 2 hours when $KMnO_4$ catalyst was added at the beginning. The trials of MnO_2 scavenger in these runs as a substitute for Filtrol gave no increased zirconium decontamination over the ORNL flowsheet blank run, but evidence was obtained that the MnO_2 precipitation was incomplete.

KAPL-2 - ANN Recovery Studies at SFRU

Two final "hot runs" were carried out on the one-gallon scale ANN Recovery Unit. First and second cycle decontamination factors of 100 and 10, respectively, were demonstrated. This project is being closed out and a final report is being written.

KAPL-3 - Separations Chemistry - Redox

Item A-1 - Head-End Studies

KAPL Chemistry Division Redox head-end studies during the month consisted of direct assistance to the ozonization and scavenging problems in the SFRU runs. Laboratory studies indicated that when as little as 5% unozonized feed was

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blended with 95% ozonized feed the extraction of the remaining ruthenium was adversely affected beyond that predicted by simple dilution. Studies of permanganate reduction by manganous ion showed no dichromate reduction to be caused. Considerable decontamination improvement over SFRU ozonization performance was demonstrated in the laboratory with samples of SFRU feed solution.

INVENTION AND DISCOVERY STATEMENT

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

<u>Inventor</u>	<u>Title</u>
H. B. Hopkins	"Electroless" Nickel Plating of Uranium and Plutonium Metal.
R. L. Moore	Separation of Uranium and Aluminum in the "25" Process by Batch Extraction with TBP.

R. H. Beaton

 R. H. Beaton
 Separations Technology Division

Date: October 2, 1950

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TECHNICAL SERVICES DIVISIONSEPTEMBER 1950VISITORS & BUSINESS TRIPS

S. B. McInteer, of the Los Alamos Scientific Laboratory, spent September 28-29 with the Analytical Section consulting on mass spectrometer analyses.

Business trips of Technical Services Division personnel were as follows:

C. G. Stevenson attended the Conference of the Pacific Northwest Library Association at Portland, Oreg., on September 1-2.

J. A. Parodi spent September 1 through 14 at the Knolls Atomic Power Laboratory in connection with the spectrochemical analysis of P-10 product. On September 15 he visited the Leeds and Northrup Co. at Philadelphia, Pa., to discuss the application of emission spectrometry to Hanford problems.

G. J. Alkire and H. H. Van Tuyl attended the American Chemical Society meeting in Chicago, September 4-7. They spent September 8 consulting on analytical chemistry at the Argonne National Laboratory.

L. F. Wardell spent September 7 at the Knolls Atomic Power Laboratory discussing Redox and TBP analyses.

L. M. Knights attended the meeting of the American Chemical Society at Chicago on September 4-7. He visited the Argonne National Laboratory on September 8, and the Knolls Atomic Power Laboratory on September 11 and 12, discussing analytical chemistry and laboratory design at both sites.

F. W. Albaugh attended the American Chemical Society meeting at Chicago on September 4-7. He spent September 7 and 8 at the Argonne National Laboratory, and September 11-12 at the Knolls Atomic Power Laboratory, discussing analytical and process chemistry problems. He visited the Oak Ridge National Laboratory, September 13-14, to discuss analytical and process chemistry and to inspect new facilities. September 15 was spent attending a special conference called by the Atomic Energy Commission and held at the Argonne National Laboratory.

P. M. Thompson spent September 5-22 visiting various sites throughout the East, studying methods of IBM Card Programmed Calculator operation, and reviewing recent advances in the field of large scale digital computers. The sites visited included General Electric at Syracuse and Schenectady, the International Business Machines Co. at New York City, the Remington Rand Co. at Philadelphia, Pa., and the A.E.C. installations at Oak Ridge and Los Alamos.

R. J. Hale spent September 18-21 with the Leland S. Rosener Co., in San Francisco, discussing the preliminary plans and specifications for the

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Radiochemistry Bldg.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	<u>August 31</u>	<u>September 30</u>
Analytical Section	307	303
Engineering Section	70	69
Information Group	75	73
Statistics Group	17	18
Administrative	<u>3</u>	<u>3</u>
Totals	472	466

The Analytical Section employed three Technical Graduates, and had one laboratory assistant return from a leave of absence. Four shift supervisors were transferred to the S Division. Four laboratory assistants resigned and one went on a leave of absence.

The Engineering Section added one Engineer in the Equipment Design Unit, by transfer from the Pile Technology Division. One general clerk and one stock-room helper resigned. The Information Group employed one clerk and one motor messenger, and had one clerk return from a leave of absence. Three clerks resigned and two went on leaves of absence. The Statistics Group employed one clerk.

One additional rotational trainee was assigned to the Analytical Section. A total of six such Technical Graduates are now assigned to this division; all are in the analytical laboratories.

ANALYTICAL CONTROL

Work Volume Statistics

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

	<u>August</u>		<u>September</u>	
	<u>Samples</u>	<u>Determinations</u>	<u>Samples</u>	<u>Determinations</u>
Process Control - 200	4,933	15,392	4,419	13,334
Process Control - 300	528	888	545	1,147
Water Control - 100, 700	715	2,730	715	2,903
Redox & TBP Programs	4,931	6,527	3,704	5,207
Process Reagents	2,028	2,448	1,952	2,344
Essential Materials	185	846	180	653
Special Samples	2,413	12,943	2,052	12,966
Stack Gas Filters	<u>15</u>	<u>39</u>	<u>20</u>	<u>36</u>
Totals	15,748	41,813	13,587	38,590

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100 Areas Water Control

The Naval Reactor Project (P-13) began the submission of water samples from test runs for determination of corrosion products and absorbed gas. Except for a greater radioactivity level and larger absorbed gas content than was originally expected, these analyses proceeded without incident.

Monthly analyses of boiler and feed waters from the 200 East, 200 West and 300 Areas were initiated as an accuracy check for the Power Division on their daily analyses. Also initiated this month was the analysis of river water samples for the H. I. Development, Site Survey Group in connection with their program to determine streaming, mixing and dilution effects in the river.

200 Areas Control

The precision of the results of the analysis of the Canyon Bldg. starting solution (6-3-MR), the Isolation Bldg. starting and final solutions (P-1 and AT, respectively), and the 234-5 Bldg. starting solution (P-4) may be summarized as follows:

<u>Samples</u>	<u>Precision (\pm %)</u>		
	<u>Expected</u>	<u>July Average</u>	<u>September Average</u>
6-3-MR	1.58	1.55	1.49
P-1	2.39	1.52	2.25, 1.81*
AT	1.98	1.67	2.21
P-4	2.51	2.39	2.79

* In the Isolation Bldg. Laboratory, the chemical assay for plutonium in the P-1 sample was discontinued on September 12 and replaced by the radio-assay direct evaporation method (CA-6a). The precision of $\pm 1.81\%$ was determined from the data obtained in the first two weeks' use of the new method, while the precision of $\pm 2.25\%$ was based on the last three weeks of the chemical assay. It is planned to institute a radio-assay for plutonium in the AT sample as soon as the second ASVP counting instrument installation is completed. The chemical assay of the AT sample will be retained for shipping purposes.

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The colorimetric determination for iron in P-1 samples from the Isolation Bldg. Cells 2 and 3 was discontinued concurrently with the change in analytical procedure for assaying the plutonium content where the iron is used to correct the plutonium assay. It is estimated that a total of 67 man-hours/month will be saved by this step. The iron determination will continue to be made on all P-1 samples from Cell 4, where the "heat-kill" production test (231-11) is being performed.

As part of the investigation of uranium carry-through in the separations process, ten samples of the product cake solution after extraction (5 each from B and T Plants) were analyzed for uranium. The average of the ten samples indicates that 3.55 pounds of uranium per run carries through at this step.

The percent range limits for checking plutonium determinations on process samples, as recommended by the Statistics Group in document HW-18582, were

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made effective during the month in the 200 Areas Control Laboratories. The new range limits are as follows:

<u>Sample</u>	<u>No. of Discs</u>	<u>Upper Limit % Range</u>
6-1-MS, 6-3-MR	4	4.20
7-4-P, 8-4-P	2	2.47
14-4-P, 17-4-P	4	2.98
19-4-P	4	2.98
7-3-WS, 8-3-WS	2	15.47
13-4-BP, 16-4-BP, 18-4-BP	2	11.93
14-3-WS, 17-3-WS, 19-3-WS	2	23.98

<u>Sample</u>	<u>No. Titrations</u>	<u>Upper Limit % Range</u>
P-1	2	4.80
AT	2	3.13
P-4	2	5.13

The following summary lists the sampling and analytical procedure changes made effective in September in the T and B Plants; the time savings are based on a 120 run/month schedule:

1. The F-1-PS sample has been eliminated, and the estimated savings are 130 man-hours/month.
2. The appearance determination on the F-10-P sample has been eliminated, and the estimated savings are 10 man-hours/month.
3. The analysis of 7(8)-4-P and 14(17)-4-P has been modified. In the future, these samples will be analyzed with one dilution - 2 discs instead of 2 dilutions - 4 discs. It is estimated that 88 man-hours/month will be saved by this procedure change.
4. The sampling program on acid wash runs was reviewed by the Process Section of the Separations Technology Division and non-essential samples were eliminated. It is estimated that 12 man-hours/month will be saved as a result of this sampling change.
5. The analysis of BiONO₃ process reagent samples by the Specific Gravity Method (RBC-12) replaced the time consuming gravimetric procedure. It is estimated that 112 man-hours/month will be saved as a result of this procedure change.

Three hundred forty-nine AT Retain samples were processed during September, and the recovered plutonium returned to the separations process. This eliminated the backlog of AT Retain samples, and future recovery operations will be maintained on a current basis.

In the 234-5 Bldg., sampling of the starting solution (P-4) was reduced to every tenth run. It had been estimated that a laboratory force reduction of 11.6 men could be realized due to this change in sampling procedure; however, the increased production schedule, coupled with the addition of a car-

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bon determination on cast metal samples, reduced this manpower savings to 6 men. The surplus personnel have been transferred to other Divisions, or returned to other groups within the Analytical Section from which they were loaned.

The increased production schedule made it necessary that the 234-5 Bldg. Laboratory operate six days per week during September on a two-shift basis, alternating 8-4 and 4-12. (Starting September 5.)

The Lot of hydrogen peroxide purchased on Order No. HW-65707-M assayed below the minimum acceptance specifications (27.5%) and subsequent resample analyses confirmed the original results. At the request of the vendor, Becco Sales Corp., a 32-ounce sample was returned to them for re-analysis. Prior to shipment, this sample was analyzed in the Isolation Bldg. Laboratory, and a 500 ml aliquot was removed and stored for future reference.

300 Area Control

Various types of lubricating oils are being tested for viscosity and pour points at -20° C., to determine which are the best for use in transportation equipment during the coming winter.

The 300 Area Plant Assistance Group, investigating irregularities in the canning operation, submitted a number of flux samples for determination of the barium chloride and moisture content. The data obtained indicated that unsatisfactory mixing of the flux ingredients was a possible cause of the difficulty.

Chemical Research Service Laboratory

The 100 Area Water Method for fluoride (WF-1a) was found to be applicable to fluoride determinations in plutonium streams. The fluoride ion bleaches the zirconium-alizarin lake, and this color change may be measured spectrophotometrically at 540 mu to give an estimation of the amount of fluoride present.

The Chemical Research Section's method for removal of Cl⁻ from the RAW stream consists of using potassium persulfate as an oxidant for the Cl⁻ with Cl₂⁻, ClO₃⁻, ClO₄⁻ as the possible products of the reaction. The analytical method used for the determination of chloride in this study was the conversion of Cl₂⁻, ClO₃⁻, ClO₄⁻ by SO₃ reduction and Na₂CO₃ fusion to residual Cl⁻ which was then titrated by the direct Volhard Method.

Chemical Development Service Laboratory

Several runs were made by the Chemical Development Section using the tentative Purex Process flowsheet. No difficulty was experienced in analyzing samples from these runs.

Counting Standards

To study the possibility of an electrostatic charge accumulating on the mica window of the vacuum chamber of an A.S.V.P. counter and causing a fatigue characteristic, samples were counted before and after coating the window with

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aqua-dag. No effect on the counting rate was observed. Previously, it had been found that aqua-dag will cure any fatigue phenomena in B.G.O. type counters due to electrostatic charge build-up.

A statistical analysis of coincidence data showed that over the range of 60,000 to 120,000 c/m the data were reliable, and that the observed loss (0.50% at 60,000) agreed with the theoretical values, assuming a five micro second resolving time for the A.S.P. instrument. Values up to 30,000 c/m were statistically unreliable, and showed increased resolving time up to about four times theoretical values. A new study controlling short term errors such as instrument drift and sample change, etc. is under way for the range of 15,000 to 30,000 c/m and has given preliminary results that agree with the theoretical values. If statistical analysis shows these results to be reliable, then the coincidence correction problem will be completed and a formal report issued.

Miscellaneous Service Analyses

In the P-10 gas analyzer, nichrome wire has been showed to be a suitable replacement for tantalum wire as the heating unit surrounding the palladium valve.

Blanks on the P-10 gas analyzer have indicated the diffusion of hydrogen through the furnace tubes. It is known that hydrogen will diffuse through steel at elevated temperatures, but this phenomenon had not been noticed in this equipment until the blanks were run recently. The source of the hydrogen is apparently atmospheric moisture, and the small amount of free H₂ which is always present.

A problem of unusual note concerned the analysis of cobalt in pure nickel metal. Spectrographic results indicated approximately 5000 ppm. Co, which was much higher than expected. A wet chemical method employing a potentiometric titration of the sample with K₃Fe(CN)₆ gave results of 3700 ppm. Co, thus establishing the presence of Co in the nickel which was supposed to be cobalt-free.

Methods Adaptation Group

The method for determination of carbon in plutonium metal, investigated by the Analytical Research Group, was reviewed and tested on process samples. Only a few modifications were necessary. The principal change was in the vaporization bath for the trapped-out carbon. The water bath was replaced by a dry ice--isopropyl alcohol bath, the temperature of which is -77° C. (+ 1°) with no gradient detectable within the mixture. This bath keeps all the water frozen but allows the carbon dioxide to vaporize. A series of metals analyzed this way gave much lower blanks and better accuracy and precision. Personnel have been instructed in this analytical procedure, and the method is being written for inclusion in the manual. Shielding and some improved equipment are being designed and will be installed as soon as they are available.

Previous studies have indicated that results obtained by the cupferron spectrographic analysis of plutonium are low, indicating a need for additional work. Data from 250 routine analyses of plutonium-free standard solutions for each of twenty elements determined by this method were gathered, tabulated, and interpreted by logarithmic statistical calculations. The precision at the 99% confidence level for an individual result was generally about a factor of five from the average value. Considering various factors which influence the

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results, the data indicated a "weighted average" recovery of 47% for all the elements, and from 28% to 73% for the individual elements. However, the recovery varies from month-to-month so much that only a general overall empirical factor of two is considered to be justified. Use of this factor, which is contemplated early in October, would improve both the accuracy of the reported results and the agreement between the results obtained by the cupferron and the carrier concentration methods.

Attempts to determine water by difference in sample solutions from Critical Mass Studies (P-11 Project) led to a general consideration of all of the P-11 analytical methods. Calculations indicated poor correlation of results. Water by difference did not agree with water by the Karl Fischer determination. The total nitrates calculated as the sum of the cations present did not agree with laboratory results, and neither nitric acid nor total nitrate could be correlated with the specific gravity and plutonium concentration by empirical formulas. Some of the data were not in agreement with the results anticipated by the P-11 personnel.

Analysis of the data indicated that (1) the Karl Fischer method gave results for the water content which were more accurate than those obtained by difference, (2) that either the nitrate results were consistently low or appreciable anions other than nitrates (such as sulfates, halides, or phosphates) are present, and (3) that the nitric acid results were not sufficiently precise. Therefore, the Karl Fischer apparatus has been reinstalled, equations will be used to crosscheck both total nitrate and water results, and the fluoride method for nitric acid will be installed to crosscheck the oxalate method. The method for total nitrates is being investigated.

Special Hazards Control

The barricades surrounding the liquid waste disposal cribs located to the rear of Bldg. 222-T were realigned and broken timbers were replaced. These barricades were damaged this past spring due to settling of the earth back-fill.

A mock-up of the hood designed to enclose the primary samplers in the 222-B & T Laboratories was tested and found to be satisfactory. Installation of this hood, together with the recently designed decontamination sink facilities, is a part of the program aimed at reducing the incidence of radioactive particles in the atmosphere of these laboratories.

ANALYTICAL RESEARCH

P-10 Analytical Studies

Mass spectrometric analysis of P-10 by-product has shown the presence of considerable quantities of water and organic fractions, together with their tritiated counterparts. It is suspected that the water results from the improper preparation of sample bulbs, and that the organic fractions result from stopcock grease and from acetone and alcohol used for drying sample bulbs. A sampling test has been started to determine the most satisfactory method of cleaning equipment and sampling, and to evaluate the extent of adsorption of product on glass. The main emphasis has been on the determination

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of tritium in by-product, and somewhat higher results have been found than reported by Los Alamos and KAPL on samples subjected to longer storage period. A study of ionization factors has been made, and it was observed that these are the same as those obtained with the Los Alamos instrument.

Under the direction of a research chemist, two chemists working full time and two working part time have maintained operation of the Bldg. 108-B mass spectrometer on a two shift, five day basis and have made approximately forty analyses during the month.

Routine analyses of lithium-aluminum alloy include the determination of hydrogen and total gas present both in the surface and in the dissolved state. One canned slug is analyzed for each billet. At month end approximately 25 slugs, representative of material awaiting test in the Bldg. 305 pile, have been analyzed and approximately 50 more slugs awaiting test are on hand for analysis. A backlog of 150 slugs, representing material in the 100 Area piles, received no attention.

Under the direction of a research chemist, one chemist and three laboratory assistants working full time, and two chemists working part time, have maintained operation of this P-10 analytical unit on a two shift, five day basis, and have completed analyses on about 70 slugs during the month.

A statistical study of the relation between the gas analyses and the production results has been started in order to evaluate the validity and significance of the analytical tests.

Two chemists have been trained in operation of the Regnault method for determination of gas density, and will be available on a two shift basis when production operations are resumed. It is agreed by all parties concerned that this method is not satisfactory, and should be replaced as soon as alternative methods are available.

An investigation of application of the emission spectrometer to P-10 analyses has been made in Schenectady by KAPL representatives and a Hanford research chemist. The Leeds & Northrup instrument used for the purpose was found to be satisfactory, but difficulties were encountered in the sampling and excitation of the gas. For this reason delivery of the instrument to Hanford has been delayed in order to permit further investigation.

Radiochemical Methods (RDA #TC-1)

Further investigation of the americium plus curium determination has included application to process streams. Excellent recoveries were obtained on synthetic 6-3-MR and 7-3-WS samples, and material balance of two batches yielded good results in one case and appreciably low results in the other.

	Am + Cm, c/m/batch	
	1	2
6-3-MR	0.38×10^{12}	1.38×10^{12}
7-3-WS	0.25×10^{12}	0.55×10^{12}
7-4-P	0.17×10^{12}	0.24×10^{12}

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A comparison of approximately 15 plutonium determinations in 6-3-MR by the direct count method shows the results by a research chemist to be approximately 1% higher than those obtained by control laboratory personnel. The method has been turned over to the Methods Adaptation Group, and standard samples have been prepared for further analyses by the control laboratory.

A comparison of twelve analyses shows that stainless steel counting discs may be substituted for platinum ones and thereby effect a considerable saving of time in recovery of the platinum discs. It was noted that chloride must be completely absent from the solutions to avoid attack on the discs. In continued study of electrolytic procedures for plating plutonium dioxide on counting discs, 10 mg. of plutonium was plated with 99.8% efficiency to yield a smooth, uniform, adherent film.

The spontaneous fission counter recently received by the Analytical Section has been installed and tested in Bldg. 222-T. Some difficulty was found and corrected in one of the amplifying circuits, and counts obtained on a standard sample have shown the instrument to operate satisfactorily and with low background.

Several samples have been analyzed with the pulse analyzer to aid Chemical Research Section studies on the separation of both americium and curium from process solutions. Satisfactory results can be obtained only by a tedious manual method, so that intensive study of isotope determinations is being withheld until the Fairstein unit on order is received.

The presence of phosphate in RAF and RAW solutions interferes in the mandelic acid and TTA procedures for the determination of radiozirconium. An investigation aimed at shortening the two-hour fluozirconate procedure has resulted in a modification that permits a thirty-five minute analysis and yields recovery within $\pm 20\%$ of 100%. The method involves elimination of the final cupferron separation in the standard procedure, and substitution of a direct count on the barium fluozirconate precipitate which is retained on a filter paper disc. The composition of the oven-dried precipitate was found to be $ZrF_4 \cdot 2BaF_2 \cdot 2H_2O$, and it was found that other beta activities are adequately separated.

Application of a similar technique to the determination of radioniobium has served to shorten the standard procedure. Three analyses yielded recoveries lying between 100 and 107%.

A limited number of tests on the KAPL rapid procedure for electroplating ruthenium has yielded recoveries on the order of only 60 to 90%.

Alpha coincidence losses were re-evaluated by application of a modified "paired disc" technique. Preliminary results indicate a loss of 0.4% instead of the presently used 0.3% at the 50,000 c/m level, and a loss of 0.12% instead of the 0% loss presently used at the 15,000 c/m level.

Spectrochemical Methods (RDA #TC-2)

The hollow cathode spectrographic excitation unit was received from the Instrument Division and installed. A 50-50 mixture of helium-argon was introduced as a carrier gas and the emission lines obtained were used for wave length calibration. In contrast to arc and spark excitation techniques, this

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unit is expected to yield emission lines of the various nonmetals; tests with lead dioxide and lanthanum fluoride yielded the oxygen and fluoride lines, respectively.

With completion of the method investigation, process samples of water from the Naval Reactor Test Unit (P-13) have been received for the determination of impurities in the parts per billion range. Multiple spectrographic determinations on each of two samples have shown results to be precise within $\pm 35\%$. A final modification of the method includes the substitution of cobalt for molybdenum as an internal standard because the latter showed undesirable volatilization characteristics.

In order to provide a method for the determination of CO in pile atmosphere, and in samples from experiments conducted by the Pile Technology and Design and Construction Divisions, infrared absorption calibration curves have been prepared. It was noted that the limiting sensitivity of the method is about 0.05% CO.

A limited study of a unique procedure for determination of uranium by measurement of infrared absorption by the metal oxinate has shown the sensitivity to be less than 1 mg./l. uranium. The excess oxine does not interfere with the measurements, but the oxines of aluminum and iron do.

Previously reported results that the cross-section of the beam on the x-ray photometer could be restricted without the loss of sensitivity, have been supplemented by tests using sample cells of about 1 ml. capacity. Preliminary observations indicate that uranium determinations can be made with the sensitivity of 0.3 g./l. uranium. The small cells used in the test were prepared by cementing windows to the base and it was observed that the windows were of nonuniform thickness. For this reason orders have been placed for cells with fused windows.

Investigations of the method for x-ray absorption determination of uranium in oxides, and the spectrophotometric method for determination of plutonium in its various valence states, have been completed and reports are in progress.

Electrochemical Methods (RDA #TC-3)

Multiple determinations of uranium in four special samples were made with the manual coulometer. The results on standards analyzed in parallel averaged 0.94% high; the coulometer results lay within a range of $\pm 2.5\%$ of the average.

Conventional Chemical Methods (RDA #TC-4)

A systematic study of the volumetric assay for AT solutions was made to determine the effect of variables such as chromium content, iron content, sample size, rate of titration, and presence of oxygen. None of these factors proved to be significant with the exception of sample size, and in this case it was believed the variation resulted from the tendency of the solution to develop small gas bubbles during pipeting of the sample.

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A continued search to determine the cause of the discrepancy in 5 of the 14 samples of Los Alamos plutonium solutions, referred to in the last monthly report, failed to disclose any clues. A summary and discussion of the data is being prepared for issue.

Conduct of the method for determination of carbon in metallic plutonium has been placed on a routine basis in control laboratories. The data continued to indicate a carbon content of 100 to 200 p.p.m., with a reliability of + 15 p.p.m. A final part of the method investigation included a test of the CO₂ obtained from ignition to determine the presence of impurities. SO₂ was not detected by tests having a sensitivity of 15 p.p.m. However, appreciable amounts of water were found, and the method was modified so as to eliminate this interference.

A literature survey indicated that the distillation-methylene blue procedure is most suitable for the determination of sulfur in metallic plutonium. Equipment has been assembled and tests have been undertaken to complete the investigation of this method which had received some attention in the past.

Information regarding standards submitted to the control laboratories and results obtained during the month of September are included in the following table.

U₃O₈ Std.

	<u>Conc.</u>	<u>Method</u>	<u>N</u>	<u>Found</u>
UNH, volumetric	84.41%		36	84.15 ± 1.47%

RCW Std.

UNH, fluorometric	1.05 g./l.		25	1.06 ± 0.27 g./l.
UNH, x-ray	1.05 "		25	1.10 ± 0.29 g./l.

RAFS

UNH	90.0 g./l.	Volumetric
UNH	90.0 "	X-ray
SO ₄	16.0 "	Iodometric
PO ₄	15.0 "	Volumetric
Na	66.0 "	Photometric
NO ₃	303.9 "	Dist.
HNO ₃	157.5 "	Potentiometric

6-3-MR

(222-B) Pu	2.813 × 10 ⁶ c/m/ml	18	2.828 × 10 ⁶ c/m/ml
(222-T) Pu	"	32	2.819 × 10 ⁶ c/m/ml

6-3-MR

(222-B, T) Pu	2.087 × 10 ⁶ "	In progress
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6-3-MR

(222-T) Pu

(Tentative)
1.537x10⁵ c/m/ml

In progress

Miscellaneous

Continued attention to the problem of high activity of pile cooling water and the formation of film in pile tubes has resulted in analysis of the sample of film deposit. The results obtained, together with those found by analysis of pile effluent water, are summarized as follows:

<u>Element</u>	<u>Film Deposit</u>		<u>Pile Effluent Water</u>
	<u>Chemical Analysis</u>	<u>Radio Analysis (a)</u>	<u>Radio Analysis (b)</u>
Fe	15.4%	19.9	1
Al	43.7		
Cr	3.3	35.8	1
Pb	3.9		
Cu		1.1	8
Rare Earths		36.2	2.5
Zn		1.5	1
Mn			30
Na			15
Si			7
Ba			2
Ca			1
Ga			1
As			3
P			0.5
Ca, Ba, Na, K		1.0	
Insoluble residue	6.4		
Unidentified		13.5	

(a) Fourteen days after sampling. Total activity 4.7 x 10⁵ c/m/sample (7.5% Geometry).

(b) Four hours after sampling. Total activity 200 c/m/ml (7.5% Geometry).

Routine radioanalysis of effluent water on a bi-weekly basis is being planned, and consideration has been given to a cooperative study by the Pile Technology, H. I., "P," and Technical Services Divisions.

ENGINEERING SERVICES

Technical Shops

Bldg. 101 Shops

Work volume statistics for the Bldg. 101 Shops (including the one-man

machine shop in Bldg. 3706) are summarized as follows:

	August		September		
	No. of Jobs	Man-Hours	No. of Jobs	Man-Hours	
Work Done on Jobs Completed	142	1,773	142	1,874	
Work Done on Jobs Not Completed	27	<u>717</u>	17	<u>342</u>	
Total Work Done		2,490		2,216	
					<u>Man-Hours to Complete</u>

Work Backlog:

Jobs Started (incl. P-12, the Exponential Pile Project)	27	5,916	18	8,578*
Jobs Not Yet Started	34	919	40	1,037
Preliminary Estimate on New Jobs	12	<u>626</u>	1	<u>80</u>
Total Work Backlog		7,461		10,415

* Includes 5,127 man-hours of P-12 work and 3,212 man-hours for P-10.

P-10 jobs of special significance were: (1) An induction furnace and bus bars fabricated for use in firing the ends of Kovar tubing for the purpose of conditioning the tubing for assembling glass components to the tubing. The firing of the kovar tubing is accomplished by heating at 1100° C., after which the tubing is cooled in a hydrogen atmosphere. Extreme care must be exercised in the firing of the kovar tube to avoid damage to a palladium thimble which is attached to one end of the tube. The furnace was set up and is being regularly used in the 101 Shops mock-up room. (2) A tube furnace used for close control of temperature for heating quartz traps.

The shop is waiting for receipt of a special bronze casting from the vendor to complete the magnetic spectrometer being made for the Pile Physics Section.

Of special significance was a graphite core borer made for the Pile Engineering Section. The purpose of this tool is to cut and remove sample cores of graphite from pile process tube holes, operating through an entrance of only 1.745". The samples are to be removed at variable distances from the face of the unit. The cutter operates with bevel gears cutting sample cores 90° from the horizontal. Because of the limited space for entrance, the cutter is raised and forced against the graphite with compressed air and the cutter then is actuated by an electric drill motor. The graphite samples to be removed will be approximately 3/8" in diameter x 1-1/4" long. The tool is made in sections of 2 ft. and 6 ft. lengths in order to achieve the variable lengths needed for cutting graphite samples at different points in the tube. These lengths can be readily assembled

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on the elevators of the pile face. A vacuum is provided for removal of the sample in case the cutter fails to retrieve it. An additional safety factor is provided through scoring of the vertical hole sample saw, which will allow the saw in case of binding to shear and insure withdrawal from the unit. Replacement cutters can be provided. A mock set-up is to be made in the 101 Bldg. during October and any alterations or corrections made depending upon the results of mock-up tests. The test results will be witnessed by Maintenance, "P," and Pile Technology Division representatives.

A Chemical Research Section job of special interest was the Remote Control Stopper Remover for 2 ml. flasks. This removal tool consists of a pair of tongs which can be operated over the top of the lead shielding. Mock-up tests gave positive results in the removal of the stopper, and the tool is now in use in Bldg. 3706.

Bldg. 3706 Shop

A number of small jobs were completed in this shop, mostly for the Chemical Research and the Metallurgy Sections. Alterations were completed on the Junior Cave. Work was in progress on the machining of a new type of thermal conductivity apparatus for Pile Technology. Work was also being done for the Chemical Research Section on multiple stirrers for use in hoods.

During the month experimental machine work was done on a valve for use as a vacuum release valve in hoods and vacuum lines. It was found that this valve could be made from stockroom parts. This will result in considerable savings.

This one-man shop had a backlog of approximately 300 hours on small jobs for the Metallurgy and Chemical Research Sections. Most of this work consisted of repairing or adding to existing equipment which is currently in use in Bldg. 3706. These jobs were being reviewed in order to determine which might be transferred to Bldg. 101 or to other Divisions' shops to reduce the backlog.

Glass Shop

Work volume statistics for the Glass Shop (exclusive of P-10) are broken down as follows:

	<u>August</u>	<u>September</u>
<u>Jobs Completed:</u>		
New	73	40
Repairs	27	7
Revisions	<u>19</u>	<u>12</u>
Total	119	59
<u>Job Backlog:</u>		
	40	10

The backlog reduction was achieved by utilizing the abilities of the trainees to do the simpler repairs and fabrication of small parts. This enabled



the more experienced glass blowers to devote most of their time to the fabrication of P-10 components, and to the making of critically-needed specialty items for Bldg. 3706 customers.

Fabrication of glass components for P-10, Line 5, were completed on schedule. Assembly of this line at Bldg. 108-B was delayed by other construction work not being completed on schedule, and by the delayed receipt on the project of certain purchased parts. Accidental breakage of lines and components required a number of emergency repair jobs at Bldg. 108-B.

Several means of modifying P-10 components were suggested and accepted. These modifications were: (1) The use of nichrome heaters replacing the previously used tantalum; (2) a change in a physical shape of the heater coils to get better heat transfer to the thimbles; (3) a ceramic insulator which serves to stop vibration of the long tungsten leads, and also serves to maintain an established distance between the heater coils and the Pd thimbles. This insulator also helps to stabilize and insure uniform thermal conductivity of the elements; and (4) revision of stems forming the electrical contact to the mercury on the stirrers and Toepler pumps. This revision was made to reduce the frequency of breakage of wires and seals which was characteristic of the previous type.

On September 27, work was started by the Maintenance Division on the enlargement of the Glass Shop by extending it southward into the west half of Room 41-A in Bldg. 3706. This enlargement will provide badly needed additional fire-bench and working space.

The qualifications of a number of experienced glass blower applicants have been reviewed, and requests for further information on the four who appear qualified have been submitted to the employment office.

Equipment Design

Laboratory Equipment Development (RDA #TC-5)

Insufficient time was available for a major effort on this RDA because of the extensive requirements for design service. However, the following work was done:

- (1) Preliminary scoping was started on the airborne contamination detector.
- (2) Design was begun on the in-cell air hoist of the multicurie cells for Bldg. 222-S.
- (3) Developments were started toward a better and cheaper manipulator gauntlet for Junior Caves.
- (4) The development of a downdraft Lucoflex hood was completed. It was reported that the self-by-pass (constant air volume) feature incorporated in this design will save considerable money in the cost of the proposed Radiochemistry Bldg. through elimination of expensive pressure sensing, airflow, control devices.

- (5) The fiber glass corrugated air filter intended to replace CWS filters for laboratory hood use was successfully developed, and a report was in process. Pressure-volume flow curves were obtained for three media: AA (very fine fiber), A (medium fiber), and B (coarser fiber). The dust collection efficiency of the glass filters did not equal the CWS filters for very small particle sizes, but are believed to be equivalent for all practical purposes in most laboratory hoods. An attempt will now be made to get a cost comparison of the two filters, since it is believed that the glass filter can be obtained for about half the cost of the CWS filter.
- (6) Samples of recently received Penberthy "Hi-D-Phos" lead glass were prepared for darkening tests.

Design Service

Services rendered the Pile Engineering Section included the following:

- (1) Work was started on the design of apparatus for testing the thermal conductivity of graphite from -80 to 2000° C.
- (2) Electrical, thermal, and pressure tests were made on three vertical rod thimbles for 105-H and 105-DR at the request of Bldg. 101 Technical Shops. Welding and installation of differential thermocouples was supervised. A method was developed for welding thin couples to the pipe wall without damage to couple composition or insulation.
- (3) An apparatus was designed for weighing slugs in air under water. The apparatus was being fabricated in Bldg. 101 Shops, and will be tested for proper operation as soon as shop work is complete.
- (4) A slug scrubber was being developed for cleaning corrosion products from slugs under water, preparatory to air-weighing. A tentative design was developed, based on power-driven helical nylon brushes. A trial model will be made as soon as ordered brushes arrive.
- (5) Preliminary studies were made on a method of removal and disposal of experimental pressure tubes from 100-H pile. Method studied included removal and disposal in one piece, disposal by cutting

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- (7) Additional drafting was done on the "core borer," a graphite sampling device.

Design services for the Metallurgy Section included the following:

- (1) In progress was a design of a gear box and accessories for agitation of hot oil in a slug elongation test apparatus.
- (2) A preliminary scoping was made for a device for graphic recording of the elongation of tensile specimens.
- (3) An existing design of a constant temperature water bath with corrosion sample agitator was studied, and a variable-speed driving mechanism was planned for the unit.
- (4) A new type of slug wafer cutoff box was being designed.
- (5) A core for the "Sugar Loaf Cask" was being designed. This core must be suitable for hot storage, in-cell operation, or disposal.
- (6) A sample holder and isolating diaphragm were designed for a metallographic polisher.
- (7) Specifications were written and twice revised for special laboratory equipment for the proposed Radiometallurgy Bldg. This equipment includes the Dry Storage Cell, Hot Cells, the Decontamination Cell, and the Decontamination Hood with the associated air filters, instrumentation, and utility services.
- (8) A proposal was studied for ventilation tests for the intermediate level cell for the proposed Radiometallurgy Bldg.
- (9) A drawing was made for an X-ray tube rack.
- (10) Design work continued on the Elbow Manipulator, the Geared Cell Tongs, the Decontamination Cell, the Cutoff Box, the Pistol Valve Manipulator, the Constant Air Flow Service Plug, and the Hydraulic Compression Mold.

Design services rendered for the Chemical Research Section included the following:

- (1) Radiation tests were made on the Junior Cave in Bldg. 3706, Room 17, using 4.3 cc. of 125 day-old dissolver solution as a source. These tests were for tryout of the in-cave radiation monitor, and to indicate external radiation levels. External levels ranged from 5 to 15 mr/hr through the three-inch thick steel shell, 5 mr/hr through the laminated lead glass viewer, and 500 mr/hr above the open top of the Junior Cave.
- (2) The installation of laboratory equipment for experimental ozonization and scavenging in this Junior Cave was completed, and the unit was turned over to the Chemical Research Section for use.
- (3) Design and assembly of equipment for metal recovery experiments con-

tinued. This equipment is expected to be complete in about three weeks, and will be used in a Junior Cave in Bldg. 3706, Room 55.

- (4) Scoping and procurement of equipment for the experimental, pulse-column box continued. This apparatus will be operated in a Junior Cave in Bldg. 3706, Room 55 when complete. Completion will take about three months and perhaps longer, depending on information on column design expected to be developed through operation of the metal recovery apparatus.
- (5) A lead shielded hood set-up including lead glass viewers and manipulators for multiple stage liquid extractions was being scoped and expedited.
- (6) A revised screw-hoist limit switch mechanism was assembled and tested.
- (7) A nine-foot-long gloved box for Bldg. 3706, Room 95, was designed, and is being built at Bldg. 101 Shops.
- (8) A special gloved box to be joined to hoods in Bldg. 3706, Room 4-A, was scoped. Completion of the design is awaiting the hood installations.
- (9) The experimental Lucoflex downdraft hood proposed for the Radio-chemistry Bldg. was being prepared for installation in Bldg. 3706, Room 95.
- (10) Scoping of radiation instruments and special equipment for the Bldg. 222-S multicurie wing continued. Requisitions have been originated to date for ten 2000 pound shielding casks, twenty 425 pound shielding cylinders, forty quart-size sample storage cylinders, one hand-operated 1000 pound capacity portable elevator, one 2500 pound capacity skid lift truck, twenty-four 3500 pound capacity skids, and one 1000 pound capacity portable hydraulic floor crane. Ready for requisitioning were the commercial components for in-cell beta-gamma monitoring, in-cell surface alpha monitoring, and out-cell gamma radiation level recording, as well as the Junior Cave mobile crane.
- (11) A laboratory waste can was redesigned.
- (12) A friction drive stirrer was designed.

Design work done for the Analytical Section included:

- (1) Gloved box procurement for Bldg. 222-S was being scoped; about half of the boxes have been covered to date.
- (2) Preliminary designs of a primary sampler enclosure for Bldgs. 222-B and 222-T were being made. A cardboard mock-up was built for trial.
- (3) A lead shielded structure with viewers, etc., for a hood was being designed to accept samples received from the Chemical Research

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Section.

- (4) A successful model vacuum release trap for use in hoods in Bldg. 222-S was made and was being drafted.
- (5) The hinged-door type infra-red dryer was drafted. This dryer is to be used in the 222-B and 222-T laboratories.
- (6) The trombone pipet was redrawn.
- (7) The flashlight wand stirrer design was revised.
- (8) The chromium assay panel was assembled for test, and disassembled for application of coatings. Reassembly will follow.

New Laboratory Planning

Redox Analytical and Plant Assistance Laboratory, Project C-187-E

Construction for Bldg. 222-S is estimated as being 37% complete as of Sept. 30, based on the value of work in place. A total of 14 design changes were initiated or approved by the Technical Divisions during the month. These changes included the authorization of substitutes for scarce materials, and alterations required to improve the function or utility of the buildings. Installation of the exhaust system was delayed when it became necessary to fabricate much of the duct work on site because of procurement difficulties.

Excavation for the Retention and Neutralization Bldg., 219-S, of this project was started on Sept. 25. It is estimated that the design of this building is 95% complete. The building is scheduled to be ready for run-in tests on March 1, 1951. Procurement of materials and equipment to be installed in it has begun, and modification of the surplus tanks from the 221-U Bldg. will begin in the near future. Considerable time was spent in reviewing and approving the construction and shop drawings.

Radiochemistry Bldg., Project C-381

The preliminary plans and specifications for the Radiochemistry Bldg. received from the Leland S. Rosener Co. on August 29 were subjected to a thorough examination. They were approved, with exceptions, and transmitted to the D & C Divisions for return to Rosener. The desired changes and additions were discussed with the Architect-Engineer, and the extra design fee involved was determined to be about \$3400. The D & C Divisions estimated that these changes would result in a net savings of approximately \$50,000 in construction costs. Technical Divisions approval of these changes and increased design cost was granted on Sept. 28, and D & C began the necessary Rosener contract modifications on that date.

Plot Plan and Utilities, Project C-394

Project Proposal C-394, Part II, was authorized by the A.E.C. on Sept. 7, by Directive HW-191, Modification 1. This proposal covered preliminary construction work on the new Works Laboratory Area such as grading, road

and fence construction, installation of certain water and power lines, and burial ground relocation. Fence construction was in progress by Sept. 18, and relocation of the burial ground began on Sept. 26 (with monitoring by the Health Instrument Div.).

The D & C Divisions have recommended that the Works Laboratory Area be classified as a Zone 2 area under the Uniform Building Code.

Radiometallurgy Bldg., Project C-385

No success attended the D & C Divisions' continuing effort to sub-contract the design of this building.

The special mechanical equipment for the Radiometallurgy Bldg. was reviewed and approved by the Principal Engineers of D & C.

The D & C Divisions placed this building in the Type 4 class under the Uniform Building Code.

Pile Technology Bldg. (Study GET-17)

Intensive work continued within Technical on the preparation of detailed equipment lists for the Pile Technology Bldg., and the listing of the required services for each room.

The work of estimating the cost of this building, as presently scoped, was continued by D & C.

Mechanical Development Bldg. (Study GET-18)

The project proposal for the Mechanical Development Bldg. was being completed by D & C for submission to Technical in time for action by the A & B Committee at their October meeting. This proposal covers the complete design, and includes also the construction of the building shell for use by construction forces working on erection of the laboratory buildings.

Bldg. 3730 Extension

Present planning contemplates the extension of Bldg. 3730, to allow it to serve in place of the originally proposed Annex to the Pile Technology Bldg. D & C has recommended that this extension be designed, and its construction supervised, by the Project Engineering Divisions. The latter have agreed to accept this assignment, and the necessary arrangements are in progress.

300 Area Services

Normal Bldg. 3706 services continued routinely. Stockroom and work order activity is summarized as follows:

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August

September

<u>Purchase Requisitions:</u>		
Total number processed	77	67
Number requiring special expediting	6	14
Number requiring emergency handling	0	1
<u>Stores Stock Requests Processed:</u>		
	0	0
<u>Store Orders:</u>		
Total number processed	1,106	757
Number requiring emergency pick-ups and deliveries	9	8
<u>Work Orders Processed:</u>	35	38

Work on the revision of Room 95 in Bldg. 3706 for use by the Chemical Research Section was approximately 80% complete. A large gloved box unit to be supplied by the Bldg. 101 Shops and the Equipment Design Unit will be installed after the present work has been completed.

The internal subdivision of several Analytical Section offices in Bldg. 3706 progressed satisfactorily. Room 23 has the carpentry work nearly complete, and work has been started on Room 14. This work is being followed by the Analytical Section, but is reported here as a building alteration.

The problem of how to heat the propane storage tank so as to maintain sufficient pressure for winter operation of the Glass Shop gas mixing system is under study. Investigation was being made by the 300 Area Maintenance and Electrical Divisions to determine what type of heating system will be economical, easily installed, and acceptable to the Safety & Fire Protection Division.

STATISTICAL STUDIES

300 Area Operations

A statistical analysis was made of data obtained by the Metallurgy Section in the experiment designed to evaluate the effects of varying conditions on the dilatometric testing of canned slugs. Based on these results, another experiment to determine the structural transformation operating limits is being designed for the Metallurgy Section.

Another statistical analysis completed for the Metallurgy Section involved X-ray diffraction data obtained from 52 sample wafers from four lots of alpha-rolled uranium (Ref: Metal Fabrication Request 103 - Bare and Canned Slug Reactivity Study). Uranium bare slugs, adjacent to the wafers used for the X-ray diffraction study, were measured for expansion with the dilatometric tester, and the results are being compared statistically.

Analytical Section results on the analysis of twenty standard samples of uranium oxide (U_3O_8) were found to differ significantly, although these samples were supposed to be identical. No explanation of the differences between samples could be found.

A comparison of the precision in secondary standard reactivity results obtained by 305 Test Pile operators during the period December 1947 to September 1950 was made for the Pile Physics Section. No significant dif-

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ference between the precision of the operators was found.

At the request of the 300 Area Plant Assistance Group, the relationship between rolling and canning date and the reactivity of canned uranium slugs is being studied.

Daily, weekly, and monthly statistical controls were reported on P Division operational results at Machining, Pickling, Canning, Test Pile, Autoclave, and Melt Plant (for monthly report see Doc. HW-19041).

200 Area Operations

Having obtained the most useful mathematical relationship between the distribution coefficient of Pu (IV) and solution variables, this study for the Chemical Research Section was concluded.

Analysis of the data obtained from the previously designed experiment to study the AT plutonium determination was completed for the Analytical Section. A study also was made of Analytical Section data comparing burets and panel boards used in the AT plutonium determination. No effect on this determination was assignable to either variable.

Analytical results of the recent sample exchange between Hanford and Los Alamos were examined. Although there appeared to be large discrepancies in individual samples, no clear-cut conclusion as to the source of Hanford-Los Alamos differences could be obtained from the data. Overall agreement between the two sites recently has been very good.

An improved counting procedure for investigating alpha coincidence losses was recommended to the Analytical Section, in order to reduce the non-statistical errors to which previous investigations have been subject.

A study was undertaken for the Process Section, Separations Technology Division, of the variation in total count per ton of uranium as determined for starting solutions. The immediate objective is to investigate effects of variations in MWD/ton between dissolver charges originating from a common push.

The regular semi-monthly reports of certain Kr-85 computations for the A.E.C. were completed and forwarded.

Weekly and monthly statistical controls were reported on the precision and accuracy of analyses made on uranium solutions, plutonium solutions, and process wastes by the analytical control laboratories in Buildings 222-B, 222-T, 231, and 234-5. The monthly report (Doc. HW-19042) also includes AT and P-4 specific gravity relationships; 231-234 plutonium assay differences; and Hanford-Los Alamos plutonium assay differences.

100 Area Operations

The final statistical analysis of PT 105-277-P, which covered the pile behavior of induction heated slugs and slugs from induction heated rods, was completed for the Pile Technology Division, and is reported in Doc. HW-19006.

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Final analysis of B Pile tube corrosion data submitted by the Pile Engineering Section indicated no significant correlation between the amount of corrosion in the tubes and the length of time the dummy patterns had been removed. Any differences which might exist between the corrosion rates in the four orifice zones were obscured by the large variation of the amount of corrosion from tube to tube.

General

Work continued on the statistical study of preliminary results from the H. I. Biology Division on the effect of internal consumption of radioactive iodine on sheep. Studies to date indicate that a substantial reduction in the frequency of sampling can be effected.

IBM Computing

Preparations for IBM machine installation were continued in Bldg. 101 at Hanford. The first of this special machine and office equipment has been received on site.

LIBRARY AND FILES

Plant Library

Library work volume and book statistics were as follows:

	<u>August</u>	<u>September</u>
Number of books on order received	102	261
Number of books fully cataloged	54	223
Number of bound periodicals processed but not fully cataloged	9	160
Pamphlets added to the pamphlet file	15	229
Miscellaneous material received, processed, and routed (Including maps, photostats, patents, etc.)	23	92
Books and periodicals circulated	2,922	2,823
Unclassified reports processed	160	414
Unclassified reports circulated	299	217
Reference services rendered	1,323	1,317

	<u>Main Library</u>	<u>W-10 Branch</u>	<u>Total</u>
Number of books	6,384	2,510	8,894
Number of bound periodicals	4,442	100	4,542

Work in the Plant Library proceeded on a routine basis with the volume of activity approximately equal to the previous month, although a considerable increase was noted in the number of books cataloged and the unclassified reports received and processed. Recent helpful periodical acquisitions included a short run of the "Annalen der Physik," which blocked in a gap in the present holdings, and a fine run, in English, of the "Proceedings of the Physico-Mathematical Society of Japan."

Technical Services Division

The references handled, of which a sampling is listed below, continued to reflect the use of the Library's facilities by all Divisions at Hanford.

- Bibliography on sabotage and on all aspects of civil defense.
- Thermal conductivity of transite.
- Solubility of iodine in water.
- Factors influencing passage of hydrogen through palladium.
- Effect of density of pumped liquid on efficiency of a jet pump.
- List of manufacturers of thermocouples.
- Iron analysis in water.
- Measuring electrical conductivity of molten metals.
- Magnetic permeability of copper.
- Rate of filtration through porous stone.
- Cause of periodic variations in Selsyn systems.
- Diaphragm pumps for vacuum systems.
- Shot welding of stainless steel.
- Tables of segmental functions.
- Plans for a four-doctor clinic building.
- Painting schedule for water tanks.
- Porosity of fire brick.

Classified Files

Work volume statistics for the Classified Files and the Central Report Publications Unit were as follows:

	<u>August</u>	<u>September</u>
Documents routed	12,386	11,921
Documents issued	7,185	5,008
Reference services rendered	3,676	3,454
Reports abstracted	338	205
Registered packages prepared for offsite	407	242
Inter-area mail sent via transmittal	33,773	24,526
Holders of classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	81	67
(b) Because of transfer of work assignment	1	5
(c) Because of termination	1	1
Inventory reductions:		
Copies of documents destroyed	842	1,211
Copies of documents downgraded	110	135
Copies of reports declassified	46	128
Classified documents located which were unaccounted for in previous inventory	13	27
Volume of unclassified mail handled by 300 Area Mail Room	30,725	30,388

Central Report Publications Unit

Ditto masters run	870	753
Mimeograph stencils run	1,171	749
Ditto masters prepared	27,334	19,226

DECLASSIFIED

Mimeograph copies prepared	66,238	35,059
Formal Research and Development		
Reports issued	13	6

In a continuing effort to reduce the Hanford Works classified document inventory, a new destruction procedure, involving both classified reproduction masters and surplus classified documents, was developed. Under this procedure all classified reproduction masters will routinely be destroyed by the Classified Files after a period of 3 weeks unless the author specifically requests longer retention. Those retained will be periodically reviewed and routinely destroyed at the end of a year, since they will then probably be useless for further duplication of the report. Original drawings, graphs, negatives, etc., of value for use in a future report, may be retained for longer periods at the request of the author.

Surplus copies of site-issued classified documents in excess of six will be destroyed routinely when it has been determined that the document is no longer in active use. Copies retained will be a circulating and reference copy in the 300 and 700 Area Files, and the Pink and Yellow copies. Written permission was also received from the A.E.C. to destroy excess copies of formal reports received from offsite, rather than to return these to the Technical Information Division at Oak Ridge, as had been done previously. Two reference copies of these reports will be retained by the Classified Files.

A number of meetings were held during the month with representatives of A.E.C. and G.E. Security to establish procedures for the routine reporting to the Security Division of classified documents discovered missing in the field operations of the Audit and Inventory Unit. A 3 x 5 form was developed and put into use in order to simplify these reports as much as possible. Results are currently being reported on a 30-day basis, although consideration is being given to drastically reducing this reporting period. Inasmuch as a great many classified documents are located soon after their loss is first noted, Classified Files has taken the position that a great deal of unnecessary bookkeeping will be required if the reporting is put on a daily basis.

A further meeting with representatives of A.E.C. Security, Classified Files, and A.E.C. Operations, discussed the accountability for classified documents transmitted to Dr. M. R. Fenske, Pennsylvania State College. Some confusion as to the proper accountability agent for M. R. Fenske's documents had resulted from the fact that he does not have a standard consultant contract with the Hanford Works. Agreement was reached that all classified documents going to him should be transmitted to the local A.E.C., who would re-transmit them to the New York office of the A.E.C., which will serve as accountability agent for M. R. Fenske's documents sent from Hanford. Arrangements were completed to transfer document accountability to the New York office of the A.E.C. for all classified documents previously transmitted by Hanford Works directly to M. R. Fenske.

A large number of SECRET documents related to the 234-5 Process, which had received TOP SECRET handling for special reasons, were recalled and turned over to the Classified Files for incorporation at their original classification.

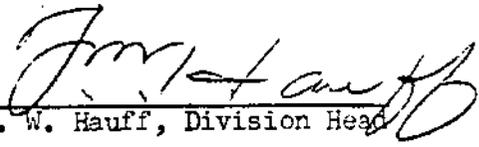


A compilation of subject headings to be used for the analysis of classified documents on reactors was received from the Technical Information Division for review and suggested changes. These headings represented a consolidation of a number of lists submitted from various A.E.C. installations including Hanford, and is to be included in CA-1927 (List of Current Subject Headings for the Indexing of Reports). It is anticipated that the completed headings will provide a sound organization scheme for abstracting and analysis of the literature on the Hanford reactors.

