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HANFORD WORKS MONTHLY REPORT

for

JULY 1950

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Compiled By

Division Managers

Classification Cancelled (Change to Declassified with Deletions

By Authority of RL-CG-4

D. L. Lewis 2/4/92

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PM Eck 2-21-92

August 18, 1950

CLASSIFICATION REVIEW FOR DECLASSIFICATION BUT LEFT UNCHANGED

By

Date 5/17/73

U.S. AEC Division of Classification

HANFORD WORKS
RICHLAND, WASHINGTON

Operated for the Atomic Energy Commission
by the
Electric Company
under
W-31-109-eng-52

[redacted]

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GENERAL SUMMARY

JULY 1950

MANUFACTURING DIVISIONS

Production Divisions

A total of 95 tons of metal was discharged at the goal concentration. The pile operating efficiency was 89.2 percent. The pile operating levels at month end were 320 MW at B pile, 305 MW at D and F piles, and 400 MW at H pile. Difficulty was encountered in maintaining the H pile level due to the effect of the partial H-10 load (58 percent complete). The average monthly level was 385 MW. The nominal CO_2 concentration in the pile circulating gas at month end was 97, 96, 89, and 94 percent, respectively.

A total of 47 tons of acceptable slugs was canned at a yield of 93.7 percent. The machining yield was 79.0 percent.

The melt plant produced 13 tons of billets at a yield of 76.5 percent.

A new record total of 101 batches was started in the Canyon Buildings, 100 were processed through the Concentration Buildings, and 91 through the Isolation Building. It was necessary, at the request of the Atomic Energy Commission, to reduce cooling time to 75 days in order to meet the above schedule. The averege purity of completed batches was 98.5 percent.

Plant Utilities and Maintenance Divisions

The Power Division removed essential material from the Temporary Construction Warehouses making approximately 23,000 sq. feet of warehouse space available to the Purchasing and Stores Divisions.

In line with separate contract billing for process and Richland Village electricity, the peak demands are reported separately: Process - 54,200 KW; Village - 11,450 KW.

On July 18 a severe electrical storm resulted in damage to the 115 KV System between the Benton Substation and 300 Area, requiring replacement of cross arms and insulators.

The Divisions have completed the initial survey of Inactive General Stores Inventories. Lists of materials valued at $385,151 have been reviewed, with $193,603 of materials declared excess to the requirements of the Manufacturing Divisions.

TECHNICAL DIVISIONS

Pile Technology Division

The H-10 loading in the H Pile was 473 tubes at month-end, and the projected size of the loading was increased from the previous 600 tubes to a new total of 825 tubes. Some curtailment of power level in the H Pile below 400 MW was required because of the high graphite temperatures encountered with the H-10 loading.

Thirteen plutonium solution critical mass determinations were made with cylindrical containers. Fabrication of an 11-inch spherical reactor was completed.

Graphite samples which were pre-irradiated at low temperatures and then oven-annealed at 375°C showed additional annealing of stored energy when irradiated at 340°C. This is further manifestation of the nuclear annealing phenomenon previously observed for dimensional changes and for changes in thermal conductivity.

At month-end, installation of the Navy Test Channel (ANL-140) was being delayed because of unsatisfactory performance of the pressure relief valve.

Examination of the ruptured slug from the D Pile indicated that failure resulted from a combination of a pin-hole in the weld and imperfect bonding between the end-cap and the rest of the slug.

A dilatometer for checking the degree of transformation of production slugs has been installed for demonstration trials. Meantime, preliminary results indicate that the G. E. Metals Comparator might be equally reliable and far better suited for routine testing of all slugs.

P-10 billet casting, slug machining, and extraction operations were proceeding ten shifts per week at the end of the month. Close liaison with Project Engineering and General Engineering and Consulting Laboratory was directed toward shipment of the metal line by December 1, 1950. Development studies were concentrated on improvement of the glass lines.

Separations Technology Division

Increased output from the separations plant depends upon shortening the process cycle times for two operations in the Concentration Building, as well as certain modifications to the Canyon Building to permit paralleling of one of the operations there. Production tests are in progress to establish the conditions required to meet the nine-hour goal for the lanthanum fluoride by-product and product precipitation steps in the Concentration Building.

Solvent extraction studies for Metal Waste Recovery have centered on establishing firm specifications for pulse columns used with the TBP process, as these columns have now been selected for plant use. Initial tests have been made with the 16-inch pulse columns, and additional work carried out with 3-inch and 8-inch columns. Low uranium losses are being obtained, well within flowsheet standards, and definitive specifications are expected from this work during the coming month, satisfying the requirements of the plant design schedule.

Tests on prototype pumps, rotameter controllers, and waste evaporators are continuing with good results. Further work on the concentration of wastes from Metal Recovery indicates that, in spite of the elimination of nitric acid recovery and the consequent increase in bulk to be handled, the neutralized wastes can be reduced to a volume no greater than that originally removed from the underground storage tanks.