INVENTIONS

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

Signed


T. W. Hauff, Division Head

TWH:mcs

MEDICAL DIVISIONS

SEPTEMBER 1950

General

Personnel Changes

The roll decreased from 285 to 279.

Visits

Dr. Norwood attended the A. E. C. Medicine & Biology Laboratory Directors scientific meeting at Los Alamos.

Mr. Bakko attended the American Hospital Association national convention in Atlantic City.

Three hospital staff members attended the Washington State Hospital Association meeting in Spokane.

Messrs. Lawrence, Engstrom and Callahan, of the Washington State Dept. of Labor Board of Appeals, were visitors and commented very favorably on the handling of insurance claims at Hanford.

Miss Mary Miller, Public Health nurse consultant of the Hospital Planning and Development Section of the State Dept. of Health, spent several days with us in studies directed toward improving our hospital nursing program.

Industrial

Employee physical examinations decreased from 2349 to 2130 while dispensary treatments declined from 8493 to 7722.

Four major and four sub-major injuries were treated, while for the previous month the number was eight major and eleven sub-major injuries. No major and only one sub-major injury was sustained by G. E. employees.

The health topic for the month considered the psychological aspects of employee relations and should nicely augment the supervisory training programs now in progress.

Sickness absenteeism increased slightly from 1.34% to 1.40%, while total absenteeism increased from 2.01% to 2.15%.

In spite of our excellent safety and sickness absentee record, our rejection of new applicants for physical reasons this year has been less than 1%, and 8½% of our new employees were physically handicapped requiring special placement in order that they might work safely.

Communities

Kadlec Hospital average daily census increased from 82 to 84.8 (73.2 adults, 11.6 infants). The census was 64.8 a year ago.

Nursing hours per patient day were 3.64 for the mixed services and 4.40 for obstetrics.

Public Health

There was an increase in communicable diseases but none were of the major serious type. Home nursing visits increased 90% largely due to increase in upper respiratory infections and school services.

MEDICAL DIVISIONS

SEPTEMBER 1950

Costs - August

Medical Divisions' operating costs before assessments to other divisions and Workmen's Compensation Costs:

	<u>July</u>	<u>August</u>	<u>August Budget</u>
Industrial Medical (Oper. Div.)	\$41,649.	38,353.	39,630.
Public Health (Oper.)	10,376.	11,092.	12,420.
Kadlec Hospital (net)	27,057.	24,552.	29,252.
Hosp. assessments to other divisions and workmen's compensation	<u>1,918.</u>	<u>1,627.</u>	<u>2,800.</u>
Subtotal - Oper. Medical Divisions	81,000.	75,624.	84,102.
Construction Medical (Ind. & P.H.)	<u>11,521.</u>	<u>11,872.</u>	<u>21,630.</u>
Total (Operations & Construction)	\$92,521.	87,496.	105,732.

The net cost of operating the Medical Divisions (before assessments to other divisions and Workmen's Compensation) was \$87,496., a decrease of \$5,025., and \$18,236. below the budget figure.

The decreased cost was largely due to increased revenue.

The net cost of operating Kadlec Hospital was \$24,552., a decrease of \$2,505., and \$4,700. below the budget estimate. The improvement was largely due to increased revenue.

Public Health expenses changed little while Industrial Medical (Operations) expense decreased by \$3,296. due to a decrease in professional services expense and an increase in revenue.

MEDICAL DIVISIONS

SEPTEMBER 1950

Industrial Medical Division

The number of examinations decreased from 2349 in August to 2130 in September. The number of dispensary treatments also decreased from 8493 to 7722. General Electric employees sustained no major injuries and only one sub-major injury. Sub-contractor employees sustained four major injuries and three sub-major injuries. During the month there were 14 first aid stations operating, 9 for General Electric employees and 5 for sub-contractor construction employees. In the 200-W area and the 100-DR area, the number of construction cases decreased by about one-third under the previous month. Cases at MJ-1 remained about the same with 1300 cases being treated.

One member of the industrial staff, Dr. Dewey Reys, left during the month to accept a position with the Du Pont Company at Louisville, Kentucky.

The industrial physicians' scientific meeting dealt with the toxicity of radio-iodine, and the subject was presented by Dr. Bustad, a member of the H. I. Biology Division.

Messrs. Lawrence, Engstrom and Callahan, of the Washington State Dept. of Labor Board of Appeals, visited us on Sept. 28th. They commented very favorably on our handling of industrial insurance claims, and stated that it was outstanding in comparison to other industries in the state. The handling of these claims of course is a joint effort between the Insurance Section of the Employee Relations Division, the Law Division, and the Industrial Medical Division.

In preparation for "National Employ the Handicapped Week", a week in October designated by Congress by a joint resolution in 1945 to encourage employers to employ those physically handicapped, the following figures are of interest and show that we have done our part at this plant in this regard. So far this year, out of 1172 applicants sent to us for G. E. employment, we have accepted 63 applicants (5.4%) with restrictions as to the kind of work they can do, and 37 (3.2%) with restrictions as to location of work. We can therefore say that about 8½% of those accepted for employment so far this year were in some way physically handicapped but still were able to do the job assigned safely.

The Health Activities Committee met on Sept. 21st, and the topic on Interpersonal Relationships was presented. Material on this subject was prepared for distribution to all employees. The topic deals with the medical aspects involved in dealing with people, and it is felt that it will be of special value in augmenting the supervisory training program now in progress.

There were three Dept. of Labor hearings attended during the month in which testimony was given by industrial physicians.

Absenteeism due to sickness increased .06% over the previous month, and absenteeism due to all causes was .14% higher.

There were no findings attributable to radiation exposure of any employee during the month. 1208397

MEDICAL DIVISIONS

SEPTEMBER 1950

<u>Physical Examinations</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
<u>Operations</u>			
Pre-employment.....	125	159	1172
Rehire.....	38	51	466
Annual.....	470	327	3640
Interval.....	440	278	3912
A. E. C.	15	7	97
Recheck.....	152	124	1178
Termination.....	106	181	762
Sub-total.....	<u>1346</u>	<u>1127</u>	<u>11227</u>
<u>Sub-contractors</u>			
Pre-employment.....	228	190	2966
Rehire.....	320	327	2826
Recheck.....	117	86	912
Termination.....	338	400	1854
Sub-total.....	<u>1003</u>	<u>1003</u>	<u>8558</u>
Total Physical Examinations.....	2349	2130	19785
<u>Laboratory Examinations</u>			
<u>Clinical Laboratory</u>			
Government.....	76	36	947
Pre-employment, termination, transfer..	4759	4991	46799
Annual.....	2450	1689	18950
Rechecks (Area).....	2311	1500	20477
First Aid.....	13	8	134
Clinic.....	2607	2597	24566
Hospital.....	2697	2941	26048
Public Health.....	82	58	499
Total.....	<u>14995</u>	<u>13820</u>	<u>138420</u>
<u>X-Ray</u>			
Government.....	13	4	158
Pre-employment, termination, transfer..	720	742	7665
Annual.....	492	341	3755
First Aid.....	167	173	1169
Clinic.....	227	321	2008
Hospital.....	135	177	1562
Public Health.....	0	5	49
Total.....	<u>1754</u>	<u>1763</u>	<u>16366</u>
<u>Electrocardiographs</u>			
Industrial.....	29	17	260
Clinic.....	4	4	38
Hospital.....	15	19	192
Total.....	<u>48</u>	<u>40</u>	<u>490</u>
<u>Allergy</u>			
Skin Tests.....	6	3	185

MEDICAL DIVISIONS

SEPTEMBER 1950

<u>First Aid Treatments</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
<u>Operations</u>			
New occupational cases.....	406	354	3245
Occupational case retreatments.....	1204	1115	10844
Non-occupational treatments.....	<u>2790</u>	<u>2726</u>	<u>27840</u>
Sub-total.....	4400	4195	41929
<u>Construction</u>			
New occupational cases.....	742	647	3740
Occupational case retreatments.....	2714	2328	11824
Non-occupational treatments.....	<u>537</u>	<u>552</u>	<u>2617</u>
Sub-total.....	3993	3527	18181
 Total First Aid Treatments.....	 8493	 7722	 60110

<u>Major Injuries</u>			
General Electric.....	0	0	2
Sub-contractors.....	<u>8</u>	<u>4</u>	<u>47</u>
Total.....	8	4	49

<u>Sub-major Injuries</u>			
General Electric.....	1	1	19
Sub-contractors.....	<u>10</u>	<u>3</u>	<u>55</u>
Total.....	11	4	74

<u>Absenteeism</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Percent Absenteeism</u>	<u>Comp. with Previous Mon.</u>
No. days absent due to all causes.....	1787	766	2553	2.15%	.14% more
No. days absent due to sickness only.....	1157	509	1666	1.40%	.06% more
Avg. days absent due to sickness by each male employee.....	.26 or 260 days/1,000 employees				
Avg. days absent due to sickness by each female employee.....	.35 or 350 days/1,000 employees				
Avg. days absent due to sickness by all employees.....	.28 or 280 days/1,000 employees				
Absenteeism due to all causes by divisions:					
Employee & Community Relations.....	1.32%				
Medical.....	1.80%				
Manufacturing.....	1.91%				
Security & Services.....	1.95%				
Health Instrument.....	2.02%				
Design & Construction.....	2.43%				
Purchasing & Stores.....	2.52%				
Technical.....	2.72%				
Community.....	2.80%				
General Accounting.....	2.81%				

<u>Investigation:</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
Total number calls requested.....	2	11	131
Total number calls made.....	2	11	131
No. absent due to illness in family..	0	0	2
No. not at home when call was made...	0	0	14

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MEDICAL DIVISIONS

SEPTEMBER 1950

Community Medical Division

General

Medical Divisions' roll decreased during the month from 285 to 279 employees.

The average daily adult hospital census increased from 71.1 to 73.2, as compared to 52.2 a year ago. The average daily infant census increased from 10.9 to 11.6, as compared with 12.6 a year ago.

Nursing hours per patient day:

Medical, Surgical, Pediatrics	3.64
Obstetrical	4.40

The ratio of hospital employees to patients (excluding newborn) for the month of August was 2.04. When newborn infants are included, the ratio is 1.77. This represents a reduction from last month due to an increase in patient census for the month of August.

The net expense of the Richland community medical program for August, 1950 was \$24,552., as compared to \$27,057. for July. Breakdown is as follows:

Kadlec Hospital net expense \$ 23,778.

This is a decrease of approximately \$2600. as compared to July. Although salaries for August were higher than those for July as a result of salary costs for July 1st and 2nd being charged to June, this increase in expense was more than offset by an increase of approximately \$5,500. in revenue due to increased patient census.

Clinic net expense \$ 774.

This is an increase of \$135. due to an increase in salary costs.

Mr. O. E. Bakko attended the American Hospital Association national convention in Atlantic City, New Jersey.

Mr. W. T. Pope, Miss R. Bridges, and Miss R. Swift attended the semi-annual meeting of the Washington State Hospital Association in Spokane. Miss Swift also attended a meeting of the Washington State Association of Nurse Anesthetists, which was held in conjunction with the Hospital meeting.

The study of nursing problems currently being conducted by Miss Mary Miller, Public Health Nurse Consultant from the Washington State Dept. of Health, is progressing satisfactorily. It is expected that the initial phase of this study will be completed during the month of October.

During this month, the hospital secured a Pathologist, Dr. Sidney Marks. Also added to our staff was a Radiologist, Dr. Edward James. The addition of these two full-time specialists once again affords the hospital complete specialty service for laboratory and x-ray work within its own staff.

MEDICAL DIVISIONS

SEPTEMBER 1950

<u>Kadlec Hospital</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
<u>Census</u>			
Admissions: Adults.....	401	393	3743
Patient Days: Adults.....	2206	2198	19672
Infants.....	337	347	3008
Total.....	2543	2545	22680
Average Stay: Adults.....	5.5	6.3	5.3
Infants.....	5.3	5.6	5.2
Average Daily Census: Adults.....	71.1	73.2	71.9
Infants.....	10.9	11.6	11.0
Total.....	82.0	84.8	82.9
Discharged against advice.....	1	1	13
One-day cases.....	65	59	591
Occupancy percentage: Adults.....	80.0%	82.3%	80.8%
Infants.....	136.3%	143.7%	134.5%
Admission Source: Richland.....	78.3%	77.6%	80.9%
North Richland....	8.5%	10.1%	7.7%
Other.....	13.2%	12.3%	11.3%
Admissions by employment:			
General Electric..	74.3%	74.3%	
Government.....	1.2%	2.6%	
Facility.....	3.7%	5.3%	
Sub-contractors...	11.5%	9.4%	
Schools.....	0.5%	0.5%	
Military.....	3.0%	4.1%	
Other.....	5.8%	3.8%	
<u>Surgery</u>			
Majors.....	54	66	576
Minors.....	86	92	679
E. E. N. T.	45	35	432
Transfusions.....	56	50	464
Dental.....	0	2	16
<u>Vital Statistics</u>			
Deaths.....	5	2	26
Live Births.....	63	62	568
Still Births.....	2	2	9
<u>Physiotherapy Treatments</u>			
Clinic.....	56	48	655
Hospital.....	48	47	513
Industrial: Plant.....	164	128	1502
Personal.....	12	18	159
Total.....	280	241	2829
<u>Pharmacy</u>			
No. of prescriptions filled.....	2537	2688	23485

MEDICAL DIVISIONS

SEPTEMBER 1950

	<u>August</u>	<u>September</u>	<u>Year to date</u>
<u>Patient Meals</u>			
Regulars.....	3392	3602	28709
Specials.....	1156	931	8876
Lights.....	223	164	1363
Softs.....	1335	1232	13631
Tonsils & Adenoids.....	100	81	987
Liquids.....	242	172	1801
Surgical Liquids.....	49	80	618
Total.....	<u>6497</u>	<u>6262</u>	<u>52985</u>
 <u>Cafeteria Meals</u>			
Noon.....	1269	1093	12586
Night.....	167	170	2083
Total.....	<u>1436</u>	<u>1263</u>	<u>14669</u>

Public Health Division

General

The number of communicable diseases reported increased, all in the minor classification or upper respiratory infections. This is not unusual, however, at the opening of the school term. Poliomyelitis remained at approximately the same level. To date, with a total of five cases reported, four have been in the adult age group.

Medical referrals for home visits for bedside nursing showed a slight increase in September to a total of thirteen. With this small number there seems to be no justification to resume weekend coverage at the present. Home nursing visits increased almost 90% during the month, largely due to increase in upper respiratory infections and school services. Field nursing visits to maternity cases was materially increased. Additional activities of the program for this group was the re-establishment of Mothers' Classes on Sept. 19th.

A program of orientation to all new teachers on the Weitzel Grid and its use has been carried out in each school by the Public Health nurses. This has been very well received.

The mosquito control program was terminated for the season on Sept. 30.

Two staff nurses resigned to take advanced training in public health nursing under the G. I. Bill of Rights. One replacement was appointed on Sept. 5th. The student in public health hygiene, who was appointed for the summer months, resigned to complete school. A sanitarian has been appointed to arrive October 2nd.

The nurse physical-therapist conducted a staff conference for nursing members as part of the in-service education program in orthopedics.

MEDICAL DIVISIONS

SEPTEMBER 1950

<u>Education</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
Pamphlets distributed.....	11291	12656	59343
News Releases.....	6	0	44
Classes.....	0	7	38
Staff Meetings.....	3	3	37
Lectures & Talks.....	2	11	65
Attendance.....	48	447	2438
Conferences (among section workers)..	72	122	520
Films shown.....	11	2	28
Attendance.....	227	55	825
Radio Broadcasts.....	1	3	4
 <u>Immunizations</u>			
Diphtheria.....	48	21	1940
Influenza.....	0	0	1
Rocky Mt. Spotted Fever.....	0	0	13
Smallpox.....	14	9	1476
Tetanus.....	50	22	169
Typhoid.....	4	1	20
Whooping Cough.....	48	21	86
Tuberculin Test.....	2	13	31
Total.....	166	87	3736
 <u>Social Service</u>			
Cases carried over.....	83	89	799
Cases admitted.....	10	22	145
Total.....	93	111	944
Cases closed.....	4	14	136
Remaining case load.....	89	97	808
 Sources of referral:			
Public Health.....	5	4	28
Doctors.....	3	4	50
Interested person.....	0	2	14
School.....	0	0	6
Personnel Office.....	1	0	2
Personal Application.....	0	8	24
Other agency.....	1	1	10
Miscellaneous.....	0	3	11
Total.....	10	22	145
 <u>Sanitation</u>			
Inspections made.....	144	194	1464
 <u>Bacteriological Laboratory</u>			
Treated water samples.....	222	186	1727
Milk Samples (Inc. cream & ice cream)	35	12	482
Other bacteriological tests.....	197	177	1973
Total.....	454	375	4182

MEDICAL DIVISIONS

SEPTEMBER 1950

<u>Communicable Diseases</u>	<u>August</u>	<u>September</u>	<u>Year to date</u>
Amoebic Dysentery.....	0	0	1
Chickenpox.....	2	2	149
Erysipelas.....	0	0	1
German Measles.....	2	9	163
Gonorrhoea.....	0	0	2
Impetigo.....	1	9	11
Influenza.....	0	2	8
Measles.....	0	0	12
Meningitis.....	0	0	1
Mumps.....	1	3	11
Pinkeye.....	0	0	13
Poliomyelitis.....	3	2	5
Ringworm.....	0	6	15
Roseola.....	0	1	4
Scabies.....	0	3	11
Scarlet Fever.....	0	1	50
Syphilis.....	4	0	24
Tuberculosis.....	0	1	5
Whooping Cough.....	3	3	19
Pharyngeal Infection.....	0	0	6
Total.....	<u>16</u>	<u>42</u>	<u>511</u>
Total No. Nursing Field Visits.....	534	930	8452

MEDICAL DIVISIONS

PERSONNEL SUMMARY

September 30, 1950

	1100 Area				3000 Area		Sub-total
	Division Administration	Industrial	Hospital	Public Health	Industrial	Public Health	
Physicians	2	3.7	2	1	2		10.7
Nurses	2	9	50**	8	1	2	72.
Anesthetists			3				3.
Nurse Aides		1	24	1			26.
Orderlies & Amb. Dr.			6				6.
Tech. - Clin. Lab.			10.4		1		11.4
Tech. - X-Ray Lab.			3		2		5.
Tech. - Bact. Lab.			1				1.
Tech. - Phys. Ther.			1				1.
Secretary	2						2.
Cler. Work. Leader	1						1.
Steno. & Typist	2	1	2	2	1		8.
Office Mach. Oper.	2	1					3.
Telephone Oper.	3						3.
General Clerk	11	9	9*	1	9		39.
Pharmacist			3				3.
Dietitian			2				2.
Cook			5				5.
Kitchen Worker			10				10.
Soc. Serv. Couns.				3			3.
Sanitarian				1			1.
Health Educator				1			1.
Janitor		4.6	8.8	.6	.7	.3	15.
Records Supv.	2						2.
Acctg. Supv.	3						3.
Admin. & Asst.	2						2.
Others	1		7				8.
TOTAL	33	29.3	147.2	18.6	16.7	2.3	247.1

* (1) General Clerk in Clinic Record Room.

** (4) Nurses working part time.

Note: T. W. Galbraith, bacteriologist, carried on H. I. roll, working part time in Medical Divisions.

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Personnel located in outlying areas shown on following page.

MEDICAL DIVISIONS

PERSONNEL SUMMARY

September 30, 1950

	Sub-total	Outlying Areas										TOTAL	
		100-DR	100-B	100-D	100-F	100-H	241-S	200-E	200-W	300	MJ-1		White Bluffs
Physicians	10.7		.1	.2	.3	.1	.1	.2	.3				12
Nurses	72	2	1	4	4	1	1	4	5	2	1	1	98
Anesthetists	3												3
Nurse Aides	26												26
Orderlies & Amb. Dr.	6												6
Tech. - Clin. Lab.	11.4		.4	.4		.4		.4					13
Tech. -X-Ray Lab.	5												5
Tech. - Bact. Lab.	1												1
Tech. - Phys. Ther.	1												1
Secretary	2												2
Cler. Work. Leader	1												1
Steno. & Typist	8												8
Office Mach. Oper.	3												3
Telephone Oper.	3												3
General Clerk	39		.3	.3	.5	.5	.2	.2	.4	.6			42
Pharmacist	3												3
Dietitian	2												2
Cook	5												5
Kitchen Worker	10												10
Soc. Serv. Couns.	3												3
Sanitarian	1												1
Health Educator	1												1
Janitor	15												15
Records Supv.	2												2
Acctg. Supv.	3												3
Admin. & Asst.	2												2
Others	8												8
TOTAL	247.1	2	1.8	4.9	4.8	2	1	4.7	5.4	2.7	1.6	1	279

Number of employees on roll:

Beginning of month	285
End of month	<u>279</u>
Net decrease	6

HEALTH INSTRUMENT DIVISIONS

SEPTEMBER, 1950

Summary

Additions and deletions to the total force resulted in a net decrease of eight employees for the month. Four Class I Special Hazard Incident Investigations were reported.

Operational Division surveys of area work locations showed no serious deviation from satisfactory hazard control. Misadventures that did occur did not result in significant radiation exposure of personnel.

Routine activity density measurements by the control groups of the Biology and Development Divisions on samples of air, water, soil, vegetation, and wildlife, showed the usual pattern of activity deposition. As expected, deposition of I¹³¹ increased in accordance with the shortened metal cooling period.

Health Instrument Divisions

HEALTH INSTRUMENT DIVISIONS

SEPTEMBER 1950

Organization

The composition and distribution of the force as of 9/30/50 was as follows:

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>200-E</u>	<u>200-W</u>	<u>300</u>	<u>700</u>	<u>P.G.</u>	<u>Total</u>
Supervisors	1	1	8	2	4	12	12	6	0	46
Engineers *	4	8	24	3	7	15	13	3	0	77
Clerical	0	0	3	1	1	3	3	4	0	15
Others	14	15	48	11	29	65	52	11	8	253
Total	19	24	83	17	41	95	80	24	8	391

* includes chemists, biologists, etc.

<u>Number of Employees on Payroll</u>	<u>September 1950</u>
Beginning of Month	399
End of Month	<u>391</u>
Net decrease	8

Added to the roll were one engineer, one chemist, 2 technical graduates, 4 inspectors, 1 laboratory assistant, 1 moto-messenger, 3 steno-typists, and a general clerk.

Removed were 4 inspectors, 3 technical graduates, 2 technologists, 6 laboratory assistants, 1 instrument trainee, a badge worker, 3 personnel meters clerks, and 2 steno-typists.

General

Reports on the deliberations of the International Congress of Radiology on dose units and protection were obtained from the respective chairmen at the Roentgen Ray Society in St. Louis, Missouri. Details will be disseminated either by group meetings or by a separate report.

Briefly, general dose statements in energy units - ergs per gram - were recommended, with the roentgen to be used for photon radiation up to 3 Mev. Derived units, such as the rep and rem, were not recognized by the committee. The required dose statements without such units become so long-winded that all practical workers in the field will use some such system. Only a modest teaching effort should be sufficient to make the rep-rem system universal before the next International meeting.

Health Instrument Divisions

In the field of radiation protection, a second round of the Chalk River Conference was held at Harwell. The International Committee met later and essentially said that it was in no position to quote reliable limits for radioisotope exposure; it indirectly gave its approval to the Harwell figures. Of principal interest was a restoration of the plutonium permissible deposition to the pre-Chalk River value, and an increase by a factor of 10 in the body deposition of tritium, and an increase by a factor of 50 in the permissible air concentration of tritium. These values are much closer to those of the local calculations of Kornberg and Parker except that a safety factor of 2, representing 1 rep = 2 rem for the very soft beta emission of tritium is preferred here. The new limits will greatly simplify the instrumentation problem, and should permit substantial economies in the design of any new tritium facilities.

Four Class I Special Hazard Incident Investigations were reported. One involved a minor explosion in a plutonium processing hood, one concerned another accidental release of tritium, one resulted from failure to follow special hazard instructions, and the fourth arose from inadequate job planning. In no case was there actual overexposure of personnel.

The following trips were reported:

- L. K. Bustad - American Medical Association, Miami, Florida. (Omitted last month)
- M. E. Getzendaner - ANL and ACS meeting, Chicago.
- J. W. Healy - NME-AEC symposium, Edgewood, Maryland;
ORNL, Los Alamos.
- G. R. Hilst - Schenectady, BNL, ORNL, ANL.
- H. A. Kornberg - Laboratory Directors' meeting, Los Alamos.
- W. A. McAdams - NME-AEC Symposium, Edgewood, Maryland, Civil defense meeting,
Washington, D.C.
- H. M. Parker - Waste disposal conference UCLA; American Roentgen Ray Society,
St. Louis, Missouri.
- J. W. Porter - ANL and ACS meeting, Chicago.

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

<u>Inventor</u>	<u>Title</u>
None	None

Health Instrument Divisions

OPERATIONAL DIVISION

100 Areas

General Statistics

	<u>August</u>					<u>September</u>					<u>1950 To Date</u>
	<u>B</u>	<u>D</u>	<u>F</u>	<u>H</u>	<u>Total</u>	<u>B</u>	<u>D</u>	<u>F</u>	<u>H</u>	<u>Total</u>	
Special Work Permits	571	634	496	863	2564	397	930	331	839	2497	23,228
Routine & Special Surveys	405	510	522	447	1884	294	705	369	468	1836	16,146
Retention Basin	88	76	87	193	444	81	52	93	87	313	3,756
Air Monitoring Samples	111	99	82	146	438	155	110	85	157	507	4,423

Retention Basin Effluent

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

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>
Power Level (MW)	335	320	305	400
Average beta dosage-rate (mrep/hr)	1.1	1.0	1.5	0.6
Average gamma dosage-rate (mr/hr)	2.8	2.4	3.0	1.6
Average total dosage-rate (mrep/hr)	3.9	3.4	4.5	2.2
Average integrated dose in 24 hrs. (mrep)	94	82	108	53
Maximum integrated dose in 24 hrs. (mrep)	115	98	137	96
Maximum integrated dose in 24 hrs. (mrep) 1950	120	139	154	194

100-B Area

File and Associated Buildings

Time limits in the discharge area were reduced due to high level contamination in the Area. Front face extended Special Work Permits were voided as increased radiation readings were noted following power increase.

F-10 Operations - 108 Building

General Statistics

	<u>August</u>	<u>September</u>
Special Work Permits	60	54
Routine & Special Surveys	69	66
Air Monitoring Samples	256	205

Urine sample results showed two individuals with readings above 20 uc P-10 oxide per liter with a maximum of about 33 uc/liter reported. Considerable equipment decontamination was done. About 75% of returned shipping containers are contaminated.

Health Instrument Divisions

Metallurgical Laboratory - 111 Building

	<u>August</u>	<u>September</u>
Special Work Permits	48	22
Routine & Special Surveys	20	7
Air Monitoring Samples	1	0

Cleanup of contamination from the 100-D Area ruptured slug was completed and the concrete floor in the transfer area installed.

100-D Area

D Pile and Associated Buildings

Process tube nozzle change was completed without incident. High air sample results were attributed to difficulty in air balance. Marked increases in dose-rates at the "B" experimental hole were noted when the cooling water was cut off.

DR Pile and Associated Buildings

Dry and wet critical tests were made without incident. During a coefficient test high dose rates were recorded on the far side due to open holes and on top of the pile due to an open V.S.R. thimble.

100-F Area

Pile and Associated Buildings

Contamination in the discharge area continued high placing restrictions on work in the area. A further reduction in the gamma beam at the top far edge of the pile was noted. A decrease of about 55% in intensity has occurred since June.

Biology Building and Associated Buildings

	<u>September</u>
Special Work Permits	7
Routine & Special Surveys	31
Air Monitoring Samples	11

Some contamination spread occurred during experiments with tritium. Routine survey disclosed contamination in the isotope preparation room.

Health Instrument Divisions

P-11 Operations

General Statistics

	<u>August</u>	<u>September</u>	<u>1950 To Date</u>
Special Work Permits	0	0	5
Routine & Special Surveys	55	26	200
Air Monitoring Samples	52	37	114

Air sample results were normal; a maximum of 1.7×10^{-10} $\mu\text{g Pu/cc}$ was obtained during installation of equipment. Equipment changes to test spheres was completed without incident. However, when product solution was added to the system several leaks were found. Contamination was confined to the immediate area and readily cleaned.

100-H Area

High air sample results were noted in widely separated locations and were attributed to such items as pump leaks, leaks in water level indicator lines, and air balance. Gas leaks were prevalent at unit base seams. The "A" experimental hole thimble was removed and the P-13 equipment installed without incident.

200 Areas T and B Plants

General Statistics

	<u>August</u>			<u>September</u>			<u>1950 To Date</u>
	<u>T</u>	<u>B</u>	<u>Total</u>	<u>T</u>	<u>B</u>	<u>Total</u>	
Special Work Permits	307	295	602	326	229	555	6,265
Routine & Special Surveys	581	543	1124	510	456	966	9,390
Air Monitoring Samples	855	911	1766	604	860	1464	12,872
Thyroid Checks	74	57	131	35	77	112	1,336

Canyon Buildings

In the T Plant, conditions were improved by waste removal and decontamination. Seventy-four of 359 air samples showed results above 10^{-12} $\mu\text{g Pu/cc}$ with a maximum of 4.5×10^{-8} $\mu\text{g Pu/cc}$; 129 were above 10^{-10} $\mu\text{c f.p./cc}$ with the maximum 2.6×10^{-8} $\mu\text{c/cc}$. Fifteen scrubber samples for radioiodine showed a maximum of 7.6×10^{-9} $\mu\text{c/cc}$.

In the B Plant, high air samples were coincident with dissolver charging. Scrubber samples of canyon air I^{131} showed results up to 1.4×10^{-8} $\mu\text{c/cc}$. Of 469 air samples, 77 were above 10^{-12} $\mu\text{g Pu/cc}$ and 155 were above 10^{-10} $\mu\text{c f.p./cc}$; maxima were 2.5×10^{-10} $\mu\text{g Pu/cc}$ and 3.7×10^{-7} $\mu\text{c/cc}$.

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Health Instrument Divisions

Concentration Buildings

Normal maintenance repair work was done in both areas without incident. Discharge of plutonium from cell vents averaged 194 $\mu\text{g}/24$ hrs. in A cell (T Plant) and 60 μg Pu/24 hrs. in D cell (B Plant).

Stack Areas

Further increase in dose-rate at the base of B stack was noted. Present reading is 7.2 rep per hour.

Waste Disposal Areas

In the T Plant, replacement of a leaky connector caused the loss of a crane hook and ball due to contamination. Excavation for the waste evaporator was started. Gauging of 101U, 102U and 103U risers was completed with good hazards control. In the B Plant, a sharp increase in radioactivity at the 5-6 crib riser was attributed to increased I^{131} in scrubber solution associated with shorter cooling periods.

Plant Laundry

Seventeen of 66 air samples showed positive results, the maximum of 1.7×10^{-6} μg U/cc occurred while processing 300 Area clothes.

General

All thyroid checks were below warning level.

The Isolation Building

General Statistics

	<u>August</u>	<u>September</u>	<u>1950 To Date</u>
Special Work Permits	42	44	272
Routine & Special Surveys	419	367	2757
Air Monitoring Samples	520	463	3529

Air Sample Results

Fifty-nine of 563 samples were above 10^{-12} μg Pu/cc; the maximum was 6×10^{-10} obtained from the building exhaust system. Replacement of a cell filter was necessary for correction.

Operating Cells

Forty-two unregulated items, four floor locations and one person were reported contaminated. Gamma radiation levels increased further during the month.

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Health Instrument Divisions

Purification Building

General Statistics

	<u>August</u>	<u>September</u>	<u>1950 To Date</u>
Special Work Permits	240	206	1,757
Routine & Special Surveys	835	485	5,256
Air Monitoring Samples	1691	1216	12,139

Air Sample Results

Two-hundred-four of the 1,216 samples showed concentrations above 10^{-12} $\mu\text{g Pu/cc}$. High result was 8.9×10^{-9} $\mu\text{g/cc}$ associated with 235 process difficulties at Hood 10. No overexposure of personnel was found. Other high results included 5.6×10^{-10} $\mu\text{g/cc}$ in 234 operation during canister change and 5.9×10^{-9} during work on Hood 25 in 235 operation.

234 Building - Operating Section

Process rooms 222 and 223 (recovery) are becoming progressively more contaminated. The contamination status of room 228 was again unchanged; the average room air concentration was 5.2×10^{-11} $\mu\text{g Pu/cc}$. One serious contamination spread occurred when an individual failed to check his protective clothing.

235 Building - Operating Section

Gross Pu contamination of rooms 230 and 231 occurred as a result of a minor explosion in Hood 10; there was no skin contamination or injury.

General Building

The waste transport cart was grossly contaminated but no contamination was found on the waste truck. A decrease was noted in the air contamination in the process transfer vacuum system (26-inch vacuum).

200 Areas Control Laboratories

	<u>T</u>	<u>B</u>	<u>231</u>	<u>234-5</u>
Items contaminated - not regulated	108	181	211	197
Skin contamination - alpha	4	5	4	3
Skin contamination - beta	0	4	0	0
Contaminated floor locations	10	76	17	109

In the B Plant, 6 cases of skin or protective clothing contamination marked an increase in incidents.

In the Purification Building, low level floor contamination has gradually built

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Health Instrument Divisions

up to a general level of about 500 d/m per square foot.

Particle contamination continued high. Concentration in particles per 1,000 cubic meters were:

<u>Location</u>		<u>August</u>	<u>September</u>
222 T	Outside	23	82.3
	Hallway	66.2	89.3
	Room 7	313	361
222 B	Outside	24.5	27.9
	Hallway	28.1	79.5
	Room 7	281	347

The 300 Area

General Statistics

	<u>August</u>	<u>September</u>	<u>1950 To Date</u>
Special Work Permits	155	88	1,150
Routine & Special Surveys	172	174	1,589
Air Samples	194	136	1,377

Metal Fabrication Plant

Fourteen of 52 air samples showed results above 5×10^{-5} $\mu\text{g U/cc}$; maximum was 3.7×10^{-2} $\mu\text{g/cc}$ during rod brushing. An air sample result of 2.4×10^{-4} $\mu\text{g U/cc}$ was obtained in the area maintenance shop.

Technical Building

Three instances of Pu contamination to the hands and one of I^{131} were successfully cleaned. Five of 66 air samples were above 10^{-11} $\mu\text{g Pu/cc}$; the maximum was 1.7×10^{-11} $\mu\text{g/cc}$.

Hand Score Summary

There were 37,439 alpha and 38,059 beta scores recorded. About 0.11% of the alpha and about 0.06% of the beta scores were high. No attempted reduction was indicated for 5 alpha scores in B Plant and 3 beta scores at 100-D; where decontamination was attempted it was successful.

Health Instrument Divisions

PERSONNEL METERS

Pencils

	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>E&N 200</u>	<u>200-W</u>	<u>300</u>	<u>Total</u>	<u>1950 To Date</u>
Pencils Read	13,606	17,578	12,396	9,385	17,925	29,556	32,005	132,451	1,159,380
Single Readings (100 to 280 mr)	12	65	3	6	15	34	19	154	1,654
Paired Readings (100 to 280 mr)	3	1	0	0	0	0	0	4	23
Single Readings (Over 280 mr)	40	63	23	18	27	93	47	311	2,222
Paired Readings (Over 280 mr)	0	0	0	1	0	1	2	4	22
Lost Readings	1	2	1	0	0	1	1	6	40

Of the eight significant pencil readings reported, none was confirmed by film badge results.

Investigation of lost readings revealed no possibility of an overexposure.

Badges

	<u>100-B</u>	<u>100-D</u>	<u>P-11 101-P 100-F</u>	<u>100-H</u>	<u>200-E</u>	<u>R.R.T. 200-N</u>	<u>200-W</u>	<u>300</u>	<u>Total</u>	<u>1950 To Date</u>
Badges Processed	2279	2572	2680	1970	2076	462	3503	7605	23,147	197,545
Number Readings (100 to 300 mrep)	15	80	6	9	63	0	106	90	371	2,365
Number Readings (Over 300 mrep)	13	34	0	7	2	0	22	0	78	207
Lost Readings	1	3	3	1	2	0	2	3	15	81

Lost readings were accounted for as follows:

Packet lost in area	1
Badges lost in area	3
Contaminated badge	1
Lost in processing	1
Film not packaged	9
Total	15

There were 10 results above 600 mrep but were all attributed to faulty film. Investigation of lost readings showed no possibility of an overexposure.

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Badge Resume, Construction Areas

	<u>200-W</u>	<u>100-DR</u>	<u>Total</u>	<u>1950 To Date</u>
Badges Processed	1,187	2,205	3,392	22,590
Number Readings (100 to 300 mrep)	0	1	1	50
Number Readings (Over 300 mrep)	0	1	1	7
Lost Readings	2	0	2	11
Total badges processed 1950, Operations		197,545		
Construction		<u>22,590</u>		
Total		220,135		

In addition to the badge program, a total of 1,604 items of non-routine nature was processed during the month.

Slow Neutron Pencil Summary

	<u>100-B</u>	<u>100-D</u>	<u>100-DR</u>	<u>100-F</u>	<u>100-H</u>	<u>Total</u>	<u>1950 To Date</u>
Number of pairs issued	49	49	0	89	416	603	6,991
Number of significant readings	0	14	0	89	35	138	566
Number of significant readings (Above 50 mrem)	0	0	0	0	1	1	7

Investigation of the result above 50 mrem showed no possibility of exposure as user did not enter any Danger Zone.

Neutron Film

<u>Badges Processed</u>	<u>100-B</u>	<u>100-D</u>	<u>100-F</u>	<u>100-H</u>	<u>200-W</u>	<u>Total</u>	<u>1950 To Date</u>
Personnel	43	35	59	211	35	383	2,066
Special	9	4	6	12	24	55	212

Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

CONTROL GROUPS

Site Survey

Monitoring for the activity density of alpha and beta emitters in drinking water did not reveal any significant deviations from those measured the previous month. The maximum activity density of alpha emitters was 35 dis/min/liter measured in a sample taken from the Benton City water well; this alpha emitter was confirmed to be uranium by fluorophotometer analyses and presumably is naturally occurring uranium. The maximum activity density of beta emitters measured was 1.5×10^{-7} $\mu\text{c}/\text{cc}$ as sampled from the Kennewick Highlands water supply. Samples of sludge taken from the Kennewick and Pasco filter plants indicated a maximum result of 1.1×10^{-5} μc beta emitters per gram. Beta activity in the Columbia River during September was higher by factors of 2 to 4 at most sampling over that noted in August; this increase was primarily attributed to the continued decrease in the river flow.

A continued increase in air contamination levels was observed during September as compared with last month; the most significant increase was confined to an area within a 5 mile radius of the separations area stacks. The increase was confirmed by detachable ionization chambers, air filter measurements, and by I^{131} scrubber monitors. The maximum weekly and monthly average filterable beta emitters measured was 6.2×10^{-12} $\mu\text{c}/\text{cc}$ and 8.5×10^{-12} $\mu\text{c}/\text{cc}$, respectively, at a monitoring station inside the 200 East Area. An increase by a factor of about 2 was noted in Benton City. Spot monitoring for I^{131} at various meteorological conditions during dissolving yielded a maximum result of 1.4×10^{-7} $\mu\text{c}/\text{cc}$ as measured inside the 200 West Area; 3000 feet downwind from the stack, a result of 4.1×10^{-9} was obtained almost simultaneously. These increases were again ascribed to the planned reduction of cooling time, equivalent to a twofold increase in iodine emission. A probable increase in the number of active particles in the atmosphere was observed within the separations area; the increase approached factors of 2 to 3 over last month at most monitoring stations within this area. No apparent change from past data was observed at locations outside the separations area.

Corresponding increases in the activity density of I^{131} in vegetation were measured at most sampling locations. The maximum monthly average concentrations were observed near the 200 West Area Badge House where values of 1×10^{-3} $\mu\text{c}/\text{gram}$ to 5×10^{-4} $\mu\text{c}/\text{gram}$ were measured; the maximum individual value of this group was 3.8×10^{-3} $\mu\text{c}/\text{gram}$. I^{131} in vegetation from the Wahluke Plateau averaged 1.9×10^{-5} $\mu\text{c}/\text{gram}$ with a maximum of 4.6×10^{-5} $\mu\text{c}/\text{gram}$; detectable I^{131} on vegetation was also noted in Pasco, Kennewick, and Richland. I^{131} comparable with the level measured in the Tri-City Area was measured on samples taken from Walla Walla and Pendleton. The increases were more pronounced at locations distant from the 200 Area stacks. Current readings are approximately twice as high as those of last month.

The average activity density of beta emitters measured in pile effluent water

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this month remained essentially unchanged. A maximum value of 4.2×10^{-3} μc beta emitters per cc was measured in the 107-B basin the day following a shutdown accompanied by a purge; this individual maximum was the highest recorded in any effluent basin this year. The average activity density of beta emitters in this water varied from 3.2 to 6.6×10^{-4} $\mu\text{c}/\text{cc}$. Preliminary results of stack monitoring in the 100 Areas indicated an approximate average value of 1.2×10^{-3} $\mu\text{c}/\text{liter}$ stack air primarily due to A^{41} . A tracer amount of residual activity has not been identified.

Bioassay

Four hundred and thirty urine samples were analyzed for plutonium. Thirty blank and spiked urine samples were run as controls. Approximately three hundred urine samples were processed as test analyses in training new personnel added to the laboratory and in checking the analytical procedures of the TTA analysis.

Urine samples and urine blank control samples again averaged 0.04 dis/min. This month the average yield for the spiked urine samples was 91 per cent. One set of urine samples was not accepted because of a low recovery yield on the spiked sample; analysis of 2 resamples from last month indicated less than 0.33 dis/min in both cases. Current results from personnel in the 234-235 areas do not indicate significant differences from the results of all other personnel sampled.

Four hundred and forty-seven urine samples were analyzed for fission products; thirty-one spiked samples and blank samples were run as controls. The results did not indicate any sample to exceed the arbitrary resample limit of 10 c/m using thin mica-window counters.

One hundred and two urine samples taken from 300 Area production personnel were analyzed for uranium by the fluorophotometer method. The maximum individual result was 44 $\mu\text{g}/\text{liter}$ sampled from an employee in the melt plant. The average uranium measured in seventeen samples taken from personnel at random not working with uranium was 2 $\mu\text{g}/\text{liter}$; the maximum individual result in this group was 6 $\mu\text{g}/\text{liter}$.

A total of two hundred and fifty-six urine samples was analyzed for tritium oxide in the Control Laboratory. Of this total, twenty-nine samples showed more than 1.6 $\mu\text{c}/\text{liter}$; the individual maximum value was 33 $\mu\text{c}/\text{liter}$. Fourteen of the high values were obtained from one individual; the next highest individual frequency was four.

Control Laboratory

The significant variation noted in comparing an immediate control point on a mica-window counter with subsequent points taken later in the day has been partially relieved by allowing the standard to rest inside the lead shield for five minutes before taking a control point. One mica-window counter is being tested for operation as controlled by a revised control chart procedure where

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the average counting rate of the counter is determined each week based on its performance for that particular week; this is in contrast to the current procedure of establishing the average computed for ten 10-minute points with a standard source.

Preliminary work evaluating a suitable method for analyzing for alpha emitters in vegetation indicate a yield of about 60 per cent for plutonium and about 75 per cent for uranium. The proportional counter has been used for measuring tritium oxide in air samples the past month.

A summation of work performed in the analytical laboratory and counting room appears below:

Laboratory:

<u>Type Sample or Analysis</u>	<u>Number of Analyses</u>
Vegetation	1,707
Water	1,303
Solids	455
Fluorophotometer	800
Very soft beta emitters	296
Miscellaneous	<u>251</u>
Total	4,812

<u>Counting Room</u>	<u>Number of Analyses</u>
Beta measurements	3,675
Alpha measurements	3,344
Control points	1,777
Decay curves (points)	2,322
Absorption curves (points)	<u>270</u>
Total	11,388

Calibrations

	<u>Number of Routine Calibrations</u>		
<u>RADIUM CALIBRATIONS</u>	<u>August</u>	<u>September</u>	<u>1950 to Date</u>
Fixed Instruments			
Gamma	366	339	3,316
Portable Instruments			
Alpha	314	279	2,554
Beta	699	637	5,367
Gamma (Radium)	1,152	945	8,602
X-ray Scanning	3	4	20
Neutron	<u>50</u>	<u>5</u>	<u>1,475</u>
Total	2,618	1,870	18,018

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<u>RADIUM CALIBRATIONS (cont'd)</u>	<u>August</u>	<u>September</u>	<u>1950 to Date</u>
Personnel Meters			
Beta	763	616	5,997
Gamma (Radium)	5,519	8,159	64,698
X-ray	6,094	8,514	58,565
Neutron	28	30	130
Total	12,404	17,319	129,390
GRAND TOTAL.	15,388	19,528	150,724

Meteorology

<u>Forecasts</u>	<u>Number Made</u>	<u>Percent Reliability</u>
Production	90	86.3
24-hour	60	87.9
Special	8	88.0

September, 1950 was both warmer and drier than normal. On the 2nd, the temperature reached 102, the highest September mark in the thirty-seven years of record for the month in the Hanford Area. Average temperature for the month was 67.5, a September mark which has been exceeded only five times during the period of record.

Precipitation for the past month totaled only 0.01 inch. This amount occurred on the 26th, and was the first measurable quantity recorded since July 19.

An unusual phenomenon occurred on the 13th when a cloud of dust, borne by a northeast wind, quickly obscured the sky and reduced visibility. At 0830 when the cloud was first observed, northeast of the area, there was otherwise no restriction to visibility. By 0900 the cloud completely covered the 200 Areas, vision horizontally was cut to one-half mile and the sky became completely obscured. Thereafter, visibility improved slowly to five miles at 1300 and was unrestricted again after 1700.

DEVELOPMENT GROUPS

Experimental Meteorology

Most of the work of the Experimental Meteorology group during this month was confined to theoretical studies of certain aspects of the dispersion and diffusion problems and planning of future experiments. A study of the temperature changes occurring in the formation of nocturnal fogs in this area has been started.

Industrial Hygiene

Apparatus was designed for the purpose of testing air-supplied face masks and respirators for the P-10 program and is now being built by the Instrument

16

1200421



Health Instrument Divisions

Division.

Studies were continued on measurements of carbon monoxide concentrations near the piles in the 100-F and 100-H Areas and on exposures to xylol in the H.I. Personnel Meters Building.

Geology

The activity densities in samples from the contaminated ground water zones in the 200 Areas were approximately at normal levels following the previously established trends except for the alpha activity in the 361-B-9 well which increased considerably to a level of 390 dis/min/liter. Drilling operations to further explore the 241-T-361 area of ground water contamination have been resumed. The alpha contamination in the 300 Area wells did not change much from the levels obtained during August.

Sediment samples taken from 200 West Area 5-6 tile field test holes continued to show above normal activity densities although the level is below that reported last month. The maximum activity density was 0.04 uc/gm in a sample from the #1 test hole.

Soil Science

This long-planned group was finally activated.

Methods Development

Preliminary results in comparing C.W.S. #6 type filter paper with Whatman #41 paper for use in determining alpha emitters in the atmosphere have been obtained. These indicate that the pressure drop across C.W.S. #6 type paper at 81.5 and 122 feet/minute was approximately 3 times that across the Whatman paper. Direct counts of C.W.S. filter paper for plutonium activity indicated counting rates 2 to 3 times that measured on the Whatman filter, although the individual data do not indicate this difference to be a constant in each comparison. The ratio of chemically extracted counts per minute to the direct counts per minute appeared to be higher for the Whatman paper than for the other. It was also found, as expected, that it was considerably easier to digest the Whatman filter rather than the C.W.S. filters, leaving a minimum amount of residue on the counting plate. Additional experiments are planned in which each type filter will be tested by backing the test filter with the other filter.

Physics

Tests on a newly received "Landsverk" electroscope unit with a chamber which can be exposed to water vapor indicate a sensitivity such that there is some possibility of measuring tritium contamination in exhaled air from individuals with the maximum permissible concentration in the body. If this level can be raised by a factor of five as indicated in report HW-18879 the possibility is considerably improved. However, in order to be usable, the background must be

Health Instrument Divisions

maintained at a low level and chamber contamination cannot be tolerated. Tests with contaminated breath samples are being planned.

Work is continuing on the measurement of the neutron spectra by nuclear emulsion techniques. Attempts to get satisfactory exposures to neutrons from the radium-beryllium source have failed because of excessive sensitivity of the emulsion to gamma radiation.

Some measurements are being made on the response of ionization chambers and photographic film exposed to the high energy (6 to 7 Mev) gamma radiation from N^{16} which is of immediate interest to the Operational Division in the 100-E Area. Films in film badges exposed to these radiations have less darkening behind the open window than behind the silver shield.

Instrument Development

The applicability of the Brown vibrating reed electrometer, Beckman RXG micro-micro-ammeter with 10^{12} ohm input resistor and the Applied Physics vibrating reed electrometer to P-10 monitoring was investigated further. The "sensitized" RXG is slower and more critical to adjust than is thought practical. An Applied Physics vibrating reed also showed long-term temperature effects on the most sensitive range.

A detector for measuring tritium in air was designed and partially assembled. The potentially contaminated gas will be drawn into a mixing chamber, mixed with methane (20% air - 80% methane) and passed to the proportional counting volume.

Design of an instrument for routine alpha surveys with a scintillation counter was completed and construction is in process. This system is meant to replace air proportional counters, provide useful counting rate meter readings, give controllable audio indication and have a minimum number of operating adjustments.

Test sections of iron filled concrete pile shield were monitored to determine the value of radiation testing for voids. During pouring, it was rather easy to determine the state of aggregate distribution and subsequent tests showed that a two-inch cube was rather readily detectable as well as a one-inch diameter void along the axis of a tube. Further work will allow more accurate evaluation of the method. The radiation source used was 2 mg Ra and a copper wall G.M. counter was the detector.

Health Instrument Divisions

BIOLOGY DIVISION

Analyses Group

1. Radioactivity in Carcasses

The counting characteristics of a large tube designed by the Instrument Development group were studied and found satisfactory.

2. Alpha and Beta Analyses of Organic Material

Work continued on the development of an analytical method for the determination of total I^{131} in large amounts of organic material of low activity density. The methods outlined last month which gave yields of 95 to 100% on blank animal tissues spiked with KI^{131} failed when applied to tissue from animals fed I^{131} because organically bound I^{131} was not liberated for precipitation. New approaches are being investigated. Methods for the analysis of I^{131} in vegetation are also being investigated.

Yields and reproducibility of the current methods used in the routine control laboratory were tested and found satisfactory.

3. Radioelements in Organisms in Pile Effluent

The analysis of a one-month old sample of algae from the 107 basin was completed. Results indicate 25% of the measurable activity due to P^{32} , 22% due to Fe^{59} , 29% due to rare earths, 8% due to Zn^{65} , and 2% due to one of the Co isotopes. Identification of the long-lived elements present in the organisms exposed to effluent water is nearly completed from the analyses of these old algae samples. Identification of the short-lived radioisotopes will start next month.

4. Physical Processes Affecting Methods of Isotope Use

The development of a procedure for standardization of I^{131} solutions from ORNL by gamma counting was completed. A saving of one man day per week will be effected by the new method.

5. Waste Disposal Methods for Biological Specimens

No progress.

6. Physical Chemical Methods for Dosimetry due to Deposited Isotopes

No progress.

Health Instrument Divisions

Analytical Services

Analytical services to other Biology groups consisted of concentrating ORNL I¹³¹ solutions to a small volume, calibrating seven shipments of I¹³¹, preparation of spike solutions for feeding, and the analyses in triplicate of about 1200 samples. These are in addition to approximately 2400 beta counts and to 750 decay and absorption curve determinations.

Aquatic Biology Group

1. Effect of Pile Effluent Water on Aquatic Organisms

Monitoring of the pile effluent water has been continued during the month with juvenile trout. Results have been much the same as observed last month with slight toxicity suggested at a concentration of 5% effluent. A slightly greater mortality was observed among the young trout in the warmer water of the 5% strength effluent than could be accounted for on the basis of bacterial infections apparent in troughs of higher temperatures. The size of the fish held in 5% effluent is not significantly different from that of the controls.

Equipment has been renovated and revamped in preparation for the regular and more extensive monitoring tests with salmon which will be started again during the latter part of next month.

2. Biological Chains

Observations were continued on yearling rainbow trout which have been held in 5% strength pile effluent and fed a diet containing algae from the 107 basin. No activity determinations were made on these fish during the month, since experimental conditions were temporarily upset at the end of last month in order to control disease. This experiment was also seriously affected on September 12, when 61% of the trout in one of the control groups died following a prophylactic treatment with pyridylmercuric acetate. Other groups receiving the same treatment were not as seriously affected, and no loss occurred in the group being fed the 107 basin algae.

3. Radiobiological-Ecological Survey of the Columbia River

Conditions were favorable for the collection of organisms from the Columbia River, and sampling was maintained on a scheduled basis from 13 stations between Priest Rapids and McNary Dam. Quantitative samples were obtained from 5 of these stations.

In most of the forms collected at Hanford, activity densities ranged from 2 to 10×10^{-3} $\mu\text{c/g}$, and were two to three times that found last month. Such an increase was anticipated since the seasonal trend approaches a maximum at this time of year when the water temperature is still high and the flow of the river is reduced.

Health Instrument Divisions

Organisms inhabiting a side channel which existed in this area during the high water period exhibited especially high activities. The average activity density of small fish in this section decreased by a factor of two during the month in spite of the general increase elsewhere in the river as indicated by the Hanford data. Small fish now isolated in a pond which was earlier a part of the channel were roughly twice as radioactive as similar fish now living in the adjacent river. For large fish, a maximum activity density of 10^{-2} $\mu\text{c/g}$ was found in the scales of a chiselmouth captured at Hanford. This is more than three times the maximum observed during August.

The number of planktonic organisms present in the river water at the 100-F Area decreased from about 81,000 per liter during August to 19,000 per liter during September.

Biochemistry Group1. Relative Biological Effects via Biochemical Systems

No progress.

2. Absorption of Pu from the G.I. Tract

Experimental animals for the experiment were received.

3. P-10 Hazards Biological Investigations

Two experiments to determine the absorption of P-10 and P-10 oxide through the skin of young swine have been carried out. From the first experiment it was learned that the skin-flap method is unsatisfactory for this type of skin absorption study. Tighter control of P-10 sample used must be maintained to avoid loss of this substance during administration. The skin of the second pig exposed to P-10 was allowed to remain intact. Periodic sampling of blood was performed, but analytical data are not available yet. Two more young swine will shortly be exposed to P-10 gas and P-10 oxide vapor to determine absorption of these substances through the skin.

The intraperitoneal injection of P-10 oxide in mice over a period of two weeks has been completed, and most of the animals have been sacrificed. Analysis of body water and residue for P-10 oxide is proceeding as planned, but data are not yet available at this time.

4. Possible Therapeutic Agents for Radiation Damage

Maintenance and breeding of mice for experiment on splenic protection against X-irradiation continue.

5. Percutaneous Absorption of Radioelements

No progress.

Health Instrument Divisions

In the Biological Services laboratory, a total of 1,005 chemical determinations were carried out. This is an increase of more than 15% over the amount of work performed during August. The number of hematological and bacteriological determinations was 968 and 117, respectively.

Botany Group

1. Separations Area Control Plot

Samples of alfalfa collected in the 200-E R-3 Danger Zone during the month showed no increase in activity density over those collected during August. The maximum activity density of Russian thistles growing in the area increased slightly to 5.2 $\mu\text{c/g}$ for leaves, and 4.0 $\mu\text{c/g}$ for stems.

The 200-East experimental plot was planted to a cover crop of oats during the month.

2. Agricultural Field Station

Routine sampling of vegetation and soil showed no significant differences between treatment and control plots.

A laboratory experiment has been started to determine the location of radioactivity pickup by Field Station soil, and the amount of buildup of radioactivity that can be expected over a several year period.

3. Translocation of Radioelements in Plants

A study of the effect of pH, Y, and B concentrations on the uptake of Y^{91} by red kidney bean plants has been started. Nutrient cultures have replaced sand cultures in these experiments.

4. P-10 Botanical Investigations

Six samples of Russian thistle were taken at three locations outside of 108-B. Analyses of the plant water and organic matter gave values of less than $2 \times 10^{-3} \mu\text{c/cc}$ for each.

Laboratory experimentation has been confined to methodology and equipment design for handling P-10 and P-10 oxide in future experiments.

5. Effects of Radiation on Plant Life

Not yet started.

Physiology Group

1. Biological Effects of Active Particles

No progress. 1208427

Health Instrument Divisions

2. Bone Metabolism of Radioelements

Normal values are being obtained on the experimental animals as fully as facilities will allow.

3. Techniques in Autoradiography

No progress.

Services

The present month has seen a tremendous load in tissue preparation and photography due to the planned serial sacrifice of lambs by Zoology group. There have been fifteen animals sacrificed in the past two weeks, each contributing twenty tissues requiring collection at the autopsy table and preparation. Gross photographs are also required at each autopsy.

Zoology Group

1. Biological Monitoring

Waterfowl

Activity density in tissues of Mallard ducks from the 100-F colony showed a decline from the levels found in August. Bone samples still exceeded the MPC for P^{32} by a factor of 2. Thyroid samples were surprisingly lower in radioactivity than those assayed the previous month.

Wild waterfowl, however, showed a gain in thyroid activity over the preceding month. Maximum value found was $0.007 \mu\text{c/g}$, which exceeds the MPC for I^{131} by a factor of about 2.

Upland Wildlife

A general trend upward in thyroid activity was found in all forms of upland wildlife. Areas of greatest tissue activity densities were the 200 Areas, Hanford, and Coyote Rapids. Maximum values found in the thyroids of animals from these areas were 0.26, 0.054, and 0.010 $\mu\text{c/g}$, respectively. The level at the 200 Areas is higher by a factor of 20 than levels detected in August, and exceeds the MPC for I^{131} in tissue by a factor of 65.

2. Toxicology of I^{131} in Stock Animals

The majority of the lambs have reached 120 days of age, and are now weaned. Twenty two 120-day old lambs have been sacrificed; 57 placed on same diet as mothers, and 17 retained for future studies.

The rams that are being fed the same amount of iodine as their mothers will be the object of general toxicology investigation with emphasis on sperm

[REDACTED]

Health Instrument Divisions

studies, About eight of the rams being retained for future studies will be used to determine radiation damage recovery rates.

Gross autopsy findings on 3 lambs from ewes fed 240 $\mu\text{c}/\text{day}$ indicate the thyroids have been severely damaged. The lambs in this group at weaning were generally smaller, less alert, and more unthrifty than other groups. Compared with the average weaning weights of 14 lambs in the control group, the lambs averaged 5 kg less per head. This is interesting when one realizes their only source of radiation was from the mother in utero and from the milk. These ewes, however, have exhibited no unusual symptoms but remain alert and thrifty, suggesting an increased sensitivity of the young growing offspring. An unapparent reduction in milk flow in the ewes could conceivably explain partially the reduced rate of gain in their lambs.

The neck region over the thyroid of the lambs now receiving 240 $\mu\text{c}/\text{day}$ displays a lower level of radioactivity than that observed over the abdomen, indicating fairly complete destruction of glandular function. To better define the toxicology of I^{131} and some of the parameters that may indicate radiation effects, one ram lamb has been fed one dose of approximately 300 mc. No reportable data are yet available.

One of three ewes receiving 1,800 μc I^{131} each day is now prostrate. This animal is still eating a reasonable amount of feed and is able to get around by pushing herself by the rear limbs. A lamb that was placed in this lot and has been suckling one of these ewes has been manifesting depression and a strange gait. These animals seem to lack good coordination in walking and are sometimes observed to "knuckle under" at the fetlock and to drag their feet slightly.

With regard to blood chemistry, present data indicate a significant linear increase in creatinine levels in the ewes receiving 1,800 $\mu\text{c}/\text{day}$. In this same group of ewes, there has been a significant decrease in blood glucose that appears to be cumulative.

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GENERAL ACCOUNTING DIVISION

September 1950

GENERAL

Instructions were received from AEC and work was commenced in connection with reviews of budget estimates. Past procedures were modified in accordance with instructions received, and letters of explanation together with required schedules were prepared for distribution to division heads.

Review of methods used in assessing costs to other divisions was continued and additional revisions were made which will result in a more equitable allocation of costs. Work in connection with the development of new assessment procedures is continuing. Detailed write-ups are being prepared for each division outlining proposed methods of assessments to be based on fixed or standard rates.

In addition to numerous minor assignments, Internal Auditors reviewed receiving procedures relative to tank car and bulk shipments, investigated records and procedures in connection with Memo Sales to Employees, and continued the audit of procedures and records relative to the handling of excess materials.

During the month certain revisions were made in Consolidated Construction Work in Progress report, Source of Construction Costs report, Summary of Costs report, and Inventory report. These revisions resulted in an improvement in the presentation of information and the inclusion of additional data.

Hanford Works Instructions Letter No. 87 was issued in September covering revised procedures for reporting time worked. These revisions were necessary as a result of a change in assignment of work weeks, and change in payment practices as covered by H.W. Instructions Letter No. 155 which was also issued in September. The new procedure was made effective September 18, 1950 and revised weekly time cards and revised weekly clock cards were used beginning on that date.

Meetings were held in September with members of Supervisory--Management groups during which representatives of Union Relations and Payroll Divisions explained the reasons for changes in the work week and payment practices, and the necessity for revised procedures for reporting time worked.

Calculation of retroactive payments to Auxiliary Firemen was begun in September in accordance with the agreement reached between Hanford Atomic Metal Trades Council and General Electric Company. Payroll Division employees worked overtime on Saturday, September 30, 1950 on this work.

Newly hired Business Graduates are being given training in all accounting sections through a within-division Job Rotation Program. During September, three employees were on these rotating assignments.

General Accounting Division

Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of August as compared with September, may be summarized as follows:

	<u>August</u>	<u>September</u>
<u>Disbursements</u>		
Material and Freight - GE	\$1 140 394	\$1 063 856
Payrolls - GE (Net)	1 857 632	2 214 615
Payments to Subcontractors	2 739 002	2 509 282
Other	<u>913 286</u>	<u>861 842</u>
Total	<u>\$6 650 314</u>	<u>\$6 649 595</u>
 <u>Receipts</u>		
Rents	\$ 110 833	\$ 109 477
Hospital	35 295	39 810
Telephone	14 318	14 400
Bus Fares	9 192	8 078
Other	<u>19 467</u>	<u>32 697</u>
Total	<u>\$ 189 105</u>	<u>\$ 204 462</u>
 Net Disbursements	<u>\$6 461 209</u>	<u>\$6 445 133</u>

General Accounting Division

STATISTICS

<u>Employees and Payroll</u>	<u>Total</u>	<u>Monthly Payroll</u>	<u>Weekly Payroll</u>
Employees on Payroll at beginning of month	7 829	1 804	6 025
Additions and transfers in	163	27	136
Removals and transfers out	(222)	(8)	(214)
Transfers from Weekly to Monthly Payroll	---	25	(25)
Transfers from Monthly to Weekly Payroll	---	(2)	2
Employees on Payroll at end of month	<u>7 770</u>	<u>1 846</u>	<u>5 924</u>
<u>Employees on Payroll at end of month</u>		<u>August</u>	<u>September</u>
Manufacturing		3 313	3 325
Design and Construction		629	640
Municipal, Real Estate & General Services		717	674
Others		3 170	3 131
Total		<u>7 829</u>	<u>7 770</u>
<u>Overtime Payments</u>			
Weekly Paid Employees		\$ 46 068	\$ 64 562
Monthly Paid Employees		9 381 (1)	11 282 (2)
Total		<u>\$ 55 449</u>	<u>\$ 75 844</u>
<u>Number of Changes in Salary Rates and Job Classifications</u>		844	759
<u>Gross Amount of Payroll</u>			
Manufacturing		\$ 1 198 869	\$ 1 410 721
Design and Construction		221 289	256 853
Municipal, Real Estate & General Services		229 857	258 822
Others		1 000 443	1 168 939
Total		<u>\$ 2 650 458(3)</u>	<u>\$ 3 095 335(4)</u>
<u>Annual Going Rate of Payrolls</u>			
Manufacturing		\$15 442 524	\$15 602 430
Design & Construction		2 781 311	2 915 908
Municipal, Real Estate & General Services		2 875 231	2 747 047
Others		12 748 334	12 732 192
Total		<u>\$33 847 400</u>	<u>\$33 997 577</u>
<u>Average Salary Rate Per Hour (5)</u>		<u>August</u>	<u>September</u>
		<u>Weekly</u> <u>Monthly</u> <u>Total</u>	<u>Weekly</u> <u>Monthly</u> <u>Total</u>
Manufacturing		\$2.063 \$2.733 \$2.182	\$2.062 \$2.727 \$2.182
Design and Construction		1.580 2.811 2.051	1.585 2.804 2.047
Municipal, Real Estate and General Services		1.778 2.247 1.914	1.801 2.252 1.940
Others		1.674 2.560 1.879	1.679 2.561 1.888
Total		<u>\$1.852 \$2.616 \$2.024</u>	<u>\$1.856 \$2.615 \$2.032</u>

- (1) Payments cover period from 16th of previous month to 15th of current month, except that in the case of Design and Construction Divisions, payments cover period July 1, 1950 to July 31, 1950.
- (2) Payments cover period from 16th of previous month to 15th of current month, except that in the case of Design and Construction Divisions, payments cover period August 1, 1950 to August 31, 1950.
- (3) Includes payment for the four (4) week period ended August 20, in the case of weekly paid employees.
- (4) Includes payments for the five (5) week period ended September 24, in the case of weekly paid employees.
- (5) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, suggestion awards, etc.

1208432

General Accounting Division

Employee Benefit Plans

Pension Plan

	<u>August</u>	<u>September</u>
Number participating at beginning of month	6 528	6 524
New participants and transfers in	74	63
Removals and transfers out	(78)	(78)
Number participating at end of month	<u>6 524</u>	<u>6 509</u>
% of eligible employees participating	94.7%	94.6%

Employees Retired

	<u>September</u>	<u>Total to Date</u>
Number	3	147
Aggregate Annual Pensions Including Supplemental Payments	\$ 1 523	\$36 782 (1)
Amount contributed by employees retired	\$ 1 260	\$21 125 (2)
(1) Includes 5 employees who died after reaching optional retirement age but before actual retirement. Lump sum settlements of death benefits were paid to beneficiaries in these cases.		
(2) Amount before commutation of pensions in those cases of employees who received lump sum settlement.		

Group Life Insurance*

	<u>August</u>	<u>September</u>
Number participating at beginning of month	5 710	5 746
New participants and transfers in	93	66
Cancellations	(5)	(6)
Removals and transfers out	(52)	(80)
Number participating at end of month	<u>5 746</u>	<u>5 726</u>
% of eligible employees participating	77.8%	77.8%

*Statistics exclude 45 pensioners as of the end of August, and 46 pensioners as of the end of September who were granted lump sum pension settlement and who are paying premiums at Hanford Works.

Group Life Insurance Claims

	<u>September</u>	<u>Total to Date</u>
Number of claims	2	45
Amount of insurance	\$9 925	\$230 372

Group Disability Insurance (1)

	<u>August</u>	<u>September</u>
<u>Personal Coverage</u>		
Number participating at beginning of month	3	3
New participants and transfers in	-0-	-0-
Cancellations	-0-	-0-
Removals and transfers out	-0-	1
Number participating at end of month	<u>3</u>	<u>2</u>
 <u>Dependent Coverage</u>		
Number participating at beginning of month	2	2
Additions and transfers in	-0-	-0-
Cancellations	-0-	-0-
Removals and transfers out	-0-	1
Number participating at end of month	<u>2</u>	<u>1</u>

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General Accounting Division

Employee Benefit Plans (continued)

Group Disability Insurance (1) (continued)

Claims (2)

Number of claims paid by insurance company:

Employee Benefits

Weekly Sickness and Accident

Daily Hospital Expense Benefits

Special Hospital Services

Surgical Operations Benefits

Dependent Benefits Paid

Daily Hospital Expense Benefits

Special Hospital Services

Amount of claims paid by insurance company:

Employee Benefits

Dependent Benefits

Total

August

September

1

8

8

10

-0-

-0-

\$ 952

-0-

\$ 952

2

3

3

3

-0-

-0-

\$ 488

-0-

\$ 488

Premiums

Personal - Employee Portion

- Company Portion

- Total

Dependent- Employee Portion

- Company Portion

- Total

Grand Total

\$ 5

3

8

\$ 2

-0-

2

\$ 10

\$ 3

2

5

\$ 1

-0-

1

\$ 6

- (1) Group Disability Insurance Plan was discontinued November 30, 1949. August and September statistics cover employees absent with continuous service who are participating in the Group Disability Plan. They were not actively at work on December 1, 1949, and therefore were not eligible to participate in the new Group Health Insurance Plan.
- (2) Statistics are for claims paid during the month and do not necessarily indicate that claims were incurred during the month.

Group Health Insurance (1)

Personal Coverage

Number participating at beginning of month

New participants and transfers in

Cancellations

Removals and transfers out

Number participating at end of month

% of eligible employees participating

August

September

7 005

140

(3)

(92)

7 050

94.7%

7 050

164

(4)

(117)

7 093

94.9%

Dependent Coverage

Number participating at beginning of month

Additions and transfers in

Cancellations

Removals and transfers out

Number participating at end of month

4 665

72

(3)

(48)

4 686

4 686

64

(11)

(45)

4 694

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General Accounting Division

Employee Benefit Plans (continued)

<u>Group Health Insurance (1) (continued)</u>	<u>August</u>	<u>September</u>
<u>Claims (2)</u>		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	66	42
Daily Hospital Expense Benefits	85	56
Special Hospital Services	86	74
Surgical Operations Benefits	61	55
Dependent Benefits Paid		
Daily Hospital Expense Benefits	140	147
Special Hospital Services	153	192
Surgical Operations Benefits	110	140
Amount of claims paid by insurance company:		
Employee Benefits	\$13 295	\$10 242
Dependent Benefits	15 929	17 686
Total	<u>\$29 224</u>	<u>\$27 928</u>
 <u>Premiums</u>		
Personal - Employee Portion	\$15 162	\$15 249
- Company Portion	7 305 (3)	7 348 (3)
- Total	<u>\$22 467</u>	<u>\$22 597</u>
Dependent- Employee Portion	\$13 121	\$13 141
- Company Portion	10 450 (3)	10 465 (3)
- Total	<u>\$23 571</u>	<u>\$23 606</u>
Grand Total	<u>\$46 038</u>	<u>\$46 203</u>

(1) Group Health Insurance Plan was made effective December 1, 1949

(2) Statistics cover only claims and not all claims incurred during the month.

(3) Gross company cost before dividend

Vacation Plan

Number of employees granted permission to defer one week of their 1950 vacation to 1951

	<u>September</u>			<u>Total to Date</u>		
	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>	<u>Weekly</u>	<u>Monthly</u>	<u>Total</u>
Manufacturing	3	4	7	139	55	194-a)
Design and Construction	2	3	5	17	23	40-b)
Municipal, Real Estate and General Services	3	3	6	28	22	50
Technical	2	3	5	27	35	62-c)
Health Instrument	1	0	1	4	2	6-b)
Employee & Community Relations	0	0	0	4	4	8
Plant Security & Services	2	0	2	88	23	111-b)
Purchasing & Stores	2	1	3	18	6	24-b)
Medical	1	1	2	7	2	9
General Accounting	1	0	1	6	2	8
General Administrative	0	0	0	0	1	1
Total	<u>17</u>	<u>15</u>	<u>32</u>	<u>338</u>	<u>175</u>	<u>513</u>

(a - Total to date reduced by 4 cancellations)

(b - Total to date reduced by 1 cancellation)

(c - Total to date reduced by 2 cancellations)

Annuity Certificates (For duPont Service)

6. Number issued	<u>September</u>	<u>Total to Date</u>
	1	34

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General Accounting Division

Employee Benefit Plans (continued)	Municipal, Real Estate & General				
	Mfg.	D&C	Services	Other	Total
<u>U. S. Savings Bonds</u>					
Number participating at beginning of month	1 691	258	314	1 422	3 685
New authorizations	20	4	1	38	63
Voluntary cancellations	(31)	(5)	(5)	(19)	(60)
Removals and transfers out	(14)	(8)	(3)	(30)	(55)
Transfers in	11	-0-	-0-	2	13
Number participating at month end	<u>1 677</u>	<u>249</u>	<u>307</u>	<u>1 413</u>	<u>3 646</u>
% Participating	50.4%	38.9%	45.5%	45.1%	46.9%
<u>Bonds issued</u>					
Maturity Value	\$ 114 725	\$ 16 425	\$ 19 000	\$ 87 150	\$ 237 300
Number	2 085	280	349	1 553	4 267
Refunds issued	41	9	6	32	88
Revisions in authorizations	21	6	7	17	51
<u>Annual going rate of deductions</u>					
G. E. Employee Savings and Stock Bonus Plan	\$ 693 977	\$100 577	\$116 739	\$555 687	\$1 466 980
General Electric Savings Plan	\$ 216 224	\$ 31 546	\$ 36 015	\$147 424	\$ 431 209
Total	<u>\$ 910 201</u>	<u>\$132 123</u>	<u>\$152 754</u>	<u>\$703 111</u>	<u>\$1 898 189</u>

<u>Suggestion Awards</u>	September	Total to Date
Number of awards	33	714
Total amount of awards	\$450	\$11 685

<u>Employee Sales Plan</u>	September	
	Major Appliances	Traffic Appliances
Certificates Issued	61	384
Certificates Voided	1	3
		Total
		445
		4

<u>Salary Checks Deposited</u>	August		September	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle First National Bank	733	837	726	846
North Richland Area Office- Seattle First National Bank	11	7	11	7
Richland Branch - National Bank of Commerce	157	118	153	131
Out of state banks (Schenectady Staff)	--	2	--	2
Total	<u>901*</u>	<u>964</u>	<u>890**</u>	<u>986</u>
*Week ended 8-27-50				
**Week ended 9-24-50				

<u>Special Absence Allowance Requests</u>	August	September
Number submitted to Pension Board	6	5

<u>Absenteeism (Weekly Paid Employees)</u>	1949	1950
January 1 to September 24	2.31%	2.26%

1208436

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING

	<u>August</u>	<u>September</u>
Number of Employees		
On Payroll at beginning of month	169	171
Removals and transfers out	(4)	(5)
Additions and transfers in	6	12
Number at end of month	<u>171</u>	<u>178</u>
Net increase (or decrease) during month	2	7
% of terminations and transfers out	2.4%	2.9%
% of absenteeism	2.97%	3.06%

Changes by division in number of Accounting Division employees during September were as follows:

General: Decrease of one employee

- One new hire
- One transfer to Municipal, Real Estate, and General Services Divisions
- One termination

Accounts Payable: Decrease of one employee

- One transfer from General Accounts
- One transfer to Budgets
- One illness removal

Cost: Increase of one employee

- Transfer from Plant Accounting

General Accounts: Increase of one employee

- Three new hires
- One transfer to Accounts Payable
- One termination

Plant Accounting: Decrease of three employees

- One transfer to Cost
- One transfer to Special Assignments
- One termination

Weekly Payroll: Increase of six employees

- Four new hires
- Two return from illness absence

Monthly Payroll: No Change

Special Assignments: Increase of two employees

- One transfer from Budgets
- One transfer from Plant Accounting

1208437

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Budgets: Increase of one employee

- One transfer from Plant Security and Services Division
- One transfer from Accounts Payable
- One transfer to Special Assignments

Internal Audit: Increase of one employee

One new hire

Injuries	August	September
Major	-0-	-0-
Sub-major	-0-	-0-
Minor	3	-0-

Number of Accounting Division employees as of September 30, 1950, were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	3	4	7
Accounts Payable	13	1	14
Cost	14	1	15
General Accounts	16	1	17
Plant Accounting	20	3	23
Weekly Payroll	63	6	69
Monthly Payroll	15	2	17
Special Assignments	3	1	4
Budgets	5	1	6
Internal Audit	1	5	6
Total	<u>153</u>	<u>25</u>	<u>178</u>

Non-exempt employees may be summarized as follows:

Classification	Number as of	
	8-31-50	9-30-50
Accounting A	1	1
Accounting C	5	5
Accounting D	4	4
Business Graduate	14	16
Clerical Working Leader	5	5
Cost Clerk A	2	2
Cost Clerk B	1	1
Cost Clerk C	1	1
Cost Clerk D	2	2
Field Clerk C	1	1
General Clerk A	21	20
General Clerk B	35	41
General Clerk C	19	18
General Clerk D	6	8
General Clerk E	1	0
Office Machine Operator A	7	8
Office Machine Operator B	5	5
Secretary B	1	1

1208438

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

<u>Classification</u>	<u>Number as of</u>	
	<u>8-31-50</u>	<u>9-30-50</u>
Steno-Typist A	2	2
Steno-Typist B	6	6
Steno-Typist C	3	4
Steno-Typist D	2	1
	<u>144</u>	<u>152</u>

Open employment requests as of September 30, 1950 were as follows:

Accounting B	1
Accounting C	1
Business Graduate	6
General Clerk B	2
General Clerk C	2
Steno-Typist C	3
Total	<u>15</u>

General Accounting Division

	<u>August</u>	<u>September</u>
<u>Accounts Payable*</u>		
Balance at Beginning of Month	\$ 53 713	\$ 63 951
Vouchers Entered	952 312	879 902
Cash Disbursements	937 585	Dr. 886 814
Cash Receipts	<u>511</u>	<u>1 795</u>
Balance at end of month	<u>\$ 68 951</u>	<u>\$ 63 834</u>
Number of Vouchers Entered	1 918	1 639
Number of Checks Issued	1 243	1 089
Number of Freight Bills Paid	268	278
Amount of Freight Bills Paid	\$ 4 364	\$ 5 134
Number of Purchase Orders Received	1 066	1 075
Value of Purchase Orders Received	\$ 214 201	\$ 210 365
<u>Cash Disbursements</u>		
Community	\$ 49 972	\$ 65 156
Design & Construction	3 231 124	2 766 196
General	2 944 340	3 248 961
Manufacturing	<u>424 878</u>	<u>569 282</u>
Total	<u>\$6 650 314</u>	<u>\$6 649 595</u>
Material and Freight	\$1 140 394	\$1 063 856
Lump Sum and Unit Price Subcontracts	202 124	154 800
CPFF Subcontracts		
Labor	2 056 683	1 831 945
Others	480 195	522 536
Payrolls (Net)	1 857 632	2 214 615
Payroll Taxes	330 002	289 308
U. S. Savings Bonds	149 124	147 533
General & Administrative Expenses	200 000	200 000
Miscellaneous	<u>234 160</u>	<u>225 002</u>
Total	<u>\$6 650 314</u>	<u>\$6 649 595</u>
<u>Cash Receipts</u>		
Community	\$ 99 378	\$ 97 662
Design & Construction	30 484	33 687
General	6 077 306	5 523 855
Manufacturing	<u>12 708</u>	<u>9 525</u>
Total	<u>\$6 219 876</u>	<u>\$5 664 729</u>

* General Divisions Only.

1208440

General Accounting Division

	<u>August</u>	<u>September</u>
<u>Detail of Cash Receipts</u>		
Advances from AEC	\$6 030 771	\$5 460 208
Rents	110 833	109 477
Hospital	35 295	39 810
Telephone	14 318	14 400
Scrap Sales	7 956	8 695
Bus Fares	9 192	8 078
Miscellaneous Accounts Receivable	4 218	4 622
Refunds from Vendors	3 460	3 930
Employee Sales	751	694
Educational Program	2	2 260
All Other	3 080	12 555
	<u>\$6 219 876</u>	<u>\$5 664 729</u>
<u>Number of Checks Written</u>		
Community	194	188
Design & Construction	381	321
General	1 243	1 089
Manufacturing	661	650
Total	<u>2 479</u>	<u>2 248</u>
<u>Bank Balances at End of Month</u>		
Chemical Bank & Trust Company - New York		
Contract Account	\$1 760 177	\$1 358 410
Seattle First National Bank - Richland		
Contract Account	2 525 785	1 902 217
U. S. Savings Bond Account	196 665	218 332
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	25 740	18 398
Seattle First National Bank - Seattle		
Escrow Account	57 496	57 496
National Bank of Commerce - Richland		
Contract Account - Manufacturing	275 122	330 717
Contract Account - Community	50 028	34 844
	<u>\$4 941 014</u>	<u>\$3 970 414</u>
<u>Travel Advances and Expense Accounts</u>		
Cash Advance balance at end of month*	\$ 20 336	\$ 23 633
Cash Advance balance outstanding over one month*	1 016	550
Traveling and Living Expenses:		
Paid Employees	19 338	19 857
Billed to Government	17 291	17 515
Balance in Variation Account at end of month	<u>3 795 Dr.</u>	<u>6 137 Dr.</u>

* General Divisions Only.

1208441

General Accounting Division

	<u>August</u>	<u>September</u>
<u>Hospital Accounting</u>		
Accounts Receivable		
Balance at Beginning of Month	\$113 630	\$116 522
Invoices Issued	46 309	49 694
Refunds	783	613
Cash Receipts	35 295 Cr.	39 809 Cr.
Payroll Deductions	8 860 Cr.	7 777 Cr.
Bad Debts Written Off	-0-	500 Cr.
Adjustments	<u>45 Cr.</u>	<u>28</u>
Balance at End of Month	<u>\$116 522</u>	<u>\$118 771</u>
	<u>Total to Date</u>	<u>September</u>
<u>Scrap Sales</u>		
(a) Number of Sales	<u>247</u>	<u>17</u>
(b) Revenue (Not Including Sales Tax)		
Revenue to G. E.	\$250 427	\$ 8 695
Revenue to A.E.C. (Sale of Tract Houses)	<u>32 723</u>	<u>-0-</u>
Total Revenue	<u>\$283 150</u>	<u>\$ 8 695</u>

1208442

General Accounting Division

ACCOUNTS PAYABLE

The number of vouchers booked in September decreased 15% from August. The dollar amount of disbursements also decreased. There were 1,639 vouchers recorded in September amounting to \$879,901, as compared to 1,918 vouchers in August amounting to \$952,313.

The number of checks issued also decreased from August as indicated below:

	<u>September</u>	<u>August</u>
Chemical Bank & Trust Company	339	414
Seattle First National Bank	<u>750</u>	<u>829</u>
Total	<u>1 089</u>	<u>1 243</u>

A total of 1,666 vouchers were paid in September, averaging 1.53 vouchers per check, slightly higher than August.

On September 30 there were 1,090 vouchers on hand requiring additional supporting data before they could be forwarded to A.E.C. for final audit. Details are as follows:

	<u>September</u>	<u>August</u>
Number on Hand - Paid	201	181
Number on Hand - Unpaid	<u>889</u>	<u>833</u>
Total	<u>1 090</u>	<u>1 014</u>

Included in the above total of 201 paid vouchers on hand were only 6 vouchers over 90 days old. In August there were 12 such vouchers more than 90 days old on hand.

The number of freight bills paid in September increased over August. Total was 278, amounting to \$5,134 compared with 268 in August, amounting to \$4,364.

The General Ledger Accounts Payable balance as of September 30 was \$63,833.71, a decrease from August's balance. Details of this balance by months compared with August are as follows:

	<u>September</u>	<u>August</u>
May	\$ 7.54 Dr.	\$ 400.34 Dr.
June	70.19 Dr.	411.34 Dr.
July	190.02 Dr.	791.88 Dr.
August	61.16	70,554.80
September	<u>64 040.30</u>	<u>-</u>
Total	<u>\$63 833.71</u>	<u>\$68 951.24</u>

General Accounting Division

ACCOUNTS PAYABLE (CONTD.)

New purchase orders issued in September pertaining to General Divisions increased slightly over August in number but decreased slightly in amount. Details are as follows:

	<u>September</u>		<u>August</u>	
	<u>No.</u>	<u>Amount</u>	<u>No.</u>	<u>Amount</u>
New Purchase Orders	1 075	\$210 365	1 066	\$214 201
Alterations	64		86	

During September one employee was transferred out to the Budget Section and one employee was transferred in from General Accounts Section. At the present time, this Section is short two employees.

BUDGETARY CONTROL

The preliminary consolidated balance sheet budget for Fiscal Years 1951 and 1952, prepared and distributed during the latter part of May 1950, was revised during the month to reflect actual totals for Fiscal Year 1950 and current estimates for Fiscal Years 1951 and 1952. The revised consolidated balance sheet budget was completed and distributed during the last of the month.

On September 18, 1950 a draft of a letter of instructions covering quarterly budget reviews was received from A.E.C. Our comments concerning procedures outlined by A.E.C. were solicited before a final and official letter is to be issued.

Generally, the letter mentioned above set forth the following:

1. Replace mid-year budget reviews with quarterly budget reviews.
2. Time schedule for submission of quarterly budget reviews to A.E.C.
3. Instructions to be followed in the preparation of schedules to be submitted to A.E.C.

In line with these instructions, work was undertaken modifying present procedures and drafting budget schedules and work sheets. Letters to division managers and/or division heads outlining instructions to be followed in preparing data for the quarterly budget review were also prepared for distribution.

Work was begun during the month in the preparation of preliminary Research and Development Program Reports of the Technical Divisions. These reports are similar to those prepared by the Health Instrument Divisions and submitted to A.E.C. in compliance with their request in August 1950. All available information presently on file in the Budget Section is being considered in the preparation of these preliminary reports. Upon completion, these reports will be forwarded to the Technical Divisions for review and addition of other information not available to the Budget Section, and for whatever other revisions they feel are necessary to make the reports more complete and accurate.

General Accounting Division

COST

General Divisions Operating Reports for month of August were issued on September 15, 1950. Detailed reports of Research and Development costs were issued on September 20, 1950. In lieu of the normal Research and Development cost reports issued to the A.E.C., special reports were prepared which included only budgeted amounts established by the A.E.C. Budget Section for the various programs, and which deleted all references to Research and Development Authorizations.

Due to difficulties involved in consolidating Design and Construction Divisions costs with other divisions, issuance of the Hanford Works Summary of Costs for the month of August was delayed until the early part of October.

The cost code book for the General Divisions was completely revised and reprinted, and copies were distributed to all interested divisions.

After considerable discussion on the subject with a representative of the Technical Services Division, it was agreed that charges by the Technical Shops to all divisions would bear the standard rate of IME. Previously, a fixed rate of 65% had been charged on work performed for the Project Engineering and the Design and Construction Divisions in order to eliminate the possibility of capitalizing overhead of a fixed nature. The Technical Services Division pointed out that all work done by Technical Shops was of an experimental or first-model nature and would therefore not be capitalized. Moreover, since a large portion of the work was billed at this reduced rate, various Research and Development Programs were being forced to absorb the differences as an overcharge in IME.

Research and Development cost code No. 679 was opened at the request of the Health Instrument Development Divisions to cover work to be performed by the newly organized Soil Science Group.

The method of liquidating Stores Division expense was revised effective in September so that customer divisions are now charged on the basis of the cost of maintaining inventories for their use rather than on the basis of dollar value of withdrawals during the previous month. The revised procedure will eliminate fluctuations in the amounts assessed from month to month and assessments will be more nearly in line with value of services rendered.

GENERAL ACCOUNTS

During September the General Accounting Division issued 1 089 contract checks amounting to \$3 248 961, representing an increase of \$304 621 in expenditures as compared with August.

Advances from A.E.C. were reduced from \$5 500 000 to \$4 500 000 at the month's end and may be detailed as follows:

1208445

General Accounting Division

GENERAL ACCOUNTS (CONTD.)

	<u>September</u>	<u>August</u>
Cash in Bank - Contract Accounts	\$3 626 188	\$4 611 113
Cash in Transit	443 583	460 208
Expenditures Disallowed by A.E.C.	20 229	18 679
Cash in Bank - Salary Accounts	50 000	50 000
Travel Advance Funds	60 000	60 000
Advances to Subcontractors	<u>300 000</u>	<u>300 000</u>
 Total	 <u>\$4 500 000</u>	 <u>\$5 500 000</u>

An additional \$1 550 was added to Expenditures Disallowed by the A.E.C. this month making a total disallowed to date of \$20 229. Of this total, \$9 000 is in connection with payments to straight day workers - GAO Informal Inquiry No. GE-37, and \$11 229 GAO Informal Inquiry No. GE-36 covering payments for expenses in connection with transferred employees.

The balance of Accounts Receivable-Miscellaneous increased from \$2 566 to \$6 513. The major cause for this increase was the billing of Special Expenses to the Apparatus Department in the amount of \$3 687. Other open items in this account are claims against carriers and are being followed by the Traffic Section of the Purchasing Division.

During September 92 Travel Expense Reports were processed amounting to \$12 393. Reimbursement was received from the A.E.C. in the amount of \$11 804; the balance of \$589 was charged to the Travel and Living Expense Variation Account. The open Travel Advances to Employees increased from \$20 366, as of the beginning of the month, to \$23 633 at the month's end.

The Travel and Living Expense Variation Account has been charged with \$6 137 (all Divisions) so far this Fiscal Year. Of this total, \$2 342 was charged this month (\$211 entertainment expenses and \$2 131 representing the difference between expenses incurred by employees and reimbursements received from the A.E.C.). The main reason for the large amount not reimbursed by the A.E.C. was the processing of Association Island Conference Expenses.

Memorandum Billings were received from Knolls Atomic Power Laboratory covering Engineering and Consulting Laboratory Assistance to Hanford in the amount of \$147 248, KAPL Assistance to Hanford of \$848, and Research Laboratory Assistance of \$1 126.

General Ledger Trial Balances were received from all Accounting Divisions by September 18, 1950. Hanford Works Financial Statements were completed September 21 and Consolidated Financial Statements on September 28, 1950.

The Consolidated Construction Work in Progress and the Consolidated Source of Construction Costs Reports were revised this month. As a result, costs as reported for Design and Construction Divisions agree with Design and Construction reports without having to consider any reconciling items as was done in the past.

The balance of Government Cost Transfers decreased \$1 572 984 this month, resulting principally from the transfer of Excess Materials and Equipment to the A.E.C.

General Accounting Division

GENERAL ACCOUNTS (CONTD.)

A.E.C. and GAO copies of all Accounts Payable Vouchers prior to July have been transmitted to the A.E.C. with the exception of 6 vouchers for General Divisions; three for Design and Construction Divisions and two for the Manufacturing Divisions, which require additional supporting details.

INTERNAL AUDITING

As a result of a review of procedures covering receipt of materials shipped in bulk and in tank cars, recommendations were made to Purchasing and Stores to weigh incoming and outgoing cars on our scales. This recommendation was made in order to verify quantities billed by vendors, to establish documentary evidence to be used in support of shortage claims, to insure maximum efficiency in unloading cars and to establish basis for charge-back to vendors for residual quantities not unloaded.

Investigation of records and procedures was begun for Employees Memo Sales. Items billed on a memo basis to employees out of Central Stores consist of padlocks, flashlights, safety glasses, rain coats and hats, boots and goggles. The purpose of the investigation is to determine the amount of such memo sales maintained by Central Stores, their present worth, the legality of attempting to collect for items not returned, and the possibility of placing the responsibility for handling these items with each Division.

Review was begun on an Accident Cost per Worker report (major injuries), prepared by the Safety and Fire Protection Division for management. The purpose of the review being to determine if calculations and figures used in the report are basically sound from an accounting standpoint.

One auditor is continuing the study on mail distribution for Hanford Works.

Three auditors are preparing final reconciliations of the 62 Excess Materials sub-accounts at North Richland. After completion of this work, the Excess Materials Audit will have been completed.

MEDICAL ACCOUNTING

The balance in Accounts Receivable increased from \$116 522 in August to \$118 789 in September, due primarily to an increase in sales of \$3 385. The adult patient-day census increased from 71.1 in August to 73.2 in September.

Out-patient invoices totaled 1 998 and amounted to \$11 026 in September as compared to 1 736, amounting to \$9 780 in August. This represented an increase of 262 invoices amounting to \$1 246. Of the total invoices, cash invoices numbered 1 179 amounting to \$4 336 and charge invoices numbered 819 amounting to \$6 690.

In-patient revenue increased \$2 139 over August due to the increased adult patient-day census.

1200447

General Accounting Division

MEDICAL ACCOUNTING (CONTD.)

A total of 18 claims in the amount of \$556 was submitted this month to Fort Lewis for services rendered military personnel. Reimbursement on 5 claims totaling \$200.00 on prior months' billings was received this month from Fort Lewis.

Listed below is a summary of activity on accounts to date submitted to Yakima Adjustment Service for collection:

	<u>Number</u>	<u>Amount</u>
Accounts Submitted	154	\$28 332
Accounts returned as uncollectible	9	3 730
Collections by Yakima Adjustment Service	16	325
Collections on Accounts Recalled (10% basis)	5	309
Accounts Recalled	10	1 936
Accounts at Yakima Adjustment Service as of 9-30-50	124	22 341

A procedure was established for auditing in-patient ledgers in order to verify that charges are being made by servicing sections of the hospital to in-patients for all services rendered. Each week, 15 to 20 ledger accounts are carefully checked against the patient's charts. All services not charged for are noted and a report is forwarded to the Medical Division Manager in order that necessary remedial action can be taken. Inadequate internal procedures covering charges for services rendered by hospital personnel are now being revised as a result of this audit.

Effective September 1, 1950, all charges to out-patients for X-Ray and Laboratory services are made by Kadlec Hospital instead of by the doctors. Any profits for these services accrue to the hospital. Prior to September 1, 1950, charges to patients for these services were made by the doctors and the hospital billed the doctor at 75% of fee schedule.

A revision of the fee schedule was made in September to include charges to patients for routine drugs and dressings and other minor items for which charges had not previously been made. Similar charges are made by other hospitals in this area. It is estimated that an increase in revenue of approximately \$1 500 to \$2 000 monthly will result.

Re-casting of Costs from September 1, 1946 through June 30, 1950, on the present basis of reporting costs was started this month. Unit cost figures comparing costs from 1946 through the present date for analytical purposes are being worked up from the re-casted figures. This information is being developed for incorporation in the historical narrative currently being prepared by the Medical Divisions.

General Accounting Division

PLANT ACCOUNTING

The inventory of Shop Equipment and Portable Tools was completed and entries will be made to adjust Plant Accounts to reflect actual conditions in the field.

A study of Work Orders covering the replacement of agitators in the 221 Building revealed that approximately \$44 000 was charged to "S" Division Operating Expense (Account 628) during FY 1950, covering replacement cost of these units. During this same period retirements of agitators, which had been buried because of contamination, resulted in a net reduction in Plant Accounts of approximately \$45 000. The A.E.C. Office of Finance recommends that such transactions be considered as retirements and additions to Plant Accounts. All concerned are not in agreement with this procedure, however, and further discussions regarding proper recording of these transactions are now in process.

The present practice of screening Work Orders of the Manufacturing, General and Community Divisions has resulted in reclassifying approximately \$100 000 in charges from Expense Accounts to Investments Accounts in the last several months. All Work Orders of a routine nature are normally screened by personnel in the Cost Sections of the various Accounting Divisions. Henceforth, the Plant Accounting Section will periodically screen all Work Orders in progress to reduce the possibilities of erroneous charges to Operating Costs.

A study of Work Orders covering new construction and retirements is now in progress in an attempt to arrive at a standard procedure for recording Construction Work in Progress insofar as Work Orders are concerned. Construction Work In Progress is understated each month by the amount of credits applied to Work Orders representing estimated costs of Units of Property removed.

One termination and one transfer to Cost General reduced Plant Accounting Section personnel by two employees during the month. Two anticipated terminations in October will increase this loss to four persons. Requisitions for replacement have been submitted to Employment.

1200449

General Accounting Division

PAYROLLS

During the month of August there were 222 Removals from Payroll, of which three were removals due to lack of work. There was one transfer to another unit of the Company. There were 163 Additions to the Payroll, including six transfers from other units of the Company. The result is a net decrease of 59 employees on the Payroll.

* * * * *

Under the General Electric Employees Savings and Stock Bonus Plan, 131 participating employees withdrew from the Plan 1 005 U. S. Savings Bonds having a maturity value of \$48 650. U. S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in August were delivered to employees on September 29, 1950. There were 714 U. S. Savings Bonds and 2 579 Custody Receipts delivered to employees. As of September 30, 1950, percentage of Hanford Works employees participating in the G. E. Employees Savings and Stock Bonus Plan and General Electric Savings Plan, and the annual going rate of payroll deductions was as follows:

	<u>Mfg.</u>	<u>D & C</u>	<u>Municipal, Real Estate and General Services</u>	<u>Other</u>	<u>Total</u>
G. E. Employees Savings and Stock Bonus Plan	45.9%	34.7%	40.4%	40.6%	42.3%
General Electric Savings Plan	12.1%	8.0%	10.2%	8.9%	10.3%
Both Plans	50.4%	38.9%	45.5%	45.1%	46.9%

Annual Going Rate of Deductions

	<u>Mfg.</u>	<u>D & C</u>	<u>Municipal, Real Estate and General Services</u>	<u>Other</u>	<u>Total</u>
G. E. Employees Savings and Stock Bonus Plan	\$693 977	\$100 577	\$116 739	\$555 687	\$1 466 980
General Electric Savings Plan	<u>216 224</u>	<u>31 546</u>	<u>36 015</u>	<u>147 424</u>	<u>431 209</u>
Total	<u>\$910 201</u>	<u>\$132 123</u>	<u>\$152 754</u>	<u>\$703 111</u>	<u>\$1 898 189</u>

* * * * *

Under the Group Health Insurance Plan 487 claims for benefits by employees were forwarded to Metropolitan Life Insurance Company during September, and 612 checks amounting to \$27 928 were received from the Insurance Company covering payment of 399 claims submitted by employees for benefits under the Plan.

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1200450

General Accounting Division

PAYROLLS (continued)

During September, 49 new authorization cards for check-off of Union Dues were received by Weekly Payroll Division for members of seven unions affiliated with Hanford Atomic Metal Trades Council as follows:

<u>Union</u>	<u>Number</u>
International Union of Operating Engineers, Local 280	4
International Chemical Workers Union, Local 369	13
International Brotherhood of Teamsters, Warehousemen, Garage Employees and Helpers, Local 839	5
International Association of Machinists, Lodge 1951	2
Hanford Industrial Firemen, No. 37	14
International Brotherhood of Electrical Workers Local No. 77-133	10
Laundry Workers International Union Local No. 197	<u>1</u>
Total	<u>49</u>

Authorizations for check-off of Union Dues in effect at September 30, 1950, cover 619 employee members of 14 Unions. H.A.M.T.C. submitted authorization cards for three employee members of International Union of Operating Engineers, Local 370-C, who transferred to International Union of Operating Engineers, Stationary Local No. 280, and one card for an employee member of International Association of Machinists, Lodge 1743, who transferred to International Association of Machinists, Lodge 1951.

At September 30, 1950, 20.1% of the 3 107 employee members of unions affiliated with H.A.M.T.C. had authorized check-off of Union Dues.

* * * * *

Permission to defer one week of their 1950 vacations until 1951 was granted by Division Managers in September to 17 Weekly Paid employees and 15 Monthly Paid employees. To date, permission to defer one week of 1950 vacations until 1951 has been granted to 338 Weekly Paid employees and 175 Monthly Paid employees.

* * * * *

There were twelve time cards received late in Weekly Payroll during the month of September, as follows:

<u>Week Ended</u>	<u>Number</u>
9-3-50	4
9-10-50	5
9-17-50	2
9-24-50	<u>1</u>
Total	<u>12</u>

* * * * *

General Accounting Division

PAYROLLS (continued)

During the month of September, 189 authorizations for deductions from payroll for the purchase of Safety Shoes were received in Payroll Divisions.

* * * * *

Approximately 110 190 items were addressographed in Weekly Payroll Division during September, in addition to regular routine addressograph work.

* * * * *

On request of supervision during the month of September, Weekly Payroll Division issued vacation payment checks to 18 employees prior to normal pay day.

* * * * *

Hanford Works Instructions Letter No. 87 was issued in September covering revised procedures for reporting time worked. These revisions were necessary as a result of a change in assignment of work weeks, and change in payment practices as covered by H. W. Instructions Letter No. 155 which was also issued in September. The new procedure was made effective September 18, 1950 and revised weekly time cards and revised weekly clock cards were used beginning on that date.

Meetings were held in September with members of Supervisory--Management groups during which representatives of Union Relations and Payroll Divisions explained the reasons for changes in the work week and payment practices, and the necessity for revised procedures for reporting time worked.

Written instructions were issued to employees of the Preparation of Payrolls Section covering the changes in procedures and payment practices. Overtime was worked on Saturday, September 23, for the purpose of reviewing these instructions with employees and starting the work of preparing the payroll for the week ended September 24. Preparation of the Payroll for the first week under the revised procedure was completed without undue delay, and salary checks were delivered to employees in accordance with the normal payoff schedule.

* * * * *

Calculation of retroactive payments to Auxiliary Firemen was begun in September in accordance with the agreement reached between Hanford Atomic Metal Trades Council and General Electric Company. Payroll Division employees worked overtime on Saturday, September 30, 1950 on this work.

* * * * *

At the request of Safety and Fire Protection Division, arrangements were made by Payroll Division to have a slogan printed on salary check envelopes during Fire Prevention Week to be observed the second week in October. The slogan will be printed on Monthly salary check envelopes issued for the month of September and on Weekly salary check envelopes distributed to employees on October 6, 1950.

Security Division requested that Payroll Divisions make arrangements to print a Security Slogan each month on salary check envelopes distributed to employees.

1200452

General Accounting Division

PAYROLLS (continued)

A sample of the slogan to be used was included with the request. We suggested to the Security Division that if the slogan were printed each month on a permanent basis, some of the effect of the slogan may be lost. We also discussed other aspects of the request and the possibility of similar requests from other divisions, and it was agreed that a Security Slogan would be printed on salary check envelopes intermittently, possibly once every three or four months.

* * * * *

At the end of August, Bank Reconciliations were complete as follows:

1. Weekly Salary Payroll through Payroll No. 211 for the week ended September 10, 1950.
2. Weekly Salary Vacation Payroll through Payroll No. 211 for the week ended September 10, 1950.
3. Monthly Salary Payroll No. 47 and 48 for July and August 1950.
4. Bond Account for August 1950.

1208453

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - SEPTEMBER 1950

SUMMARY

There were no major injuries during the month. There have been two major injuries during the year 1950 for a frequency rate of 0.179.

There were seven minor fires during the month. No loss resulted.

Approval has been received and an architectural contract let for the construction of a new wing of the Administration Building.

Volume of work in the Office Services Divisions decreased slightly during the month.

Retention and disposal schedules have been completed on approximately 75% of all plant records. The balance of schedules will be ready for approval during October.

Estimated savings resulting from Office Methods Division activities were \$4,875 of which \$4,300 will be on a recurring annual basis.

Three new patrol posts were added during the month and one discontinued.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT-SEPTEMBER 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	<u>Beginning of Month</u>	<u>End of Month</u>	<u>Increase</u>	<u>Decrease</u>
Staff	3	3		
Patrol and Security	595	590		5 (a)
Safety & Fire Protection	144	136		8 (b)
Office Services (General Services, Clerical Services, Records Control and Office Methods)	230	227		3 (c)
TOTALS	972	956		16

NET INCREASE: 16

(a) - Patrol and Security

- 1 - New Hire (Patrol)
- 1 - Returned from Leave of Absence (Security)
- 2 - Transferred from other Divisions (Patrol)
- 9 - Terminations

(b) - Safety and Fire Protection

- 1 - Rehire
- 3 - Transferred from other Divisions
- 5 - Transferred to other Divisions
- 7 - Terminations

(c) - General Services

- 2 - New Hires
- 2 - Transferred from other Divisions
- 2 - Removed from roll due to illness
- 1 - Termination

Clerical Services

- 9 - New Hires
- 11 - Transferred to other Divisions
- 2 - Terminations

1203455

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury 165
Accumulated Exposure Hours since last Major Injury 6,782,336
Major Injury Frequency Rate (start-up to date) 0.79

	<u>August</u>	<u>September</u>	<u>Year to Date</u>
Major Injuries	0	0	2
Sub-Major Injuries	1	1	19
Minor Injuries	359	317	2,356
Exposure Hours	1,320,408	1,221,250	11,189,305
Major Injury Frequency Rate	0.0	0.0	0.179
Major Injury Severity Rate	0.0	0.0	0.001
Minor Injury Frequency Rate	2.72	2.60	2.55

Sub-Major Injury No. 184

On September 22, at approximately 8:35 P.M., a patrolman in the Richland Patrol Group received a slight fracture of the upper arm when he was struck by a person being placed under arrest.