In the research laboratory preliminary results have been obtained on the americium-curium content of plant dissolver solutions of metal at different enrichment levels. This work is needed to establish the relationship of real processing losses to the apparent loss as determined by radiochemical analysis. Work has been completed on the pooling of 5-6 and second cycle crib wastes for a 100-fold reduction in product content before disposal. Studies are under way on the neutralization of the large volumes of acidic distillate which will be produced by the volume reduction (evaporation) steps proposed for the separations areas. First attention is being given to percolation through limestone as a means of raising the pH before disposal by cribbing. Other investigations in progress include: (a) extraction efficiency in pulse columns as a function of pulse wave, (b) hydrolysis products of TBP and their effect on solvent extraction behaviours, (c) acid-deficient TBP systems, and (d) manganese dioxide scavenging of dissolver solution.

A prototype of the fiberglas filter to be installed in the dissolver cell at B Plant has been tested with canyon ventilation air. When operated in series with a silver reactor (for removal of I^{131}), the efficiency of the filter at a linear gas flow of 20 ft/minute was found to be in the range of 99.99 percent.

Technical Services Division

The Analytical Section gave increased attention to the development of methods for the analysis of P-10 product, and cooperated with Pile Technology in the selection and ordering of a Consolidated-Nier isotope ratio mass spectrometer for this use. Close analytical liaison also was established with the KAPL evaluation of an alternate method employing emission spectrometry with excitation by electrodeless discharge.

Technical Shops assistance to the P-10 program was extended in both the Glass Shop and the Building 101 mechanical shops. In the former, two more glassblower trainees were added and arrangements were completed for this shop to assume administrative responsibility for all P-10 glassblowers on August 1. At Building 101, arrangements were made which provide P-10 with immediate service in metal fabrication with one to three machinists being assigned as required.

Design progress continued on the Hanford Works Laboratory Area. The architect-engineer (L. S. Rosener) working on the Radiochemistry Building raised many design questions requiring Technical attention. Appropriations and Budget Committee approval was obtained for Project C-394 (Plot Plan & Utilities), and the A.E.C. has this design proposal. With the help of personnel loaned by D & C, scope designs were completed for certain special equipment (e.g., cells) of the Radiometallurgy Building as required for use by D & C in architect-engineer negotiations. Preliminary design scoping of the Pile Technology Building continued in liaison with the Technical sections for whom this facility is being planned.

Supplementary Project Proposal C-187-E-R-2, covering construction of the Redox Analytical & Plant Assistance Laboratory and Associated Waste Disposal System, was approved by the A & B Committee and forwarded to the A.E.C.

HEALTH INSTRUMENT DIVISIONS

The force increased by eight. No formal Special Hazard Incident was reported.

Surveys by the Operational Division showed radiation control to be normal. High dosage rates were noted during manipulation of a ruptured slug and during miscellaneous pile area activities. Particle contamination in the 200 Area Process Control Laboratories continued to be undesirably high.

Measurements by the Biology and Development Division control groups on the deposition of activity in the environs showed no significant change from levels previously reported.

Development work on tritium hazard evaluation and detection occupied a major portion of the available research man hours in several of the Biology and Biophysics groups during the month.

PLANT SECURITY AND SERVICES DIVISIONS

There were no lost time injuries during the month. There have been only two lost time injuries for the year to date making a frequency rate of 0.23.

There were eight minor fires in the industrial areas with a total loss of $40.

The 700 Area laundry volume was 20 percent less than the previous month.

Mail volume also decreased slightly, while Office Equipment repair and

received. Effective July 1, a procedure was established in the Employment Office whereby all employees removed from the rolls with their continuity of service protected will be notified in writing when their service is broken by virtue of continued absence.

During the past month the Employee Services Group cooperated with the Union Relations and Wage Rate Division in comparing the new insurance and pension plan with the old plans so that information might be presented to the HAMTC. Five retired employees were interviewed during July for the purpose of arranging for photographs and news stories in the Works News concerning their activities since retirement. Twelve inquiries were received from pensioners requesting information concerning the availability of Company merchandise at employee prices. Six employees retired during July, and two employee deaths occurred during the month. Six investigations were made and letters prepared regarding the status of employees on leave of absence. Sixty-eight employees confined to the Kadlec Hospital were visited during July, and fifty-one salary checks were delivered to employees in the hospital. Eleven visits were made to employees confined at home due to illness. Five hundred and fifty-one employees are members of the military reserve, and 145 additional employees are subject to the Selective Service Act. Thirty-five suggestion awards, totaling $355, were made during July. These suggestions resulted in an estimated savings of $3,341.01. There were 72 compensation claims reported to the Department of Labor and Industries, and two property damage claims were reported to the Travelers Insurance Company during July.

The first four groups of supervisors began "Principles and Methods of Supervision" on July 18. There is a total of 79 supervisors participating in these meetings which are held in Dormitory W-10 and the Hanford High School. One thousand sets of material for "Principles and Methods of Supervision" have been ordered from the Sales Analysis Institute. Two issues of the Hanford Works SAGE, prepared by the Training and Program Development Group, were distributed to supervisors on July 12 and 26. Four meetings were held during the month with a total of 33 supervisors of the Medical Division attending for the purpose of reviewing Company policies and Benefit Plans. Eight meetings with a total of 187 non-exempt Medical Division employees attending were also held during July. Requests were received from the Purchasing Division, Accounting Division, and the Technical Personnel Office for a special program on letter writing and report writing.