Safety Activities

An agreement for instruction to be given to "S" Division trainee supervisors in the 200 Areas has been concluded. It is intended that trainees (from two to four at a time) be turned over to the Safety Engineer for a full week of instruction and actual safety work in the field. At the end of this period, the Fire Engineer will give three hours of instruction in Fire Protection. Such activity should give new supervisors a good grounding in safety and fire that will benefit the program for a long time to come.

Studies and tests are being conducted to determine the feasibility of fresh air masks for crafts working in the SWP zones in buildings supplied with breathing air. The Chemox has not proved satisfactory in many instances for maintenance work in cramped space.

The Safety Division declined approval to use methane gas under uncontrolled conditions of ventilation and disposal.

An investigation was made of a special corrosion problem in the Technical Services Division involving the use of carbon monoxide. Conditions were found satisfactory.

A meeting was held with representatives of the Safety and Stores Divisions to discuss the reclamation of used safety equipment. Plans for closer coordination of safety activities of these divisions have been agreed upon. A consolidation of responsibilities and duties will result in substantial savings; also an improvement in services rendered.

Plant Security and Services Divisions

Safety Activities (Contin)

The Security Patrol Safety Hurdle Contest was concluded resulting in noticeable improvement in compliance with the rules concerning the wearing of personal protective equipment, i.e. goggles and gloves. The number of minor injuries per month to patrolmen have decreased during this contest.

Arrangements for establishing an accident prevention committee in the White Bluffs area have been started. Diversity of operations complicate this committee's activities.

Preliminary acceptance inspections have been made to the 100-DR water works. A number of minor changes have been recommended.

A survey was conducted of a job where Bit-U-Mastic is being applied to the inside of underground effluent lines. It was found that the air supply was inadequate. Recommendations were submitted and complied with to replace the circulating type fan used as an exhaust fan with a coppas type blower mounted through plywood resulting in a substantial improvement of operations.

Assistance was given the "P" Division in a study of special masks needed for special work hazards and it was found that the type mask now in use can be procured with an adapter at a small additional cost which will solve the problem involved.

A study was made of a special chemical gas testing device operated by the P-13 Group. The system is under a high vacuum and contains many pounds of mercury. Spillage, implosions and glass breakage presented unusual problems. Design and usage approved.

A new cleaning mixture (stoddard solvent and a du Pont blend mixture) for electric motors is being tested by the Electrical Division. Should this prove satisfactory, it may eliminate the use of carbon tetrachloride on numerous cleaning operations.

Air sample tests conducted in storage vaults containing X-ray films. No decomposition hazards were observed.

Investigation was made of a proposal to change the rod lengths in the "P" Divisions. A suggestion that longer rods would be beneficial is not being substantiated.

Fire Prevention Activities

An entire month was devoted to the training of patrol members in use of first aid fire fighting equipment. This was conducted at the Pistol Range.

Maintenance work at the Pasco Base was given special attention by the Fire Department because of hazardous repair work. Undertaken by the U. S. Army, many additional exposures were created.

A fire alarm panel to demonstrate the use of the fire alarm system is being built. It will be used in safety meetings. It is expected to be completed in time for use during Fire Prevention Week. It will be displayed in all areas.

Plant Security and Services Divisions

Fire Prevention Activities (Contin)

The topic of the month was prepared and mailed to all supervision along with a program of activities for Fire Prevention Week.

More than 150 prints and drawings for the Hot Semi Works were reviewed and approved. Prints for the Radio Chemistry building were reviewed and comments forwarded to the contact engineer.

The Fire Division supervisor attended the conference of the International Association of Fire Chiefs held in San Francisco. At the conference, several technical papers were presented and the latest in fire fighting equipment was displayed.

Industrial Fires

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Transportation	Outer	1	Fire in Burning Pit spread	None
Power	Outer	1	Spontaneous Ignition	None
Security & Patrol	100-B	1	Exhaust from car	None
	Outer	1	Smoking Material	None
	Total	4	Total	None

Industrial Investigations

<u>Division</u>	<u>Area</u>	<u>No. of Fires</u>	<u>Cause</u>	<u>Loss</u>
Maintenance	100-B	1	Heating flammable liquids	None
Maintenance	200-E	1	Burning	None
Transportation	Riverland	1	Burning	None
	Total	3	Total	None

OFFICE SERVICES DIVISION

General Services

Plant Laundry (Building 2723)

	<u>August</u>	<u>September</u>
Coveralls - Pieces	30,083	27,813
Towels - Pieces	9,432	7,515
Miscellaneous - Pieces	76,432	74,731
Total Pieces	115,947	110,059
Total Dry Weight - Lbs.	157,995	148,098

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Plant Security and Services Divisions

Richland Laundry (Building 723)

	<u>August</u>	<u>September</u>
Flatwork - Pieces	57,931	51,298
Rough Dry - Pieces	30,983	27,162
Finished - Pieces	2,640	2,339
Total Pieces	91,554	80,799
Total Dry Weight - Lbs.	69,912	61,053

Monitoring Section (Building 2723)

Poppy Check - Pieces	88,504	85,278
Scaler Check - Pieces	122,116	115,780
Total Pieces	210,620	201,058

Clerical Services

All moves in the 703 Building were completed during the month and a new 703 Building Directory was issued.

Installation was started on the new Hauserman movable partitions under the supervision of the Hauserman people.

The project for the renovation of the 700 Area buildings has been approved and also the project for relighting a part of Building 705.

Approval has been received and an architectural contract let for the construction of the new wing of the 703 Building.

E. N. Wilder assumed responsibility for the Mail Room vice R. M. Tattu who replaced D. B. Sell as supervisor of the Stenographic Services Section.

Mail Room

Four employees were transferred from the Mail Room during the month to better positions.

An unusually large number of special plant mailings were handled during the month.

	<u>August</u>	<u>September</u>
Pieces of Internal Mail handled	491,714	442,417
Pieces of postal mail handled	65,266	62,295
Pieces of registered mail handled	1,164	1,053
Pieces of insured mail handled	343	262
Pieces of special delivery mail handled	277	320
Total Mail handled	558,764	506,347
Total Amount of postage used	\$ 1,880.04	\$ 1,626.62
Total teletypes handled	4,271	4,399

1200459

228

Plant Security and Services Divisions

Office Equipment Section

Almost all of the new calculators, adding machines and typewriters were received and replacement of the old machines was started. It has been decided not to sell the old machines, but to hold them until we find out whether it will be possible to secure additional machines due to material shortages.

Work has been started on the preparation of the A & B Committee request for the balance of our office equipment requirements for the fiscal year of 1951. We have received a letter from Mr. Foglund of the Atomic Energy Commission which states that all orders should be placed at once due to scarcity of materials and the establishment of production priorities on materials.

	<u>August</u>	<u>September</u>
Office machines repaired in shop	295	265
Office machine service calls	<u>323</u>	<u>316</u>
Total machines serviced	618	581

Printing Section

It was necessary to work 128 hours overtime during the month due to an influx of special letters and other priority printing orders.

At the present time we have a backlog of over 85 multilith orders on hand and if the volume does not let up during the month of October, we will again be forced into overtime work.

	<u>August</u>	<u>September</u>
Multilith orders received	282	268
Multilith orders completed	277	258
Multilith orders on hand	74	84
Stencil and fluid duplicating orders received	1,143	936
Stencil and fluid duplicating orders completed	1,155	947
Stencil and fluid duplicating orders on hand	51	40

Stenographic Services Section

A training manual is being prepared which we believe will greatly increase the efficiency of the stenographers and better prepare them for assignments in the Plant.

	<u>August</u> <u>Hours</u>	<u>September</u> <u>Hours</u>
Dictation and Transcription	21:00	24:00
Machine Transcription	36:30	24:10
Letters	105:15	307:25
Manual and Procedures	136:55	141:05
Duplicating - Stencils, Ditto	485:40	171:10

Plant Security and Services Divisions

Stenographic Services (Contin)

	<u>August</u>	<u>September</u>
Special	456:35	495:45
Training	7:35	90:10
Unassigned time during the month	38:45	34:25
Meeting time	7:35	12:00
Holiday and vacation	---	104:00
	<hr/>	<hr/>
	1,629:00	1,404:10
Employees loaned to other divisions	<u>1,197:00</u>	<u>683:15</u>
Total hours available	2,826:00	2,087:25

Records Control Division

Quantity of records received, processed and stored:

Community Division	15	Standard storage cartons
Design & Construction Divisions	10	" " "
General Accounting Divisions	64	" " "
Health Instrument Division	69	" " "
Medical Division	2	" " "
"P" Division	27	" " "
Power Division	27	" " "
Purchasing Division	24	" " "
Service Division	17	" " "
Stores Division	73	" " "
Technical Division	3	" " "
	<hr/>	

Total 331 Standard Storage Cartons

Persons provided records services: 473

Standard storage cartons issued: 221

Storage cartons of records reboxed and processed: 584

Retention and disposal schedules have been set and approved on approximately 75% of all plant records. Schedules for final approval are in the hands of the supervisors of the divisions involved for an additional 15%. The balance of schedules are being typed and will be sent out for division approval by October 6. Some of the divisions are reviewing the schedules thoroughly before making final approval, taking more time than was expected. However we expect to have all schedules approved and summarized in October.

Installation of the uniform filing method was suspended during September to allow completion of the records inventory and disposal schedules in two divisions. This work will be resumed on October 9.

Plant Security and Services Divisions

Records Control Division (Contin)

All work on the stenographic manual has been completed by this division and the Special Programs Section of Employee and Community Relations. The printing job is now out for bids. Delivery date as originally set on the covers is around October 20.

Reboxing of records in old style boxes in storage (3000 boxes) is well under way. Erection of sixty sections of shelving reviewed early in September was begun on September 28.

A motor has been purchased by the Atomic Energy Commission for the box stapling machine they now have. This will be sufficient for box making that we and the Atomic Energy Commission will have in the new Records Center.

Office Methods Division

General Activities -

	<u>August</u>	<u>September</u>
Printing orders reviewed	391	377
New numbers assigned	239	180
Printing orders cancelled*	41	29
Forms redesigned	19	26

*Twenty-four of the printing orders cancelled were orders for small quantities of forms that were available from either the division originating the form or from stores stock. These types of orders should continue to reduce as forms users become better informed regarding supply sources.

Five orders were cancelled, and forms currently being used by other divisions substituted.

If the above twenty-nine orders had gone direct to Printing, without Forms Control, printing costs would have been approximately \$250.00.

A majority of the forms being redesigned are those involving multilith or outside printing, and are redesigned to conform with our adopted standards. The twenty-six forms redesigned during September has resulted in a paper saving estimated at approximately \$325.00 per year.

A study was made of the timekeeping and labor cost procedures being used by Atkinson and Jones, a C.P.F.F. subcontractor set up to handle certain phases of plant maintenance and minor construction and working under the direction of the Construction Division of Design and Construction Divisions.

The procedures established by Atkinson and Jones to complete their payroll and labor distribution reports required a considerable amount of duplicated clerical effort resulting from excessive handling on their part and improperly compiled information being submitted to the divisions requiring their services.

Plant Security and Services Divisions

Office Methods Division (Contin)

A new series of four forms was designed to facilitate handling and improve reporting. An annual savings of approximately \$4,300.00 has resulted with additional savings possible.

Total estimated savings created by above activities were \$4,875.00 of which \$4,300.00 will be on a recurring annual basis.

PATROL AND SECURITY

General

On September 1, Section XXV of H.W. Instructions Letter No. 135, entitled "Operations Bus Traffic Into Plant Area" was issued.

A survey of the 300, 700, and 3000 Areas for location and type of filing cabinets was completed by the 300 Area Security Patrol on September 5.

Effective September 15, No. 2 Shift, the operations bus driver will no longer stop the bus on entering the Richland Barricade. This is unnecessary since a patrolman is now located at the bus lot to see that all passengers of operation buses have proper identification.

Beginning with the No. 1 Shift, September 15, the Security Patrol assigned one man to the Richland Bus Terminal during the hours listed below for the purpose of writing travel passes and/or temporary one day passes for employees who have either lost or forgotten their plant photo passes. In addition to the above duties, the patrolman assigned to this post will, in the event of trouble between the bus driver and employees, see that no one is permitted to ride the bus without proper identification.

No. 1 Shift - from 10:20 P.M. until 300 Area bus leaves
No. 2 Shift - from 6:20 A.M. until 300 Area bus leaves
No. 3 Shift - from 2:20 A.M. until 300 Area bus leaves

Construction work was started on the fence to separate the southeast corner of the 300 Area on September 18. This part of the 300 Area will be a portion of the site of the Technical Center.

Effective at 12:00 Noon, September 18, the post known as the 105-DR Tunnel Badge House was discontinued.

On September 18, at 7:25 A.M., a new post to be known as the 105-DR Exclusion Area Badge House was established and it will be manned twenty-four hours daily. This badge house is in addition to the 105-D Badge House. Both Badge Houses will have duplicate kardex clearances.

Effective with the No. 1 Shift, September 18, the Security Patrol winter uniforms will be worn.

Foot patrol post in the 221-U Area, 200-West, was discontinued September 19.

Plant Security and Services Divisions

Beginning September 19, three new posts were created in the 200-West Area. These posts will be known as the 221-U Construction Badge House, one man on Shift No. 3; 221-U Construction Vehicle Gate, one man on Shift No. 3; and 221-MJ-1 roving foot patrol, one man on Shift No. 2. These posts will be manned Monday through Friday on Shift No. 1 and all shifts Saturdays, Sundays and Holidays. The men from the 221-U Construction Badge House and Vehicle Gate will be posted as a roving foot patrol in the MJ-1 Construction Area.

Mirrors for inspection of the underneath side of vehicles were placed in operation by the 300 Area on September 19. This inspection will be handled on a spot basis.

A new walk-in type panel truck was placed into operation on September 20 by the Security Patrol Administration Section. This truck will be used as a laundry truck.

Effective September 24, woolen winter uniforms will be worn by the No. 2 and No. 3 shifts.

Checking of the gate locks at the 213 Area was discontinued on the No. 2 Shift on September 24.

All personnel in the 700 and 100 Areas were advised of "Defense Warning Signals" on September 29 by the Security Division.

Blackout procedures for the following areas were revised by the Security Division during the month:

200-East Area	September 15
100-D Area	September 20
100-B Area	September 22

Three night inspections were made by the Duty Officers during the period covered by this report.

"Q" orientation talks were given by representatives of the Security Division to 149 General Electric employees during the month.

A procedure is being established whereby designated members of the Security Patrol Division in the various areas will assist the Security Office in the search for lost or missing documents charged to Works personnel as certified by the Audit and Inventory Group of Classified Files and the Blueprint Reproduction Section.

Patrol

The 200 Areas handled 130 process escorts between the areas.

Requests handled totaled 418, consisting mainly of opening doors, buildings, gates and issuing keys for employees of other departments.

Plant Security and Services Divisions

Patrol (Contin)

A total of 737 pat searches were made of employees leaving the operating areas during the month.

A total of 112 Unusual Incident Reports were received, consisting mainly of security violations, lost badges, pencils, contraband picked up at barricades, traffic accidents and fires.

Classified escorts totaling 348 were handled during the month.

A total of 8 traffic escorts and 581 construction personnel escorts were handled during the month.

Patrol made nine ambulance runs for the Medical Division and answered two fire calls during the month.

Practice Evacuations were held as follows:

100-B Area	9-20-50	10:06 A.M.
100-F Area	9-29-50	11:34 A.M.
100-H Area	9-12-50	10:16 A.M.
100-H Area	9-25-50	8:18 A.M.
200-West Area	9-18-50	9:09 P.M.
200-West Area	9-19-50	9:32 A.M.
200-West Area	9-21-50	2:35 A.M.
200-West Area	9-21-50	5:05 A.M.
200-West Area	9-22-50	9:11 P.M.

Practice Mobilization Plan A:

100-F Area	9-24-50	1:30 A.M.
100-F Area	9- 5-50	9:55 P.M.
100-F Area	9- 3-50	12:45 A.M.
100-F Area	9- 4-50	9:41 P.M.
100-H Area	9-28-50	1:32 A.M.
200-East Area	9-12-50	4:32 A.M.

Arrest Summary

	<u>August</u>	<u>September</u>
Warning tickets issued	2	6
Verbal warning given	11	22
Citation tickets issued (traffic only)	6	10

Accident Summary

Total accidents	9	5
Government permits suspended	0	1

Plant Security and Services Divisions

Patrol (Contin)

Training

The training courses held during the month of September were as follows:

	<u>Hours</u>
Pistol	2
Safety	1/4
Health	1/4
Security	1/2
Operations Class No. 1	1
Operations Class No. 2	1
Operations Class No. 3	1 1/2
Operations Class No. 4	1/2
Division Policy Regarding Seniority	1

An instructor at the Patrol Training School helped complete the final phases of the latest Security Activities film in Portland.

All target posts and anchor plates were replaced on the practical pistol course range.

Light armored car HO-1E-13978 was repaired and returned to the Range.

A Technical graduate assigned to Security Patrol spent four days becoming acquainted with the Patrol training program.

The regular Patrol Staff Meeting was held at the Range to discuss and arrange material for the new training period which commenced September 29.

An instructor at the Training School attended a civil defense meeting to formulate plans concerning hand gun instruction and firing.

The final Safety Hurdle Race inspection was made and material concerning the entire contest was compiled. The contest resulted in a tie so arrangements were made to have a duplicate plaque constructed.

Security

There were 193 Security meetings held and attended by 2,960 General Electric employees during the month.

A series of 44 charts concerning security instructions for female employees, particularly stenographers and secretaries, was prepared in the form of a "chalk talk" by a Security representative for use at the "Q" orientation talks given to all new women employees. This will be a regular feature of the orientation.

A Security representative showed the film "Fitting U Into Security" at four meetings to 90 employees, and the film "Scrap of Paper" at 12 meetings to 450 employees.

Plant Security and Services Divisions

Security (Contin)

The following Security Bulletins were issued during the month:

- Bulletin No. 54 "Emergency Blackouts - Plant Areas", September 7.
- Bulletin No. 55 "Security Violations", September 20.

Employee Clearance

Class "Q" clearances received on new employees this month	63
Class "Q" clearances received on new employees to date	6,847
Class "Q" clearances received on both old and new employees since February 17, 1947	11,306
Formal "P" clearances awaiting change to "Q"	85
Authorization clearances issued this month	87

Statistical Summary of Outstanding Area Badges

	<u>August</u>				<u>September</u>				
	<u>A</u>	<u>B</u>	<u>C</u>	<u>Total</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Total</u>	
100-B	1861	583	435	2879	100-B	1895	554	444	2893
100-D	939	951	469	2359	100-D	963	960	459	2382
100-F	707	1160	390	2257	100-F	675	1182	389	2246
100-H	1720	979	498	3197	100-H	1702	1011	499	3212
200-E	941	1911	327	3179*	200-E	969	1880	323	3172*
200-W	1401	1483	309	3553	200-W	1430	1446	303	3179
200-N	26	352	121	999	200-N	32	842	121	995
300	1338	1744	706	3288	300	1339	1730	708	3777
P-11	53	1		54	P-11	52	2		54
					100-DR	2988	7		2995

*Includes 40 "A" badges at Riverland Yards

*Includes 39 "A" Badges at Riverland Yards

Visitor or Temporary Badges

<u>Area</u>	<u>August</u>	<u>September</u>
100-B	784	826
100-D	1256	1320
100-F	1206	1242
100-H	787	814
200-E	1066	1098
200-W	1756	1682
200-N	776	784
300	2053	2137
P-11	25	36
100-DR		43
Total	9605	10,012

Plant Security and Services Divisions

Security (Contin)

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to the AEC this month:	6	Personnel:	81
Total companies forwarded to the AEC last month:	15	Personnel:	34
Total companies forwarded to the AEC to date:	295	Personnel:	2,656
Total companies cleared for "Restricted Data" this month:	3	Personnel:	5
Total companies cleared for "Restricted Data" last month:	7	Personnel:	11

New companies forwarded to Atomic Energy Commission this month:

Cutler & Hammer
Milwaukee, Wisconsin

State of Washington (employee)
Track Scaler
Olympia, Washington

Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "P"	26
Formal "Q"	5

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING SEPTEMBER 30, 1950

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data Class.</u>	<u>Unclass</u>	<u>Areas</u>
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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. Fugua, M.D.	9-22-50	9-23-50	X		
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II. Visits to other Installations

W. D. Norwood to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Attend meeting of industrial physicians and quarterly meeting of lab. and medical directors	Dr. T. Shipman D. Brown	9-27-50	10-3-50	X		
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DESIGN AND CONSTRUCTION DIVISIONS

I. Visitors to this Works

F. E. Crever Gen. Eng. & Consulting Lab. Schenectady, New York	Consultations on labora- tory projects	G. Thayer	9-27-50	9-29-50	X		200-W 234, 235
D. E. Garr Gen. Eng. & Consulting Lab. Schenectady, New York	Consultations on labora- tory projects	G. Thayer	9-27-50	9-29-50	X		200-W 234, 235
D. H. Marquis Gen. Eng. & Consultation Lab. Schenectady, New York	Consultations on labora- tory projects	G. Thayer	9-27-50	9-29-50	X		200-W 234, 235

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Unclass</u> <u>Areas</u>
E. Girardot Gen. Eng. & Consulting Lab. Schenectady, New York	Design work in connection with completion of 234-5 Building Program	G. Thayer	9-12-50	9-22-50	X	200-W 234 235 272-Z
D. H. Marquis Gen. Eng. & Consulting Lab. Schenectady, New York	Design work in connection with completion of 234-5 Building Program	G. Thayer	9-12-50	9-15-50	X	200-W 234 235 272-Z
G. N. Hauver Cutler-Hammer Company Milwaukee, Wisconsin	Inspection of equipment furnished by his firm	H. H. Jones	9-11-50	9-16-50	X	100-D XXX
E. Long Gen. Eng. & Consulting Lab. Schenectady, New York	Design work on Task V and VI, 234-5 Design Program	G. Thayer	9-7-50	10-6-50	X	200-W 234 235
H. H. Newman Swenson Evaporator Company Harvey, Illinois	Discussions on Project 362, operation of pilot plant evaporator with reference to scale up	P. M. Murphy	9-12-50	9-12-50	X	
A. H. Rau Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on drafting organization, practices and procedures	G. H. Hill J. G. Carriere	9-25-50	10-6-50	X	100-D Const. 300-3706, 303 200-W 221-U, 231 100-D 105
II. Visits to other Installations						
G. S. Cochrane to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation regarding design and installation of equipment for 432 Project	D. H. Marquis	8-28-50	9-22-50	X	
J. R. Cartmell to: Kellex Corporation New York, New York	Consultation on design problems	N. A. Spector	8-25-50	9-4-50	X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Unclass</u>
J. M. Frame to: Argonne National Laboratory Chicago, Illinois	Technical consultation treatment of dissolver off gasses	S. Lawroski	9-5-50	9-9-50	X	
R. C. Hollingshead to: Proportioners, Inc. Providence, Rhode Island	Design consultation of pulse mechanism	R. P. Lowe	9-5-50	9-10-50		X
R. C. Hollingshead to: Kellex Corporation New York, New York	Design consultation on pulse generating mechanism	J. S. Atwood	9-1-50	9-9-50	X	
R. C. Munn to: Kellex Corporation New York, New York	Consultation in instru- mentation for Project C-362	J. S. Atwood	9-18-50	9-27-50	X	
P. M. Murphy to: Kellex Corporation New York, New York	Design discussions relative to project C-362	G. White, Jr.	9-25-50	9-30-50	X	
D. E. Irons to: Kellex Corporation New York, New York	Consultation on Redox design progress	G. White, Jr.	9-20-50	9-23-50	X	
R. S. Porry to: Kellex Corporation New York, New York	Design discussions relative to project C-362	G. White, Jr.	9-25-50	9-30-50	X	
J. S. Parker to: Kellex Corporation New York, New York	Discussions on TBP and Redox	G. White, Jr.	9-5-50	9-9-50	X	
J. S. Parker to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultations on 432 project	F. E. Crever	9-7-50	9-11-50	X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>UnClass</u>
B. K Phillips to: Atomic Energy Commission Los Alamos Scientific Lab. Los Alamos, New Mexico	Union relation matters and procedures	C. Campbell, AEC	9-21-50	9-22-50	X	
E. L. Reed to: General Electric Company Schenectady, New York	Consult on assistance from Ind. Eng. Div.	T. R. Rhea	9-11-50	9-16-50	X	
W. J. Dows to: Westinghouse Electric Co. Chicago, Illinois	Discuss electric furnace details with prospective vendors - Project C-361	Mr. Gillette	9-20-50	9-29-50		X
L. O. Chalkins to: Pacific Coast Eng. Co. Alameda, California	Discuss engineering details on laboratory equipment	Mr. Ramsden	9-19-50	9-21-50		X
L.B. Brinkman to: Gilmore Fabricators Oakland, California	Engineering consultation	G. Rotenkobler	9-20-50	9-23-50		X
M. J. Rutherford to: Gilmore Fabricators Oakland, California	Engineering consultation	G. Rotenkobler	9-20-50	9-23-50		X
J. S. Parker to: C. F. Braun Alhambra, California	Consultation with manufacturer in connection with C-362 and C-187-D	J. Braun	9-25-50	9-29-50		X
J. S. Parker to: Southwestern Eng. Co. Los Angeles, California	Consultation with manufacturer in connection with C-362 and C-187-D	Mr. Coulter	9-25-50	9-29-50		X
J. S. Parker to: Southwest Welding Co. Alhambra, California	Consultation with manufacturer in connection with C-362 and C-187-D	E. A. Brock	9-25-50	9-29-50		X

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Areas</u>
J. S. Parker to: Consolidated Western Co. Los Angeles, California	Consultation with manufacturer in connection with C-362 and C-167-D	Sales Mgr.	9-25-50	9-29-50	X		
J. R. Wolcott to: Willamette Iron & Steel Portland, Oregon	Discuss engineering matters and delivery schedules on Project C-187-E	C. Smith	9-26-50	9-29-50	X		
J. R. Wolcott to: Coates Electric Co. Seattle, Washington	Discuss engineering matters and delivery schedules on Project C-187-E	Mr. Moore	9-26-50	9-29-50	X		
J. R. Wolcott to: Western Gear Seattle, Washington	Discuss engineering matters and delivery schedules on Project C-187-E	Shop Supt.	9-28-50	9-29-50	X		
J. R. Wolcott to: Washington Iron Works Seattle, Washington	Discuss engineering matters and delivery schedules on Project C-187-E	Shop Supt.	9-28-50	9-29-50	X		
R. C. Hoffman to: Leland S. Rosener San Francisco, California	Design liaison with architect engineer	L. S. Rosener, Jr.	9-17-50	9-20-50	X		
W. C. Royce to: Leland S. Rosener San Francisco, California	Design liaison with architect engineer	L. S. Rosener, Jr.	9-17-50	9-23-50	X		
W. C. Royce to: Ralph M. Parson, Co. Los Angeles, California	Negotiations with architect engineer	R. M. Parson	9-18-50	9-23-50	X		
ELECTRICAL DIVISION							
I. Visitors to this Works							
L. C. Ford	Check installation of equipment	H. A. Carlborg	9-1-50	9-30-50			X 100-D-XXX 100-H-XXX 300-XXX

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Name - Organization Purpose of Visit Person Contacted Arrival Departure Restricted Data Class Unclass Areas

HEALTH INSTRUMENT DIVISIONS

I. Visitors to this Works

A. H. Emmons Oak Ridge National Laboratory Oak Ridge, Tennessee	Consultation on biology problems	H. M. Parker H. A. Kornberg	9-18-50	9-22-50	X	100-F 108-F 200-W 222-U
L. Silverman Harvard University Boston, Massachusetts	Study of industrial hygiene problems	F. E. Adley	9-18-50	9-19-50	X	
J. F. Ego, Jr. Argonne National Laboratory Chicago, Illinois	Consultation involving industrial hygiene and ventilation problems	F. E. Adley H. M. Parker	9-25-50	9-27-50	X	100-B 106-B 200-W XXX 300 3706,303

II. Visits to other installations

H. M. Parker to: U. California, L.A. Los Angeles, California	Waste disposal problems	S. Warron	9-6-50	9-9-50	X	
H. M. Parker to: American Roentgen Ray Society St. Louis, Missouri	Attend meeting	- -	9-25-50	9-29-50	X	
M. E. Getzdamor to: Argonne National Lab. Chicago, Illinois	Discuss biochemical investigations	A. M. Brues H. M. Patt	9-1-50	9-9-50	X	
M. E. Getzdamor to: Inst. of Radiobiology Chicago, Illinois	Discuss biochemical experiments	R. E. Zirkle	9-1-50	9-9-50	X	
J.W. Healy to: Army Chem. Center Chemical Corp, Tech. Command Edgewood Arsenal, Maryland	Symposium on chemical dosimetry	- -	9-16-50	9-20-50	X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Areas</u>
J. W. Porter to: Argonne National Lab. Chicago, Illinois	Discuss botanical investigations	A. M. Brues H. M. Patt S. A. Gordon	9-4-50	9-9-50	X	
INSTRUMENT DIVISION						
I. Visitors to this Works						
K. E. Atwood Bailey Motor Company Seattle, Washington	Make final adjustments on the Power Calculator system in 105-IR	W. M. Mathis E. Hilgemann	9-18-50	9-23-50	X	100-D 105 105-IR
V. S. Rutherford Bailey Motor Company Seattle, Washington	Make final adjustments on the Power Calculator system in 105-IR	W. M. Mathis E. Hilgemann	9-18-50	9-23-50	X	100-D 105 105-IR
II. Visits to other Installations						
B. E. Woodward to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation for Pile Technology Division	D. H. Marquis	9-13-50	9-16-50	X	
B. E. Woodward to: Knolls Atomic Power Lab. Schenectady, New York	Review instrumentation pending our use of in- formation at Hanford projects	H. H. Race C. E. Hanson, Jr.	9-14-50	9-16-50	X	
PROJECT ENGINEERING DIVISIONS						
I. Visitors to this Works						
J. G. Schneeman X-ray Products Corporation Los Angeles, California	Inspect radiograph films taken on P-13 piping assembly	J. T. Lloyd	9-13-50	9-14-50	X	
D. E. Carr Gen. Eng. & Con. Lab. Schenectady, New York	Discussion of P-10-X equip- ment	J. S. McMahon F. A. Bowman W. R. Feltz	9-28-50	9-29-50	X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Areas</u>
D. H. Marquis Gen. Eng. & Con. Lab. Schenectady, New York	Discussion of P-10-X equipment	J. S. McMahon W. R. Felts F. A. Bowman	9-28-50	9-29-50	X		
W. A. Hartman Gen. Eng. & Con. Lab. Schenectady, New York	Discussion of P-10-X equipment	J. S. McMahon W. R. Felts F. A. Bowman	9-28-50	9-29-50	X		
F. E. Crever Gen. Eng. & Con. Lab. Schenectady, New York	Discussion of P-10-X equipment	J. S. McMahon W. R. Felts F. A. Bowman	9-28-50	9-29-50	X		
D. H. Marquis Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on fabri- cation of furnace tube for Impile controlled atmosphere experiment	H. J. Bollarts H. P. Shaw	9-16-50	9-16-50	X		
A. H. Rau Engineering Policy Division General Electric Company Schenectady, New York	Discussion to evaluate difficulties of certain design and drafting assignments - Redox, P-10 and Hot Semi-works	J. S. McMahon S. F. Schure	9-25-50	10-10-50	X		100-D 105-DR 100-B 108 100-F-XXX, 108 200-W 221-T, 224-T 231, 221-U, 234 Redox Const. Area

II. Visits to other Installations

H. F. Peterson to: Atomic Energy Commission Los Alamos Scientific Lab. Los Alamos, New Mexico	Inspect and review trans- portation system and main- tenance facilities	G. Eudell	9-18-50	9-20-50	X		
H. F. Peterson to: San Antonio Transportation Co. San Antonio, Texas	Inspect and review trans- portation facilities	L. McInorny	9-21-50	9-22-50	X		

Name - Organization

C. Froauff
 Lee & Estes
 Kennewick, Washington

L. Vorschueren
 Liquid Carbonic, Inc.
 Yakima, Washington

P. Ridenour
 Industrial Air Products
 Yakima, Washington

E. Winkelman
 Inland Motor Freight
 Pasco, Washington

E. Winkelman
 Inland Motor Freight
 Pasco, Washington

G. Hixon
 Inland Motor Freight
 Pasco, Washington

G. Hixon
 Inland Motor Freight
 Pasco, Washington

F. Colbort
 United Truck Lines
 Kennewick, Washington

J. Tallent
 United Truck Lines
 Kennewick, Washington

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Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data	
				Class	Unclass
Deliver material on orders HW 63685 and 67662	H. H. Hart	9-8-50	9-8-50	X	100-B 105 200-E 200-W 271-T
Deliver material on order HW 67678-M	H. H. Hart	9-11-50	9-11-50	X	100-H 105
Deliver material on order HW 67678	H. H. Hart	9-15-50	9-15-50	X	100-B 105 100-D 105 100-F 105
Deliver material on order HW 65697-M	H. H. Hart	9-19-50	9-19-50	X	100-H-XXX
Deliver material on order HW 65697-M	H. H. Hart	9-20-50	9-20-50	X	100-H XXX
Deliver material on order HW 65697-M	H. H. Hart	9-20-50	9-20-50	X	100-H XXX
Deliver material on order HW 65697-M	H. H. Hart	9-21-50	9-21-50	X	100-H XXX
Deliver material on order HW 67677-M	H. H. Hart	9-22-50	9-22-50	X	100-D 105
Deliver material to Rust Eng. Company	H. H. Hart	9-25-50	9-25-50	X	100-B 105

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Agency</u>
H. L. Halverson United Truck Lines Kamnowick, Washington	Deliver material on order HW 67655-M	H. H. Hart	9-25-50	9-25-50	X		200-W 271-T
R. Thorne Inland Motor Freight Pasco, Washington	Deliver material on order HW 69144-M	H. H. Hart	9-26-50	9-26-50	X		100-B 105
G. Hixon Inland Motor Freight Pasco, Washington	Deliver material on order HW 69144-M	H. H. Hart	9-26-50	9-26-50	X		100-D 105 100-F 105
M. Brill Leo & Estes Kennewick, Washington	Deliver material on order HW 69764-M	H. H. Hart	9-27-50	9-27-50	X		100-D XXX
G. Hixon Inland Motor Freight Pasco, Washington	Deliver material on order HW 9609	H. H. Hart	9-28-50	9-28-50	X		100-D 105
II. Visits to other Installations							
W. A. Jeffrey to: C. F. Braun Company Los Angeles, California	Negotiating fabrication orders on D-22240, D-22241 and D-22242	J. Braun	9-25-50	9-26-50		X	
W. A. Jeffrey to: Standard Steel Company Los Angeles, California	Negotiation fabrication orders on D-22240, D-22241 and D-22242	C. N. Ross	9-25-50	9-26-50		X	
W. A. Jeffrey to: Southwest Welding Co. Los Angeles, California	Negotiating fabrication orders on D-22240, D-22241 and D-22242	M. Brock	9-25-50	9-26-50		X	
W. A. Jeffrey to: Consolidated Western Steel Los Angeles, California	Negotiating fabrication orders on D-22240, D-22241 and D-22242	Mr. Thompson	9-25-50	9-26-50		X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Unclass</u>
R. V. Lawson to: Willamette Iron & Steel Portland, Oregon	Expedite delivery of orders	Mr. Garland	9-28-50	9-28-50		X
R. H. Burroll to: G. O. Carlson Company Coatesville, Pennsylvania	Expedite all orders	- -	9-28-50	Two weeks		X
R. H. Burroll to: Tube Turns, Inc. Louisville, Kentucky	Expedite all orders	- -	9-28-50	Two weeks		X
L. G. Jones to: Gunderson Brothers Eng. Corp. Portland, Oregon	Inspection of HWC-8981	Mr. Trapman	9-30-50	9-30-50		X
R. J. Gandy to: Allied Chem. & Dyo Cor. New York, New York	Arrange procurement of essential materials	C. M. Brown	9-31-50	9-9-50		X
R. J. Gandy to: Stauffer Chemical Company New York, New York	Arrange procurement of essential materials	H. Stauffer	9-31-50	9-9-50		X
R. J. Gandy to: Westcavo Chem. Div. Food Machinery & Chem. Corp. New York, New York	Arrange procurement of essential materials	M. Y. Seaton	9-31-50	9-9-50		X
R. J. Gandy to: National Coal Association Washington, D. C.	Gather information on coal situation and obtain new freight rates	J. Battlo	9-5-50	9-5-50		X
R. J. Gandy to: Monsanto Chemical Company Seattle, Washington	Contact in regard to nitric acid supply	I. Smith	9-26-50	9-27-50		X

<u>Name-Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	
						<u>Arena</u>	
R. J. Gandy to: Allied Chemical & Dye Cor. Seattle, Washington	Contact in regard to nitric acid supply	J. Sutherland	9-26-50	9-27-50		X	
R. J. Gandy to: Aluminum Company of America Seattle, Washington	Contact in regard to aluminum supply	Mr. Finley	9-26-50	9-27-50		X	
I. (cont'd) Visitors to this Works							
R. C. Smith Builders Providence, Inc. Providence, Rhode Island	In connection with order HWC-8110	H. A. Hauser	9-6-50	10-1-50		X	
W. B. Clements American District Telegraph Co. Seattle, Washington	In connection with order HWC-4837	H. A. Hauser	9-26-50	10-6-50		X	
R. W. Herrick Stephens Adamson Mfg. Co. Los Angeles, California	In connection with order HWC-8508	H. A. Hauser	9-27-50	10-4-50		X	
J. W. Burton Roberts Filter Company Darby, Pennsylvania	In connection with order HWC-8110	H. A. Hauser	9-27-50	10-8-50		X	
F. R. Haddock Roberts Filter Company Darby, Pennsylvania	In connection with order HWC-8110	H. A. Hauser	9-27-50	10-8-50		X	
TRANSPORTATION DIVISION							
I. Visits to other Installations							
R. T. Cooke to: Atomic Energy Commission Los Alamos Scientific Lab. Los Alamos, New Mexico	Inspect transportation system and maintenance facilities	G. Eudell	9-18-50	9-20-50		X	

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Restricted Data
Class Unclass
Arrival Departure
Person Contacted
Purpose of Visit
Name - Organization

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Class	Unclass	Arrone
A. L. Dorrell to: Atomic Energy Commission Los Alamos Scientific Lab. Los Alamos, New Mexico	Inspect transportation system and maintenance facilities	G. Eudell	9-16-50	9-20-50	X		
TECHNICAL DIVISIONS							
I. Visitors to this Works							
B. B. McIntoe Los Alamos Scientific Lab. Los Alamos, New Mexico	Consultation on mass spectrometer analyses and P-10 consultation	C. R. McCully H. F. Zuhr	9-28-50	9-29-50	X	300-3706 100-B 108 105	
K. H. Kingdon Knolls Atomic Power Laboratory Scheneectady, New York	Consultation on assistance to HCO program	A. B. Greninger	9-18-50	9-19-50	X	300 3706 100-B 108	
J. Meeley Los Alamos Scientific Laboratory Los Alamos, New Mexico	P-10 conference	W. M. Harty	9-1-50	9-2-50	X	300 3706 100-B 105 108 100-D 105 100-H 105	
F. S. Patton Y-12 Plant Oak Ridge National Laboratory Oak Ridge, Tennessee	Discuss slug canning	E. A. Smith	9-5-50	9-9-50	X	300 3706, 305 100-B 108	
H. W. Bousman Gen. Eng. & Con. Lab. Scheneectady, New York	P-10 consultation	H. F. Zuhr	9-18-50	9-22-50	X	300 3706 100-B 105, 108	
J. Marsden Knolls Atomic Power Laboratory Scheneectady, New York	Discuss gas process studios and P-10 consultation	W. M. Harty	9-18-50	9-20-50	X	300 3706 100-B 105 108	



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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Around</u>
D. H. Ahmann Knolls Atomic Power Laboratory Schenectady, New York	Discuss gas process studies and P-10 consultation	W. M. Harty	9-18-50	9-21-50	X		300 3706 100-F 105 108
Z. D. Sheldon Knolls Atomic Power Laboratory Schenectady, New York	Discuss gas process studies and P-10 consultation	W. M. Harty	9-18-50	9-21-50	X		300 3706 100-B 105 108
F. E. Crovor Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	9-28-50	9-29-50	X		100-B 105 108
D. E. Garr Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	9-28-50	9-29-50	X		100-B 105 108
W. A. Hartman Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	9-28-50	9-29-50	X		100-B 105 108
D. H. Marquis Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	9-29-50	9-29-50	X		100-B 105 108
W. G. Stockdale Oak Ridge National Laboratory Oak Ridge, Tennessee	Stack gas filtration	R. H. Beaton	9-18-50	9-19-50	X		200-E 271-B 200-W 271-T, 231
J. A. Suddeth Oak Ridge National Laboratory Oak Ridge, Tennessee	Stack gas filtration	R. H. Beaton	9-18-50	9-19-50	X		200-E 271-B 209-W 271-T, 231
L. Silverman Harvard University Boston, Massachusetts	Air filtration	R. H. Beaton	9-19-50	9-20-50	X		

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		
					<u>Class</u>	<u>Unclass</u>	<u>Areas</u>
A. Rosano Harvard University Boston, Massachusetts	Air filtration	R. H. Beaton	9-19-50	9-20-50	X		
H. K. Jackson Oak Ridge National Laboratory Oak Ridge, Tennessee	Technical information on development of purex process	R. H. Beaton R. B. Richards	9-26-50	9-29-50	X		109-F 105 200-W 221-T 221-U 231
A. C. Jealous Oak Ridge National Laboratory Oak Ridge, Tennessee	Pulse column for use in purex process	R. H. Beaton R. B. Richards	9-26-50	9-29-50	X		300 3706 100-F 105 200-W 221-T 221-U, 231
R. B. Lindauer Oak Ridge National Laboratory Oak Ridge, Tennessee	Technical information on development of purex process	R. H. Beaton R. B. Richards	9-26-50	9-29-50	X		300 3706 100-F 105 200-W 221-T 221-U, 231
E. C. Stewart Oak Ridge National Laboratory Oak Ridge, Tennessee	Metal recovery process	R. H. Beaton R. B. Richards	9-26-50	9-29-50	X		300 3706 105-F 105 200-W 221-T 221-U, 231 300 3706
A. C. Jealous Oak Ridge National Laboratory Oak Ridge, Tennessee	TBP consultations	R. H. Beaton	9-11-50	9-12-50	X		300 3706, 321
II. Visits to other installations							
L. L. Burger to: Chicago, Illinois	Attend American Chemical Society meeting	--	9-4-50	9-8-50			X
H. H. Hopkins to: Chicago, Illinois	Attend American Chemical Society meeting	--	9-4-50	9-8-50			X
R. B. Richards to: Chicago, Illinois	Attend American Chemical Society meeting	--	9-4-50	9-8-50			X

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Areas

Restricted Data
Class Unclass

Departure

Arrival

Person Contacted

Purpose of Visit

Name - Organization

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u> <u>Class</u> <u>Unclass</u>	<u>Areas</u>
W. E. Roake to: Chicago, Illinois	Attend American Chemical Society meeting		9-4-50	9-8-50		
L. L. Burger to: Argonne National Laboratory Chicago, Illinois	TBP consultation	H. H. Hyman S. Lawroski	9-6-50	9-6-50	X	
L. L. Burger to: Knolls Atomic Power Lab. Schenectady, New York	TBP consultation	J. Marsden	9-11-50	9-12-50	X	
H. H. Hopkins to: Argonne National Lab. Chicago, Illinois	TBP consultation	H. H. Hyman S. Lawroski	9-6-50	9-8-50	X	
R. B. Richards to: Argonne National Lab. Chicago, Illinois	TBP consultation	B. Lawroski	9-6-50	9-8-50	X	
R. B. Richards to: Knolls Atomic Power Lab. Schenectady, New York	SFRU consultation	J. Marsden	9-11-50	9-13-50	X	
F. J. Leitz to: Knolls Atomic Power Lab. Schenectady, New York	SFRU consultation	J. Marsden	9-11-50	9-13-50	X	
W. E. Roake to: Argonne National Lab. Chicago, Illinois	TBP consultation	H. H. Hyman	9-6-50	9-6-50	X	
W. E. Roake to: Knolls Atomic Power Lab. Schenectady, New York	TBP consultation	J. Marsden	9-11-50	9-12-50	X	
F. W. Woodfield to: Knolls Atomic Power Lab. Schenectady, New York	SFRU consultation	J. Marsden	9-11-50	9-13-50	X	



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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data	
					Class	Unclass
- 19 -						
F. J. Quinn to: Gen. Eng. & Con. Lab. Schenectady, New York	432 Project Testing	D. Egnor	9-6-50	9-15-50	X	
J. T. Stringer to: Proportioneer's Inc. Providence, Rhode Island	TBP equipment conference - -		9-7-50	9-8-50		X
J. T. Stringer to: Gen. Eng. & Con. Lab. Schenectady, New York	Long-range bearing program conference	W. D. Egnor	9-11-50	9-12-50		X
R. A. Carlson to: Gen. Eng. & Con. Lab. Schenectady, New York	432 Project Testing	D. H. Marquis	9-25-50	10-6-50	X	
W. W. Koenig to: Allegheney-Ludlum Brackenridge, Pennsylvania	Investigation of substitutes for T-347 stainless steel	C. H. McKnight	9-1-50	9-1-50		X
W. W. Koenig to: E. I. du Pont de Nemours Wilmington, Delaware	Investigation of substitutes for T-347 stainless steel	W. R. Myers W. B. DeLong	9-5-50	9-6-50		X
W. W. Koenig to: Araco - Rustless Division Baltimore, Maryland	Investigation of substitutes for T-347 stainless steel	G. E. Linnert	9-6-50	9-6-50		X
W. W. Koenig to: Electro-Metallurgical Corp New York, New York	Investigation of substitutes for T-347 stainless steel	G. A. Sands	9-7-50	9-7-50		X
W. W. Koenig to: International Nickel Co. New York, New York	Investigation of substitutes for T-347 stainless steel	F. L. Laque	9-7-50	9-7-50		X
J. F. Sullivan to: NEPA Division, Fairchild Oak Ridge, Tennessee	Consultation and design of Special Request ORNL-138	R. W. Coyle	9-18-50	9-21-50	X	

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Name - Organization

Purpose of Visit

Arrival

Departure

Restricted Data

Areas

<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u> <u>Class</u>	<u>Unclass</u>	<u>Areas</u>
R. E. Burns to: Knolls Atomic Power Lab. Schenectady, New York	TBP consultation	J. Marsden	9-11-50	9-12-50	X		
A. B. Carson to: Atomic Energy Commission New York, New York	Meeting of Reactors Safeguard Committee	Committee	9-14-50	9-15-50	X		
H. F. Zuhr to: Oak Ridge National Lab. Oak Ridge, Tennessee	Leak detection and vacuum equipment	W. B. Humes	9-11-50	9-12-50	X		
H. F. Zuhr to: Knolls Atomic Power Laboratory Schenectady, New York	P-10 consultation	C. Munnal	9-11-50	9-15-50	X		
H. F. Zuhr to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	9-11-50	9-15-50	X		
A. T. Taylor to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	C. Munnal	9-11-50	9-15-50	X		
A. T. Taylor to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	9-11-50	9-15-50	X		
J. A. Parodi to: Knolls Atomic Power Lab. Schenectady, New York	Discuss spectrochemical analysis (P-10)	C. Munnal	9-1-50	9-14-50	X		
J. A. Parodi to: Leeds & Northrup Philadelphia, Pennsylvania	Consultation on emission spectrograph	W. G. Fastie	9-15-50	9-15-50		X	
G. J. Alkire to: Chicago, Illinois	Attend American Chemical Society meeting	- -	9-4-50	9-7-50			X

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>		<u>Areas</u>
					<u>Class</u>	<u>Unclass</u>	
G. J. Alkire to: Argonne National Lab. Chicago, Illinois	Consultation on analytical problems	A. H. Jaffe W. J. Bentley	9-5-50	9-8-50	X		
H. H. Van Tuyl to: Chicago, Illinois	Attend American Chemical Society meeting	- - -	9-4-50	9-7-50		X	
H. H. Van Tuyl to: Argonne National Lab. Chicago, Illinois	Consultation on analytical problems	F. S. Tompkins	9-5-50	9-8-50	X		
L. F. Wardell to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on Redox and TBP analytical problems	B. F. Rider	9-4-50	9-8-50	X		
L. M. Knights to: Chicago, Illinois	Attend American Chemical Society meeting	- - -	9-4-50	9-7-50		X	
L. M. Knights to: Argonne National Lab. Chicago, Illinois	Consultation on analytical problems and laboratory design	A. H. Jaffe R. Bane	9-4-50	9-8-50	X		
L. M. Knights to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on analytical problems	B. F. Rider	9-11-50	9-12-50	X		
F. W. Albaugh to: Chicago, Illinois	Attend American Chemical Society meeting	- - -	9-5-50	9-7-50		X	
F. W. Albaugh to: Argonne National Lab. Chicago, Illinois	Inspection of facilities, discussion of analytical and process chemistry	E. Lawroski W. M. Manning	9-7-50 9-15-50	9-8-50 9-15-50	X X		
F. W. Albaugh to: Knolls Atomic Power Lab. Schenectady, New York	SPRU program conference and analytical methods discussion	J. Marsdon J. F. Flagg	9-11-50	9-12-50		X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data Class</u>	<u>Unclass</u>	<u>Arms</u>
F. W. Albaugh to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discussions of analytical and process chemistry	F. R. Bruce M. T. Kelly	9-13-50	9-14-50	X		
F. W. Albaugh to: Y-12 Laboratory Oak Ridge, Tennessee	Discussion on process chemistry	G. L. Clewett	9-14-50	9-14-50	X		
G. G. Stevenson to: Portland, Oregon	Attend conference of Pacific Northwest Library Association	- -	9-1-50	9-2-50		X	
R. J. Hale to: Leland S. Rosener, Co. San Francisco, California	Discuss preliminary plans and specifications for radiochemistry building	L. S. Rosener	9-18-50	9-21-50		X	
P. M. Thompson to: General Electric Company Syracuse, New York	Discuss background information on large scale digital computers	L. R. Fink	9-7-50	9-7-50		X	
P. M. Thompson to: General Electric Company Schenectady, New York	Discuss background information on large scale digital computers	T. M. Berry	9-8-50	9-8-50		X	
P. M. Thompson to: International Bus. Mach. New York, New York	Study methods of IBM Card C. C. Hurd Programmed Calculator system	C. C. Hurd	9-12-50	9-15-50		X	
P. M. Thompson to: Eckert & Mauchley Remington Rand Agency Philadelphia, Pennsylvania	Discuss background information on large scale digital computers	W. T. Brown	9-11-50	9-11-50		X	
P. M. Thompson to: Argonne National Lab. Chicago, Illinois	Discuss background information on IBM Card Programmed operation	D. Flanders	9-7-50	9-7-50		X	

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<u>Name - Organization</u>	<u>Purpose of Visit</u>	<u>Person Contacted</u>	<u>Arrival</u>	<u>Departure</u>	<u>Restricted Data</u>	
					<u>Class</u>	<u>Unclass</u>
P. M. Thompson t6: Oak Ridge National Lab. K-25 and Y-12 Plants Oak Ridge, Tennessee	Discuss background information on IBM Card Programmed operation Calculator system	J. P. Kelly F. C. Uffelmann	9-17-50	9-20-50	X	
P. M. Thompson to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Discuss background information on IBM Card Programmed operation of Calculator system	P. C. Hammer B. Carlson	9-20-50	9-22-50	X	
D. W. Pearce to: Knolls Atomic Power Lab. Schenectady, New York	Consultation - assistance to Hanford program	K. H. Kingdon	9-11-50	9-12-50	X	
D. W. Pearce to: Mallinckrodt Chem. Corp. St. Louis, Missouri	Consultation - purification of uranium materials	W. Keller	9-13-50	9-14-50	X	
I. (cont'd) Visitors to this C. Manual Knolls Atomic Power Lab. Schenectady, New York	Work - Technical Divisions Consultation on P-10 program	W. M. Harty R. B. Richards	9-10-50	9-22-50	X	300-3706, 321 100-B-108-B
C. A. Hansen, Jr. Knolls Atomic Power Lab. Schenectady, New York	Discuss 100-G instrumentation and assistance to HOO	D. W. Pearce E. S. Day (Instrument Division)	9-25-50	9-29-50	X	300-3706, 321 100-D-105, 100-H-105
R. A. Hanson International Bus. Machines Seattle, Washington	Installation of IBM equipment in 101 Bldg.	P. M. Thompson B. F. Butler	9-28-50	10-2-50		X 101
C. G. Kruse International Bus. Machines Pasco, Washington	Installation of IBM equipment in 101 Bldg.	P. M. Thompson	9-28-50	10-6-50		X 101

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PURCHASING AND STORES DIVISIONS
SUMMARY
 SEPTEMBER, 1950

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

	<u>Total Personnel</u> <u>as of 8-31-50</u>	<u>Total Personnel</u> <u>as of 9-30-50</u>	<u>Net Change</u>
Exempt	57	61	4
Non-Exempt	<u>314</u>	<u>294</u>	<u>- 20</u>
TOTALS	371	355	- 16

The dollar value of orders placed during the month was \$2,100,202.97 which represents approximately 33-1/3% increase over the previous month.

The Technical Divisions, through the Separations Division, authorized acceptance of Type 304 ELC (.030% carbon maximum) stainless steel as a substitute for Type 347 except in those few instances where Type 347 will be specified on a "no substitute" basis. This action was necessary in order to help conserve Columbium of which there is a critically short supply.

Aid was rendered to our fabricators in connection with locating scarce materials by shipment of material from our stocks and locating other materials on the open market.

Orders for 1,408 tons of stainless steel were placed under a Voluntary Allocation Program worked out with the stainless steel producers. Representatives of the Purchasing Division, including the Divisions' Manager and Assistant Manager, made trips to the vendors' plants on both the East and West Coasts, to expedite placement and shipment of orders for equipment for Projects C-187-D and C-362.

Five additional stainless steel nitric acid tank cars and two rubber lined phosphoric acid tank cars were obtained from the Army Transportation Corps on a "no recall" basis.

During the month, 2,882 purchase requisitions were processed through screening with the result that 1,847 items were supplied from Plant stocks thus obviating the necessity for purchase from outside sources.

A shipping order for 4,500,000 board feet of surplus lumber was received on the Commission during the month. This lumber was in sizes which could not be used on the project.

Warehouses No. 1, 2, and 8 at the Pasco Depot were evacuated during the month and turned over to the Army. The Commission has requested the Army's permission to continue to use Warehouses No. 5 and 6 for the storage of controlled materials and equipment.

1200492

PURCHASING AND STORES DIVISIONS

SUMMARY

SEPTEMBER, 1950

All stainless steel in the excess category has been withdrawn and isolated for possible future use. This will necessitate physical and chemical analysis in many instances.

A total of 38 carloads and 491 truckloads of surplus materials and equipment were shipped from the project during the month.

Negotiations with the Milwaukee Railroad resulted in a rate reduction of 92 cents per ton on coal moving from Roundup and Keene, Montana to Hanford. This reduction will result in annual savings of approximately \$92,000.

The Interstate Commerce Commission issued Service Order No. 865, effective September 20, 1950, increasing demurrage charges. This is the second change issued during the year. H. W. Instructions Letter No. 156 was issued in order to call this increase to the attention of all concerned.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges during the month amounting to \$25,928.70.

Work continued in the development of preliminary design information for the proposed Central Warehouse.

PURCHASING AND STORES DIVISIONS
STAFF SECTION
SEPTEMBER, 1950

Assignments

Additional reports showing statistical requirements for the preliminary design of the centralized warehouse were submitted to the Project Engineering Division. In conjunction with the requirements, a statement of justification of the size of the warehouse is being prepared for the Commission.

Statistics and estimates costs of including graphite storage adjacent to the new centralized warehouse were established to support a proposal for the A and B Committee.

In collaboration with Operating Stores Inventory Control, Community Maintenance and Manufacturing Divisions representatives, mild steel requirements thru January 1951 were forecast and requisitioned.

An agreement was reached with the General Accounting Division, Budget Section, that they will continue to use the Purchasing and Stores Divisions budget as approved in March.

The Budget revision for fiscal year 1951 within-division cost was forwarded to the General Accounting Budget Section for consideration.

Meetings were held with the representatives of the National Cash Register and the I.B.M. Company to discuss further, the mechanization of stores record keeping. Proposals are now being submitted by Burroughs, I.B.M. and National Cash Register.

Data are now being accumulated for submission to Mr. Robin, Schenectady, regarding the History of the Purchasing and Stores Divisions.

Revision of functions, methods and accountability procedures for the Surplus, Salvage and Scrap Section were completed and accepted for the final write up and installation.

Memo Employee Sales procedures and inventory activity for the period July 1, 1949 thru June 30, 1950, was forwarded to the Manufacturing Divisions for their comments.

Surveys and discussions with the Manufacturing and Project Engineering Divisions were continued on area warehousing and a preliminary proposal was prepared for consideration.

Recommendations were made and necessary steps taken to set up an accountability control desk in Operating Stores, as a further step in centralizing stores warehousing. Accounting control desk was established previously in North Richland, Surplus, Salvage and Scrap, and in White Bluff, Construction Materials.

PURCHASING AND STORES DIVISIONS
STAFF SECTION

Revised procedures for handling and controlling returnable containers were presented for acceptance and installation.

During the month the following reports were prepared and submitted:

- Balance Sheet Budget Progress Report for 6 months ending June 30, 1950.
- Balance Sheet Budget Progress Reports for July and August 1950.
- Monthly Force Report.
- Monthly Force and Overtime Forecast Report.
- Recapitulation of Inventory Per Financial Statement for July.
- Weekly Overtime Requests.

The following graphs and tabulations were kept current:

- Pasco Completion Data.
- Buyers Weekly Purchase Order Record.
- Indirect Labor Analysis.
- Purchase Order Data for Quarterly Report to Mr. Prout.

Personnel

Method-Pro- cedure Cost Bud- get Control	As of 8-31-50			As of 9-30-50			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
	1	7	8	3	6	9	2	-1	1
Audit Section	<u>2</u>	<u>12</u>	<u>14</u>	<u>2</u>	<u>13</u>	<u>15</u>	<u>0</u>	<u>1</u>	<u>1</u>
TOTAL	3	19	22	5	19	24	2	0	2

One Safety and Security meeting was held with 15 people in attendance.

Accounts physically checked and audited were:

903-32	Stainless Steel	100%
903-10	Lab. Chemical Supplies	90%
903-26	Radio Supplies	85%
906	Cash Sales	100%

New catalogs being prepared are:

903-3	Plumbing	100%
903-24	Medical	90%
903-12	Gauges, Recorders	10%

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
SEPTEMBER, 1950

GENERAL

There was a slight decrease in the number of orders placed during September as compared with the previous month. The dollar value of orders placed, however, totaled \$2,100,202.97 against \$1,541,144.19 in August. 1741 purchase orders were placed as compared with 1942 placed in August. 2877 requisitions were received and assigned as compared with 2895 during August. Requisitions on hand at month end totaled 866 as compared with 656 at the end of the previous month.

Of 329 construction requisitions received, 70 were for Project C-187-D, 21 for C-187-E, 2 for Project 234-5, 19 for Project C-362 and 14 for DR Water Works. The balance of the construction requisitions were for miscellaneous items charged to the construction program.

The Separations Division (D&C) authorized acceptance of Type 304 ELC (maximum 0.030% carbon content) stainless steel as a substitute for Type 347 except in those instances where other requirements are specifically set forth in the requisition. The acceptance of this substitute is to conserve Columbium for essential usage and will be used wherever possible without delaying or hindering the current construction schedules.

In a number of instances, assistance was given to our fabricators in locating materials. This was accomplished by shipment of material from Hanford Works stocks and by locating material on the open market.

Bulk orders for 1408 tons of stainless steel were placed during September under the voluntary allocation program. The tonnage of stainless steel requisitioned for fourth quarter delivery exceeded the estimates furnished to the Purchasing Division in August by several hundred tons.

Although carbon steel is not included in any voluntary allocation program, instructions have been received from the Atomic Energy Commission to develop our future requirements and place unpriced orders on selected producers. Two copies of all carbon steel orders will be forwarded to the Atomic Energy Commission. The Purchasing Division will purchase all carbon steel for the Atkinson-Jones Company except requirements for small lots of less than carload.

The Stauffer Chemical Company was awarded a contract to supply our requirements of ferric sulphate for the next twelve months. Other annual requirement contracts were awarded to the General Chemical Division, Allied Chemical and Dye Corporation, for ferrous ammonium sulphate; Liquid Carbonic Corporation for carbon dioxide; and Continental Coal Company for 100,000 tons of steam coal from Roundup, Montana.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

GENERAL (continued)

Invitations to Bid were mailed to prospective vendors for our annual requirements of lime, Chlorine and Sodium Dichromate. Contracts were made with Monsanto Chemical Corporation and E. I. du Pont regarding our forecast of Nitric Acid requirements.

Five additional stainless steel nitric acid tank cars and two rubber lined phosphoric acid tank cars were secured from the Army Transportation Corps to augment our present fleet of cars. These cars were required on a "no recall" basis.

Considerable inspection manpower was utilized in the selection of corrosion coupons in fabricators' plants and steel mills for the purpose of securing corrosion analysis on all stainless purchased for Class I vessels and canyon equipment for the 202-S Building.

Practically no fabrication was started on any of the Class I or Class II vessels purchased for Project C-187-D due to the shortage of stainless steel. Partial shipments of steel were expedited and sufficient steel is expected in the fabricators' plants during October to permit fabrication to start in most instances.

During the month six representatives of the Purchasing Division, including the Divisions' Manager and Assistant Manager, made trips to vendors' plants to expedite delivery of orders for process equipment and material for the C-187-D Project.

PERSONNEL

	<u>As of 8-31-50</u>			<u>As of 9-30-50</u>			<u>Net Change</u>		
	<u>Ex.</u>	<u>Non-Ex.</u>	<u>Total</u>	<u>Ex.</u>	<u>Non-Ex.</u>	<u>Total</u>	<u>Ex.</u>	<u>Non-Ex.</u>	<u>Total</u>
Administrative	1		1	1		1			
Purchasing	13	11	24	13	12	25		1	1
Expediting	3	11	14	5	11	16	2		2
Inspection	15	5	20	17	8	25	2	3	5
Clerical	1	17	18	1	18	19		1	1
TOTAL	33	44	77	37	49	86	4	5	9

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	4
Number of Employees Attending	75
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

STATISTICS

	<u>G</u>	<u>D</u>	<u>TOTAL</u>
Requisitions on hand 9-1-50 (includes 81 assigned to Government)	557	99	656
Requisitions assigned during September	2548	329	2877
Requisitions placed during September	2417	250	2667
Requisitions on hand 9-30-50 (includes 78 assigned to Government)	688	178	866

	<u>Number</u>	<u>Value</u>	
HW Orders Placed	1540	\$ 701,348.62	
HW Alterations Placed	134	4,078.35	Cr.
TOTAL	1674	\$ 697,270.27	

HWC Orders Placed	201	\$ 1,281,278.63
HWC Alterations Placed	57	121,654.07
TOTAL	258	\$ 1,402,932.70

AEC Orders Placed	138	\$ 220,286.37
DC Orders Placed	10	51,389.53

	<u>OR</u>	<u>ORD</u>	<u>TOTAL</u>
Government Transfers	4	0	4

	<u>Number</u>
Return Orders Issued	109

OPEN ORDERS

HW Orders	1441
HWC Orders	454
Government Orders	24

Number of New Orders requiring inspection during month -----	40
Number of Orders requiring inspection completed during month -----	27
Number of Orders outstanding requiring inspection at month's end ---	216
HW Orders expedited (Special Request) -----	350
HW Orders expedited (Routine) -----	770
HWC Orders expedited (Routine) -----	698

PURCHASING AND STORES DIVISIONS
STORES DIVISION
September, 1950

GENERAL

Materials valued at \$16,750.37 were declared excess from active inventories during the month. This was accomplished by the deletion of 526 obsolete stock items.

2882 purchase requisitions were processed through screening and 1847 items were furnished from plant sources.

Materials valued at \$162,787.28 were declared excess from the Construction Materials Account (10.20). This material was on firm negative lists rescreened by all subcontractors. A shipping order for 4,500,000 board feet of lumber was received from the Commission during the month. The lumber involved was sized lumber and not required for use on the Project.

A general listing of materials not required for the current construction program was received from the Design and Construction Divisions Manager. Inasmuch as other divisions than Design and Construction may have need for some of these materials, it will be necessary to give them an opportunity to state their requirements before taking formal excess action.

The Commission has requested that consolidated lists be prepared of surplus personal property now declared as excess to the Commission, but not shipped, for defense rescreening. Satisfactory progress was made in complying with the request and the Commission is aware that as a result the movement of excess property from Hanford Works will be curtailed.

Warehouses Nos. 1, 2, and 8 at the Pasco Depot were evacuated during the month. The Commission has requested that the Army permit the Commission to use Warehouses Nos. 5 and 6 for the storage of controlled materials and equipment. Verbal approval of the Commission's request was given the later part of the month.

All stainless steel, including pipe, tubing, sheets, shapes, fittings, and valves were removed from the surplus category for possible use at Hanford Works. Samples of the foregoing stainless steel were sent to laboratories for physical and chemical analysis.

Shipping activities continued at an increased rate as 491 truckloads and 38 carloads of material and/or equipment were shipped to schools or government agencies.

218 shipping documents valued at \$460,455.67 were processed and shipped.

Three formal excess lists, totaling \$1,556,212.10, were submitted to the Commission during the month.

102 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the sale of scrap and transfer of excess properties.

PURCHASING AND STORES DIVISIONS
STORES DIVISION

PERSONNEL

	As of 8-31-50			As of 9-30-50			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non Ex.	Total
Administrative	3		3	4		4	/1		/1
Construction Matl. Sect.	3	45	48	2	35	37	-1	-10	-11
Operations Matl. Sect.	4	97	101	4	96	100		-1	-1
Surplus, Salvage & Scrap Materials Section	5	100	105	5	86	91		-14	-14
TOTALS	<u>15</u>	<u>242</u>	<u>257</u>	<u>15</u>	<u>217</u>	<u>232</u>		<u>-25</u>	<u>-25</u>

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	11
Number of Employees Attending	207
Minor Injuries	7

STATISTICS

INVENTORY CONTROL SECTIONS

Construction Materials Section

Items in Stores Stock	49,708
Items in Small Tools (Estimated)	8,584
Items added to Stock	1,086
Items completely liquidated from Stock	406
Store Orders Posted - Materials (Items)	3,221
Store Orders Posted - Tools (Items)	475
Number of Requisitions Screened - A. J.	595
Number of Items Screened - G. E.	2,370
Number of Items furnished from Stock	468
Number of Items Excessed	2,238
Value of Disbursements - Materials	\$267,743.73
Value of Disbursements - Tools	26,715.32
Inventory Valuation at month end - Materials	\$8,633,839.40
Value of Materials Shipped	19,329.91
Value of Materials Excessed	162,787.28
Value of Materials Received	56,633.99

Operations Materials Section

Number of items added to Stores Stock	150
Number of items deleted from Stores Stock	598
Items in Stores Stock at month end	46,525
Store Orders Posted	17,927
Number of requisitions screened this month - G. E.	2,287
Number of items furnished from plant sources this month	1,379
Inventory valuation at month end (903-all captions, 906 & 912)	1,191,371.92
Inventory valuation at month end (Spare Parts)	1,628,737.22
Inventory valuation at month end (Special Materials)	3,174,675.19
Total value Inventory Accounts	5,994,784.33

PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Continued)

Value of Disbursements, not including cash sale items	226,790.10*
Value of Cash Sales	436.71
Value of Sales, Payroll Deduction	1,307.38
Value of Materials Declared Excess	16,750.37
Value of Materials Returned to Stores Stock for Credit	5,690.96

* Includes \$68,267.13 disbursed to Construction and CPFF Subcontractors

Surplus, Salvage and Scrap Materials Section

Balance of Account 10.10 as of 8-25-50		\$11,088,101.41
 <u>Receipts 8-25-50 to 9-25-50</u>		
Lumber	\$175,813.28	
Automotive Equipment	64,697.86	
Material and Supplies	284,119.57	
Miscellaneous Equipment	30,538.27	555,168.98
Adjustments - Classes & Current Market Prices		
Market Prices		1,683.43 Cr.
		11,641,586.96

Disbursements 8-25-50 to 9-25-50

On Project

Lumber	2,820.96
Automotive Equipment	30,093.11
Machine Tools and Equipment	15,849.93
Office Machines, Furniture, etc.	239.50
Material and Supplies	18,054.72
Miscellaneous Equipment	12,756.67

Transfers from Excess to Account 10.20

Material and Supplies	14,340.40
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Off Project

Lumber	16,494.22	
Automotive Equipment	327,671.29	
Machine Tools & Equipment	19,745.87	
Office Machines, Furniture, etc.	45,858.53	
Household Furniture, etc.	3,400.63	
Material and Supplies	1,227,836.99	
Miscellaneous Equipment	86,924.42	1,822,087.24

Balance of Account 10.10 as of 9-25-50

\$ 9,819,499.72

Total Receipts to Date

\$32,873,473.48

Total Disbursements to Date

\$23,052,290.33

PURCHASING AND STORES DIVISIONS
STORES DIVISION

<u>Scrap and Salvage Disbursed</u>	
Scrap Sales Completed	18
Scrap Sales in Process	4
Scrap Sales Revenue for month of September	\$20,951.28
Total Scrap Sale Revenue to Date	\$154,877.55

WAREHOUSING, RECEIVING, DISBURSING & SHIPPING SECTIONS

<u>Construction Materials Section</u>	
Store Orders Filled	3,696
Items Excessed	1,871
<u>Operations Materials Section</u>	
Receiving Reports Issued	3,499
Emergency Store Orders Filled	3
Shipments Processed (Containers & Material)	214
Shipments Received	3,548
Store Orders Registered	20,406
<u>Surplus, Salvage & Scrap Materials Section</u>	
Store Orders Filled	339
Truckloads of Material Shipped	491
Carloads of Material Shipped	38

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
SEPTEMBER, 1950

GENERAL

Negotiations with the Milwaukee Road have resulted in publication of a rate of \$4.23 per ton on slack coal from Roundup and Keene, Montana to Hanford, Washington, as published in NPCFB, Section 22, Quotation No. 109, effective October 1, 1950.

This is a reduction of 92 cents per ton and, based on anticipated tonnage for a year, will reflect a savings of \$92,000.

In response to our proposal requesting publication of a rate of 23 cents per cwt. on Lime in bags or bulk, minimum 80,000 pounds, from Evans, Washington to Hanford and Richland, the carriers have agreed to publish this rate on bulk shipments only, to be effective on statutory notice. This reduction will effect a savings of \$72 per car on shipments in bulk. The request for a similar reduction on shipments in bags is still under consideration by the carriers.

The Interstate Commerce Commission issued Service Order No. 865, to become effective September 20, 1950 increasing demurrage charges as follows:

<u>After Expiration of 48-hour Free Time Period</u>	<u>Increased Demurrage Rates Per Car Per Day *</u>	<u>Present Demurrage Rates Per Car Per Day</u>
First Day	\$ 5.00 **	\$ 3.00 ***
Second Day	5.00 **	3.00 ***
Third Day	10.00	3.00 ***
Fourth Day	20.00	3.00 ***
Each Day Thereafter	20.00	5.00

* Effective 7:00 A.M. September 20, 1950.

** The \$5.00 charge for each of the first two Demurrage days may be offset by applying two credits to each \$5.00 charge.
(Note: A credit is earned only when a car is unloaded or loaded within the first 24 hours of the free time.)

*** Present Demurrage Rules provide that the \$3.00 charge for each of the first four Demurrage days may be offset by applying one credit for each \$3.00 charge.

H. W. Instructions Letter No. 156 was issued to call this to the attention of all who are charged with the responsibility of seeing that freight cars are unloaded or loaded promptly to avoid excessive demurrage charges and undue delay to railroad freight cars.

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

Savings Report (Continued)

3. Loss and Damage and Over- Charge Claims	\$ 336.48	\$ 98,486.25	\$ 98,822.73
4. Ticket Refund Claims	479.95	9,169.02	9,648.97
5. Household Goods Claims	<u> </u>	<u>13,909.08</u>	<u>13,909.08</u>
	\$ 27,480.70	\$ 1,505,561.84	\$ 1,533,042.54

Work Volume Report

Reservations Made	Rail	51
	Air	134
	Hotel	87
Expense Accounts Checked		117
Household Goods & Automobiles	Movements Arranged Inbound	10
	Shipments Traced	3
	Insurance Riders Issued	12
	Insurance Bills Approved	26
	Furniture Repair Orders	4
	Claims Filed	3
Ticket Refund Claims	Filed	14
	Collected - Number	13
	Collected - Amount	\$ 479.95
Freight Claims	Filed	5
	Collected - Number	4
	Collected - Amount	\$ 336.48
Freight Bill Audit Savings		\$ 735.57
Freight Shipments Traced		37
Quotations	Freight Rates	146
	Routes	175
Bills Approved	Air Express	40
	Carloading	148
	Express	121
	Rail	505
	Truck	250

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

Work Volume Report (Continued)

Carload Shipments	Inbound - General Electric	556
	Others	75
	Outbound- General Electric	30
	Others	0
Over and Short Reports Processed		15
Damage Reports Processed		7

Report of Carloads Received

	<u>MILW</u>	<u>N.P.</u>	<u>U.P.</u>	<u>TOTAL</u>
General Electric Company:				
Acid, Miscellaneous	1			1
Asphalt		2		2
Coal		236	228	464
Caustic Soda	6	9	4	19
Chemicals			2	2
Chlorine	2	1		3
Cement	2			2
Cabinets	1			1
Hydrofluric Acid			3	3
Lumber		2		2
Hydrated Lime	2	2	1	5
Nitric Acid		13	4	17
Phosphoric Acid	1	1	1	3
Plywood	2		2	4
Caustic Potash	1			1
Salt			1	1
Soda Ash	2		2	4
Nitrate of Soda	1			1
Steel Partitions			1	1
Ferrous Ammonium Sulphate			1	1
Ferric Sulphate	2	1	2	5
Sulphuric Acid		3		3
Steel Pipe	3	1		4
Steel Tubing			1	1
Shelving, Steel			1	1
Tanks, Steel	1			1
Merchandise	1	2		3
Expres	1		1	1
TOTALS	28	273	255	556

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

Report of Carloads Received (Continued)

	<u>MILW</u>	<u>N.P.</u>	<u>U.P.</u>	<u>TOTAL</u>
Atkinson & Jones Construction Company:				
Cement	5	18		23
Gravel		2		2
Conduit		1		1
Pipe			1	1
Roofing Material	1			1
Silica Sand	1			1
Steel Plates	—	—	2	2
TOTALS	7	21	3	31
U. S. Army:				
Guns		2	1	3
Steel	—	—	1	1
TOTALS	0	2	2	4
Fred J. Early:				
Cement	9			9
Asphalt	1			1
Sewer Pipe		8		8
Steel Plates	—	—	1	1
TOTALS	10	8	1	19
Chief Joseph School:				
Boilers - Steel	1			1
Uptown Theatre:				
Theatre Chairs			2	2
Asbestos Supply Company:				
Ceiling Panels	1			1
Rust Engineering Company:				
Cement	2			2
Richland Fuel & Lumber Company:				
Coal		3	6	9
Associated Engineers, Inc.:				
Pipe			1	1
Kortens:				
Pianos	1			1

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

Report of Carloads Received (Continued)

	<u>MILW</u>	<u>N.P.</u>	<u>U.P.</u>	<u>TOTAL</u>
Gilmore Fabricators:				
Steel Plates			3	3
E. P. Erwen:				
Brick		1		1
TOTALS - SUBCONTRACTORS	22	35	18	75
TOTALS - ENTIRE PROJECT	50	308	273	631

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SUMMARY - SEPTEMBER, 1950

The number of applicants interviewed increased from 1,229 during August to 1,442 during September. Of these applicants, 377 were individuals who applied for employment with the Company for the first time. In addition, 204 new applications were received through the mail. Open nonexempt, nontechnical requisitions increased from 247 at the beginning of the month to 280 at the month end. Total plant roll decreased from 7,839 to 7,795. Turnover rate increased from 1.57% in August to 2.60% in September. This increase was due primarily to employees returning to school and entering the military service. During September, 69 new requests for transfers to other type of work were received in the Employment Office. Fifty employees were transferred during the month. Field recruitment of stenographers resulted in offers being made to 3 in Spokane, Washington; 8 in Denver, Colorado; 10 in Chicago, Illinois; and 9 in St. Paul and Minneapolis, Minnesota. Field recruitment of designer-draftsmen resulted in 53 being interviewed in Denver, Colorado, and 12 in St. Paul and Minneapolis, Minnesota; however, no offers were made to any of these individuals pending a review of their qualifications by interested divisions.

During September a history of Employee Benefit Plans for the period from 9-1946 to 9-1950 was prepared in conjunction with the over-all plant history presently being compiled in Schenectady. Three employees retired during September and two employee deaths occurred. One hundred forty-two visits were made to employees confined either at Kadlec Hospital or at home, and fifty-four salary checks were delivered to employees by a representative of the Employee Services Group during September. At the end of September there were 600 reservists on our rolls, and 587 of these have been categorized by the Joint Manpower Mobilization Committee. All deferments requested for reservists have been granted. At the end of September there were 827 employees registered under the Selective Service Act of 1948, with 106 being classified as 1-A. Deferments have been requested for 63 employees, with 17 being granted, and 46 still pending. Twenty-seven suggestion awards, totaling \$ 405.00, were made during September. These suggestions resulted in an estimated savings of \$ 5,746.67. Ninety compensation claims were reported to the Department of Labor and Industries, and two property damage claims and two bodily injury claims were reported to the Travelers Insurance Company during the past month. One compensation case was settled during September with an estimated savings of \$19,765.55 for the Company.

During the week of September 25-29, the 40-Hour Supervisor's Training Program was again made available to supervisors, and 58 supervisors attended this session. A few revisions have been made over the program from last year to keep the material on a current basis. Two issues of the Hanford Works SAGE were distributed during September. The final meetings of the special program for Medical Division employees were held during the month with 15 supervisors and 156 nonexempt employees participating. A special program on revised Instructions Letter No. 87, "Weekly Time Cards and Weekly Clock Cards", and Instructions Letter No. 155, "Workweek -- Method of Scheduling and Making Payment for Weekly Paid Employees", was presented to 317 supervisors in order that they would become familiar with the policies and procedures outlined in these Instructions Letters. On September 22, 1950, the first of a trial test program for nonexempt employees, covering 17 subjects in 8 hours, was conducted with 15 nonexempt employees in attendance. Since this type of program has been found to be effective and desirable, a complete program for all nonexempt employees will be prepared.

Employee and Community Relations Divisions
Summary

Upon completion of negotiations, a contract was executed on September 12, 1950, between the Company and the Building Service Employees International Union Local #201. Establishment of specific workweeks for operations weekly employees was accomplished and made effective September 18, 1950. On September 14 and 15, we received two petitions from the NLRB seeking recognition of the HAMTC as bargaining representative for Health Instrument Inspectors A & B and Laboratory Assistants, A, B and C, and also the Village Firemen of Richland and North Richland.

Negotiations with the Sheet Metal Workers were concluded on September 17, 1950, with the assistance of the Federal Mediation and Conciliation Service. A work stoppage of one day (September 18) resulted when the Union members met in Pasco to approve the Settlement. The extended and very difficult negotiations with the Office Workers were concluded and the Agreement formally signed on September 15, 1950. The Federal Mediation and Conciliation Service in Washington, D. C., inquired regarding the submission of a panel of five arbiters from which the fifth man could be selected for the settlement of the Daylight Saving Time dispute. Atkinson-Jones replied that they had been unable to secure a meeting with the Unions, but stand ready and willing to complete arbitration. Negotiations with the Technical Engineers were held on September 12 and 20, 1950. The Union has set October 9 as the dead line for the completion of negotiations beyond which date they will go on a "hunting trip". A meeting is scheduled for October 9. Negotiations of an initial agreement with the Machinists are in progress. The next meeting is scheduled for October 4. Atkinson-Jones has made a survey of Machinist rates in Eastern Washington which should determine the justification for the \$2.75 demand (present rate, \$2.35). Notice of a desire to open their present Schedule "A" was received from the Ironworkers, Cement Finishers and Roofers Unions. Edmund P. Erwen (Erwen Construction Company) has replaced George Grant (Morrison-Knudsen) on the Project Negotiating Committee. Travel to Los Alamos, New Mexico, to obtain a comparative evaluation of methods used in the resolution of certain Union Relations problems, and travel to Houston, Texas, to attend the A. F. of L. Convention was performed by a member of this Division.

Reimbursement approval was received for the setting up of a preferential rate for former exempt employees changed to a nonexempt status and also for the payment of retroactive pay to employees incorrectly classified as exempt and changed to nonexempt. Instructions were forwarded to Payroll for the retroactive payment of money due members of the Auxiliary Fire Brigade. Discussions continued in connection with a request for reimbursement for an increase in job rates of stenographers and secretaries. One hundred twenty-five requisitions for new help were reviewed, 305 merit and automatic increases were processed and approved and 136 additions to the weekly roll were approved.

The Works NEWS played an important part in service both to the community and to the plant through its promotion campaign on Community Chest this year. A 12-page issue was published on September 29, two pages of which were devoted entirely to publicizing the various activities which Community Chest contributions help support.

Employee and Community Relations Divisions
Summary

The Public Functions Supervisor also represented General Electric in the Community Chest Drive in Richland by serving as the publicity chairman for the town campaign.

Two letters of a new series which do not deal with controversial subjects were prepared by Special Programs and submitted to the General Manager for his signature prior to distribution. Designed to acquaint Hanford Works employees with accomplishments the Company is making in its operation of Hanford Works, and pointing out that these accomplishments are the result of the efforts of all G-E people at Hanford Works, these letters will be prepared and submitted for approval by the General Manager from time to time--not at regular intervals--in order that the informality of this series can be retained.

A total of 55 releases of information were made by the News Bureau during the month of September, 49 of which were sent to the "local list."

One of the outstanding public relations activities, intended to assist in clearing up misinformation concerning the way in which construction contractors may obtain work in the Hanford project was conducted through the medium of a talk by a member of the Contract Division at a convention of Architectural Engineering firm representatives at Yosemite, California. This offered an opportunity to distribute factual information at the convention and the news releases to newspapers based on the talk given.

The News Bureau and Hanford Works NEWS received compliments during the month from those responsible for operating the Nuclear School of Engineering for their activities in advising Richland residents and employees of the various courses being offered this term in the school. Although final figures are not available, it is estimated that the enrollment will be the largest ever experienced since the school's inception by the Nucleonics Department.

The News Bureau and Special Programs were active during the month of September in publicizing and preparing classified advertising to advise of the requirements for personnel at Hanford Works.

The Women's Feature Writer, reclassified a publicity writer during the month, aided in the Community Chest campaign. Five feature stories about agencies in Richland which received benefit from Chest funds were written for local newspapers by this employee. In addition, she prepared four Women's Pages for publication during September in the Works NEWS, and various other special feature stories for the plant newspaper.

The Community Relations supervisor, who performs liaison between the Community and Public Relations Division Head and the Manager, Municipal, Real Estate and General Services Divisions, contacted the local YWCA representative during the month concerning the use of the economics material entitled "What Can Women Do?". This is a forward step in the Company's efforts locally to encourage thinking and discussions on economic subjects in the community. In addition, this supervisor participated in the planning of Richland's activities during National Fire Prevention

Employee and Community Relations Divisions
Summary

Week at the invitation of the Fire Prevention Committee of the Richland Chamber of Commerce. This supervisor also prepared the news stories which recorded community expenditures and revenue in Richland during Fiscal Year 1950.

A Hanford Works speaker addressed the Pasco Chamber of Commerce during September, and 12 papers of a technical nature were received and cleared for use before public groups by the Public Functions. In addition, this section handled the obtaining and distribution of 11 General Electric films for showing before plant groups and community groups during the month.

Hanford Works Photo House added the processing of motion picture film containing classified subjects to its functions during the month of September. Although this processing requires considerable care, technical experience, and knowledge, it was found to be more economical to perform the work in the Photo House regularly. During September a record of 4,935 prints were produced. This represented an increase of 958 over August, 1950.

The office handbook for use by stenographer and typists at Hanford Works was brought near to the completion point during September. Final approval was received on the book and arrangements were completed for having it printed. This accomplishment of Special Programs concludes a lengthy period of writing, designing, and obtaining of finished commercial art from the Division's commercial artist.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SEPTEMBER, 1950

ORGANIZATION AND PERSONNEL

Employee Relations:

Employment:

Effective September 9, 1950, a messenger assigned to the Investigation and Files Group resigned.

Effective September 11, 1950, an interviewer and investigator "B" assigned to the Procurement and Procedures Group was upgraded and transferred to the Union Relations Division.

Effective September 18, 1950, a general clerk "A" assigned to the Manufacturing Accounting Division was upgraded and transferred to the Procurement and Procedures Group as an interviewer and investigator "B".

Effective September 27, 1950, a general clerk "D" was engaged and assigned to the Procurement and Procedures Group to replace a general clerk "D" who voluntarily resigned on September 26, 1950.

Effective September 27, 1950, a general clerk "C" was engaged and assigned to the Procurement and Procedures Group to replace a general clerk "C" who has given notice of resignation.

Employee Services:

Effective September 20, 1950, a stenographer-typist "B" was engaged to replace a stenographer-typist "B" who will go on leave of absence in November.

Insurance and Suggestion System:

There were no organization changes in this Group during the month of September.

Training and Program Development:

Effective September 1, 1950, T. A. Purton, Jr., a Staff Assistant was upgraded to the position of Assistant Supervisor of Training.

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Employee and Community Relations Divisions
Organization and Personnel

Union Relations:

Effective September 11, 1950, one General Clerk "B" was upgraded and transferred to the Manufacturing Accounting Division.

Effective September 18, 1950, one Interviewer and Investigator "B" in the Employee Relations Division was transferred to Union Relations-Subcontractor as a Staff Assistant on the Exempt roll.

Community and Public Relations:

Effective September 18, 1950, one General Clerk "B" voluntarily terminated.

Number of Employees on Roll	<u>September, 1950</u>
Beginning of month	92
End of month	92
	<hr/>
Net gain or loss	0

Employee and Community Relations Divisions

ACTIVITIES

Employee Relations

Employment:

	<u>August, 1950</u>	<u>September, 1950</u>
Applicants interviewed	1,229	1,442

377 of the above applicants interviewed during September were individuals who applied for employment with the Company for the first time. In addition, 226 new applications were received through the mail.

Open Requisitions	<u>August, 1950</u>	<u>September, 1950</u>
Exempt	11	4
Nonexempt	247	280

Of the 247 open, nonexempt, nontechnical requisitions at the beginning of the month, 107 were covered by interim commitments. Of the 280 open, nonexempt, nontechnical requisitions at the end of the month, 133 were covered by interim commitments. During September, 118 new requisitions were received requesting the employment of 144 nonexempt employees.

	<u>August, 1950</u>	<u>September, 1950</u>
Employees added to the rolls	150	162
Employees removed from the rolls	<u>124</u>	<u>206</u>
Net gain or loss	+ 26	- 44

Of the 206 employees removed from the rolls, only 3 were removed due to lack of work. All 3 of these employees were in the bargaining unit.

Turnover:	<u>August, 1950</u>		<u>September, 1950</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Excluding employees laid off for lack of work	1.28%	2.80%	2.13%	4.55%

Over-all plant turnover:	<u>August, 1950</u>	<u>September, 1950</u>
Excluding employees laid off for lack of work	1.57%	2.60%

Much of the turnover this month can be attributed to the facts that many temporary summer employees terminated to return to school, and many ex-service men terminated to take advantage of the last full school year under the educational provisions of the G.I. Bill, and also several of our employees left to enter military service. Several wives of the above employees also terminated in order to leave with their husbands.

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Employee and Community Relations Divisions

At the end of September, there were 188 employees in lack of work status, divided into the following categories:

	<u>August, 1950</u>	<u>September, 1950</u>
Nonbargaining unit employees	49	48
Bargaining unit employees	137	140

Transfer Data

Accumulative total of requests for transfer received since 1-1-50	372
Number of requests for transfer received during September	69
No. interviewed in September, including promotional candidates	94
Transfers effected during September, including promotional transfers	50
Transfers effected to date since 1-1-50, including promotional transfers	268
Transfer requests active at month end	115
Transfers effected in September for employees given lay off notices	5
Transfers effected since 1-1-50 for employees given lay off notices	45
Number of stenographers transferred from Stenographic Pool in September	1

Most transfers effected, either on a promotional basis or resulting from a request for transfer, entail multiple movements of personnel, as may be exemplified by the following two examples:

1. An exempt position in the Union Relations Division was filled by the promotion of an Employment Interviewer and Investigator "B" from the Employment Section. The latter position was filled by promoting a Field Clerk "A" from the Plant Security and Services Division. The Field Clerk "A" opening thus created was filled by promoting a Field Clerk "C" out of the Power Division who had requested a transfer to the Records Control Section of the Plant Security and Services Division. The opening then created in the Power Division was filled by a General Clerk "C" in the Maintenance Division who it was necessary to reassign due to the fact that he could not type as required on his job in Maintenance. The opening in the Maintenance Division was filled by hiring a woman with previous project experience.
2. An opening occurred for a female General Clerk "A" in the General Division. This opening was filled by promoting a General Clerk "B" out of the Manufacturing Accounting Division. The latter opening was then filled by promoting a General Clerk "C" in the Manufacturing Accounting Division, and the General Clerk "C" position was filled by promoting a messenger out of the Plant Security and Services Division. The messenger opening was then filled by a newly engaged employee.

During September, 8 people whose continuity of service was broken while in an inactive status were so informed by letter. In addition, 3 employees who were removed from the rolls without processing through our termination procedures were contacted by letter.

Employee and Community Relations Divisions

Manpower availability is steadily growing more acute. Though it finally appears that the recruitment program for instrument mechanics and trainees will result in substantial fulfillment of our requirements, it still remains difficult to satisfy our needs for designers, draftsmen, health instrument inspectors and stenographers. Field recruitment in September is summarized as follows:

SPOKANE, WASHINGTON: August 31, and September 1 and 2. Stenographers only. Interviewed 9 people, of which 3 were stenographers and offers were made to all 3.

DENVER, COLORADO: August 31, and September 1 and 2. Stenographers, designers and draftsmen. Interviewed 80 people of which 12 were stenographic candidates and 53 designer-draftsman candidates. Offers were made to 8 stenographers, however, no offers were made to designer-draftsmen pending a review of qualifications of those interested in filing applications by the interested divisions.

CHICAGO, ILLINOIS: September 25, 26, and 27. Stenographers only. A total of 25 people were interviewed, and offers made to 10 stenographers.

ST. PAUL and MINNEAPOLIS, MINNESOTA: September 28 and 29. Stenographers, designers and draftsmen. Interviewed 34 people. Offers were made to 9 stenographers and 1 general clerk (sister of one of the stenographers). 12 designer-draftsmen applicants were interviewed, however, no offers were made pending review of the qualifications of those interested in filing applications by the interested divisions.

Employment Statistics

<u>Number of employees on rolls</u>	<u>8-31-1950</u>	<u>9-30-1950</u>
Exempt		
Male	1,763	1,796
Female	46	48
Nonexempt		
Male	4,578	4,511
Female	1,452	1,440
TOTAL	7,839	7,795

ADDITIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
New Hires	21	114	135
Re-engaged	0	3	3
Reactivations	1	18	19
Transfers (from other plants)	5	0	5
Actual additions	27	135	162
Payroll exchanges	22*	3**	25
GROSS ADDITIONS	49	138	187

* Transferred from Weekly Payroll

** Transferred from Monthly Payroll

Employee and Community Relations Divisions

TERMINATIONS

	<u>Exempt</u>	<u>Nonexempt</u>	<u>Total</u>
Actual Terminations	10	163	173
Deactivations	1	27	28
Payroll exchanges	<u>3*</u>	<u>22**</u>	<u>25</u>
GROSS TERMINATIONS	14	217	231

71% of all terminations were on a voluntary basis, and most of these were for the following reasons: (a) Returning to school (b) Military service, and (c) Another job.

GENERAL

	<u>8-31-1950</u>	<u>9-30-1950</u>
Applicants interviewed	1,229	1,442
Photographs taken	257	260
Fingerprint impressions taken (in duplicate)	301	371
Procurement letters written	573	568

ABSENTEEISM STATISTICS
(Weekly Salary Roll)***

Male	1.69%	1.69%
Female	3.11	2.81
Total Plant Average	2.04	1.96

INVESTIGATION STATISTICS

Cases pending at beginning of month	1,130	908
Cases received during the month	187	188
Cases closed	409	246
Cases pending at month end	908	850
Cases found satisfactory for employment	170	184
Cases found unsatisfactory for employment	7	5
Cases closed before investigations completed	13	6
Special investigations conducted	18	34

- * Transferred to Weekly Payroll
- ** Transferred to Monthly Payroll
- *** Statistics furnished by Weekly Payroll Division

Employee Services:

During September, one trip was made to all areas for the purpose of posting bulletins announcing the resumption date for Standard Time at Hanford Works.

A history of Employee Benefit Plans was prepared covering the period between September 1, 1946 and September 1, 1950 in conjunction with the over-all plant history presently being compiled in Schenectady.

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Employee and Community Relations Divisions

Assistance was rendered to the Deputy Collector's Office of Internal Revenue in Pasco in locating for them individuals employed at this Works.

The following visits were made with employees during the past month by representatives of the Employee Services Group:

Kadlec Hospital	137
Employees at home	5
Salary checks delivered to employees confined to Hospital	44
Salary checks delivered to employees confined at home	10

As of the first of August, participation in Company Benefit Plans were as follows:

Pension Plan	94.8%
G.E. Group Life Insurance	77.8
G.E. Group Health Insurance	94.9
Employee Savings & Stock Bonus	42.3

Two employee deaths occurred during the month of September, namely:

Village Patrol Division; and
, Purchasing and Stores Division.

The following employees retired during September:

Alvin A. Anderson, Manufacturing Power Division;
Harry F. Loukes, Village Maintenance Division, (Optional); and
Julius Molina, Village Labor Division.

Each of these employees was interviewed prior to their retirement in order that all benefit plans to which they might be eligible during their retirement might be clearly explained.

Two employees, who were members of our Group Health Insurance Plan, and who were injured outside of Richland and hospitalized, were contacted during September by letter outlining their benefits and forwarding them the necessary claim forms.

Five pension checks were delivered personally during the past month to retired employees.

Four publications of Employee Benefit Plans Information were prepared and released to the Works News for publication during September. In addition, a news release was prepared for the Works News to advise employees of the extreme shortage of steam irons produced by this Company.

Reserve and Selective Service

During September, 3 reservists received orders to report for physical examinations or active service. Deferments have been requested on two of these employees. By the end of the month deferments had been granted on all cases, both those pending at the beginning of the month and those requested during the month.

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Employee and Community Relations Divisions

During September deferments for 13 employees registered under the Selective Service Act were requested, making a total of 63 deferments requested to date. To date 17 requests for deferment have been granted, with 46 cases still pending. In 11 instances Local Boards denied our requests for deferments, and 10 of these have been appealed. It was not possible for us to appeal the other case inasmuch as the employee had received his induction papers prior to his Local Board receiving our request for deferment.

The statistics with respect to employees effected by the Selective Service Act are as follows:

Employees registered under Selective Service Act of 1948	827
Employees registered who are veterans	522
Employees registered who are nonveterans	305
Employees classified as 1-A who are single and nonveterans	106

At end of September there were 600 reservists on our rolls. As of the end of September the Joint Veterans Mobilization Committee has categorized 587

Employee and Community Relations Divisions

Insurance and Compensation

Compensation

-- On July 15, 1948, the claimant sustained a back injury in the course of his employment with the . The Department of Labor and Industries allowed this claim on November 3, 1948. Considerable medical treatment was rendered to the claimant and time loss was paid. The objected to the allowance of this claim as the injury was felt to be nonoccupational and nonindustrial. On March 5, 1950, the entered a final award order with a permanent partial disability payment of \$ 900 or 25% of the maximum allowed for unspecified disabilities. On April 5, 1950, the appealed this order to the Board of Industrial Insurance Appeals alleging condition pre-existed the injury. A hearing was held in Richland on September 25, 1950, attended by representatives of

The Department entered a Special Appearance before the Board of Appeals contending that the had no right of appeal under our contract with the State. At this time withdrew the appeal in the matter since it was felt that we could not produce sufficient evidence to justify reduction of the award as previously made. The withdrew their Special Appearance.

-- When the claimant terminated his employment with on March 3, 1949, he claimed to have sustained a hernia while working for them on February 4, 1950. On June 27, 1949, the Department of Labor and Industries sustained our opposition of allowance for this claim, and this order was then appealed by the claimant. A hearing was granted to the claimant on March 9, 1950, in Seattle, Washington, at which time he presented his case with medical testimony. A continuance was granted at that time in order that the Company could present their testimony. This hearing was held in Richland, Washington, on August 1, 1950, at which time the employer presented the employee's foreman and a fellow workman who refuted the claimant's earlier statements. A continuance was again granted to the Company in order to present medical testimony at a later date. On September 27, 1950, the employer presented the testimony of Dr. J. F. Riordan who had examined the claimant at the time he terminated his employment. Dr. Riordan's testimony was to the effect that he had detected the hernia at the time of the termination, and that the claimant stated at that time that he knew of no incident which would have caused the injury occurring at work. It is the Company's understanding that the Department and the claimant have concluded their cases.

-- On November 12, 1947, this employee dropped dead while at work in the Maintenance Division. It was the opinion of the Medical Division upon examination that the cause of death was due to heart failure, and a report to this effect was submitted to the Department of Labor and Industries as it was felt that this was not job incurred. In January, 1948, the Washington State Department of Labor and Industries notified the Company of their intention to award a pension to the widow of this former employee. The Company requested the Department to review their original opinion as investigations conducted here by our Medical and Safety Divisions did not reveal any unusual strain or trauma at any time preceding the employee's death. In March, 1948, the Department of Labor and Industries awarded a pension to the widow of the

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PRIVACY ACT MATERIAL REMOVED

Employee and Community Relations Divisions

deceased, and the Company appealed this decision on April 16, 1948. The first hearing on this appeal was held in November, 1948, and a continuance granted in order that the Company could present the testimony of a cardiologist. In April, 1949, at Seattle, Washington, Dr. Eric Chew, a cardiologist, testified that there was no relation between effort and coronary thrombosis, and the fact that the claimant had lifted a weight of approximately 150 lbs. on the day of his death could not be connected with the resulting death. A further hearing was held in Yakima, Washington, on October 4, 1949, in order that the claimant might present further testimony. On January 20, 1950, testimony was submitted by the Department of Labor and Industries through Dr. Von Pohl, a cardiologist, who testified substantially the same as Dr. Chew had previously. Further testimony was submitted by Company doctors on April 25, 1950, and the case forwarded to the Board of Industrial Insurance Appeals for decision. In September, 1950, the Board of Industrial Insurance Appeals entered an order reversing the order by the Supervisor of Industrial Insurance originally granting the widow a pension. As a result of this reversal, the Company realized a savings of \$ 19,765.55.

-- Sometime during November, 1948, the claimant reported to First Aid alleging that during the previous month he had sustained an injury to his right hand which resulted in the formation of a ganglion of the wrist. On November 29, 1949, the Department of Labor and Industries entered a final order in the amount of \$ 850, which consisted of \$ 290 for 10% permanent partial disability of the right hand at the wrist, and lost time from 12-5-48 to 5-31-49 in the amount of \$ 560. In December, 1949, the Company appealed this order on the grounds that the claimant's condition was the result of a personal and not an industrial injury. This appeal was also based on testimony of two impartial physicians who stated that the ganglion cyst on the claimant's wrist had no relationship with the claimant's accident. Two other physicians had testified, however, that the disability was job connected. On April 4, 1950, a final hearing was held at Yakima, Washington, at which time the testimony of all physicians was submitted and the case referred to the Board of Industrial Insurance Appeals for their decision. In September, 1950, the Board of Industrial Insurance Appeals sustained the original award as ordered by the Department of Labor and Industries.

Liability Insurance

was injured in the bus accident which occurred on January 9, 1950, at the 200-W Area Parking Lot. He contended that the impact knocked him off his feet injuring his back. He was treated at the Kadlec Hospital for a short time for a possible fracture. Travelers Insurance Company recommended settlement in the amount of \$ 3,500.00 and this recommendation was approved by General Electric and the Atomic Energy Commission. On September 21, 1950, we advised Travelers that approvals had been obtained.

PRIVACY ACT MATERIAL REMOVED

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Employee and Community Relations Divisions

Name Schedule Bond

Three employees of the Department of Labor and Industries are authorized to sign checks drawn on the General Electric Company reserve accounts created through the contract between General Electric, Department of Labor and Industries and the Atomic Energy Commission. A Name Schedule Bond in the amount of \$ 10,000 on each employee was obtained on August 29, 1950, through the Firemen's Fund Indemnity Company. This is a special type bond covering these employees as agents of the General Electric Company. The Atomic Energy Commission furnished General Electric Company prior approval before negotiations were entered into with Firemen's Fund Indemnity Company.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to 55 insurance companies and investigation agencies during September.

Insurance Statistics

	<u>August, 1950</u>	<u>September, 1950</u>	<u>Total since 9-1-1946</u>
Claims reported to the Department of Labor and Industries	82	90	3,644
Claims reported to the Travelers Insurance Company	7	4*	455

* Of the above claims reported during September to the Travelers Insurance Company, 2 were property damage claims, and two were bodily injury claims.

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Employee and Community Relations Divisions

Training and Program Development:

During the week of September 25-29, 1950, the 40-Hour Supervisor's Training Program was conducted with 58 supervisors attending. This was the first time this program was held since May as it was omitted during the peak vacation months of June, July, and August. A few revisions have been made in the program in order to keep the material current. This program will now be held monthly.

The eight groups of supervisors presently enrolled in the "Principles and Methods of Supervision" are progressing very well. Difficulty is being encountered in obtaining a full enrollment for the four groups to start in October. This is due to the fact that many supervisors have not yet completed their vacations, and that there are a limited number of supervisors on a straight day schedule. At the present time a study is being made of the problem of presenting this program to shift supervisors, and as soon as this is solved, the program will be made available to those supervisors.

During September, two copies of the H.W. SAGE were mailed to all supervisors. It is interesting to note that from a test of reader acceptance of this one page publication, it was learned that 193 out of 200 supervisors contacted did read this publication.

In September the final meetings were held with the Medical Division on the program they had requested, with 15 supervisors and 156 nonexempt employees attending. At these meetings a questionnaire to test acceptance of the material presented was issued to all participating employees. To date only a portion of these questionnaires have been returned, but general indications show a desirability on the part of these employees for review meetings to keep them abreast of current procedures, policies and plans which affect them.

As a follow up to the Economics Program presented to supervisors during February and March, 1950, at which time they received a copy of the book "The Road Ahead" by John T. Flynn, a letter with two attachments, "In Support of the Federal Council" and "Reply of John T. Flynn to Criticisms of His Chapter on Revolution in the Churches", were forwarded to supervisors to keep them current on economics.

During the week of September 18, 1950, 11 meetings were held, with 317 supervisors participating, in which a program was presented to explain and discuss the revisions of H. W. Instructions Letter No. 87, "Weekly Time Cards and Weekly Clock Cards", and the new procedure outlined in H.W. Instructions Letter No. 155, "Workweek -- Method of Scheduling and Making Payment for Weekly Paid Employees". This program had been requested by the Union Relations Division in order that all supervisors would be familiar with these two Instructions Letters.

In September, 16 additional copies of the Supervisor's Handbook on Employee Relations were distributed to supervisors in various divisions. Also during the month, one addition and four revisions were distributed to holders of this book.

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Employee and Community Relations Divisions

A total of 136 new employees were given orientation during August, and of this number 71% elected to participate in the Group Life Insurance Plan, and 80% elected to participate in the Group Health Insurance Plan. In addition, 3 re-engaged and 4 transferred employees were given orientation, of this number, 30% elected to participate in the Group Life Insurance Plan, and 100% elected to participate in the Group Health Insurance Plan.

On September 22, 1950, the first of a trial test program for nonexempt employees covering 17 subjects during 8 hours was conducted with 15 nonexempt employees in attendance. These employees were from the "S" Division, Transportation Division, Technical Divisions, Health Instrument Division, and Fire Division of the 200-W Area. These employees all indicated excellent acceptance of an informative program of this type for nonexempt employees, and a complete report of such a program will be submitted since it has been found to be effective and desirable.

Employee and Community Relations Divisions

Union Relations and Wage Rates

Union Relations - Operations Personnel:

Negotiations were completed and a contract executed on September 12, 1950, between the Company and the Building Service Employees International Union, Local No. 201, involving approximately 75 employees of Kadlec Hospital. It was agreed that the personnel affected would be placed on six separate seniority listings which were being completed at month end.

Establishment of specific workweeks for operations weekly employees was accomplished and made effective September 18, 1950. This Division performed considerable liaison work between the Payroll Section and the various operating divisions in order to orient all supervisors with the problem and coordinate the application of a substantially revised procedure.

On September 14 and 15, the Company received from the National Labor Relations Board two petitions for election for the purpose of recognizing the Hanford Atomic Metal Trades Council as the bargaining representative for the groups involved. One petition sought representation for Health Instrument Inspectors A & B and Laboratory Assistants A, B and C. The other petition designated Richland and North Richland Village Firemen as the petitioners.

Grievance Statistics

Twenty-seven grievance reports were received during the month, bringing the total received this year to 173. Three hundred forty-nine grievances have been received since the grievance procedure was established in April, 1949. Grievances were received this month from the following divisions:

HAMTC (Unilateral)	5
Mfg. Power	2
Mfg. Maintenance	2
Mfg. "S" Division	10
Mfg. Transportation	1
General and Office Services	1
Village Maintenance	1
Village Utilities	5
Total	27

Employee grievance reports received during the month of September were regarding the following subjects:

Recognition	4
Check-off	1
Discrimination	2
Jurisdiction	3

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Sick Leave	2
Seniority	10
Information to Council	2
Grievance Procedure	1
Wage Rates	<u>2</u>
Total	27

The status of all grievances received to date is as follows:

	<u>1949</u>	<u>1950</u>	<u>Total</u>
Settled satisfactorily, Step I	56	37	93
Settled Step I - Time Limit	59	71	130
Pending at Step II	--	44	44
Settled at Step II	<u>61</u>	<u>21</u>	<u>82</u>
	176	173	349

Seven per cent of the total grievances received this year have been submitted by employees outside the bargaining unit.

Meetings

The Council Grievance Committee and the Company Negotiating Committee met once during the month for the purpose of processing grievances at the Step II level.

Union Relations - Subcontractor Personnel:

Negotiations with the Sheet Metal Workers initiated on September 8, under the threat of a strike to become effective September 18 unless all provisions of the Schedule "A" as presented by the Union were accepted, were concluded on September 17, 1950. A Counselor of the Federal Mediation and Conciliation Service was present at all negotiations. The Agreement provided for:

1. Wage increases to \$2.35 effective August 1, 1950 and to \$2.45 effective November 13, 1950.
2. A vacation plan granting five days per year or its equivalent in pay.
3. Overtime pay at double the straight time hourly rate for all work in excess of two successive shifts and after 4:30 p.m. on Saturday.
4. No change in isolation pay.

A work stoppage of one day (September 18, 1950) resulted when the Union members met in Pasco to approve the results of the negotiations.

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The Schedule "A" was formally executed on September 22, 1950.

The Agreement between Atkinson-Jones and the Office Workers arrived at on August 30, 1950 was the subject of renewed negotiations when disagreement developed regarding the proper application of wage increases and retroactivity. A final agreement was ratified by the Union on September 13 and formally signed on September 15.

Atkinson-Jones received an inquiry from Peter Seitz of the Federal Mediation and Conciliation Service in Washington, D. C. requesting information regarding their submission of a panel of five arbiters from which the fifth man could be selected for arbitration in the Daylight Saving Time dispute. L. C. Fassett replied to the effect that they had been unable to secure a meeting with the Union for the purpose of selecting the fifth man, but stand ready and willing to complete arbitration in line with their collective bargaining agreement. Atkinson-Jones is at the present time considering an appropriate course of action and have stated that a decision will be forthcoming by October 15.

Negotiations of revisions to the present Agreement with the Technical Engineers were initiated during the month with meetings on September 12 and 20, 1950. The Union appears very firm in their demands for the elimination of the merit increase form of administration in favor of established rates for each classification. Atkinson-Jones has indicated that they may offer an automatic progression schedule similar to the one in effect for the Office Workers with a starting, three months, and six months rate. The Union has set October 9 as the dead line for completion of negotiations. A meeting has been scheduled for October 9, 1950.

Negotiations with the Machinists were held on September 12 at which time the Union submitted documentary evidence purportedly justifying their \$2.75 demand (present rate, \$2.35). Negotiations continued on September 19. Atkinson-Jones at the present time is making a survey of Machinist rates in Eastern Washington. A meeting has been schedule for October 4, 1950.

On September 22, 1950, information was received from Atkinson-Jones that the United Slate - Tile and Composition Roofers Association had opened their Schedule "A". Atkinson-Jones has requested specific mention of those provisions to be negotiated.

On September 22, notice was received from the Ironworkers Local No. 14 of their desire to negotiate changes, revisions, etc. of their present Schedule "A" which has an effective date of August 10, 1950. Although these negotiations were just concluded in August, the opening notice was received on October 10, 1949, and it is quite probable that the present opening is in order.

Notice was received from the Operative Plasterers and Cement Finishers International Association, Local No. 478, of a desire to negotiate adjustments in wage rates.

Employee and Community Relations Divisions

The Decision and Certification from the NLRB authorizing the Operating Engineers Local No. 370 as the collective bargaining agent for the unit as described in the petition was made effective September 19, 1950. Notification has been received from the NLRB setting October 17 and 18 as the dates for the Operating Engineers Union authorization election.

Edmund P. Erwen (Erwen Construction Company) has replaced George Grant (Morrison-Knudsen) as a member of the Project Negotiating Committee.

Travel to Los Alamos, New Mexico was performed by a member of this Division in order to obtain a comparative evaluation of methods used in the resolution of certain Union Relations problems.

The A. F. of L. Convention in Houston, Texas was attended by a representative of this Division.

Reimbursement Authorizations

Request for Reimbursement Authorizations handled during the month:

1. Travel Allowance, Plumbers and Steamfitters
2. Overtime Compensation - Meal Time - Electricians (Linemen)
3. Office Workers - Wages, etc.

There were no Reimbursement Authorizations received during the month.

Work Stoppages

A one-day work stoppage involving the Sheet Metal Workers occurred on September 18, 1950. A membership meeting held in Pasco on this date resulted in the ratification of the negotiated settlement of their dispute and work was resumed on September 19, 1950.

A threatened work stoppage involving the Office Employees Union was averted on September 13 by the ratification of the Settlement Agreement between Atkinson-Jones and that Union.

The Technical Engineers have set October 9 as the dead line for the completion of negotiations presently in progress. A meeting is scheduled for that date.

Wage Rates:

Approval was received for reimbursement in connection with the setting up of a preferential rate for individuals previously classified in the exempt roll who were moved to the nonexempt payroll.

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Notification was received of approval of our request for reimbursement for the payment of retroactive pay to employees who were incorrectly classified as exempt and who were changed to the nonexempt payroll.

Payment was computed and instructions forwarded to the Payroll Division for the retroactive payment of money due members of the Auxiliary Fire Brigade in accordance with an agreement between the General Electric Company and the HAMTC.

A revision of the job descriptions of Firemen and Fire Inspectors was negotiated with representatives of the HAMTC.

In conjunction with Union Relations representatives negotiations were concluded with the HAMTC on an agreement whereby "S" Division Helpers will, upon completion of the Helper progression schedule, be automatically upgraded to the Chemical Trainee classification.

Negotiations were opened with the Council's Power Division representatives on a plan for the upgrading of Miscellaneous Operators to VU Power Operators and the movement of Village Miscellaneous Operators to Area Power jobs.

A request for reimbursement approval was resubmitted for the payment of all individuals classified as Supervisors-in-Training as nonexempt rather than exempt roll employees.

Discussions were continued and additional substantiating information submitted in connection with our request for reimbursement approval for an increase in the job rates of stenographers and secretaries.

Job descriptions, starting rates, job rates were negotiated for those Medical Division classifications represented by the Building Service Local 201.

A national survey on rates paid for glass blowing work was completed.

This Division participated in a series of meetings with Arthur Ran, of the General Engineering staff, relative to the classification of draftsmen, designers and reproduction employees in the Design and Construction and Project Engineering Divisions.

Investigated and checked the classification and rates involved in the proposed change in classification and transfer papers forwarded to this office during the month.

Three hundred and five merit and automatic increases were processed and approved in September. The assigned classifications and rates for one hundred thirty-six individuals added to the rolls were reviewed and approved. Proper classifications were determined, processed and approved for 125 requisitions for new help.

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Employee and Community Relations Divisions

Community and Public Relations Division

PUBLIC INFORMATION - News Bureau

During the month of September, 55 releases of information were made by the News Bureau.

Local News Releases

During September, 49 releases of information, in the form of stories and/or photos on the following topics were made to the "local list" of media, which is comprised of the Columbia Basin NEWS, Tri-City HERALD, Yakima Morning HERALD, Lind LEADER, Walla Walla Union-BULLETIN, Spokane CHRONICLE, Works NEWS and radio stations KPNW, KWIE, KIT and KALE:

Personnel

General - A story announcing the participation of David McLenegan in the meeting of the American Society for Engineering Education in Detroit was sent to the "local list" and in addition a copy was sent to the Wisconsin Engineer of the University of Wisconsin, Mr. McLenegan's Alma Mater.

Organization Changes - The News Bureau published a story announcing the re-organization of the Community Divisions. Announcement was made of the promotion of Tom A. Furton.

Speakers - Three releases on this subject were sent to the local list. A speech by M. H. Gardner in Pasco describing the probable effects of an atomic bomb on an American city was summarized. H. M. Parker addressed a two-day institute on the handling and disposal of radioactive waste materials sponsored by the University of California. The speech given by William W. Mills at Pasco describing the impact of the chemical industries in the country was summarized.

Union Activities - There were three releases on union activities. The first refuted a union-inspired report on the contract between G.E. and the Building Service Employees Union. The second was a joint company-union statement announcing that further negotiations would be continued on the back pay for auxiliary firemen. The third was a joint statement summarizing the agreement that was reached on payments to auxiliary firemen.

Community

General - Two releases fall under this heading. The first described the arrangements that had been made for permitting bird hunting on the reservation. The second was a brief announcement of the change to standard time.

Construction - Two community construction stories were sent to the local list during September. The first announced the commencement of improvement work on air conditioners in Richland's 29 dormitories. The second announced the painting of 168 houses, dorms and office buildings in Richland.

Employee and Community Relations Divisions

Commercial Facilities - A release announced the opening of a new commercial facility, R. J. Skewes Furniture Co.

Electrical - Four stories were written warning residents of electrical interruptions.

Fire Prevention - A story explaining the danger of improper firing of coal furnaces was sent to the local list.

Recreation - Seven recreation stories were released during September: Two on the Minnesingers choir; one of the Winter Recreation Program for North Richland; two on the football clinic and two on dancing at the Recreation Hall. **Public Works** - An announcement in the change of the garbage pick-up schedule, an announcement on procedure for reporting burned-out street lights and a story on the \$127,023 street rebuilding job now in progress were sent to the local list.

Medical - Two stories announced polio cases. One of them also described polio symptoms. The other spoke of the record to date as compared with last year. The significance of the 92.8 per cent rating achieved in Kadlec Hospital by the American College of Surgeons was explained in a story. Further achievement of this acknowledgment was made by means of a picture with caption which was released to the Columbia Basin NEWS only. Kadlec Hospital emergency service was explained in a local story. The "Hi, Neighbor!" series of radio programs which will be broadcast over KWIE was given a promotional send off by another local story. The five medical stories were written by Special Programs and sent out by the News Bureau.

Patrol and Safety - A picture with caption described the attendance of two Richland patrol officers at a school of law enforcement at Ft. Lewis and was sent to local media. A picture with caption publicized issuance of the booklet "Here's Community Patrol." A story announced the giving of theatre tickets in connection with a KALE safety program. The radio program dealing with the problem of teaching teen-agers to drive safely was publicized in a local release. Another story announced the repainting of cross walks.

Plant

General - The Graduate School of Nuclear Engineering was described and the courses it offers were listed in a story to local media. The Columbia Basin NEWS showed exceptional interest in this story. They prominently displayed the complete schedule of courses.

Safety - The award of gifts to 7800 G.E. employees for achieving over 5 1/2 million accident-free man hours of work since April 18 was released.

Releases Sent Throughout the Northwest

During September, 6 informative news releases were sent to 75 of the leading daily newspapers, wire services, and radio stations in the four northwestern states in addition to the local mailing list. Below are the subjects of the releases:

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Employee and Community Relations Divisions

Personnel -

General - The commencement of hiring 500 permanent operating personnel at Hanford Works was released for general release. The story was intended as free advertising to spread the word on the types of people who were needed and the steps they should take to apply for work here.

A speech made by E. S. Jordan was summarized in a news story and copies were sent to San Francisco for distribution through R. W. Jackson's office, in addition to our daily list. This speech was delivered at an architect convention in Yosemite, California and explained the methods of procuring architect engineer services at Hanford Works.

Union Relations - The joint statement on retroactive payments to voluntary auxiliary firemen was sent to the "daily list."

Construction - In line with our usual policy of publicizing construction at Hanford Works in order to aid the Contract Section in obtaining more and better bids, two stories were sent to the "daily list" as free advertising for bids. One was for the construction of a large laboratory building, the other was for remodeling Richland's prefabs. Another story announced the results of the bid opening for the construction of an Instrument Maintenance and Development building. Edmond P. Erwin of Yakima submitted the low bid of \$118,900.

Tri-City HERALD Only

Three stories were requested from the Tri-City HERALD on September 12 and answered the next day. They were a request for information on construction work facing Swift across from the hospital (answer: a new parking lot); the construction equipment on the north bank of the drainage ditch close to the dike north of the Desert Inn (answer: corps of engineers pumping station); progress of negotiations toward a new G.E.--A.E.C. contract (answer: G.E. feels no statement is in order at this time). A picture showing the damage caused by illegal trash dumping at the south end of town was given to the Tri-City HERALD with information explaining the picture and telling where such refuse should be dumped.

Columbia Basin NEWS Only

The local representative asked for and was given information on two G.E. employees at Hanford Works who entered the armed forces during September. A picture with caption illustrating the trash dumping problem was given to this paper also.

Other Projects

A series of pictures which Jeanne Weller will use in an "Adventures Ahead" ad based on Kelly Woods were sent to her with captions. In addition, another set of pictures on Richland teen-agers were also sent to Miss Weller for her "Adventures Ahead" story.

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Richland Chamber of Commerce requested the number of G.E. and A.E.C. employees here and the total monthly income of these people. She was told that the total employee figure was about 8,000 and total payroll about 30 million.

Telephone Tolls - When the telephone toll question came up about the first of the year the Tri-City HERALD came out in favor of removal of tolls and requested a statement from G.E. The statement given by Earl Richmond stated that G.E. was in favor of such removal because it would save the Company money. Six months later in answer to a new request from the same paper another statement was written which quoted the new community manager as stating that a new procedure had been worked out so that collection of tolls from Richland subscribers caused no expense to G.E. During September when the issue was reopened the Tri-City HERALD ran a story quoting Earl Richmond's statement and implied that G.E. is still in favor of removing tolls between Richland and Pasco or Kennewick. Actually, because the costs of collecting tolls has been eliminated by virtue of the new procedure and because of our responsibility to Richland residents, the Company's attitude has been changed. Consequently, a request from the Columbia Basin NEWS for answers to a list of questions was welcomed as an opportunity to explain that the proposed action on tolls would no longer save money and increased facilities would be required. The implication was made that G.E. was no longer in favor of removal of the tolls.

Promotion Story System

The News Bureau program of sending brief stories on promotions of G-E personnel at Hanford Works to local papers of the affected people took a firm step forward in September. A form was set up, which is sent to everyone receiving a promotion. The employee fills out the form, thus providing the News Bureau with information and with permission to write the story. During September, about 25 of the new forms were sent, and by the end of the month, they had just started coming back. During October, this will become a matter of routine. This program will bring G.E.'s role at Hanford Works to the attention of many people throughout the country.

Community Chest Stories

Seven stories publicizing the Richland Community Chest Drive were sent to the local list.

PUBLIC INFORMATION - Community Divisions

"What Can Women Do?" - This folder of economic material, which includes a plan of action for women interested in preserving the American way of life, was mailed to the local Y.W.C.A. president, along with a letter which expressed the hope that she and the members of her organization would find it interesting, thought-provoking, and challenging. It is believed that the mailing of the material represents another step toward offering an economic education program at the community level.

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Employee and Community Relations Divisions

The ABC's of Safety - The Community Relations Supervisor, on behalf of the Richland Safety Council, wrote the introduction to a "Safety Alphabet and Coloring Book" to be distributed to local children between the ages of four and ten.

Suggestion Awards for Residents - The Suggestion System and Community Relations Supervisors met to discuss the feasibility of making cash awards to residents who offer worthwhile or money-saving suggestions for community improvement. A written report of the meeting's results was submitted to the Municipal. Real Estate and General Services Divisions Manager for his information and action.

Fire Prevention Week - At the invitation of the Chamber of Commerce Fire Prevention Week Committee, the Community Relations Supervisor attended an evening meeting of the group and accepted a position on its publicity committee.

Community and Plant Meetings Attended - The Community Relations Supervisor attended the monthly meeting of the Richland Community Council, in order to keep abreast of its activities and proposals; attended a Plant meeting concerned with the local "telephone tolls question"; attended the Community Manager's meetings in which the reorganization of the Community Divisions was discussed; attended the staff meetings of the Municipal. Real Estate and General Services Divisions and the Community and Public Relations Division, in an effort to maintain close liaison between these groups.

The Community's Annual Financial Report - The news story which reported municipal expenditures and revenue in Richland for fiscal year 1950 was written by the Community Relations Supervisor and released to public information media through the G.E. News Bureau.

Activities of the Municipal. Real Estate and General Services Divisions - The Community Relations Supervisor attended the Community Manager's staff meetings and contacted superintendents of the Municipal. Real Estate, and General Services Divisions, regularly, to gather information of interest and concern to Plant personnel and the public. With the assistance of the groups within the Community and Public Relations Division, he released this information via the Works NEWS, newspapers, radio, and other public information media.

PUBLIC INFORMATION - Public Functions

Papers and Speakers

The Pasco Chamber of Commerce was entertained at their regular luncheon meeting, September 18, by W.W. Mills of the Technical Divisions who was requested by Public Functions to speak on the subject, "How Chemical Ideas Grow Into Industry."

"Private Architect-Engineer Participation in the Atomic Energy Program" was the subject of a presentation made by Elwyn L. Jordan of the Construction Contract Division at the Annual Convention of the California

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Employee and Community Relations Divisions

Council of Architects at Yosemite National Park, Friday, September 29. Considerable time was spent by Public Functions in supplying Jordan with facts, material and suggestions. Bill Watts of the News Bureau also furnished Jordan with additional information and handled all publicity in conjunction with this assignment.

Twelve speakers submitted papers and texts to Public Functions for public relations approval. Other necessary publicity and speaking arrangements were also handled for these people.

Film Showings

Forty-one general Electric films were procured for plant groups, organizations, civic clubs and community groups during the month. In addition, to the showings, all films are now carefully inspected and necessary repairs made by our Photo House personnel before being returned to the G.E. Film Distribution Section.

"And Then There Were Four", the traffic safety film procured by the Community Safety Division upon the recommendation of Public Functions has received the heaviest demand for showings ever made for a film on this project. So great has been the demand that General Petroleum Corporation, producers of the film, have broken precedent and made a gift of it to our Company.

A fine letter of appreciation for the film services rendered by the Film Distribution Section of the Apparatus Department and our Public Functions group was received from Captain Flaherty, Battery Commander of the Fifth Anti-Aircraft Group stationed at North Richland. Over 80 G-E films were procured and shown to over 1,500 G.I.'s in the last two months.

Radio

"The Lady From Safetyland", a radio show produced by Public Functions for the Community Safety Division for weekly broadcasts for the "Kiddie Korner" hour from radio station KALE, concluded twelve weeks of successful broadcasting as of September 30. A new show is being written and produced by this group to replace the former series, at the request of the radio station and the Community Safety group. Appreciation has been expressed to members of the group who have contributed time on their days off to produce this show--Ben Willingham, Ray Benckenstein and George Gilson.

"Are You Listening?", the Works NEWS column developed by Public Functions, has become a popular feature according to many sports enthusiasts who, because of limited coverage of sports broadcasts in the only local daily paper distributed on Saturday,s rely upon the information furnished them by our publication. Outstanding network program times were published during the Community Chest Drive.

The "Hi, Neighbor!" mental health series program produced for the Richland Health Council by Public Functions has been completed and the 9-weeks series of broadcasts will have the initial "airing" at 7:30 p.m., Sunday, October 8 and each successive Sunday at this same time. This has turned out to be a "scoop" broadcast.inasmuch as this nation-wide program will not be broadcast in the Northwest until January according to Seattle publications. Another unusual feature about the program is the addition

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of a roundtable forum conducted following the 15-minute Eddie Albert dramatization with outstanding religious, medical, school and business leaders expressing their opinions on the principles revealed in the stories and family problems they help to improve here. (Please refer to October 6 issue of Works NEWS and monthly report of August for additional details concerning this production).

Two radio interviews on traffic safety were produced by Public Functions for Community Safety Division which were broadcast early this month over radio station KALE. The principals in this tape-recorded production were M.L. Blum, John Cowan, and Paul Sevedge, members of the Richland Safety Council.

A recording was made for radio broadcast of Morton Cooper, guest speaker for the Supervisor's Association meeting held this month. Past state commander of the American Legion, Mr. Cooper spoke on the subject of communism and the Marxist Theory. The sound system was arranged by Public Functions and Ray Benckenstein handled parts of both assignments.

Recordings were made of Mr. Prout's speech made before the Los Angeles Rotary Club in March of this year. From this a text was prepared and given to Mr. Prout to use as the basis of his appearance as principal speaker at the California Manufacturer's Association Convention to be held in San Francisco, October 19.

A wire recording was made of Mr. McCune's speech made before the members of Pasco Kiwanis Club early this month, from which a text was prepared for his use in developing a speech for his appearance at the Yakima Kiwanis Club on October 31. Mr. McCune gave a talk and demonstration of laboratory equipment, the same as was given at the Businessmen's Luncheon held in Richland during June.

Program Development

The three following programs required three weeks of careful planning and utilization of all the services that Public Functions comprises, in addition to considerable time and effort spent by other groups of this division to successfully launch these worthwhile projects.

Richland Community Chest publicity and advertising was undertaken both as a personal service and a service of this division. It has required considerable time for the preparation of over 186 radio spot announcements, special recorded radio programs, news releases, speaker engagements, photography, man-on-the-street radio quizzes, art work and other details too numerous to record. The largest quota ever established in Richland and Hanford Works by a service agency hurled a definite challenge to local journalistic staffs to try and accomplish a successful campaign.

Fire Prevention Week in Richland will unleash one of the most ambitious community programs ever undertaken in this area, and more especially, the most complete ever sponsored by the Richland Safety Council. The Supervisor of Public Functions was selected by the latter group to develop and prepare a program of week-long events both for Richland and Hanford

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Works. Considerable time and effort was consumed in planning the entire schedule, conducting meetings, developing a theme radio guessing contest, recorded radio quiz shows at schools, organizations and clubs, publicity and photography, parade arrangements and general coordination of all activities.

The part Employee and Community Relations Divisions play in the production of plutonium is the theme of a presentation developed for the Divisions Manager for his appearance October 19 before the Seattle Chapter of the Pacific Northwest Personnel Management Association. A detailed description of the functions of the Community and Public Relations Division, Union Relations Division and Employee Relations Division was outlined and distributed to each supervisor heading all groups to select and describe the outstanding accomplishments since January, 1950. The preparation of a visualizer will illustrate the accomplishments as an aid to the Divisions Manager in his forthcoming talk.

Extra Activities

Safety Award Certificates were awarded to employees of the Employee and Community Relations Divisions as the concluding function of the present Council for the year of the revised Safety Meeting Program. The Supervisor of Public Functions, who has headed this committee, retires as the first Chief Coordinator after having produced a new policy engineered with the cooperation of two additional coordinators including the Supervisor of Special Programs. A new note of entertainment was conceived and presented as a method of securing as near 100 per cent attendance as was possible, including the distinction of having more members of Supervisory-Management attend the meetings than in many other divisional meetings. Attractive award certificates were prepared through the cooperation of Special Programs personnel and the issuance of these documents will continue in the following months as employees attain one year attendance records.

Motion picture scripts were prepared for the recently completed Community Activities color-film. These were made for use in the commentary that is used in the presentation and will continue throughout the filming done on the Fall and Winter programs and then assembled for the final reel.

Art Work

Commercial art produced during September set something of a record in both quality and quantity. Projects submitted to the artist entailed finished art work on an extensive scale and comprised higher quality reproducible techniques. The leading assignment was the illustration work for the forthcoming Stenographic Manual. Novel pen and ink drawings were completed for this illustrated manual of instructions and added considerably to the presentation qualities. Among other important assignments requiring finished art work were the following: 4 Works NEWS editorial cartoons; pen and ink illustrations for CUE, the illustrated folder of accomplishments of Employee and Community Relations Divisions; 2-color letterhead for Safety and Fire Protection Division; pen and ink illustrations for new telephone directory; pen and ink illustrations for new "Guide to Richland" booklet; pen and ink illustration for Security Division; pen and ink

Employee and Community Relations Divisions

illustrations for Meistersingers presentation book for director Sidney Irving; pen and ink column head, "Are You Listening?", the Works NEWS radio column.

The above work required preliminary sketches which aided in the selection of final approved drawings and which must be taken into account for the accomplishments of the Public Functions group.

Photographic Services

Processing of color film of a classified nature has been added to the functions of the H.W. Photo House. Photographs of color charts and processes were made and Ansco color film processed by the Photo House. The processing requires considerable care, technical experience and knowledge. The classification of the materials photographed required processing in our own laboratories which also created a great savings in cost and travel expense to have this work done in San Francisco or Los Angeles.

Processing of motion picture film in quantity is now being accomplishing by the Photo House. Reversal process, negative process, positive process, and positive and negative printing of 16 mm cinefilms are among the methods being undertaken in order to reduce costs for this work elsewhere.

Over 320 fine grain 8" x 10" prints were produced which required special fine grain development, copy methods, and printing. Charts and photographs of requiring detail that could not be reproduced by printing methods were photographically reproduced for the Pile Technology Division. Twelve continuous hours were required to accomplish this assignment by the Supervisor and two photographers.

Construction progress photographs comprising diagrams and layouts of special equipment, instrument construction, graphic process methods and graphic reports were prepared by the Photo House in September. An increasing demand for photographs is being made of the Photo House for reporting construction progress. Layouts of special equipment will be reproduced from photographs which has proved to be a more practical method than drawings. Photographs have been made of reports, tests, experiments, and methods to be shown in detail.

An effort to postpone rather than refuse our services to requesting Divisions is being made. A critical overload has resulted due to an increase in the number of Divisions requesting services from the Photo House. The difficulty of determining the need of one division's requirements from that of another makes it difficult to refuse many of our services. Postponements are impossible in many cases due to time elements and deadlines.

A record high of 4,935 prints were produced during the month of September, 1950. The full limit of personnel, equipment, and space was used to produce 4,935 prints, which was 958 more prints than produced in the month of August, 1950.

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Employee and Community Relations Divisions

EMPLOYEE INFORMATION - Works NEWS

Distribution of the Works NEWS increased to 9000 copies. Although this total is considerably over the number of employees on the roll, sub-contractor personnel working within the same buildings as G-E people are now receiving papers at their request. The large number of people on the outside mailing list account for the remainder of the copies.

Publicity promotion on several programs both in the plant and the community was given in the Works NEWS during the month. These included:

The Nucleonics Safety Council Award which was won by the plant was featured prominently on the front page, by editorial cartoons, and by pictures of the gifts being awarded. Aid was given the Safety Division in promoting gift selection, and a blank was published in two issues of the paper for the convenience of the employees.

The Patrol Safety Hurdle Race was given recognition by a front page feature as a means of helping to create interest. This story was written by an area reporter, and indicates the type of material being encouraged from the reporter staff. The story was bylined to enhance reporter incentive.

The G.E. Graduate School of Nuclear Engineering. A complete list of all courses available during 1950-51 was included on two pages of the Works NEWS. Information was also given on enrollment, and other pertinent data. A registration form was carried for two weeks for the convenience of prospective students.

An editorial by the G.E. General Manager followed which pointed out the educational opportunities available to G-E people at Hanford Works. Culminating promotion of the school was a full page feature on another activity of this Division (Technical Personnel Office) describing their recruiting activities of technical personnel.

Information on Communists was started as a series of articles and are still being continued. This information is being run at the request of the F.B.I. and the G.E. Security Division to show the employees the dangers of Communism.

Registration and voting information was prominently featured during the month. Information included a feature urging people to vote in the primaries, and other material pertinent to registration. A full page syndicated mat was published. A story quoting the League of Women Voters gave the results on the primaries, and urged a better showing for the regular election.

Security Measures being taken throughout many G.E. plants were revealed to Works NEWS readers by two full-page mats. They were run per request of the G.E. Security Division to place emphasis on the importance of security at this time. Additional information on measures being adopted here were published regarding blackout procedures which are now established in the areas.

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Employee and Community Relations Divisions

Community Chest publicity was included throughout the month starting with teasers in the ear of the paper and full first page publicity on the date of the drive and the official launching. Pictures, cartoons and editorial cartoons also figured prominently.

A full two pages were devoted in one issue to Community Chest activities showing the Division chairman becoming acquainted with each agency's work. These two pages were made up through the special efforts of the Special Programs group.

Adult Education classes. A complete announcement of the opening, registration dates, and a complete listing of all classes available was published.

Red Cross Blood Program was publicized through an editorial cartoon, an editorial, and a follow-up story urging people to donate their blood. Special arrangements were made at press time to include a story advising people of the emergency need for blood as the result of the Korean crises.

Sports news included a map published principally to show hunters the new areas on the project open to hunting, with an accompanying story of explanation.

Interest of employees in the activities of their children has prompted the staff to include all available news on events for them. This has included stories on the Little League, and a football clinic being conducted for youngsters.

Human interest features were published during the month to include a full page feature story with accompanying pictures on an employee who acts as a clown for the entertainment of children; employees who have won recognition for their midget auto racing activities; those enjoying special classes in square dancing as run by the Parks Association; a feature on the finale of the Summer Recreation Program, and a feature on an employee with 25 years of combined service with duPont and G.E.

Training of a new Assistant to the Editor was completed, and the new assistant took over full responsibility at the middle of the month.

Two twelve page papers were published during the month, and one included a "Candid Camera" insert.

EMPLOYEE INFORMATION - Special Programs

The Richland Community Patrol booklet, "Here's Community Patrol," produced by Special Programs during August was mailed to each family in Richland with a letter from the Patrol Chief, and to obtain maximum employee relations within Community Patrol, advance copies with a letter from the Chief were sent to all Patrolmen, both letters being prepared by Special Programs. A photo publicizing the booklet distribution was arranged and distributed with caption to local newspapers through the News Bureau.

Three Richland polio cases admitted to Kadlec hospital during September were publicized through Special Programs in line with the established policy of Special Programs preparation of such news releases, which are released to local media through the News Bureau.

Employee and Community Relations Divisions

The 1950 objectives and accomplishments for the first half of the year for the Employee and Community Relations Divisions were summarized in folder form, copies of which were sent to the Advertising and Publicity Department, the New York office and to Community Relations managers of other Departments.

Production of Safety Certificates for the Employee and Community Relations Divisions employees included obtaining blank certificates, writing copy and handling production.

The new monthly Safety Division bulletin letterhead, "Here and There As We See It", was produced.

Three Hanford Works telephone directory covers were produced through Special Programs promoting fire prevention, safety and security.

Two-page photo spread on Community Chest activities was produced for insertion in the Hanford Works NEWS by Special Programs on an exceptionally limited production time basis.

Recruitment classified advertisements for stenographers were written and placed in Chicago, St. Paul, and Minneapolis newspapers; and for draftsmen and design draftsmen in Portland, St. Paul and Minneapolis newspapers. In line with this Special Program responsibility, payment for classified recruitment advertising was arranged, including the keeping of appropriate office records.

Richland Health Council-sponsored radio series of health programs received initial newspaper publicity through a Special Programs news story which was released through the News Bureau.

A Medical Divisions employee relations letter which informed employees of the Medical Divisions that the Hanford Works Industrial Medical Program had received full approval of the American College of Surgeons, and that Kadlec Hospital had received continued full approval, was prepared by Special Programs for the Medical Divisions manager's signature. Appropriate Works NEWS publicity and similar materials for release to local newspapers were prepared, in line with Special Programs responsibility for Medical Divisions employee and community relations activities.

A change of Instruction Letter No. 135 was instituted through Special Programs whereby bus drivers are permitted to pick up employees living between the 1131 Bus Lot and the Barricade who have forgotten their photo identification passes. Under a recently instituted procedure, such employees would have had to obtain temporary passes at the 1131 Bus Lot, thereby missing their busses and, in all probability, being late for work.

Minor Injury Report form copy was revised to provide a form which would be easier to complete, but which would obtain essentially the same information supplied by the present form.

Brief description of Special Programs activities and responsibilities was prepared at the request of the Public Functions Supervisor for a forthcoming series of addresses by the Employee and Community Relations Divisions Manager.

Employee and Community Relations Divisions

Kadlec Hospital emergency service was explained in news releases prepared by Special Programs which appeared in the Hanford Works NEWS and local newspapers. Purpose of the explanation was to inform adequately all residents that cases of a non-emergency nature would be referred to the person's personal physician or dentist, thereby enabling better emergency treatment for genuine emergency cases.

The forthcoming office reference book, "This Way, Please--", was brought near to completion, with final approval being received from Office Services Division which issued a purchase requisition for printing of the book.

A letter to all employees from the General Manager expressing congratulations for the current Hanford Works safety achievement and encouragement for continued safety was prepared by Special Programs, which also arranged both production and distribution.

An outline for establishing a Suggestions Club for Hanford Works employees, through which additional recognition could be provided to successful suggestors and additional Suggestions System publicity derived, was prepared and presented to the Suggestions System secretary by Special Programs.

No-Accident Safety Award Plan promotion activities of Special Programs during September included arranging for Works NEWS publicity photographs, arranging for the design and production of a lucite display case for displaying the safety award gifts, preparing photographs of the prizes and appropriate posters for posting in each of the areas, and developing of a promotion plan to aid in achieving the second award of this Plan.

EMPLOYEE INFORMATION - Women's Activities

Four women's pages appeared in the Hanford Works NEWS during the month of September.

Fall fashions from local shops suitable for office wear were featured in the September 8 issue. They were modeled by a General Electric office employee.

An employee just returned from a trip to Europe was featured in the September 15 Works NEWS. Also on the page was a listing of adult courses offered by the Richland Public Schools and a recipe for chocolate-Brazil nut pie.

On September 22, patterns for Fall sewing were co-featured with G.E. Consumer's Institute hints on Fall house cleaning and an article on routine hand care.

About 70 patterns were distribute to readers as a result of this article.

Needlework for Christmas gifts was the subject of the September 29 women's page. Free patterns were offered readers. An article on care of hair and another on obtaining fine art for the home accompanied this feature.

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Employee and Community Relations Divisions

An assortment of Knitting patterns from old files were sent to the instructor of knitting in the Richland Public Schools adult courses.

Stuffed toy patterns were mailed at the request of J. Samuel Taylor Orthopedic Guild Christmas Fair committees.

"What's Doing," a service feature for readers gave publicity on an antique glass show, folk dancing, YWCA recreation courses, and Richland Public School adult night classes.

A story suggesting week end and one day jaunts in easy reach of Hanford Works people appeared in the September 1 issue of the works NEWS.

A schedule for the G.E. sponsored football clinic for young boys appeared on the sports page of the September 29 issue of the works NEWS.

Five feature stories about agencies in Richland receiving benefit from Community Chest funds were written for local newspapers. Subjects were Washington State Children's Home Society, Boy Scouts, Camp Dudley, Richland Youth Council including Boy Scouts, Girl Scouts, Camp Fire Girls, Hi-Spot Club, YMCA, Hi-Y, Tri-Hi-Y, and other Youth Council sponsored activities.

Seven news stories were written for local release at the request of the Community Recreation Division. This includes those re-written for radio release.

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DIVISIONS

Employee & Community Relations

- Employment
- Special Programs
- News Bureau
- Works News
- Public Functions

Management

- Rotational Training

MEDICAL

Municipal, Real Estate & General Services

- Community Safety
- Community Activities
- Community Engineering
- Patrol

Manufacturing Divisions

- Transportation
- S Divisions
- Instrument Division

Technical Divisions

- Separations
- File Technology

Design & Construction

Safety Division

Security Division

A.E.C.

DIVISIONS	8 X 10	5 X 7	2 X 4	2 X 2	Negatives	Color Slides	Prof. A Badge	Motion Pictures	Laminated Cards	Portrait
<u>Employee & Community Relations</u>										
Employment					260		419		87	
Special Programs	91				42					
News Bureau	64				45					
Works News	130				87					
Public Functions	130				12					7
<u>Management</u>										
Rotational Training		36				273				4
<u>MEDICAL</u>										
<u>Municipal, Real Estate & General Services</u>										
Community Safety	26				36					
Community Activities	20				12					
Community Engineering	12				15					
Patrol	26				24					
<u>Manufacturing Divisions</u>										
Transportation	11				5					
S Divisions	32				16					
Instrument Division	38				19	4		100*		
<u>Technical Divisions</u>										
Separations	18				19					
File Technology	320				32					
<u>Design & Construction</u>										
Safety Division	16				10					
Security Division	63				52					
A.E.C.	10				2 rolls					
	1007	36	419	3181	687	281	419	100*	87	11

TOTAL PRINTS 4,935
 TOTAL NEGATIVES 637
 TOTAL ASSIGN. 106
 June 4,455
 July 2,930
 Aug. 3,977
 104
 794
 612
 75
 840
 111

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS
SUMMARY - SEPTEMBER, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll:	<u>Beg. of Month</u>	<u>End of Month</u>
Community Administration	5	
Community Accounting	28	
Community Public Works	440	
Community Safety	3	
Community Commercial Facilities	15	
Community Housing	44	
Community Fire	96	
Community Patrol	69	
Community Activities	<u>18</u>	
	718	
Administration		11
Accounting		28
Engineering & Contracts		32
Municipal Division		
Public Works		138
Parks & Recreation		32
Patrol		46
Fire		58
Safety		3
Real Estate Division		
Housing		186
Commercial & Other Property		13
General Services Division		
Steam & General Maintenance		72
Patrol		20
Fire		<u>37</u>
		676

There was a decrease of forty-two employees in the Divisions during the month of September, 1950. This reduction was due, in part, to the discontinuance of seasonal grounds maintenance crews.

GENERAL

Effective September 18, 1950, the Community Divisions were reorganized and are now known as the Municipal, Real Estate and General Services Divisions. A redivision of the responsibilities and duties of the Community Divisions was made, as well as redistribution of personnel.

The rearrangement of the Operating and Construction Budgets, to fit in with the new reorganization, was begun in September.

Total housing applications pending, three hundred eighty-nine (389).

R. J. Skewes Furniture Store and KALE Radio Station opened business offices in Richland during the month.

Summary

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September, 1950

The collection of garbage from residences was reduced to once weekly as of September 30, 1950, for the duration of the winter months.

During the month, thirty-six (36) prisoners were processed through the Richland Jail.

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GENERAL ELECTRIC COMPANY
HANFORD WORKS
MUNICIPAL, REAL ESTATE AND GENERAL
SERVICES ACCOUNTING DIVISION

MONTHLY REPORT FOR SEPTEMBER, 1950

ORGANIZATION

Effective September 11, 1950 K. G. Grimm was appointed Accountant vice R. H. Hopkins who assumed the duties of Manager, Municipal Divisions. Effective this same date, A. C. Beltzner was appointed Assistant Accountant. The position of Assistant to the Accountant was not filled.

Employees - Beginning of month	28	Exempt	5	Male	11
Transfers In	1	Non-exempt	23	Female	17
Transfers Out	2		28		28
New hires	1				
Terminations	0				
Total end of month	<u>28</u>				

RENTS

<u>House Leases Processed</u>	<u>September</u>	<u>August</u>
Total active basis beginning of month	5699	5672
New Leases	119	125
Cancellations	126	98
Total Active House Leases end of month	<u>5692</u>	<u>5699</u>
Modifications	8	3

<u>Dormitory</u>		
Total occupancy beginning of month	984	929
New Assignments	130	190
Removals	149	135
Total occupancy end of month	<u>965</u>	<u>984</u>

Rental Revenue Was As Follows:

Equipment (6 facility operators)	\$ 17.80	\$ 17.80
Houses		
Basic Rent	198,957.44	198,052.16
Electricity	48,455.33	48,314.32
Water	8,032.46	8,001.12
Steam	1,106.78	1,069.60
Dormitory	13,522.53	12,994.76
Facility		
Basic Rent	30,569.36	27,105.63
Electricity	3,433.92	3,433.92
Water	490.00	490.00
Steam	10,416.67	10,416.67
	<u>\$315,002.29</u>	<u>\$309,895.98</u>

Municipal, Real Estate and General
Services Accounting Division

	<u>September</u>	<u>August</u>
Unoccupied Dormitory Loss	\$ 1,109.97	\$ 1,637.74
Unoccupied House Revenue Loss	<u>1,358.44</u>	<u>2,447.75</u>
	\$317,470.70	\$313,981.47

Telephone

Number of work orders processed	319	329
Number of working phones	5016	4982
Revenue including services	\$ 18,943.07	\$ 18,936.34

Miscellaneous

Invoices prepared this month	215	234
Revenue from above invoices	\$ 4,114.39	\$ 2,003.97

Building permits issued during September

Seldon Mason	\$ 45.50
Automatic Laundry	54.05
C & H Food Store #2	5.00
Byron Myers	18.00
Kaiser Market	10.80
N.W. United Protestant Church	160.55
Harvey Stoller	<u>18.50</u>
Total	\$ 312.40
Previously reported	6,667.82
Total to date	<u>\$ 6,980.22</u>

General

Fifty-three collection letters were written during the month resulting in the collection of twenty accounts in the amount of \$393.67.

Two accounts were submitted to the Yakima Adjustment Service.

Two telephone accounts	\$ 16.70
Nineteen accounts previously submitted	<u>205.10</u>
Total twenty-one accounts	221.80
Collected by Yakima Adjustment Service	2.32
Collected by General Electric Co.	<u>1.55</u>
Balance	\$217.93

Forty-nine of the fifty-six active telephone accounts delinquent thirty days or over as of August 31, 1950 have been paid.

Four minor telephone accounts totaling \$1.08 were written off during the month.

Municipal, Real Estate and General
Services Accounting Division

ACCOUNTS PAYABLE

<u>Statistics</u>	<u>September</u>	<u>August</u>
Accounts payable vouchers processed	213	236
Freight Bills processed	11	23
Purchase Orders Received	71	70
Net amount of Purchase Orders	\$21,802.00	\$12,952.00
Receiving Reports Received	99	106
Total net amount disbursed	\$65,156.00	\$49,972.00
Number of checks issued	180	186

A summary of active subcontracts is shown below:

<u>Subcontractor</u>	<u>Subcontract Number</u>	<u>Amount Awarded</u>	<u>Paid this Month</u>	<u>Total Paid</u>	<u>Amount Retained</u>
Newland Cafeteria	*	80.40	19.60	80.40	-0-
Richland Maint. Co.	*119,	497.92	-0-	119,497.92	-0-
Holiday & Edworthy, Inc.	G-284	4,700.00	-0-	4,112.50	-0-
Bailey's Plumb. & Heat.	G-293	8,241.45	397.40	8,241.45	-0-
Assoc. Engineers, Inc.	G-305	89,462.05	23,660.16	23,660.16	2,628.91
Empire Elec. Co.	G-310	16,760.00	-0-	-0-	-0-
A.G. Patton & Cecil C. Hill	G-311	16,694.00	834.70	16,694.00	-0-
Algat C. Grant	G-318	26,135.00	6,295.28	6,295.28	699.47
Amer. Steel & Wire Co.	G-319	6,484.05	-0-	-0-	-0-
Roof Service, Inc.	G-325	3,569.00	3,569.00	3,569.00	-0-
Packard Pipe & Pump Co.	G-326	10,248.50	-0-	-0-	-0-
C&E Construction Co.	G-328	16,992.95	-0-	-0-	-0-
F. O. Repine Co.	G-329	29,263.00	-0-	-0-	-0-
Pasco Electric Co.	G-331	7,035.70	-0-	-0-	-0-
		\$355,164.02	\$34,776.14	\$182,150.71	\$3,328.38

* Total amount of contract will be total of estimates submitted.

COST

Reports

The August Operating Report was completed and distributed on September 21, 1950.

The Comptroller's Appropriation Report and Supplemental Report was issued on September 26, 1950.

The August Utilities Report was completed but not distributed.

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Municipal, Real Estate and General
Services Accounting Division

Budget

Operations

The revision of the Operating Budget to correspond with the reorganization of the Community Divisions to the Municipal, Real Estate and General Services Divisions was partially completed.

Construction

The budget status of each Municipal, Real Estate and General Services project was compiled and a budget status report issued September 30, 1950.

Appropriation Requests

An Appropriation Request covering "Irrigation Ditch Fencing - Wright Ave. to Van Giesen street" was prepared this month.

Service Orders

<u>Code</u>	<u>Service Orders</u>		<u>Labor</u>		<u>Material</u>		<u>Total</u>	
	<u>Aug.</u>	<u>Sept.</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Aug.</u>	<u>Sept.</u>
1	781	997	1,270.16	1,476.30	609.61	1,552.14	1,879.77	3,028.44
2	1,521	1,980	1,628.88	2,027.06	1,674.01	2,310.15	3,302.89	4,337.21
3	41	141	102.00	200.10	49.63	128.67	151.63	328.77
4	45	39	139.80	142.80	127.42	83.66	267.22	226.46
5	222	262	352.20	371.70	571.06	638.21	923.26	1,009.91
6	237	192	565.53	402.60	151.39	146.93	716.92	549.53
9		30		118.56		95.86		214.42
	<u>2,847</u>	<u>3,641</u>	<u>4,058.57</u>	<u>4,739.12</u>	<u>3,183.12</u>	<u>4,955.62</u>	<u>7,241.69</u>	<u>9,694.74</u>

Net

Increase	794		680.55		1,772.50		2,453.05
Percent of	.28%						
Increase			.16½%		.55½%		.34%
Average Cost							
Per Order		1.43	1.30	1.21	1.36	2.54	2.66
Percent of							
Increase /					12%		
or decrease -			- 09%				5%

1 Plumbing 3 Heat & Vent 5 Lock & Key 9 Sheetmetal
2 Electrical 4 Glazing 6 Carpentry

The increase in Service Orders on all crafts is Seasonal. The average cost per order increased about 5 per cent over August.

Municipal, Real Estate and General
Services Accounting Division

Work Orders

Community W. O. Control was divided into three groups under the new Community Divisions, effective September 25. All active W.O. were recoded with new work analysis codes and also "Job Type" codes became effective at this time. All Routine W.O. are in the process of being rewritten under new work order numbers and recoded.

	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Net Change</u>
Active Routine	402	310	313	✓ 3
Active Normal	<u>2,053</u>	<u>2,121</u>	<u>2,275</u>	✓ 154
	2,455	2,431	2,588	✓ 157
W. O. Received	2,335	2,236	1,592	
W. O. Completed	<u>2,378</u>	<u>2,260</u>	<u>1,435</u>	
	- 43	- 24	- 157	

General Ledger

	<u>No.</u>	<u>Debit</u>	<u>Credit</u>
Second Class Invoices Received	58	\$367,279.59	\$236,961.32
Second Class Invoices Issued	37	54,431.83	

ENGINEERING AND CONTRACT DIVISION
MONTHLY REPORT
SEPTEMBER 1950

ORGANIZATION AND PERSONNEL

	<u>Exempt</u>	<u>Non-Exempt</u>	<u>Total</u>
Number of employees on payroll:			
August 31, 1950	18	14	32

Due to a re-organization during the month, the Contract Supervisor, Manager, and secretary were added to the Engineering Section to form the Engineering and Contract Division. The following personnel changes also took place during the month:

Terminations		1
Transfers	1	2

resulting in personnel roll as of September 30, 1950, as follows:

Exempt		19
Non-Exempt		12
Total		31

GENERAL

Due to a re-organization of the Community Divisions into the Municipal, Real Estate and General Services Divisions, Engineering and Contracts were combined to form the Engineering and Contracts Division. All engineering service requests were reviewed by all the Managers of the Municipal, Real Estate and General Services Divisions, as well as outside divisions' engineering and service requests. They were either cancelled or re-issued, depending on the present need. Engineering work by this division will be handled on an architect-engineer basis in the future.

The following number of jobs were completed on continuous engineering service requests:

ESR-97-CH	Electrical and Structural Inspections	8
ESR-118-CF	Authorization Permits	5

The following Engineering Service Requests were completed or cancelled:

<u>Job. No.</u>	<u>Description</u>	<u>Date Completed</u>
96-CH	Acceptance of New Houses From Construction	9/28/50 - Closed out
117-CF	Minor Inspections	9/26/50 - Closed out
181-CA	Assembly of God Church Site	Work stopped
184-CA	Church of Christ	9/29/50
187-CA	Central United Protestant Church Site	9/28/50

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Engineering and Contracts Division (continued)

<u>Job No.</u>	<u>Description</u>	<u>Date Completed</u>
220-CA	Swimming Pool Association	9/18/50 - Cancelled
S-237	Richland Coordinate System	9/22/50
238-PW	5,000 Gallon Asphalt Tank	9/29/50
S-240	Prefab Roof Maintenance	9/26/50
245-CH	New Wells - Tract Houses NN-1040 & C-1248	9/25/50
252-FW	Heat Exchanger, 784 Building	9/28/50
S-258	Re-roofing B.O.Q. Dorms	9/22/50
285-CH	Painting vs Siding - A & J Houses	9/28/50 - Closed out
287-CH	Repair of Ranch-Type Roofs	9/28/50 - Closed out
296-CH	Sub-standard Basement Stairs, A & B Houses	9/28/50 - Closed out
313-CH	Exterior Painting, 22 Dorms & 1 Dorm Apartment	9/28/50 - Closed out
320-CA	Permanent Installation for Erecting Sign	9/27/50 - Closed out
S-350-SS	Lighting Study, 700 Area Offices	9/29/50 - Cancelled
354-FS	Revision of Plans for Headquarters, Fire Station	9/27/50 - Closed out
362-CH	Relocation of Water Shut-offs in Prefabs	9/28/50 - Closed out
367-CA	Specifications and Contract for Exterior Painting of Municipal Building	9/28/50 - Closed out
372-CH	Electrical Plan for Tenant-Erected Garages	9/28/50 - Closed out
379-CH	Interior Painting, Scheduling, Contracting	9/28/50 - Closed out
382-CF	Joseph's Investment Building	9/29/50
383-CF	Carnation Milk Company	9/29/50
385-PW	8-foot Sidewalk - Greenway	9/25/50
388-CF	Johnny's Minute Man Building Addition	9/29/50
395-CF	McVicker's Investment Building Addition	9/29/50
399-PW	Installation of Steam Meters - Schools	9/27/50 - Closed out
410-AEC	Airport Control Building	9/27/50

Engineering and Contracts Division (continued)

<u>Job No.</u>	<u>Description</u>	<u>Date Completed</u>
414-PW	Richland Drainage Ditch - Clean Up and Reduce Size	9/27/50 - Closed out
417-CF	Water in Klopfenstein's Basement	9/27/50 - Closed out
423-CF	Richland Laundry and Cleaners Addition	Work stopped
426-PW	Irrigation Facilities - Levee 2-C	9/18/50
S-430	Catholic Church and School	9/15/50
431-CA	Painting Central Protestant Church	9/19/50
433-AEC	Richland Public Library	9/19/50
441-CF	Recreation Hall Remodeling	9/28/50 - Closed out
446-CA	Site Map - Red Cross Building	9/19/50
447-VA	Government-Owned Commercial Facilities Study	9/1/50 - Cancelled
448-CA	Electrical Estimate - First Baptist Church and Reorganized LDS Church	9/8/50 - Closed out
455-PR	Staking Infield - Memorial Softball Field	9/20/50
456-SS	Up-to-date Blueprint of 700 Area	9/21/50

Technical information and instructions were furnished the following prospective facility operator and church:

- a. Mr. Huber, Chevrolet dealer
- b. Free Methodist Church

The status of facility-sponsored construction is as follows:

Theater: Construction started 12/14/49. 95% complete.

Morgan and Olberg Drugstore: Construction started 8/7/50. 50% complete.

McVicker Food Store: Construction started 5/22/50. 95% complete.

Drive-In Restaurant: Construction started 7/24/50. 75% complete.

Outdoor Roller Rink: Construction started 9/1/50. 2% complete.

Automatic Laundry Building: Construction started 8/10/50. 80% complete.

1208555

Engineering and Contract Division (continued)

The status of community-activities construction is as follows:

- Latter Day Saints Church: Construction started 2/5/49. 98% complete.
- Reorganized LDS Church: Construction started 8/22/49. 50% complete.
- Northwest United Protestant Church: Construction started 9/25/50. 3% complete.
- Westside United Protestant Church: Plans and specifications being revised.
- First Baptist Church: Plans and specifications being revised.
- Redeemer Lutheran Church: Construction started 8/21/50. 25% complete.
- Addition to Masonic Temple: Construction started 8/11/50. 40% complete.

The status of school construction is as follows:

- Chief Joseph Junior High School: Construction started 4/24/50. No called inspections as yet.
- Jason Lee Elementary School: Preliminary information furnished AEC.
- Columbia High School Addition: Building permit to be issued.

Progress on AEC-sponsored construction is as follows:

- Richland Swimming Pool: Building permit to be issued.

The status of Special Duties ESR's is as follows:

- 112-CH, Study Sagging Floors in M,Q,R,S Houses: 50% complete. Work progressing.
- 243-FW, Irrigation Ditch Fencing South of Carmichael Junior High School: Status to date issued by Baskette 9/18/50. Fair Price Estimate issued 9/29/50.
- 273-EC, Study Cause for Dampness Under 705 Building: Deferred.
- 314-CH, Re-wiring Tract House L-901: 30 per cent complete. Deferred.
- 303-CH, Study Excessive Settlement of Pre-cut House Floors: 40% complete. Deferred.
- 325-FW, Booster Pump Station, North Richland, Made Automatic: 30% complete. Deferred.
- 345-CF (Part II), Flayland Park - Prepare Plans to Provide Water, Sewer, Electricity: 95% complete. "As-built" plans to be prepared.
- 372-CH, Electrical Plan - Tenant-Erected Garages: 20% complete. Deferred.

Engineering and Contract Division (continued)

Status of Special Duties ESR's continued:

- 377-SS, Dismantling 700 Area Buildings: Information on removal of hutments behind 703 Building transmitted to Warburton 9/26/50.
- 379-CH, Interior Painting, Scheduling, Contracting: 15% complete. Deferred.
- 381-CF, Richland Bakery - Electric Meters: 75% complete. Awaiting completion of installation.
- 387-FW, Engineering for Public Address Services: Subcontractor started work 9/22/50.
- 389-CF (Part II) Utilities to Drive-In Restaurant: 90% complete. "As-built" drawings to be prepared.
- 425-CF (Part II) Utilities to Roller Rink: 20% complete. Awaiting information from lessee.
- 436-FW, Elevated Water Tanks Rust Prevention: 30% complete. Work progressing.
- 438-CH, Magnesium Anodes for Rust Elimination in Hot Water Tanks: 5% complete. Deferred.
- 454-CE, Project Proposal for Office Space for Community
- 453-CF, Recreation Hall Alteration: Awaiting information.
- 457-CF, Richland Fuel and Lumber Company - Electrical Study: 70% complete. Work progressing.

Lots were staked for Northwest United Protestant Church and for the Red Cross Building.

The following work was done on streets and storm sewers:

Curb and sidewalk on Lee Boulevard at railroad crossing were repaired. All streets were repaired ahead of the work of the seal-coat contractor.

Work done on grounds maintenance is as follows:

Ground maintenance responsibilities have been transferred from this division during the month. Maintenance material on hand has been transferred to groups now responsible for ground maintenance.

Traffic control report is as follows:

Traffic counts were taken. Cross walks were painted at schools and some center-striping was done.

Site Development - U. S. Army, North Richland:

Personnel from the Army installation at North Richland requested technical assistance in their site grading problems. Help was given them on types of plant

1208557

Engineering and Contracts Division (continued)

Site Development - U. S. Army, North Richland (continued)

material adapted to their area and on methods for handling their particular problem of irrigation and turfing. Possible locations for a top-soil pit were also reviewed with them.

No reports were received during the month on additional cost due to poor design and construction.

"S" PROJECTS

- S-244 "Fencing Irrigation Ditch--Wright to Van Giesen" - Project proposal completed with approval signatures. Awaiting appropriation request.
- S-255-D "Parking Lot - Columbia Play-field" - Field Release No. 2 issued 9/20/50. Site grading nearing completion.
- S-269 "Fencing Water Recharge Basins" - Cost report issued 9/26/50.
- S-290 "Automatic Traffic Signals" - Subcontractor awaiting materials.
- S-299 "Radio Communication - Fire Division" - Original specifications approved.
- S-307 "8-inch Water Main and Fire Hydrant - Guthrie Avenue" - Specifications revised 9/7/50.
- S-311 "722-A Remodeling" - Excess material picked up. Completion report pending credit for excessed material.
- S-321 "Valve Pit Re-arrangement - Dormitories" - Final specifications issued 9/12/50.
- S-333 "Air-conditioning Controls in Dormitories" - Field Release No. 2 issued 9/28/50.
- S-342 "Repair Roof Over New Wing of 703 Building" - Construction started 9/25/50.
- S-349 "Interior Painting - 703 Building" - Cost report issued 9/11/50; two cost reports issued 9/25/50. Work progressing. Job approximately 50% complete.
- S-350 "Improved Lighting - 705 Building" - Field Release No. 1 issued 9/22/50.
- S-355-CA "Relocation of Castle Club" - Awaiting further information from Manager, Municipal, Real Estate & General Services Divisions.
- S-366 "Exterior Painting - Hospital and Medical-Dental Building" - Awaiting decision on contract procedure.
- S-393-FW "Coal Car Mover" - Work order approved by R. J. Pederson.
- S-394-DC "Moving Metal Hutment #1" - Restaked location.
- S-397 "Radio Communication - Public Works and Housing Divisions" - Returned for additional information.

Engineering and Contracts Division (continued)

- S-405-B "Street Tree Planting" - Project approved by A & B Committee.
- S-406-CA "Fence Around Barth Play Lot" - Plans and specifications ready for sub-contract documents.
- S-413-FW "Salt Storage - 784 Boiler House" - Suspended by R. J. Pederson.
- S-430 "Exterior Painting - Catholic and Central United Protestant Churches" - Field Release No. 1 issued 9/11/50.
- S-432 "Extension of Swift Boulevard to By-pass Highway" - Project approved by A & B Committee.

"C" PROJECTS

- C-233-A "Spalding Elementary School" - Irrigation system is 90% complete; lawn seeding 75% complete. All grass is seeded; some clean-up work, patching, restoration of grade, and maintenance still remains to be done.
- C-232-A "Carmichael Junior High School" - All 4" mains are complete with the exception of about 100 feet. 30% of lateral system is installed. Back-filling and settling of ground is in progress. Lawn seeding will start 10/1/50.
- C-282-R "Grass Seeding" - Memorial Park area east, north, and west of cemetery has been completed. Charges on this area are now made to Maintenance.
- C-285-CH "Asbestos Siding - A & J Houses": Project proposal and appropriation request submitted to Root 9/6/50, approved by A & B Committee, and forwarded to the AEC for approval.
- C-351 "Irrigation of Public Grounds": Directive modification requested 9/29/50 to extend completion. Rough grading of Columbia Parking Lot is complete. Work has started on tapping of mains at Columbia High School. Site grading is in progress here and at Frankfort Play Lot. Construction schedule for areas will be governed by size of pipe received by subcontractor. Pipe shipments are slow.
- C-356 "Recreational Facilities--Schools and Parks": Addendum #1 to specifications for fence and backstop at Columbia Baseball Field issued 9/25/50. Directive modification requested 9/25/50 to extend completion date. Installation of drinking fountain at Jefferson Park started 9/26/50.
- 356-CH "Relief Valves--Residential Water Heaters": Letter and project proposal forwarded to Nucleonics Safety Council 9/22/50.
- C-359 "Duane Avenue Street Improvement": Notice to proceed issued 9/6/50. Construction started 9/18/50 on storm drainage. Storm sewer to Wellsian Way has been installed and backfilled.
- C-367 "Moving Ten Prefabs From Columbia Camp to Richland": Work Requests Nos. 3 and 4 issued 9/6/50; Nos. 5, 6, and 7 issued 9/8/50; cost report issued 9/15/50 and 9/19/50. All foundations completed and prefabs moved to new sites. Sewer main installation started. Work is about 45% complete.

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Engineering and Contracts Division (continued)

- C-363 "Exterior Rehabilitation of Prefabs": Appropriation requested submitted to Root 9/6/50. Repair of foundation posts continuing. Approximately 30% of houses completed. Relocation of stop and waste completed on approximately 200 houses. Bid opening scheduled for 10/19/50.
- C-372 "Exterior Painting 141 Houses, 24 Dormitories, and Buildings 770, 770-A, and 770-B": Contract approved 9/18/50; notice to proceed issued 9/19/50. Subcontractor began work 9/22/50. Directive modification requested 9/25/50 to decrease funds and extend completion date.
- C-374 "Casey Street Improvement": Notice to proceed issued 9/6/50; construction started 9/12. Work is approximately 38% complete.
- C-376 "Irrigation Laterals--Carmichael and Spalding Schools": Directive modification requested 9/29/50 to extend completion date.
- C-386 "1950 Street Patching and Seal Coating": Field Release #2 issued 9/20/50.
- C-387 "Interior Painting of Dormitories": Specifications issued.
- C-400 "Re-roofing, Painting, and Siding--700 Area Buildings": Cost estimate and other parts of project proposal revised 9/5/50 and submitted to B. R. Hennigar 9/6; approved by A & B Committee and AEC. Plans and specifications approximately 75% complete.
- 404-FW "Shelterbelt Planting and Irrigation": Project proposal and appropriation request submitted to Root 9/5/50. Project proposal returned for revision in scope of work; to be re-submitted 10/12/50.

Suspense Item:

- 7856 Work Order F-03527, Site Grading--Columbia Playfield:
Drainage has been installed in this area and is complete. Grading is complete with the exception of some finish grading in the infield on the fence line and along the flow lines of drainage ditches. Because of the salty and sterile condition of the soil which has been encountered on the new grade, considerable soil-conditioning will be necessary.

MUNICIPAL DIVISIONS

SUMMARY

ORGANIZATION AND PERSONNEL:

	<u>Beginning of Month*</u>		<u>End of Month</u>	
	<u>Exempt</u>	<u>Non-Exempt</u>	<u>Exempt</u>	<u>Non-Exempt</u>
Administrative			2	1
Fire			57	1
Parks & Recreation			9	23
Patrol			15	31
Public Works			20	118
Public Safety			2	1

* The Municipal Divisions as such, were not organized until September 18, 1950, and for that reason there are no figures available before that date.

C. F. Barnes, Superintendent of the Parks & Recreation Division, attended the National Congress of Park Executives in Dallas from September 18 to September 22, 1950.

D. H. Berst and R. E. Anderson left September 29, 1950 to attend the National Recreation Congress in Cleveland, Ohio.

GENERAL INFORMATION

A policy was established regarding the use of patrolmen at the Columbia High School Football Stadium on the nights of High School Football games, which policy in principle will be followed at all public gatherings, unless unusual circumstances deem otherwise. It was established that periodic checks will be made of the stadium throughout the evening by the regular patrol car on duty. It was also deemed advisable to install a phone in the press box overlooking the stadium area in the event of an emergency outside, contact could be made available. In regard to controlling the parking situation at the stadium, it was decided that the patrolman on duty would assume full responsibility in controlling traffic and parking facilities. In the event it is deemed advisable by the Patrol Chief, patrolmen could be assigned to the stadium at such times as large gatherings might warrant such assignment.

Requests have been received for permission to park trailers within the parking compounds in the commercial area. These requests have been refused in as much as the use of these facilities for such parking would create a traffic hazard and because parking is limited within the business district. It was felt that by allowing the parking lots to be used by individual organizations in conducting their programs, an undesirable precedent would be established.

PUBLIC WORKS DIVISIONS
MONTHLY REPORT
SEPTEMBER 30, 1950

ORGANIZATION AND PERSONNEL

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
Number of employees on payroll:			
August 31, 1950	58	382	440
September 30, 1950	20	118	138

Personnel changes made during month:

New employees	3
Transfers from Transportation	2
Transfers from D & C	1
Transfers from Parks and Recreations	1
Transfers to "S" Division	5
Transfers to Plant Security and Service	1
Transfers to Power	1
Transfers to Health Instrument	1
Transfers to Manufacturing Maintenance	2
Leave of Absence	1
Terminations	23

The balance of personnel changes during the month are absorbed in the re-organization that took place 9-18-50, within the Community Divisions.

GENERAL

The entire organization of Community Public Works was extensively affected by the re-organization of Community Divisions as became effective on September 18th, 1950. The reports herein-after presented include a recording of personnel and performances prior to September 18th and representing Community Public Works. For that part of September following the 18th, the activities are recorded and the organization represented as they now pertain to the Public Works Division of the Municipal Divisions.

Municipal - Public Works Division

OPERATION AND MAINTENANCE DIVISION
MAINTENANCE SECTION

SEPTEMBER 1, 1950 THRU SEPTEMBER 17, 1950

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
<u>Organization and Personnel</u>			
August 31, 1950	19	185	204
September 17, 1950	19	182	201

Personnel changes made during above period:

Transfers to Manufacturing Maintenance		2	
Terminations		1	

Miscellaneous

Renovations of vacant houses completed during this period amounted to a total of 40 orders; 28 of these being conventional houses and the remainder (12) prefab houses. Work on these houses included 30 complete paint jobs, 6 partial paint jobs and miscellaneous repairs and cleaning as required to raise these houses to accepted standards. There are 40 open orders at the close of this period.

A total of 21 houses were completed on the interior paint program, this work also including carpentry repair as necessary preparation to application of paint. Interior painting of W-10 was completed in the early part of September. Kitchens were painted in 10 A and J houses.

Project S-349, the interior painting of Building 703 is progressing satisfactorily and on schedule.

Replacement of faulty timbers in prefab foundations, which work is part of the prefab rehabilitation project, was completed on 66 houses. Water service and stop and waste valve revisions, also in connection with this project were completed in 31 prefabs.

Replacement of cracked or leaking concrete bath tubs with metal tubs was completed in 31 houses and tile board installed in the tub recess immediately following. In addition to these tile board installations, tile board was installed in 54 houses where it was not necessary to replace tubs, making a grand total of 85 tile completions.

Re-nailing of siding, replacement of deteriorated boards and other exterior repair as necessary in preparation for painting of Kadlec Hospital and Medical-Dental Clinic was performed during this period and involved an expenditure of 414 man hours.

Municipal - Public Works Division

Miscellaneous (Continued)

The annual inspection and repair of ranch house furnaces was completed, and this same work is in process in A and J and precut houses being about 75% complete at close of this period.

Necessary work to provide water and sewer service for 10 prefabs which were moved to Richland from Columbia Camp was completed, and these same services were also provided for Meyer's Drive-Inn and L. D. S. church site.

Heating system revisions were completed in motor room of 1131 Garage, the work involving installation of additional radiators and blowers as necessary to properly heat this area.

The overhaul of pump at Columbia Field Pump House was completed and the pump is now back in service.

Installation of steam meters was completed at Carmichael and Columbia Schools, which buildings are served by the Central Heating Plant.

Twelve shower stalls were fabricated and installed in prefab houses.

Three hutments were moved from the 700 Area to a site on Wellsian Way (as prepared by Richland School District), the only remaining work on this project being the clean-up of area at former location.

Miscellaneous work completed during this period includes replacement of 9 electric water heaters, 5 kitchen sinks and 1 wash basin; repair or replacement of linoleum on 68 floors and 37 sink boards; sealing and re-caulking of linoleum edge around 23 sinks; repair, upholstery and finishing of 13 chairs and 3 davenos.

Service Order Group

A total of 1215 service orders were completed during the period covered by this report - 94.1% for housing, 2% for Commercial Facilities, 1.1% for Public Works, .3% for general, and 2% for various other divisions.

Following is status of service orders at end of period:

On hand September 1, 1950	197
Receiving during month	1218
Completed during month	1215
On hand September 18, 1950	200

Municipal - Public Works Division

MAINTENANCE SECTION

SEPTEMBER 18, 1950 THRU SEPTEMBER 30, 1950

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
<u>Organization and Personnel</u>			
Number of Employees on Payroll:			
September 18, 1950	19	182	201
September 30, 1950	4	22	26
Personnel changes made during the above period:			
Received on Transfer from Village Labor	1	10	
Transfers to General Services	6	34	
Transfers to Real Estate	9	113	
Transfers to Parks and Recreations	1	3	

Miscellaneous

The Maintenance Section - Public Works Division, Municipal Divisions was organized and commenced operation on September 18, 1950. Headquarters were established in the Public Works Yard on north side of Knight Avenue with the general foreman located in 722-J, the crafts section in 722-G, pipe section in 722-V, and the labor section in 722-W.

Routine maintenance of the irrigation system was carried on and amounted to a total of 123 man hours.

Sewage Treatment Plant digester coils were hydrostatically tested, and one badly deteriorated coil was replaced. These coils are in process of being sandblasted and will then be painted and returned into service.

An expanded metal screen was fabricated and installed at Sewage Treatment Plant transformer bank for the purpose of eliminating the possibility of a stream of water contacting the primary side of transformers and carrying current back to man using hose for cleaning purposes.

Motor for No. 2 pump at sewage plant was removed, taken to electrical shop for repair, and returned to service.

Check valve on No. 12 well was repaired.

A 2-1/2" irrigation riser and line were installed at Columbia Field to control dust during work in progress at this area.

Municipal - Public Works Division

Miscellaneous (Continued)

A hot water heater was installed and necessary plumbing work was performed at 1125 Warehouse, which building is now occupied by Parks and Recreation Division.

A concrete sidewalk was installed on Greenway between post-office and the Seattle First National Bank.

Work performed for Parks and Recreation included installation of concrete storm drains and grills at Columbia Playfield, winterizing of swimming pool, and the covering of all sewer vents at Riverside Park with protective screens to eliminate possibility of children dropping stones, etc., down these vents and stopping sewer lines, and installation of a 2-1/2" irrigation riser and line for dust control during construction work at Columbia Field. Work now in process for this same Division included installation of drinking fountain at Jefferson Playground and fabrication of picnic tables.

Work performed for General Services Divisions included partial installation of hand rails at 722-A, repair of blue print machine in 760 Building, and 3.4 man hours spent cutting stainless steel for Stores Division.

Spray paint work completed includes 7 miles of center-striping and 20 cross-walk lanes.

Routine maintenance and installation of traffic and street marker signs was carried on by this group as necessary.

LABOR SECTION

SEPTEMBER 1, 1950 THRU SEPTEMBER 17, 1950

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
<u>Organization and Personnel</u>			
Number of Employees on Payroll:			
August 31, 1950	9	125	134
September 17, 1950	9	106	115
Personnel Changes Made During above period:			
New Employees		1	
Terminations		16	

Municipal - Public Works Division

Personnel Changes Made During Period (Continued)

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
Transferred from Transportation		2	
Transferred to "S" Division		3	
Transferred to Transportation		1	
Transferred to Plant Security - Patrol		1	
Leave of Absence		1	

Miscellaneous

Sanitation crews continued operation through the 17th of September as they have been doing since August 14, when the new routes and zone system was put into effect. The six day collection of refuse from restaurants and stores continued through September 17th.

Miscellaneous labor crews completed several excavation and backfill jobs up to and including the 17th of the month. The entire personnel and equipment of this crew was transferred to H. M. Armstrong on the 18th of September.

Irrigation of Public Areas continued to the 17th of September with approximately the same force. The night watering crew was discontinued the 17th of September. Parks and Recreation took over the responsibility after this time.

Routine maintenance of streets and outer roads continued satisfactorily. All step and walkway orders concerning residences were transferred to the Real Estate Division September 17th.

SANITATION AND EROSION CONTROL SECTION

SEPTEMBER 18, 1950 THRU SEPTEMBER 30, 1950

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
<u>Organization and Personnel</u>			
Number of Employees on Payroll:			
September 17, 1950	7	88	95
September 30, 1950	3	43	46

Municipal - Public Works Division

SANITATION AND EROSION CONTROL (CONTINUED)

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
Personnel Changes Made During Above Period:			
Transfers to "S" Division		2	
Transfers to Plant Security and Services		1	
Terminations		2	
Transfers to Real Estate		14	
Transfers to Maintenance	1	10	
Transfers to General Services		3	
Transfers to Parks and Recreations	2	13	
Transfers to Utilities	1		

Miscellaneous

Sanitation crews continued operation through the month of September as they have been doing since August 14, when the new routes and zone system were put into effect. The six day collection of refuse from restaurants and stores continued through September. The only change in operations was the transfer of the pit coverage responsibility to C. E. Zimmer. One heavy equipment operator and four pieces of equipment was also transferred to C. E. Zimmer.

Our forces took over the maintenance of grass on the dike from the drainage ditch north, the Sewage Disposal Plant and the 1182 Pump House.

The responsibility for the irrigation and general maintenance of orchards was placed in the Real Estate Division.

Work on Columbia Playfield is approximately 65% complete.

The Gowen Street dike section is all re-seeded where irrigation system was installed.

Mowing and burning of weed areas within the city limits is in progress. Some mowing and discing of the nursery has been done.

Municipal - Public Works Division

ROADS AND STREETS MAINTENANCE SECTION

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
<u>Organization and Personnel</u>			
Number of Employees on Payroll:			
September 17, 1950	2	16	18
September 30, 1950	2	16	18

Personnel Changes During Period:

Received on Transfer from Labor Section		2	
Transferred from Parks and Recreation		1	
Transferred to Maintenance		1	
Terminations		2	

Miscellaneous

Maintenance of roads, streets, parking compounds, and drives was carried on throughout this period as required.

Street sweeping throughout the Village was performed according to schedules for this work.

Grading of streets outside of city was done where required.

Parallel walks of both black-top and concrete were repaired as necessary.

Materials Used This Month

Pre-Mix:

Roads Maintenance	155	Tons
Parallel Walks	35.7	
Parking Compounds	22	
Steps and Service Walks	<u>18</u>	
Total	230.7	Tons

Bitumuls:

Used for all black top work	200	Gallons
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Municipal - Public Works Division

Materials Used This Month (Continued)

Gravel and Chips:

3/4" Minus Gravel - 761 Parking Lot	18	Cu. Yds.
Total	18	Cu. Yds.
3/4" Chips - Open Area Roads	6	Cu. Yds.
761 Parking Lot	164	" "
5/8" Chips - Roads	19	" "
Walks	4	" "
Compounds	37	" "
Total	230	Cu. Yds.

UTILITIES SECTION

	<u>EXEMPT</u>	<u>NON-EXEMPT</u>	<u>TOTAL</u>
--	---------------	-------------------	--------------

Organization and Personnel

Number of Employees on Payroll:

August 31, 1950	9	56	65
September 30, 1950	9	36	45

Personnel changes made during the month:

New Employees		1	
Received on Transfer from Labor Section	1		
Transferred to Power Division		1	
Transferred to General Services Division	1	20	

Steam Facilities (September 1 through September 17)

Routine normal operation of steam facilities were continued with one boiler in service. Steam supply to Columbia High School was put in service on September 5th. Installation of steam flow meters at Columbia High School and Carmichael Junior High School was completed on September 15th. After installation was completed it was necessary to calibrate instruments prior to putting them in service.

On September 18, 1950, the responsibilities for steam production and distribution were assigned to the General Services Divisions. Continuation of reports analysis and preparation has extended through the month pending organization development to handle the work in the General Services Divisions.

Municipal - Public Works Division

UTILITIES SECTION (CONTINUED)

Central Steam Plant

Steam Generated	11,846 M lbs.
Steam Sent Out	9,753 M lbs.
Coal Consumed	1,823 M lbs.

Domestic Water

Routine normal operations were continued throughout the month. Total water consumption for the month was 396 million gallons as compared to 296 million gallons for September, 1949.

The sand traps which were installed in our water supply lines from North Richland and Columbia Field wells have been operating very satisfactorily. There has been no trouble due to sand in the distribution system during the month.

Domestic Water System

	<u>Well Production</u> <u>Million Gallons</u>	<u>Avg. Daily</u> <u>Production</u>	<u>Total Consumption</u> <u>Million Gallons</u>	<u>Avg. Daily</u> <u>Consumption</u>
Richland	143.8103	4.7937	317.9685	10.5990
North Richland	170.9570	5.6986	48.7096	1.6237
Columbia Field	83.0252	2.7675		
300 Area			<u>29.4246</u>	<u>0.9808</u>
Totals	397.7925	13.2598	396.1027	13.2035

Sewerage System

Routine normal operations were carried on throughout the month. The digester mixer units at the #2 Plant were pulled to make some repairs to mixer propellers and install a new propeller on one of the units. One of the mixer shaft bearings was found to be worn badly and it was replaced. When re-installing the units some defect either in the repairs or from some other unknown source developed and one of the units failed to operate. Plans have been made with the Dorr Company, (suppliers of this equipment), to make some slight alterations to these units in the near future.

Municipal - Public Works Division

Sewerage System (Continued)

	<u>Sewerage</u>		
	Total Sewage Flow <u>Million Gallons</u>	Average Daily Flow <u>Million G.P.D.</u>	Average Rate Flow <u>Gals. per Min.</u>
Plant No. 1	42.600	1.420	985
Plant No. 2	<u>70.105</u>	<u>2.337</u>	<u>1621</u>
Totals	112.705	3.757	2606

Irrigation System

Operations have been normal throughout the month.

MUNICIPAL DIVISIONS
 PARKS AND RECREATION DIVISION
September, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of month		18
Additions	19*	
Terminations	<u>5**</u>	
End of Month		32

*Transferred from Public Works 9/18/50

** Summer recreation personnel

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of September 30, 1950:

Administration	6
Principals & Supervisors	15
Clerical	22
Teachers	249
Health Audiometer	1
Building Custodians	46
Cooks	32
Nursery School and Extended Day Care	11
Bus Drivers	2
Farm Manager	<u>1</u>
	385

Registration in School District #400 on September 5, 1950 was 5,878 students.

CLUBS AND ORGANIZATIONS

As of September 30, 1950, organizations' personnel include:

Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	2
Girl Scouts	2
Justice of the Peace	1
Y.W.C.A.	<u>1</u>
	9

The Recreation Advisory Committee held its regular monthly meeting on September 19. The minutes of the August 29 meeting were approved by the Atomic Energy Commission on September 13. The Committee was advised that the Northwest Pacific Carnival Company which was to present their show in Richland on September 20-25 under the sponsorship of the Junior Chamber of Commerce had cancelled this engagement due to the lack of a portable electric power plant.

Parks and Recreation

The remodeling of the old Richland Motors building into the Community Library was started on September 7, 1950, by the Murray Construction Company. This is scheduled for completion by December 1, 1950.

Richland Post #71 won the Taylor Trophy for the best program in traffic safety and second place in the Welsh Americanism Program at the annual State American Legion Convention held in Bellingham, Washington on Labor Day weekend.

The Red Cross Bloodmobile filled their quota of 100 pints of blood on their monthly visit to Richland on September 6, 1950.

On September 8, Project S-430 was approved by the Atomic Energy Commission for the painting of the exterior of the Catholic Church and the Central United Protestant Church.

On September 14, the "Book of Accomplishments" for "Schools - Additions and Improvements from September 1, 1946, to September 1, 1950" was completed.

Miss Grace Thompson assumed the Executive Director's position for the Y.W.C.A. on September 11, 1950. Miss Thompson's office is located in the Red Feather Building at 108 Falley.

On September 18, 1950, representatives of the Community Relations Division and the Parks and Recreation Division held a meeting to accept a bid for the printing of the "Guide to Richland". It was decided that the Republic Printing Company of Yakima should be awarded the contract to print 5,000 copies. The delivery date has not yet been determined.

The Richland Kennel Club held retriever trials in the Nelson Lake area on Sunday, September 24. Arrangements for this trial were made by the Recreation Division of the Parks and Recreation Division. Clearances were made through Atomic Energy Commission Safety and tenants living in that vicinity.

Equipment stored in the 2005 hutment on Leo Blvd. has been moved to the Parks and Recreation Warehouse #1125. Plans have been completed to use 2005 hutment for handcraft classes and as a meeting place for the community organizations.

Effective September 18, the Community - Activities Division became the Parks and Recreation Division under the Municipal Divisions. All real estate formerly handled in the Activities Division was transferred to the Real Estate Division. The maintenance of all park and recreation areas and equipment was assigned to the Parks and Recreation Division. All recreation and organizations not having real estate remain the responsibility of the Recreation Division of the Parks and Recreation Division.

RECREATION

On September 8, a play-off for the championship of the Triple "O" league was won by the Worn Out Wolves. Community was in second place and AEC #1 finished up in third place. The play-off and last few games of the season were played in the Memorial Softball Field.

Parks and Recreation

The Riverside Park Swimming Pool ceased operation for the winter months after September 4. The pool has been winterized and will be placed in operation May, 1951. The total attendance for the pool during the past summer 46,713.

The announcement for the indoor Adult Recreation Program was announced by the Recreation Division on September 14. The program begins on October 2, and will continue through March, 1951. The sessions scheduled are as follows and are held at Spalding Grade School:

Monday - 7:00 - 10:00 PM	Women's Sport Night - Gym
Tuesday " "	Men's Sport Night - Gym
Tuesday " "	Fencing - Gym Stage
Tuesday " "	Weightlifting - Room 302
Wednesday " "	Co-Recreation Night - Gym
Friday " "	Co-Recreation Night - Badminton - Gym
Friday " "	Men's Weightlifting - Room 302

The Fall Youth Program has been drawn up by the Recreation Division with the co-sponsors the Richland Youth Council. Classes will start October 14, 1950, and include instruction in finger painting, general arts, general crafts, leather, jewelry, metal, textile painting, drawing, weaving, plaster carving, marionettes, fly tying, woodcarving, and ceramics. The classes will be divided into three age groups: 6 - 9, 10 - 13, and 14 through high school age.

On September 30, the Junior Football School began and will continue for 9 Saturdays. Instructors for the courses are the high school coaches with the assistance of the Recreation Division. Two hundred boys attended the first session of the school.

PARK DEVELOPMENT AND MAINTENANCE

Irrigation installation at Spalding Playground was completed September 22. Grass seeding at Spalding Playground started August 22, and is in progress.

Irrigation installation at Carmichael Playground was started September 25, and is in progress.

Site work at Columbia Playfield was started July 17, and is in progress. Installation of the Parking Lot at Columbia Playfield was started September 12, and is in progress.

An Engineering Service Request was issued September 19, 1950, to stake the infield of the Memorial Softball Field in preparation for regrading and seeding.

On September 18, the Parks and Recreation Division assumed the direct maintenance of the park lands which entailed the transfer to that Division of maintenance crews and equipment and the setting up of a Park Maintenance headquarters in the 1125 Warehouse.

The Parks and Recreation Division issued 30 Work Orders and 12 Service Orders during the month of September.

Parks and Recreation Division

On September 18, 1950, procedures were set up for weekly inspections of all the parks, playgrounds, playlots, and playfields on a weekly basis. Inspection report sheets were prepared and the inspections of the areas were started. One copy of the inspection report was referred to the Maintenance Division with necessary work orders for completion of work as shown needed on inspection report. The original inspection report sheet is to be kept in the central files of the Parks and Recreation Division.

Special Events

1. Primary Election, September 12, 1950. Arranged for delivery of booths, voting boxes and flags to each voting place (total 29), also for pickup of same after election.
2. High School football game, September 15, 1950. Arranged for janitorial service before and after game.
3. Prepared and maintained the Memorial Softball Field during the Women's Regional Tournament held in Richland September 1 - 4, inclusive.
4. Made arrangements for: barricading parking area at north end of Columbia Playfield; Patrol assistance during games; janitor service before and after games; publication of available parking facilities, for the following games:

September 15 - High School vs. Wenatchee
September 30 - Jr. High School vs. Sunnyside Jr. High School
September 30 - Army vs. Ft. Lewis

MAJOR EVENTS DURING MONTH OF SEPTEMBER

September 1 - 4	Women's Regional Softball Tournament	Memorial Field
10	1950 Tri City Tennis Tournament	Riverside Park
15	Columbia High vx. Wenatchee - Football	Bomber Bowl
23	Army vs. Bremerton Naval Base - Football	Bomber Bowl
24	Richland Kennel Club Retriever Dog Trials	Nelson Lake
30	Jr. High vs. Sunnyside Jr. High - Football	Bomber Bowl
30	Army vs. Ft. Lewis - Football	Bomber Bowl

MUNICIPAL AND GENERAL SERVICES FIRE DIVISIONS

September 1950

Organization and Personnel:

	<u>Richland</u>	<u>North Richland</u>
Number of Employees on Payroll	55	41
Transfers to Other Divisions	0	- 1
Transfers From North Richland	<u>3</u>	<u>- 3</u>
End of The Month	58	37*

* North Richland fire protection became a responsibility of the General Services Division on September 18th, thereafter operating as a separate unit from Richland.

Response To Alarms	14	17
Fire Loss (Estimated) Hanford Works	\$ 18.00	\$ 5.00
Personal	104.50	115.45*
Investigation of Minor Fires and Incidents	16	3
Safety or Security Meetings	12	4
Inside Drills or Schools	49	13
Outside Drills	68	62
Fire Alarm Boxes Tested	183	74

* Includes U. S. Army estimate of \$100.00 damage to Army truck.

Miscellaneous Fire Department Activities:

First aid class held for 13 men of Utilities Division.

A chlorine gas mask serviced for D & C Division.

Flag pole ropes replaced by Truck Co. at Carmichael, Jefferson, Sacajawea and Marcus Whitman Schools.

A group of 15 Cub Scouts conducted on a tour of No. 1 fire station.

All fire alarm boxes in North Richland Army barracks tested after electrical adjustments made in effort to eliminate accidental alarms.

One North Richland fireman reported to Kadlec Hospital to donate blood.

Richland Fire Prevention

Fire Inspections:

700 Area Buildings	36
1100 Area Buildings	29
Commercial Facilities	21
Schools	4
Clubs	2
Homes	4
New Construction	9
AEC Airport Buildings	5

Fire Extinguishers:

Inspected	252
Installed	24
Removed	19
Refilled	8
Winterized	6

1.

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Fire Exit Drills and Tests:

Evacuation drills observed on September 12th in Carmichael School and September 22nd in 762 Building.

Evacuation alarm tested in 703 Building on Sunday, September 22nd.

Demonstration and Lectures:

Fire extinguisher demonstrations held for 60 employees of Commercial Facilities and Community Engineering Divisions and for 14 employees of D & C Separations Division.

Fire prevention talks delivered to 50 employees of Kadlec Hospital and 27 employees of Community Accounting Division.

Fire Prevention Week Planning:

Attended various meetings, obtained 30,000 pieces of promotional material and ordered special signs in preparation for Chamber of Commerce sponsorship of Fire Prevention Week.

Miscellaneous Activities:

Alterations to Building 703 were inspected. Recommendations made for ceiling and sprinkler coverage of unfinished rooms used as storage closets.

Preliminary arrangements made for flush-testing Kadlec Hospital sprinkler systems.

Fire extinguishers removed from former Richland Motors building because of remodelling operations by a sub-contractor.

Assisted Community Engineer staff on final acceptance inspections of School Agricultural building, Church of Christ; C & H Uptown Market, Uptown Theatre, Joseph's uptown buildings, additions to Ernie's Restaurant and Gerdes' Service Station.

Inspected 703 Building sprinkler systems and reviewed plans for system for new D Wing at Kadlec Hospital.

Recommended relocation of trash wagons at safe distance from facility and school buildings.

Efforts made to establish a lane for emergency vehicles between 760 Building and construction fence.

MUNICIPAL DIVISIONS

RICHLAND PATROL

SEPTEMBER 1950

ORGANIZATION AND PERSONNEL

	<u>September</u>
Number of employees on payroll:	
Beginning of month	69
End of month	<u>46</u>
Net Decrease:	23
Reason:	
1 V. T. Personal	
1 Removed from Roll - Personal Illness	
1 Deceased	
20 Transferred to General Services Division	

GENERAL

On September 18, 1950, the reorganization of the Community Divisions became effective. Coinciding with this change, the Community Patrol Division was divided to comprise two groups - Richland and North Richland. The latter group becoming a part of the General Services Division and the Richland Patrol becoming a part of the Municipal Divisions. Effective this date Capt. C. H. Overdahl and all personnel assigned to the North Richland Patrol were transferred to the General Services Division as indicated above.

Effective September 18, 1950, the Richland Patrol Division became responsible for patrolling the following outlined area: from the Columbia River on the east to the Yakima River on the west; to the Yakima River on the south and to Snyder Road on the North. Periodic checks of Burlin Park will also be made.

Community Patrol was instrumental in the publishing of a Patrol pamphlet called "Here's Community Patrol" on September 15, 1950, and the booklet was mailed to each resident in Richland at that time. The booklet outlined the objectives of the Patrol Division and requested the help of citizens in curbing crime and violations and suggested many ways in which their help could be rendered to the benefit of the Patrol and the Community as a whole. Plans are to mail the booklet to each new resident after they have had the opportunity to establish themselves.

Effective September 18, 1950, Saturday duty officer coverage was discontinued.

A group of Cub Scouts was shown through Patrol Headquarters on September 19, 1950.

Capt. J. S. Johnson of the Crime Prevention Section gave talks to the Mens Lutheran Group on September 25 and 27.

On September 25, 1950, Patrol began routine checks of the 1125 Warehouse.

During the month several new businesses were added to the list of facilities to be checked by routine Patrol.

Effective with the September issue of the Washington State Patrol monthly traffic report, Richland is included in the report along with other Washington cities.

Richland Patrol - Continued

During the month, 125 traffic violation reports were received compared to 102 last month. These consisted mainly of speeding, illegal parking, accidents, and negligent driving. A total of 107 other reports were received compared to 180 last month. These consisted mainly of Petit Larceny and Prowlers.

During the month, a total of 111 letters were received compared to 77 last month. These consisted of 106 inquiries on arrests and 5 requests for assistance.

During the month, 36 prisoners were processed through the Richland Jail.

During the month, 44 gun registrations were recorded.

During the month, 58 bicycle registrations were recorded.

TRAFFIC

There were 17 reportable accidents in Richland during September. An increase of four over the month of August. Of these 17 accidents, one resulted in a major injury requiring hospitalization and two resulted in minor injuries requiring first aid treatment. The number of injuries were the same as the previous month.

Three of the above accidents were caused as a result of reckless driving, four were caused as a result of negligent operation, two were caused by failure to yield right of way, six were caused by other traffic violations and two drivers failed to stop at the scene of the accident and make their identity known.

There were six reportable accidents in North Richland for the month of September, resulting in one minor injury requiring first aid treatment.

There were no fatalities for the month of September as a result of traffic accidents in Richland or North Richland.

Property damage as a result of traffic accidents increased \$2,514.00 over the previous month.

School Boy Patrol groups were organized at the six grade schools and the Carmichael Junior High School during the month and all of these groups have been outfitted with the necessary Patrol equipment.

Eight meetings have been held with the Patrol groups by a member of the traffic section to help them become familiar with their duties at the crosswalks.

All crosswalks in need of renewing were painted during the month. Two additional crosswalks were painted at Jadwin and Van Giesen to enable school children to cross at this intersection.

The center lining of numerous streets was renewed during the month.

A survey of traffic safety hazards, resulting from trees and shrubbery obstructing the visibility of motorists at intersections and blocking the visibility of traffic control signs, was made and steps taken to have them trimmed or removed.

There was one traffic safety lecture given on request and a safety film was shown.

Traffic flow on the main arterials remained fairly even throughout the month.

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Richland Patrol - Continued

TRAINING

Capt. W. A. Ziegler and Lt. J. K. Holmes of the Richland Patrol attended an F. B. I. Training School at Fort Lewis, Washington, from September 11 through 22.

Subjects covered in the lieutenant's training classes for the month of September were as follows:

- Public Relations
- Conduct of an Officer
- Courtesy
- Routine Patrol
- Report Writing

Advance training for Patrol members at the small arms range for the period in field instruction was as follows:

Pistol 1 hour

Qualifications on the F. B. I. Course were as follows:

Unqualified	3	27%
Marksmen	3	27%
Sharpshooter	4	36%
Expert	1	10%

Qualifications on the Army-L Course were as follows:

Expert 2 100%

A total of 13 men reported to the Range for training.

ACTIVITIES AND SERVICES (RICHLAND)

	<u>July</u>	<u>August</u>	<u>September</u>
Check on absentees	1	2	1
Persons assisted *	225	139	135
Doors and windows found open	46	103	24
Lost and found children	17	10	21
Ambulance runs	20	25	21
Lost dogs reported	6	2	0
Dog, cat, loose stock complaints	43	60	35
Persons injured by dogs	13	13	8
Bank escorts and details	40	46	37
Fires investigated	25	20	15
Miscellaneous escorts	10	11	37
Complaints investigated	56	46	39
Natural deaths reported	1	0	1
Lost and found articles	<u>34</u>	<u>36</u>	<u>19</u>
Totals	537	513	393

* Includes: Assisting other departments, assisting outside police agencies, assisting private persons, delivering emergency messages, etc.

Richland Patrol - Continued

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	<u>July</u>	<u>August</u>	<u>September</u>
Check on absentees	0	0	0
Persons Assisted*	104	80	144
Doors and windows found open	48	28	54
Lost and found children	0	3	6
Ambulance runs	5	1	1
Lost dogs reported	0	0	0
Dog, cat, loose stock complaints	3	1	15
Persons injured by dogs	1	0	0
Bank escorts and details	4	0	0
Fires investigated	17	12	14
Miscellaneous escorts	5	3	4
Complaints investigated	1	5	0
Natural deaths reported	0	0	0
Lost and found articles	0	0	7
Totals	188	133	245

* Includes: Assisting other department, assisting outside police agencies, assisting private persons, delivering emergency messages, etc.

PATROL DIVISION - TRAFFIC CONTROL STATISTICS

September, 1950

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	13	17	0	0	0	1	3	2
North Richland	6	6	0	0	1	0	1	1
Totals	19	23	0	0	1	1	4	3

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	2	4	4	2	1	3	6	8
North Richland	1	0	1	2	0	1	4	3
Totals	3	4	5	4	1	4	10	11

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	1	0	3	2	30	51	4	2	18	6	1	0	57	61
North Rich.	0	0	0	0	29	31	0	0	0	0	0	0	29	31
Totals	1	0	3	2	59	82	4	2	18	6	1	0	86	92

TRAFFIC CHARGES AND COURT CITATION TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Drunken Dr.		Reckless Dr.		Right of Way V.		Neg. Dr.		Parking V.		Other V.	
	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.	Aug.	Sept.
Richland	17	41	7	8	2	0	2	5	2	3	11	14	25	15	22	22
N. Rich.	1	3	2	5	0	3	0	1	1	2	1	1	0	0	6	6
Totals	18	44	9	13	2	3	2	6	3	5	12	15	25	15	28	28

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on 9-22-50, at the intersection of Swift Boulevard and Stevens Drive - 5,342 Motor Vehicles.

Note: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

RICHLAND PATROL DIVISION
RICHLAND JUSTICE COURT CASES

SEPTEMBER 1950

VIOLATION	NO OF CASES	NO OF CONV	NO OF FORF	NO OF FORF	CASES CON'IT	CASES PEND	CASES DISM	WARR ISS	SERV'T JAIL	SERV'T SUSP	LIC REV	CAGES IN PREV MONTHS	CAGES INCL OTHER VIOL.	BAIL FORF	FINES	FINES SUSP
Dr Lic.	13	9	2					2				1	5	\$ 10.00	\$ 45.00	\$ 32.50
Def Equip.	2	2										1	2		17.50	
F.F.S.A.I.	1	1										1	1		47.50	30.00
F.F.Y.R.O.W.	4	4						4				4	2	15.50	35.00	31.50
Ill Park.	20	10	4		1		1					1	1	10.00	10.00	
Imp Pass.	3	2	1									1	1			
Lic Plates	1	1										4	1			
Neg Dr.	19	11	4		2		2				3	4	1	97.50	222.50	55.00
Reck Dr.	4	3			1							3		305.00	127.50	
Speeding	43	17	24		2							3		16.50	192.50	7.50
Stop Sign	8	5	3									3		30.00	30.00	5.00
Illeg U Turn	3	1			1			1				4			5.00	
Drk. & Dis.	1	1													12.50	
Inter. Pub. Off.	1	1							1							
Petit Larveny	3	3													67.50	
Pub Intox.	5	3							1					25.00	42.50	12.50
Pub Nuis.	9	9	2						1						180.00	27.50
Resis Pub Off.	2	2														
Ind Lib With Minor	(Taken to Superior Court)												2			
2nd Deg Assault	1	1			1										12.50	
3rd Deg Assault	1	1													12.50	
Vagrancy	3	3							1						35.00	
TOTALS:	147	89	40	8	1	9	3	15	13	\$479.50	\$1082.50	\$214.00				

NOTE: 1 Reckless Dr. case, reduced to Negligent Dr.
1 Reckless Dr. case, change of Venue to C.T. Morbeck's Court.

NORTH RICHLAND PA'ROL DIVISION
NORTH RICHLAND JUSTICE COURT CASES

SEPTEMBER 1950

VIOLATION	NO OF CASES	NO OF CONV	NO OF FORF	NO OF CON'T	CASES PEND	CASES DISM	WARR ISS	SEN'T JAIL	SEN'T SUSP	LIC FEV	CASES INCL		BAIL FORF	FINES	
											CASES ORIG	OTHER VIOL		FINES	SUSP
Dr. Lic.	7	4		2			1			3	2		\$	\$ 25.00	\$ 12.50
Drunk Dr.	3	3												207.50	50.00
F.T.Y.R.O.W.	2	1		1										12.50	12.50
Ill. Parking	1	1												7.50	7.50
Ill. U Turn	1	1									1				
Neg. Driving	1	1											27.50		
Reck. Driving	1	1								1				52.50	
Speeding	4	4												50.00	
Stop Sign	3	1	2										10.00	5.00	
Public Intox.	6	4	2					1	1				30.00	57.50	17.50
Public Nuis.	2	1		1							1			17.50	
3rd Degree Assault	1	1													
Vagrancy	1	1													
TOTALS:	33	23	5	4		1	3	3	3	4	3	3	\$67.50	\$435.00	\$100.00

MONTHLY REPORT
RICHLAND PATROL DIVISION
SEPTEMBER, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
<u>PART I</u>				
1. Murder	0	0	0	0
2. Rape	0	0	0	0
3. Robbery	0	0	0	0
4. Aggravated Assault	0	0	0	0
5. Burglary-Break & Enter.	2	0	0	1
6. Larceny-Over \$50.00	3	0	0	1
Larceny-Under \$50.00	15	0	2	7
Bicycle Theft	17	0	0	17
7. Auto Theft	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL PART I CASES	37	0	2	26

<u>PART II</u>				
8. Other Assaults	2	1	1	0
9. Forgery & Counterfeit.	2	0	2	0
10. Embezzlement & Fraud	0	0	0	0
11. Stolen Prop:Buy:rec:poss:	1	0	1	0
12. Weapons:Carrying:poss:	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offenses	1	0	1	0
15. Offense Ag.Fam. & Child.	5	0	2	3
16. Narcotics-Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	5	0	5	0
19. Disorderly Conduct	7	0	2	5
20. Vagrancy	3	0	3	0
21. Gambling	0	0	0	0
22. Driving While Intoxicated	0	0	0	0
23. Violation Rd. & Dr. Laws:				
Speeding	36	0	36	0
Stop Sign	7	0	7	0
Reckless Driving	4	0	4	0
Right of Way	2	0	2	0
Negligent Driving	16	0	16	0
Defective Equipment	2	0	2	0
24. Parking	14	0	14	0
25. All Other Traffic Viol.	6	0	6	0
26. All Other Offenses:				
Public Nuisance	9	0	9	0
Prowlers	3	0	0	3
Pickup For Outside Agency	0	0	0	0
Dest. of Pers. Prop.	2	0	0	2
Malicious Mischief	3	1	1	0
Vandalism	4	0	1	0
Dog Nuisance	6	0	0	6
Car Prowl	1	0	0	1
27. Suspicion	<u>9</u>	<u>0</u>	<u>0</u>	<u>9</u>
TOTAL PART II CASES	150	2	115	29

(Continued on Page Two)

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PAGE TWO—MONTHLY REPORT, RICHLAND PATROL DIVISION—SEPTEMBER, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
<u>PART III</u>				
28. Missing Persons	7	0	0	7
Lost Persons	11	0	0	11
Lost Animals	1	0	0	1
Lost Property	3	0	0	3
29. Found Persons	10	0	0	10
Found Animals	4	0	0	4
Found Property	<u>18</u>	<u>0</u>	<u>0</u>	<u>18</u>
TOTAL PART III CASES	54	0	0	54
<u>PART IV</u>				
30. Fatal Mot.Veh.Traf.Acc.	0	0	0	0
31. Pers.Inj.Mot.Veh.Traf.Acc.	3			
32. Prop.Dam.Mot.Veh.Acc.	14			
33. Other Traffic Acc.	3			
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents				
38. Dog Bites	6	0	0	6
39. Suicides	1	0	0	1
40. Suicide Attempts	0	0	0	0
41. Sudden Death & Bodies Found	0	0	0	0
42. Sick Cared For	0	0	0	0
43. Mental Cases	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL PART IV CASES	27	0	0	7
COMPOSITE TOTALS				
PARTS I,II,III,IV CASES	268	2	117	116

Value of Property Recovered \$264.50

*Cases listed under "Cleared Other" are those cleared by various means other than arrest, such as: orders from prosecutor, juvenile probation officer or other situations in which a mutual agreement is obtained. They are definitely "cleared" cases and differ from the arrest column only in that there are no arrests.

JUVENILES INVOLVED

Larceny Over \$50.00—1 Case 1 Juv. Age 17. (Male)

Larceny Under \$50.00—4 cases 6 Juv. Ages, 3,5,6,7,9, and 17.(4 Males 2 Female)

Forgery—2 Cases, 1 Juv. Age 15(Male)

Vandalism—1 Case, 1 Juv. Age 13(Male)

Disorderly Conduct—2 Cases, 4 Juv. Ages 6,12,14, & 15.(All Females)

Note: 1 Grand Larceny and 3 Petit Larceny cases occurred in 1949, but were cleared this month.

1 Colored Person Involved.

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MONTHLY REPORT
NORTH RICHLAND PATROL DIVISION
SEPTEMBER, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
<u>PART I</u>				
1. Murder	0	0	0	0
2. Rape	0	0	0	0
3. Robbery	0	0	0	0
4. Aggravated Assault	0	0	0	0
5. Burglary Break. & Enter.	2	1	0	1
6. Larceny—Over \$50.00	1	0	0	0
Larceny—Under \$50.00	6	1	0	1
Bicycle Theft	1	0	0	1
7. Auto Theft	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL PART I CASES	10	2	0	3
<u>PART II</u>				
8. Other Assaults	1	0	1	0
9. Forgery & Counterfeit	0	0	0	0
10. Embezzlement & Fraud	1	0	0	1
11. Stolen Prop:buy:rec:poss:	1	0	0	1
12. Weapons:Carrying:poss:	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offenses	0	0	0	0
15. Offenses Ag.F m. & Child.	0	0	0	0
16. Narcotics-Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	6	0	6	0
19. Disorderly Conduct	2	0	2	0
20. Vagrancy	1	0	1	0
21. Gambling	0	0	0	0
22. Driving While Intoxicated	3	0	3	0
23. Violation Rd. & Dr. Laws:				
Speeding	4	0	4	0
Stop Sign	3	0	3	0
Reckless Driving	1	0	1	0
Right of Way	2	0	2	0
Negligent Driving	1	0	1	0
Defective Equipment	0	0	0	0
24. Parking	0	0	0	0
25. Other Traffic Violations	4	0	4	0
26. All Other Offenses:				
Public Nuisance	1	0	1	0
Prowlers	0	0	0	0
Pickup for Outside Agency	1	0	1	0
Malicious Mischief	2	0	0	0
Vandalism	1	0	0	0
Car Prowls	13	0	0	0
Dest. of Pers. Prop.	2	0	0	1
Dest. of Govt. Prop.	1	0	0	0
27. Suspicion	<u>3</u>	<u>0</u>	<u>0</u>	<u>2</u>
TOTAL PART II CASES	54	0	30	5

(Continued On Page Two)

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PAGE TWO—NORTH RICHLAND PATROL DIVISION—MONTHLY REPORT, SEPTEMBER, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
<u>PART III</u>				
28. Missing Persons	1	0	0	1
Lost Persons	3	0	0	3
Lost Animals	0	0	0	0
Lost Property	4	0	0	4
Found Persons	1	0	0	1
Found Animals	0	0	0	0
Found Property	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
TOTAL PART III CASES	11	0	0	11
<u>PART IV</u>				
30. Fatal Mot.Veh.Traf.Acc.	0			
31. Pers.Inj.Mot.Veh.Traf.Acc.	1			
32. Prop.Dam.Mot.Veh.Traf.Acc.	5			
33. Other Traffic Accidents	0			
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents	0			
38. Dog Bites	1			1
39. Suicides	0			
40. Suicide Attempts	0			
41. Sudden Death & Bodies Found	0			
42. Sick Cared For	0			
43. Mental Cases	<u>0</u>			<u> </u>
TOTAL PART IV CASES	7			1
<u>COMPOSITE TOTALS</u>				
PARTS I,II,III,IV, CASES	82	2	30	20

There were three colored persons involved.

*Cases listed under "Cleared Other" are those cleared by various means other than arrest, such as: orders from prosecutor, juvenile probation officer or other situations in which a mutual agreement is obtained. They are definitely "cleared" cases and differ from the arrest column only in that there were no arrests.

JUVENILES INVOLVED

Disorderly Conduct--1 Case 2 Juv. Ages 14 & 15. (Both Males)

Suspicion--1 Case, 2 Juv. Ages 14 & 15. (Both Females)

RICHLAND AND NORTH RICHLAND
PATROL DIVISION
CRIME COMPARISON REPORT
SEPTEMBER, 1950

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 inhabitants:

Class.	Wash. Oregon & Calif.		Richland		North Richland		North Richland	
	Six Months (Jan-June 1949)	One Month Average	Six Months (Jan-June 1949)	Average	August 1950	September 1950	August 1950	September 1950
Murder	.60	.10	0	0	0	0	0	0
Robbery	15.80	2.63	0	1	0	0	0	0
Assault	10.15	1.69	4	16	0	1	2	1
Burglary	90.90	15.15	8	5	3	2	2	2
Larceny	254.22	42.37	181	97	44	19	9	7
Auto Theft	38.4	6.40	4	5	3	0	5	0
Bike Theft						17		1

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Class	State of Washington		Richland		North Richland		North Richland	
	Six Months (Jan-June 1949)	One Month Average	Six Months (Jan-June 1949)	Average	August 1950	September 1950	August 1950	September 1950
Murder	.79	.13	0	0	0	0	0	0
Robbery	11.25	1.87	0	1	0	0	0	0
Assault	3.82	.63	4	16	0	1	2	1
Burglary	74.35	12.39	8	5	3	2	2	2
Larceny	241.60	40.26	181	97	44	19	9	7
Auto Theft	38.05	6.34	4	5	3	0	5	0
Bike Theft						17		1

The portion of offenses committed by persons under the age of 25 years, is shown by the following:

Class.	National Average		Richland		North Richland		North Richland	
	Six Months (Jan-June 1949)	Average	Six Months (Jan-June 1949)	Average	August 1950	September 1950	August 1950	September 1950
Robbery	53.4		0	0	0	0	0	0
Burglary	59.9		1	0	1	00	0	0
Larceny	45.1		25	44	4	5	0	0
Auto Theft	67.8		3	0	0	0	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower age group because of the practice of some jurisdictions not to fingerprint youthful offenders."

PUBLIC SAFETY DIVISION

SEPTEMBER 1950

ORGANIZATION AND PERSONNEL

Number of employees on Payroll	September
Beginning of month	3
End of month	3

GENERAL

"Child Safety", the traffic safety theme for September, stressed the fact that children were returning to school and cautioned motorists to drive carefully, particularly in school zones, as well as other areas in town. The 24-sheet poster, "It's Her Street, Too", was posted for this program. A series of spot announcements were supplied to the radio stations and two radio interviews were carried on September the 15th and the 22nd by P.T.A. members.

"School Opens" signs and posters, donated by the American Automobile Association, were used in store windows. The "Back to School" leaflets, bearing P.A. Wright's signature, were issued to all elementary grade students up to the third grade. "The Safe Way to School" program has been inaugurated in some of the schools. Each school is distributing to students from Kindergarten to the third grade a map of their school district, indicating the main arterials, traffic lights, stop signs, cross-walks and School-Boy Patrol stations, to aid parents in assisting their children in determining the safest route to school from any point on the map. This is a national program and the School System is heartily in accord with it.

"The Lady from Safetyland" radio program for September emphasized child safety in the weekly broadcasts for this period. Free tickets, furnished by the Village Theatre were given to the first ten children to write in to the station. More than thirty replies have been submitted, which according to the broadcasting station's rule of thumb measure, is indicative of a fairly good listening audience. One publicity shot of the "Lady from Safetyland" was carried by the Tri-City Herald, and a news item in the local papers.

The automobile driver training course at school was plugged by two local newspapers. Information on newly painted cross-walks, received from Chief Strook in connection with the Child Safety Program, was carried in both papers.

Over fifteen hundred people reviewed the film "Then There Were Four", which was loaned to this office for the month of September by the General Petroleum Company. Because of the excellent safety content of the film, a request was made for a thirty day extension on the loan. Judge Brown, Justice of Peace, has requested permission to send his traffic violators to see this film when it is shown to the public, once a week during October.

For the Hunting Safety Program, maps have been distributed, designating hunting areas. Approximately 2,000 pamphlets covering the ten commandments on shooting were also distributed. The Sacajawea Rifle Club has agreed to carry extensive shows in the schools for sportsmen, principally promoting safety in the field. These films are furnished by this office.

Eight schools in Richland received Honor Roll Certificates from the National Safety Council.

The final Fire Prevention Committee plans have been formulated and a complete outline prepared. The Fire Prevention Committee is made of a group of men from the Richland Safety Council, headed by D. F. McGuire. Coordinators of the program are Bert L. Sellin, P. C. Crowder and W. A. Halteman. The outline is inclusive of the entire week starting October the 8th through the 14th. Bill Boards declaring the above date as Fire Prevention Week have been posted. The publicity committee has definite material ready for release. Practically all portions of the program have been approved. The school program, approved in its entirety, is underway. The Employee and Community Relations Division have given full cooperation to the program and are doing extensive work.

The Superintendent of the Public Safety Division has been requested to speak at the National Safety Congress Manager's Meeting in Chicago on October the 13th. His subject will be "Child Safety and Bicycle Safety" and Richland's method in handling these two problems.

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

September, 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll	September
Beginning of month	43
End of month	186 **

RICHLAND HOUSING

Housing Utilization as of Month End.

Houses Occupied by Family Groups	Conven tional	Block	Pre T	Pre Cut	Ranch	Pre Fab	Apt	Tract	Total
G. E. Employees	2202	262	7	381	838	1147	59	41	4937
Commercial Facilities	92	8	1	25	71	59	4	5	265
Medical Facilities	7	12	-	2		1			22
Community Activities	9			1	7	3		1	21
Post Office	7			1	3	10		3	24
A.E.C.	98	30	-	13	39	23	4	3	210
School District	42			5	13	48	1		109
Kellex Corporation	7	5		7	7	1	1		28
Atkinson-Jones	9	15		5	11	3	4		47
J. G. Turnbull					1	2			3
C. T. Main Company	2			5	4		1		12
J. A. Terteling					1				1
Newberry Neon	3	1		1					5
Vernita Orchards								4	4
Roberts Filter						1			1
Fred J. Early Company					1				1
TOTAL HOUSES OCCUPIED	2478	333	8	446	996	1298	74	57	5690
Houses Assigned-Leases written	5					5		1	11
Houses assigned-Leases not written	12			3	4	5			24
Houses available for assignment	5		2	1		24			32
TOTAL HOUSES	2500	333	10	450	1000	1332	74	58*	5757

1.

Community Housing Division

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2472	57	51	2478	Plus 6
Block Type	332	4	3	333	Plus 1
"T" Type	10	—	2	8	Minus 2
Precut Type	442	16	12	446	Plus 4
Ranch Type	994	26	24	996	Plus 2
Prefab Type	1300	44	46	1298	Minus 2
Apartments	73	3	2	74	Plus 1
Tract	59	3	5	57	Minus 2
Total	5682	153	145	5690	Plus 8

Dormitory Statistics

Dormitories	Occupants	Vacancies	Total Beds
Men Occupied 14	566		*** 566
Men Unoccupied			
Women Occupied 12	*387	**194	581
Women Unoccupied 2			

Women's Dormitories

occupied by:

G. E. Office	1
Education	1
Apartments	1
	<u>31</u>

- * This includes Space of 4 beds in W-9 used for supply rooms and dormitory offices.
- ** This includes 100 beds in "Standby Condition" in W-17 and W-20.
- *** This includes 50 beds transferred from Women to Men on August 2, 1950 in W-21.

GENERAL

Allocation Section Statistics

Houses Allocated to new tenants	46	Voluntary Terminations	41
Exchanged houses	33	R. O. F.	3
Moves (Within the Village)	25	Discharge	—
Turnovers	19	Transfer	9
Total Leases Signed	153	Retirement	2
Terminations	70	Move Off Project	11
Total Cancellations	145	Houses assigned "As Is"	31
Applications Pending	389	Houses sent to renovation	70

- * Tract house L.854 was vacated during September. Due to the condition of this house it will not be reallocated as a dwelling unit.
- * Tract house O-1259 was vacated during September. Due to the condition of this house it will not be reallocated as a dwelling unit.
- ** Includes employees transferred over from Public Works Division to Real Estate Maintenance Division on September 25, 1950.

TENANT RELATIONS

Processing of Service Orders, Work Orders and Service Charges

	<u>Issued from Sept. 1 to Sept. 30, 1950</u>	<u>Incomplete Sept. 30</u>	<u>Issued Previous Month</u>
Service Orders	2069	494	1681
Work Orders	506	2367	761
Service Charges	169	15	167

ITEMS OF INTEREST

	<u>Total Outstanding</u>	<u>Total Outstanding Previous Month</u>
Laundry tubs	61	46
Bathtubs	178	177
Tileboard	287	291
Bathroom floor linoleum	205	197
Kitchen floor linoleum	26	2
Kitchen sink linoleum	178	169

Alteration permits issued during the month of September totaled 67 compared to 81 in August.

Removal broom closet	1	Metal strips house corners	1
Tool sheds	1	Automatic washers	14
Install shower	1	Fence	7
Remove light fixture	1	Back porch	1
Back door	4	Air conditioner	2
Basement excavation	4	Furnace humidifier	1
Basement partition	2	Relocate coal bin	2
Clothes poles	2	Shelves	1
Clothes dryer	5	Dishwasher	1
Fireplace	1	Driveway	5
Bedroom partition	1	Kitchen cabinet installation	1
Window framing	1	Kitchen cupboard drawer	1
Water softener	1	Refinish floors	2
Electrical outlet	1	Concrete pad-dog kennel	1
Glaze sunporch	1		

896 Inspections were made during the month of September as compared to 1038 made during August.

Alteration permits	136	Bathtubs	51
Cupboards	22	Drainage	4
Driving on grass	2	Floor boards	20
Grass seed	15	Jack and Shim	14
Leaking basements	22	Linoleum	114
Lot lines	31	Paint	12
Porch & Steps	25	Screen doors	27
Shower stalls	13	Shades	41
Sidewalks	33	Tileboard	72
Sinks	12	Toilet seats	14
Top soil	15	Trailers	7
Walls	12	Windows	24
Missellaneous	158		

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M.S. WAREHOUSE SUMMARY FOR August 25, thru September 25, 1950

TOTAL INV. \$97,715.36

INVENTORY ITEMS AMOUNT \$55,268.06

<u>RECEIVED IN INVENTORY</u>	<u>CODE</u>	<u>AMOUNT</u>
ON STORE ORDERS		\$2,953.55
ON PURCHASE ORDERS		175.88
FROM HOUSING (20-20)	20-20	1,306.54
FROM DORMS(21-20)	21-20	562.92
TOTAL RECEIPTS		\$4,998.89

INVENTORY DISBURSED

MISC. CHG.		456.81
FREE ISSUE	20-20	1,579.56
CASH ITEMS	20-20	100.59
DORM SUPPLIES	21-20	362.58
DORM LINENS	21-20	78.43
DORM SHADES & REFLECTOR	21-20	96.61
DORM FURNITURE	21-20	248.62
WHSE. SUPPLIES	20-20	26.77
TOTAL DISBURSED		\$2,949.97
INVENTORY ITEMS BALANCE		\$57,316.98

PLANT ITEMS AMOUNT \$42,447.30

	<u>CODE</u>	<u>AMOUNT</u>
RECEIVED		2,120.24
DISBURSED		1,152.46
TOTAL DISBURSED		1,152.46
PLANT ITEMS BALANCE		\$43,415.08

GRAND TOTAL INVENTORY \$100,732.06

PIECES

DORM FURNITURE EXCHANGED	81
RANGES EXCHANGED	4
PRE FAB HEATERS EX.	35
REFRIGERATORS EXCHANGED	11
SENT TO MAINTENANCE	87
RECEIVED FROM MAINT.	96

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COMMERCIAL AND OTHER PROPERTY DIVISION

SEPTEMBER, 1950

REORGANIZATION OF COMMUNITY DIVISIONS:

As a result of the reorganization of the former Community Divisions September 11, 1950, the former Commercial Facilities Division is now known as the Commercial and Other Property Division, being responsible for all contractual relationships with both commercial and non-commercial property including real estate functions pertaining to clubs, churches and other non-commercial organizations which were formerly handled by the Community Activities Division.

DIVISIONAL PERSONNEL:

Number of Employees on Payroll:	<u>September</u>
Beginning of month	15
End of month	13
Net decrease	2

COMMERCIAL AND NON-COMMERCIAL PERSONNEL:

Number of Employees on Payrolls:	<u>Commercial</u>	<u>Non-commercial</u>	<u>Total</u>
August	1,067	71	1,138
September	1,069	77	1,146
Net increase	2	6	8

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	20
Back Charges	6
Service Orders	21

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Leases were entered into with:

- (a) Richland Fuel and Lumber Company, covering the operation and maintenance of a solid fuel and building-material dealership on the premises formerly occupied by Northwestern Fuel Company.
- (b) G. N. Felton, covering the operation and maintenance of a fuel-oil, stove oil and wholesale gasoline dealership.

1200597

2. Leases were terminated with:

- (a) Northwestern Fuel Company, Inc.
- (b) Richland Fuel and Lumber Company, effective June 30, 1950.
- (c) Dr. Harold S. Huber, dentist.

3. Supplemental Agreements were entered into with:

- (a) Automatic Laundry Company, covering the construction, operation and maintenance of an addition to Building #1 and the subletting of space for the operation of a tavern therein.
- (b) The Scott Publishing Company, Inc., changing the initial term and renewal period of the basic lease.
- (c) Hughes of Richland, Inc., to provide for subleasing in the facility.

4. Letters of Authorization:

- (a) The Village Pharmacy was authorized to sublet space to Mr. A. T. Lee, for use as a jewelry and watch repair shop.
- (b) Spencer-Kirkpatrick Insurance was authorized to sublet space to the Yakima Broadcasting Company, owners and operators of Station KALE, for use as an office.
- (c) The Desert Inn was authorized to sublet space to radio Station KWIE, for the establishment and operation of broadcasting facilities.
- (d) Stanley N. Randolph was authorized to engage in real estate transactions.

B. Non-commercial:

1. Leases were entered into with:

- (a) Richland Post #71, The American Legion, covering the operation and maintenance of an American Legion Post and Club in a Government-owned building.
- (b) The Church of the Nazarene, covering the construction, operation and maintenance of a privately-owned church building.
- (c) The Richland Assembly of God, covering the construction, operation and maintenance of a privately-owned church building.
- (d) The Redeemer Lutheran Church, covering the construction, operation and maintenance of a privately-owned church building.

SUMMARY OF OCCUPANCY AND EXPANSION STATUS:

A. Commercial:	<u>August</u>	<u>September</u>
1. Number of Government-owned buildings	37	37
(a) Number of businesses operated by prime lessees	49	49
(b) Number of businesses operated by sublessees	9	8
(c) Total businesses operating in Government-owned buildings	58	57
2. Number of privately-owned buildings	32	32
(a) Number of businesses operated by prime lessees	36	36
(b) Number of businesses operated by sublessees	16	18
(c) Total businesses operating in privately-owned buildings	52	54
3. Total number of businesses in operation	110	111
4. Doctors and dentists in private practice, leasing space in Government-owned buildings	22	21
5. Privately-owned buildings under construction (An addition to Automatic Laundry Company Bldg. #1 is being constructed to house the Top Hat Tavern)	5	6
6. Leases awarded	0	0
B. Non-commercial:		
1. Government-owned buildings		
(a) Churches	4	
(b) Clubs and organizations	10	
(c) Government agencies	<u>3</u>	
Total		17
2. Privately-owned buildings		
(a) Completed and in use	4	
(b) Under construction	4	
(c) In process of lease negotiation	<u>6</u>	
Total		14
3. Grazing leases	48	

GENERAL:

A. Commercial:

- 1. Construction was started on the Starlite Roller Rink.
- 2. Radio Station KALE opened for business in the Spencer-Kirkpatrick Insurance building.
- 3. R. J. Skewes of Richland, Inc. commenced operation of a custom-built furniture and drapery store in the Uptown Theater building.
- 4. Dent Chocolate Shops terminated its sublease agreement with the Desert Inn.

B. Non-commercial:

- 1. The Northwest United Protestant Church started construction of a church building.

COMMERCIAL PROSPECTS INTERVIEWED:

A number of individuals and firms, the majority of which were not interested in constructing their own buildings, expressed an interest during the month to establish and operate businesses in Richland. Inquiries were received covering the following types of establishments:

- | | |
|------------------------------|-----------------------------------|
| Barber Shop | Luggage Shop |
| Food Store | Men's Wear Store |
| Funeral Home | Music Store |
| Furniture Store | Photo Studio |
| General Information | Public Accounting Office |
| Laundry & Dry Cleaning Plant | Rug and Upholstery Cleaning Plant |
| | Women's Wear Store |

GENERAL SERVICES DIVISION
MONTHLY REPORT SUMMARY
SEPTEMBER 30, 1950

ORGANIZATION AND PERSONNEL

	<u>September 18, 1950</u>	<u>End of Month</u>
Number of Employees on roll:		
Administration	2	2
North Richland Patrol	20	20
North Richland Fire	37	37
Maintenance and Operation	72	72
Total	131	131

GENERAL

Effective September 18, 1950, the General Services Division was organized. Responsibilities of this Division include operation and maintenance of the Central Heating Plant which supplies heating and process steam to 116 buildings, 1131 Auxiliary Heating Plant, maintenance of 700-1100 Area buildings and grounds assigned to plant personnel, all roads and areas lying outside the municipality, bounded by Project limits and plant barricades, functioning of North Richland Patrol and Fire Departments. Responsibilities also include the "sale" of certain craft services to other Divisions.

MAINTENANCE AND OPERATION

Report of former Public Works Division outlines activities through September 17. Included in the activities for the last twelve days of the month were:

Steam Operation

	<u>Exempt</u>	<u>Non-exempt</u>	<u>Total</u>
Organization and Personnel			
Number of employees on payroll as of Sept. 30	1	20	21

Miscellaneous

The steam meter pit at Columbia High School was poured and completed.

The 1131 Steam Plant was completed in night operation at midnight, September 18.

Operation of Pasco Warehouse Water System was discontinued as of 8:00 a.m., October 1.

The second boiler in the Central Heating Plant was placed in operation during the week of September 18 to meet increased seasonal demands. The two remaining boilers are ready for operation when weather conditions demand.

Action has been taken preparatory to installation of railroad car spotter per ESR No. 393-PW.

1200501

Maintenance

Organization and Personnel	<u>Exempt</u>	<u>Non-exempt</u>	<u>Total</u>
Number of employees on payroll as of Sept. 30	6	45	51

Miscellaneous

Effective September 18, E. L. Woodburn was reclassified from the position of General Foreman to Area Engineer, in charge of Maintenance and Operation.

Motors on recirculating pumps at Sewage Disposal Plant were inspected and lubricated, and one bearing was replaced, for the Municipal Division.

Four kitchen ranges were rebuilt for Real Estate Division.

Miscellaneous wiring and lighting work was done for Municipal Division shops and office quarters.

Docks and runways were repaired at Stores Division Warehouses 3, 4, 5 and 6.

Work was started on the installation of Hauserman Metal partitions in the 703 Building.

Winterizing of all evaporative coolers was started.

Approximately 115 room number signs and name plates were completed for 703 Building.

Interior painting of 703 Building progressed on schedule.

NORTH RICHLAND PATROL

Organization and Personnel	<u>Exempt</u>	<u>Non-exempt</u>	<u>Total</u>
Number of employees on payroll as of Sept. 30	5	15	20

Effective September 18, C. H. Overdahl was reclassified from the position of Patrol Captain to Chief, North Richland Patrol.

Data and statistics on activities for the entire month of September are contained in the combined Richland and North Richland Patrol Report. Future North Richland Patrol activities will be carried under this Division's Report.

NORTH RICHLAND FIRE

Organization and Personnel

Total number of employees on payroll as of September 30 - 37.

Effective September 18, C. L. Olson was reclassified from the position of Assistant Fire Chief to Fire Chief, North Richland.

Activities of this group are carried in the September combined Report for Richland and North Richland Fire Departments. These activities will be segregated in future Reports.

[REDACTED]

DESIGN & CONSTRUCTION DIVISIONS
September, 1950

I. ORGANIZATION AND PERSONNEL

	<u>Beginning</u>	<u>September</u> <u>End</u>	<u>Change</u>
Employees on D&C Payroll	627	641	14
Employees on Loan or Under Contract from:			
Instrument Division	7	7	
Fluor Corporation	8	8	
Technical Division	1	0	
Schenectady	2	2	
Project Engineering	0	1	
	<u>18</u>	<u>18</u>	
Total D&C Divisions	645	659	14

INVENTIONS AND DISCOVERIES

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

<u>INVENTOR</u>	<u>SUBJECT</u>	<u>REPORT OF INVENTION (DATE)</u>
V. G. Blanchette	Thermo-Electric Effect	9-29-50
R. H. McCugh	Taper Bore Gun-barrel Entrance	8-25-50

No Others

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HW-19021 - Del

ACCOUNTING DIVISIONS

I. SUMMARY

Considerable time was spent during the month revising D&C Instructions covering Work Order Procedure to conform with the establishment of the Construction Division. At month end the procedure was completed and is being reviewed by Division Managers for comments. It will be completed by October 6.

Instructions covering the operations of Subcontractor's Service Contract was completed in its final form and issued during the month.

The total number of employees reported by CFFF Subcontractors September 30 was 4,450 which includes 137 assigned to the new Service Contract. This is a total increase of 268 over 4,182 reported August 29. CFFF Subcontractors' payrolls totaled \$1,952,041, which includes \$14,558 for the Service Contract. This covers a five-week period and averages \$390,408 per week. The average weekly earnings increased from \$91.31 to \$92.60 per employee.

Total cash disbursed during the month of September was \$2,766,196 which is approximately 14% under August disbursements.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

Accounts Payable Distribution Summary follows:

General Electric Purchases	\$ 332,112 -1)
Reimbursement - Atkinson-Jones CFFF Subcontract	2,238,756
Reimbursement - Other CFFF Subcontracts	353,343
Partial Payments to Lump Sum Subcontracts	79,975
Travel (General Electric)	2,287
Miscellaneous	10,320
Total Credited to Accounts Payable	<u>\$3,014,793</u>

(1- Of this figure, \$330,730 was transferred to Atkinson-Jones for inclusion in their cost.

Due to accelerated delivery requirement dates for construction and the allocation of critical materials for the new defense program and in order to expedite delivery of materials, purchase orders are being issued that contain terms and conditions which are a departure from the normal type of operation, for example, orders that contain clauses allowing: premium payment for overtime labor, bonus for delivery of material on or before a specific date, liquidated damages clause, etc. Such orders will, in some cases, require special types of audit for close accounting control. Effective measures and procedures are being formulated in order to accomplish this end.

III. PERSONNEL

Employees on Payroll

	<u>Month</u>		<u>Changes</u>
	<u>Beginning</u>	<u>End</u>	
2 1200600	71	73	/2

[REDACTED]

CONSTRUCTION SERVICES DIVISION

I. SUMMARY

No major changes were made within the Construction Services Division during the month.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

NORTH RICHLAND CAMP

Population*

Trailers	2,524	
Barracks	869	
Houses	665	
Total	4,058	Net Increase 105

*Note: This does not include the U. S. Army personnel.

Barracks

During this period, there were two wings of one-story male barracks opened.

ARMY

On September 1st there were eight wings (one-story male barracks) occupied. At the end of the month the Army was occupying a total of 25 Pasco type barracks, 17 Hanford type barracks, Barracks #120, Mess Hall #1.

Maintenance

On September 25, 1950, the Maintenance Section was transferred to the Construction Division, operating under the new Service contract.

Steam Generating Plant

Steam generated, M lbs.	15,422.00
Oil consumed, gals.	3,871.00
Coal consumed, tons	927.19
Boiler efficiency, average %	68.25

*Steam cost, per M lbs. \$1.29

*Note: Computation of unit cost of steam is based on estimated cost of coal of \$8.60 per ton and estimated indirect cost applicable to the steam plant.

Water consumption for the month was 53,595,500 gallons or an average daily consumption of 1,728,887 gallons.

A signal code system for the whistle at the steam plant was put into effect in cooperation with the Civilian Defense Program.

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Construction Services Division (Continued)

Commercial Facilities

There were nineteen commercial facility operators doing business.

Community Activities

Plans for the coming fall and winter program are completed.

There were thirty-nine (39) religious meetings and forty-two (42) social affairs during the month.

OFFICE SERVICES

SECURITY

During the month, 412 meetings were held. A total of five (5) Security Bulletins were issued.

Statistical Information

Total number of Subcontractor and Vendor employees as of September 28, 1950	4,732
Total hires	908
Total terminations	720
Visitor clearances requested	20
Total clearances requested this month	1,030
Total clearances received this month	497

SAFETY REPORT

No automobile accidents were reported.

LABOR RELATIONS

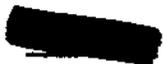
The dispute concerning daylight saving time continues unsettled.

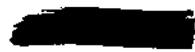
An agreement has been reached regarding the Office Workers Dispute between the Atkinson-Jones Company and the Office Workers Union. The agreement is now before the Commission for approval.

III. PERSONNEL

Employees on Payroll

<u>Month</u>		<u>Changes</u>
<u>Beginning</u>	<u>End</u>	
135	138	+/3





CONTRACT DIVISION

I. SUMMARY

Contract Modifications have been completed for the first phase of work to be performed on the TBP Program.

The DR Water Works was completed ahead of schedule.

Miscellaneous Services to be performed by CPFF Subcontractors extended to 1-1-51.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

Thirty-one contract items showing an increase of \$4,698,110.70 and one contract item showing a decrease of \$2,275.18 were completed during September.

CPFF	-	\$4,393,187.00
Fees	-	59,005.00
L.S. and U.P.	-	245,918.70

Two contract items showing an increase of \$16,578.00 and two contract items showing a decrease of \$14,680.75 were estimated to be completed in September.

Forty-six contract items remained open at the end of the month.

III. PERSONNEL

Employees on Payroll

Month		<u>Changes</u>
<u>Beginning</u>	<u>End</u>	
32	33	<i>1</i>

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RW-19021-*Del*

ENGINEERING SERVICES DIVISION

I. SUMMARY

The scheduled drafting work-load continued in excess of available manpower. Heavy demands continued for prints from the Reproduction Section.

The Estimating Section worked a six-day week to meet scheduled requirements.

Both the History Section and Project Cost and Project Analysis Sections increased their output over the preceding month.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

DRAFTING SECTION

Drafting Production:

New Drawings	206
Miscellaneous	5
Drawing revisions	62
Drafting efficiency, man-days per drawing	7.9

ESTIMATING AND STANDARDS SECTION

During the month of September the work load required a six day work week for the Estimating Group.

Estimating:

Estimates scheduled	11
Estimates completed (Total value \$30,000.00)	9
Estimates to be completed	12

Unit Cost:

A Unit Cost program was started in conjunction with the subcontractor.

Work continued on a proposed Guide Specification program.

REPRODUCTION SECTION

Steps were taken to requisition enough personnel to offset contemplated losses to the Armed Forces.

ENGINEERING SERVICES DIV. (Cont.)

The Production Group prints figures are listed below:

Originals Handled	16,600
Prints Produced	149,321
Square Feet of Production	<u>520,615</u>
Average Square Feet per Employee	34,706

PERSONNEL, RECORDS AND HISTORY SECTIOND&C Payroll Additions, Terminations and Transfers:

Additions	36
Terminations	20
Transfers within D&C Divisions	4
Transfers out of D&C Divisions	5

Secret and Confidential Documents Processed:

Documents issued, routed or destroyed.	2207
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Procedures Issued:

D&C Instructions Issued	31
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Status of Histories:

Histories ready for issue	10
Others in process	108

Reports Issued:

Nine, covering weekly and monthly force, visitor's, destroyed and reclassified documents.

PROJECT COST AND PROGRESS ANALYSIS SECTIONForecasts Issued:

Two forecasts covering Construction and D&C Forces.

Reports Issued:

Five Monthly Narrative and Progress Reports.

Forms:

Eight forms revised.

Charts Prepared:

Seven charts showing D&C Projects Progress.

ENGINEERING SERVICES DIV. (Cont.)

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Project Analyses Issued:

- 1. DR Waterworks C-342
- 2. Redox Laboratory C-187-E

Special Studies:

- 1. Recommendations on Batch Plant Billing Rate Structure
- 2. Data on Construction Employees for Community Division

III. PERSONNEL

Employees on Payroll

<u>Beginning</u>	<u>Month</u>	<u>End</u>	<u>Net Change</u>
158		161	73

[REDACTED]

PRINCIPAL ENGINEERS

I. SUMMARY

The activities of the Principal Engineers consisted of reviewing and commenting on drawings, Design Instruction Letters, Specifications, preparation of special reports, and recommendations on utilities such as steam, water, electric power serving several projects in one operating area, special advisory and consulting services requested by Design & Construction and other Divisions.

The above services were rendered for the following projects:

No inventions or discoveries were reported.

II. STATISTICAL AND GENERALPRINCIPAL MECHANICAL ENGINEERReview and Comments

Project C-362 - Waste Metal Recovery Plant
 Project C-361 - Metal Conversion Facilities
 Project C-187-D - Redox Production Plant
 Project C-187-E - Redox Analytical & Plant Assistance Laboratory

Consulting and Advisory Services

1. Investigated fabrication on inert gas-shield arc welding of stainless steel ducts for the 222-S Building. Suggested modification of procedure to eliminate internal grinding of welds.

Resistance seam welding of stainless steel ducts for laboratory heating and ventilating systems in place of gas welding.
2. Promoted the testing of 190 Building pumping equipment performance for evaluation of flywheel effect and paralleling performance of new DR Plant equipment.
3. Radiochemistry Laboratory heating and ventilating system. Flow diagram data is being requested.
4. Reviewed and commented on design proposal for 291-U ventilation system.
5. Served on Unit Cost Committee.
6. Proposed specification for fan bearings to Scope Committee.
7. Investigation of licensing for use of activated silica water treatment process for 283-W addition on C-362.

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PRINCIPAL ELECTRICAL ENGINEER**DECLASSIFIED**Special Reports

To accumulate data for a report on design criteria for electrical systems on future reactor buildings (for Project C-300).

Review and Comments

Project C-361 - Metal Conversion Facilities

Drawing SK-2-50063 - Decomposition Pots.

Project C-385 - Radiometallurgy Building.

Review of preliminary drawing and specifications.

Consulting and Advisory Services

1. Consultation with electric furnace design specialists preparatory to the writing of the purchase specifications.
2. Discussion with plant operating telephone engineers on ways and means to improve trunk service between the 200-W Area and Richland.
3. Opinion given the Separations Division, D & C, on suitability of variable frequency drive for pulse generators.

PRINCIPAL CIVIL ENGINEERSpecial Reports

1. Typing in Hanford Works Surveys to U. S. Survey Systems. Compilation of existing horizontal and vertical control data and ties to U.S.G.S. and U.S.C.&G. Surveys, and evaluation thereof.
2. Project C-381 & C-385 - Design of Radiochemistry Building.
 - a. Analysis and application of preliminary plans and specifications for AEC approval with specific reference to Uniform Building Code provisions.
 - b. Design considerations required to (i) comply with representations made by D & C Divisions to General Electric Management and AEC regarding specialized fire extinguishing apparatus; and, (ii) determine the advisability of using Lucuflex as construction material for exhaust ventilation facilities. .
3. Modified Design of Waste Disposal Plant. Further investigation and report on Mr. O. H. Pilkoy's July 7, 1950, memorandum: Suggested Economy in Waste Disposal Tank Design.

PRINCIPAL CIVIL ENGINEER (Continued)

4. Formulation of General Civil, Structural, Architectural and Design Criteria for Process Area Construction. Status and work in progress under jurisdiction of plant Standards Committee to provide basis for decision regarding (a) advisability of appointment of Design Criteria Committee; and/or (b) supplying certain information to Architectural and Civil Standards Subcommittee as representing Design & Construction Divisions understanding regarding meaning and intent of certain terms and instruments.
5. Project C-241 - Aerial Survey Richland Village. Historical resume' of authorizations and reasons for the revisions, cancellation and reinstatement of Project as well as of the work performed.

Review and Comments

- Project C-223 - Technical Office Unit Building 3703
 Project C-361-4 - Metal Recovery Plant
 Project C-362 - Rev. 8, 9, 10 - Approved Scope Revisions
 Project C-187-D - Drawings H-2-7505-4-6, H-2-5175 - Flow Diagram
 Project C-385 - Radiometallurgy Bldg. Review of Special Equipment Scope Drawings.
 Project C-364 - Aquatic Biology Laboratory, Drawings SK-1-554 - 553, 517, H-1-2358 - 2528.

Consulting and Advisory Services

1. Project C-300 - Selection of Site Area "G". Resume' of factors and data considered pertinent to site selection of "G" Area. (H. T. Wells, "P" Division, September 8, 1950)
2. Project C-199 - Expansion of 300 Area Sanitary Sewage Disposal System. Discussion of relative merits of various types of sewage treatment and disposal works and application to 300 Area requirements.
3. Project C-353 - Richland Water Study. (Subcontract G-330, Alvord, Burdick and Howson - General Electric) Explanation of intent of scope of work as set forth in contract.
4. Technical Center. Outline of standard procedure generally used for take-off of structural steel for mill allocations.
5. Project C-136 - Additional Housing for Richland Village. Review and recommendations of modifications for incorporation in Project History.
6. Recommendation Regarding Completion of New Well in 1100 Area for Municipal Sanitary Water Supply.
7. Explanation of Impaired Clearances on Takima River Railroad Bridge to U.P.R.R. Representative.

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HW-19021 *del*

PRINCIPAL CIVIL ENGINEER (Continued)

Special Assignments

1. Town Planning Board. Served as member of Town Planning Board, attending all September meetings.
2. Civil Defense Program. Served as Staff Engineer to Engineering & Safety Department, Construction and Safety Divisions.

III. PERSONNEL

Employees on Payroll

<u>Month</u>		<u>Changes</u>
<u>Beginning</u>	<u>End</u>	
4	4	0

[REDACTED]

POWER AND MECHANICAL DIVISION

I. SUMMARY

The work load in the Engineering Design Sections has increased this month, necessitating resorting to overtime work. 76% of their work was performed for other Divisions. A portion of the Design work deferred last month will be let to Architect Engineers.

The Construction Sections work load remained about the same as last month.

In general satisfactory progress is being made. Schedules are being met and in some cases progress is ahead of schedules.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

Following is a brief resume of active projects within the Division:

C-199, Expansion of 300 Area Sanitary Sewer Disposal System: A new Project Proposal is being submitted to the Manufacturing Divisions. Estimates of three alternate schemes will be reviewed and brought up to date.

C-204-B, Additions and Alterations to Kadlec Hospital & Medical Arts Building: Construction work on the addition to the Medical Arts Building is proceeding satisfactorily and is now 35% complete.

C-257, Health Instrument Control Laboratory: The Contract Division is in the process of advertising this project on a lump sum construction basis. Bid opening date is November 16, 1950.

C-276, Part II, Over-all Plant Telephone System: This project was accepted by Operations Telephone Section September 6, 1950.

C-289, Additional Laundry Facilities, 200-West: The project is 78% complete. The interior carpenter work is 90% finished, roofing 99%, heating and ventilating 70%, and electrical work 55%.

C-295, Enlarging 251 Substation: Approval of Project Proposal, Part II, (revised) is in AEC hands. In AEC's letter of September 18th, they request that the construction be performed by a lump sum contractor.

C-342, DR Water Works: The 100-DR construction is 97% physically completed as of September 30th. The Manufacturing Divisions took over the operation of the Filter Plant and Process Water Pump House as of 8:00 AM, September 26th. The additional boiler is expected to start operating October 3rd.

The remaining construction work on this project consists of roads, walkways, and miscellaneous items in the various buildings. It is expected that the plant will be turned over to Operations on a physical acceptance basis by November 1st.

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HW-19021 *Del*

POWER AND MECHANICAL DIVISION (Continued)

The as-built drawings for the project are over 50% complete as of the end of September.

C-353, Richland Water Supply: Design contract with Alvord, Burdick & Howson has been signed. Notice to proceed with study work has been withheld pending confirmation on the Atomic Energy Commission's interpretation on some contract points.

C-364, Aquatic Biology Laboratory: Young & Richardson, Carleton & Dettie, have submitted a construction cost estimate for the purpose of fee determination. Agreement has been reached on the estimate between the Estimating Section and the Architect-Engineer. This estimate will be submitted to the AEC to determine the Architect-Engineer's fee.

C-381, Radiochemistry Building: Preliminary plans were reviewed and submitted to Leland S. Rosener September 18th and he is now proceeding on schedule with final plans and specifications.

C-385, Radiometallurgy Building: Unsuccessful negotiations for a design sub-contract have been made with Leland S. Rosener, Bechtel Corp., and Ralph M. Parsons. We are now re-negotiating with Rosener.

C-394, Plot Plan and Utilities - Hanford Works Laboratory: After unsuccessful attempts to negotiate a design contract with Bechtel Corp., and Ralph M. Parsons, negotiations are currently in process with Leland S. Rosener. Authorization to proceed on the initial construction work in connection with the entire laboratory area was received, and work is now in process. The relocation of the area fence has been completed. The burial ground disposal work is completed.

GET-17, Pile Technology Building: No progress has been made on the preparation of Project Proposal or completion of design criteria.

GET-18, Mechanical Development Building: The Project Proposal and cost estimate have been submitted.

III. PERSONNEL

Employees on Payroll

	Month		Changes
	Beginning	End	
	70	69	-1

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REACTOR DIVISION

I. SUMMARY

Preliminary tests made for the purpose of testing the generating equipment and to explore the operation of the test set-up have demonstrated the general feasibility of the operation of the heat transfer test equipment in the non-boiling range. Additional work will be required before the GE & CL heater element can be installed, and the full scale tests in the boiling range can be initiated.

The preparation of hollow castings by Battelle for the zirconium tubing program is proceeding satisfactorily, although additional zirconium will have to be procured.

Preliminary arrangements have been completed with the Industrial Engineering Divisions in Schenectady for work on the water plant equipment evaluation and selection. Approval was obtained from the Manufacturing and Technical Divisions on the Reactor Division proposals for water plant design.

The following inventions were reported by Reactor Division personnel:

<u>Inventor</u>	<u>Subject</u>	<u>Report of Invention (Date)</u>
V. G. Blanchette	Thermo-Electric Effect	9-29-50
R. M. McCugh	Taper Bore Gunbarrel Entrance	8-25-50

II. STATISTICAL AND GENERAL

1. Recirculation Test

The necessary design studies were started to adapt the test system for heavy water. The Reactor Division Manager requested the A.E.C. to allocate 1000 pounds of heavy water for this test.

Pump delivery, which has been the delaying factor, now looks favorable. One pump has been received and delivery of the last pump is scheduled for mid-October.

2. Water Pump Flywheel Tests

A considerable amount of time has been lost on this test. It is anticipated that the tests will be run in the F area during the month of November.

3. Control Rod Assembly

The inverted thimble has been manufactured and shipped. It will be used in the tests of the complete control system assembly to be run in the White Bluffs Test Tower starting in November.

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Reactor Division (Continued)

4. Irradiation Tests

The Reactor Division has been assigned a 3½" through test hole in H. The concrete irradiation tests will be run as soon as necessary adapters can be made.

5. Instrumentation

A meeting was held at Richland with Mr. C. A. Hanson of KAPL to review his proposed instrumentation. Agreements were reached and the necessary development and procurement will be initiated.

6. Dew Point Indicator and Dryer Control for the Gas System

A test program has been formulated which will determine the feasibility of using a G.E. dew-point indicator and dryer control.

7. Third Safety System

The test program has been completed and the successful operation with 3/8" metallic balls has been reported. Later confirming tests with the "control alloy" balls will be performed in conjunction with the tests of the control rod system.

8. Friction Rod Drive Assembly

Installation of the rod drive on the test stand was completed and preliminary tests using a 12 foot length of rod were started in the 189-D development laboratory.

9. Shielding

The bulk pour tests of Brookhaven concrete in the steel crates were completed. This shield section will be prepared for thermal cycling tests.

10. Materials Development

(a) Process Tube Materials

Aluminum Alloys

Creep tests of standard aluminum process tube sections at 400 and 600 psi pressure and 100 degrees C temperature have been in progress 5693 hours. The tubes have had zero secondary creep rate to date.

Zirconium

Arrangements have been completed with Battelle Memorial Institute to melt and cast the sponge zirconium received in July from ANL, and the 100 pounds of machine turnings received from Westinghouse. KAPL reports, however, that the Westinghouse machine turnings appear to be useless for our purpose because of dirt contamination. KAPL will attempt to procure additional zirconium for development work.

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Zirconium (Continued)

Battelle has shipped four hollow castings to KAPL for development work and will ship two castings per week as long as zirconium supplies last.

Zirconium tubing 0.753" O.D. by 0.023" to 0.024" wall thickness will be available for creep and corrosion tests in about two weeks.

(b) Control and Safety Rods

Arrangements have been completed with E.I. to produce one test piece of 4% gadolinium-titanium alloy. Difficulty is expected in producing a homogeneous melt. Arrangements for fabrication tests at Superior Tube Company using the material produced at E.I. are nearing completion.

Final arrangements are under way for the production of one safety rod of stainless steel - 1.3% boron alloy at Crucible Steel Company.

The gas corrosion furnace for testing of control rod materials is being installed in the 3706 Building. Test should start in late October.

(c) Third Safety Systems

The test of sample nickel-boron carbide balls shows excellent thermal shock characteristics and good crushing strength (2500 psi/ball). Chemical analysis is not as yet complete.

(d) Zirconium Slug Cans

A feasibility study of zirconium for can material showed zirconium was too expensive at present prices but might be worthy of study at some future date.

III. PERSONNEL

Employees on Payroll

<u>Month</u>		<u>Changes</u>
<u>Beginning</u>	<u>End</u>	
45	45	0

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SEPARATIONS DIVISION

I. SUMMARY

It is becoming increasingly apparent that the key to successful completion of Separations Division projects as forecasted is equipment procurement, which is dependent upon receipt of materials.

Since procurement of all ferro-columbium stabilized stainless steels is particularly critical now and procurement of the former low-tantalum ferro-columbium stainless steel virtually impossible, a policy for acceptance of substitutes was established for all Separation Division Programs. Broadly, this policy permits the substitution of 304 ELC for Type 347 stainless steel and the use of commercial, tantalum containing ferro-columbium unless corrosion tests or review of specific applications indicates that certain substitutions cannot be allowed. Old formula, low-tantalum columbium stabilized welding rod is specified for all weldments. By month end purchase requisitions for bulk quantities have been issued for stainless steel for all major items of equipment.

Active projects in the field continued to progress satisfactorily. The Redox Production Plant attained 20.5% completion (versus about 19.5% scheduled) and the Redox Plant Assistance and Analytical Laboratory is 44% completed, about 10% ahead of the Atkinson-Jones schedule.

A construction contract with Atkinson-Jones covering the preparation of the U-Area, construction of the 277-U Mock-Up Building, and construction of the First Waste Metal Recovery System for TBP (C-362) was signed. Work releases covering the first two items and field procurement for the third were issued and field work started on September 18.

Directive 158, Modifications No. 3 and 4, were received for UO_3 (C-361). These directives allocated \$1,502,000 for construction and \$303,000 for engineering for this facility.

The design of the Redox facility was substantially completed by Kellex September 30. 2045 of a total of 2050 drawings have been issued and 531 of 532 requisitions written. Modifications and alterations to design previously placed in the "desirable" category will now be worked where possible.

II. STATISTICAL AND GENERAL

A. Project C-187-D - Redox Production Plant

The Kellex design work is approximately 86% complete compared to the scheduled 85%. As of September 30th, of a total of 2050 drawings to be made 2045 had been started, 1770 were scheduled for approval, 1823 had been received for approval, and 1820 (90%) had been approved and forwarded to the field. The number of approved drawings now exceeds the number scheduled. It is anticipated that all Kellex drawings will be completed by October 2, 1950 and approved ahead of schedule.

Design work by the Power and Mechanical Division is approximately 80% complete compared to 92% scheduled. As of September 30th, of a total

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A. Project C-187-D - Redox Production Plant (Continued)

of 259 drawings to be made, 180 (70%) had been approved and forwarded to the field.

Separations Division Design Work is approximately 80% as scheduled. As of September 30th, of a total of 138 drawings to be made, 107 (78%) had been approved and forwarded to the field or to the Fred J. Early, Jr. Company.

The estimate based on complete design and material take-off being prepared by A&J is essentially complete and it is expected that it will be available the first week in October. Other estimates covering the UNH Storage Facility (203-S) and the Lump Sum Waste Facilities are also being prepared or reviewed (by GE). The above information is to be used in the preparation of a revised Project Proposal based on essentially complete design and approximately 25% complete construction (to be issued in October).

CONSTRUCTION PROGRESS STATISTICS

<u>Facility</u>	<u>Completion-September 30th</u>
Improve. to Land	0.2%
Temp. Construction	85.
202-S Building	17.4
211-S Building	7
240-S Building	7.0
276-S Building	0.0
277-S Building	74.2
282-W Building	25.
284-W Building	24.5
291-S Building	21.4
2702-S Building	96.4
2726-S Building	0
Waste Facilities	12.1
Electrical Distribution	17.3
Water Distribution	31.0
Steam Distribution	52.0
Railroads	50.0
Overall Redox Production Facility (A&J)	20.5

The construction work on the 241-S Tank Farm and associated facilities under Subcontract G-302 is approximately 11% complete. Six tank bases have been poured, two have received the waterproofing, and grouting on top of the membrane has started. Two half bottom dollars have been welded on both sides. Some backfilling around tank bases has been done. The base of the diversion box has been poured and side walls have been started. Excavation for the retention basin and the sewer is in progress.

The stainless steel procurement picture darkened considerably during the month. In order to aid the procurement of stainless steel equipment, Purchasing & Stores has been advised that 304 ELC and a standard commercial grade of Tantalum plus Columbium stabilized stainless may be substituted for Type 347 stainless in equipment fabrication. The completion of the plant is dependent upon the installation of engineered equipment.

A. Project C-187-D - Redox Production Plant (Continued)

The procurement of this equipment is totally dependent on the availability of stainless steel.

B. Project C-187-E - Redox Analytical and Plant Assistance Laboratory

Four drawings and two requisitions remain to be completed for the Laboratory Waste Disposal System. These drawings will be completed during the early part of October. Completion of design for this facility is anticipated approximately two months ahead of the schedule submitted in the project proposal. A new cost estimate based on complete design is being prepared for the Waste Disposal System.

Construction of the laboratory is 44% complete, 10% ahead of the A-J schedule. The deliveries of procured items are presently satisfactory and there are no delays in construction at the present time. With the possible exception of the hoods, there are no foreseeable delays which would extend the completion date of the laboratory.

C. Project C-198 - 234-5 Building Program

Progress statistics for the month of September are as follows:

	<u>Basic Design</u>	<u>Percent Complete Overall Design</u>	<u>Construction</u>
Phases II & III (Richland)	51	37	7
Phase III (Schenectady)		93	88

A new cost estimate for this Project is being prepared in response to an AEC request urging completion of the Development Laboratory even though the cost exceeds the present budget. Preliminary indications are that the presently budgeted funds are sufficient to complete the entire Project as scoped. Additional funds will be required to include all proposed modifications and possible process changes.

GE&CL fabrication and testing of RM Line equipment is proceeding satisfactorily with all the major tasks well under way and with no significant changes or delays being anticipated. Task III shipping schedule has had to be revised backwards, however, and field studies are being made for installation of other connecting tasks prior to arrival of Task III.

Proposed RM Line modifications were discussed with GE&CL, and they are willing to permit incorporation of certain of these modifications prior to acceptance of the RM Line by Hanford. These modifications, together with additional items proposed for incorporation after acceptance, have been estimated by the "S" Division to cost about \$200,000.

Work required in the process area prior to the installation of the equipment is well underway. Approximately 60 feet of the floor and all the balance pedestal bases have been poured and the sub-floor conduit installation is about 65% complete. The G.E. construction forces have completed the S.W.P. work typing in the additional drain lines to the process sewers.

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D. Project C-361 - Metal Conversion

Directive 158, Modification No. 3, has been received, allocating \$1,502,000 for construction and \$303,000 for design. Modification No. 4 of this directive has been received, deleting requests for schedule alteration made in earlier directives.

E. Project C-362 - Waste Metal Removal and Recovery

A construction contract with Atkinson-Jones covering the preparation of U-Area, construction of 277-U Mock-Up Building, and construction of the First Waste Metal Recovery System has been signed. Work releases covering the first two items and field procurement for the third were issued and actual field work was started on September 18.

Bulk requisitions for all stainless steel requirements and requisitions for 31 Class I vessels for this project were issued during the month.

Progress statistics are as follows:

	<u>Phase I</u>	<u>Phase II</u>	<u>Phase III</u>	<u>Phase IV</u>	<u>Phase V</u>	<u>Phase VI</u>	<u>Overall</u>
Scope	99	60	100	100	100	100	87
Design	45	3	40	10	95	5	15
Construction	0	0	0	0/	0/	0	0/

III. PERSONNEL

Employees on Payroll

	<u>Month</u>		<u>Changes</u>
	<u>Beginning</u>	<u>End</u>	
	99	105	76

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PROJECT & RELATED PERSONNEL

Sept. 1950

	8-31-50	9-29-50
<u>GOVERNMENT EMPLOYEES</u>		
Civilian Personnel - Atomic Energy Comm.	348	340
Civilian Personnel - G. A. O.	8	8
Total	356	348
<u>RICHLAND VILLAGE PERSONNEL</u>		
Comm. Facilities (Includes No. Richland)	1067	1069
Organizations, Clubs, Etc.,	71	68
Schools	97	385
Churches	25	24
Total	1260	1546
<u>CONSTRUCTION SUB-CONTRACTORS</u>		
Atkinson & Jones	3254	3392
Newberry Neon	316	352
Urban, Smyth, Warren Co.	370	308
Hanley & Company	259	261
Kellex Corp.	500	517
Charles T. Main Inc.	26	22
No. Electric Mfg. Co.	2	2
J. Gordon Turnbull	6	6
Flour Corp.	11	11
Booz, Allen & Hamilton	2	2
Chicago Bridge & Iron Co.	9	-
Edmond P. Erwin	19	26
Creamer Electric	3	2
Estep Electric	-	1
J. P. Head	8	10
Royal Company Inc.	14	18
Phare Paint Stores	..	1
Combustion Engr. - Superheater Inc.	2	2
E. J. Bartell	-	16
P. S. Lord	19	4
Fred J. Erly, Jr.	41	52
Steel Const. Co., & Gilmore Fabricators Inc.	7	22
Valley Roofing	-	4
Lewis & Queen	33	16
Bergman & Lampson	2	2
J. G. Shotwell	14	8
Graybar Electric Co.	3	-
V. S. Jenkins	11	29
Sound Elevator Co.	-	1
Custodis Const. Co.	-	5
Monterey Plumbing Co.	-	3
Empire Electric Co.	-	8
Morrison & Knudsen Co. Inc.	-	38
Leland S. Rosener	-	20
Associated Engrs. Inc.	-	24
Algot C. Grant	-	6

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American Steel & Wire Co.	-	4	
Rust Engr. Co.	-	5	
L. A. Hopkins	-	13	
J. R. Strasser Drilling Co.	-	2	
C. E. Const. Co.	-	41	
F. O. Repine Co.	-	19	
Pasco Electric Shop	-	4	
Total		4931	5279
General Electric Personnel		7839	7795
GRAND TOTAL		14386	14968

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