Formal acceptance by the Council of the Company's wage increase, pension and insurance proposal was received on July 17, to be effective July 3. After the receipt of the NLRB certification of the Building Service Employees International Union, negotiations commenced on July 21 with the idea of patterning the contract after the HAMTC Agreement.

Federal Mediation and Conciliation Service intervention in the DST dispute was unsuccessful. Two Unions have failed to sign the Settlement Agreement and the offer has been withdrawn. Arbitration has been recommended by A-J. Wage increase negotiations between A-J and the Office Employees Local No. 100 reached an impasse necessitating the service of the Federal Mediation and Conciliation Service. A-J has suggested that consideration, based on an "improvement factor", might be given to increases not to exceed $2.50 per week to certain employees. The Union has authorized a strike to enforce their wage demands for increases in excess of $15 per week. Negotiations relative to the Master Agreement for 1950-51 between A-J and the Unions continued with

General Summary

A-J resisting demands for a Building Trades Agreement. The Contractors suggested that the present Agreement remain in effect for another year.

Certification of the Technical Engineers, Architects and Draftsmen Local No. 17 was received from the NLRB effective July 17, 1950. A notice of desire to open the Agreement for revisions and wage increases was received from the Union on July 21.

Negotiations between A-J and the Teamster Local No. 556 and Ironworker Local No. 14 were attended by a member of this Division.

The Operating Engineers vs. Machinists (IAM-Independent) representation election was held on July 21, 1950. Results: For IAM- 37, for Operating Engineers - 21.

A work stoppage on the part of Boilermaker-Welders was successfully concluded on July 20.

All of the work incidental to the general increase effective July 3, relative to wage rate records, was completed. Wage Rate representatives participated in discussions with the Union representatives and supervisors relative to grievances filed concerning job classifications and rates of pay. The review of Draftsman and Designers jobs continued. The semi-annual Northwest Community wage rate survey was completed. There were 106 requisitions for new employees reviewed and processed; over 500 reclassifications and transfers were reviewed; 330 increases, both automatic and merit, were handled; and 130 additions to the weekly roll were approved.

General Electric Company's offer to the Hanford Atomic Metal Trades Council was the occasion for a concerted effort by all Community and Public Relations groups during July to assist Union Relations in presenting the story of the "security package" and the three percent wage increase specifically to all members of the Negotiating Committee, and generally to all Hanford Works employees.

Another event during the month which became a joint activity of all Community and Public Relations groups was the Distinguished Service to Safety Award presented by the National Safety Council to the Nucleonics Department. The Works News was used extensively for publicizing the event to Hanford Works people.

A talk by the General Manager at the Pasco Chamber of Commerce received very favorable coverage in both the Columbia Basin News and the Tri-City Herald.

A total of 63 releases of information was made by the News Bureau during July, 50 of which were releases of stories and/or photos to the "local list" of media. The variety of subjects treated continued to be wide, including organization changes, a large number of stories about recreation for the community, and safety.

Activities of the Community Divisions Public Information supervisor during the month of July included assistance to members of the Richland Community Council in publicizing the activities of the committees they represent. This supervisor also served on the Community Defense Plan, the Richland trailer storage lot, and the garbage regulation committees appointed by the Community Manager during the month.

Arrangements were completed by Public Functions and Services whereby the approximately 1,000 members of the Army Anti-Aircraft Artillary Group located at North Richland will see regular showings of General Electric films. In addition, 14 G-E film showings were arranged for plant and community organizations during July.

In the field of radio programming, Public Functions and Services produced "Lady from Safety Land", a new weekly feature on radio station KALE which is intended as community safety education for children ages 4 to 9. In addition, the Distinguished Service to Safety Award ceremony was recorded, edited, and will be broadcast at an early date by two radio stations in the area.

Hanford Works Photo House handled an increasing number of assignments for the Reactor Division involving highly technical photography.

A new stenographic manual entitled "This Way--Please," being produced by Special Programs contains a particularly outstanding group of finished drawings created by the Public Functions and Services commercial artist.

Hanford Works News was the Medium for reporting to Nucleonics Department employees concerning the results of the Suggestion System activities during the first six month of the year. In addition to the half-year summary, the Works News carried front page feature articles concerning suggestion awards winners. It is felt that this medium has proven especially valuable in bringing about an increased number of suggestions.

PURCHASING AND STORES DIVISIONS

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

	Total Personnel as of 6-30-50	Total Personnel as of 7-31-50	Net Change
Exempt	55	55	
Non-Exempt	306	307	plus 1
TOTALS	361	362	plus 1

The number of purchase requisitions received and the number of purchase orders placed declined during the month as compared with the previous month.

The procurement phase of the DR Water Works was practically completed with 95 percent of all purchases shipped or available on the plant.

Termination of orders due to cancellation of Rala was completed. Forty orders were involved -- nine of which required cancellation charges and six required the return of material to the vendors for credit -- the remaining twenty-five were cancelled without charge.

Procurement for the P-10-D Project was accelerated in an effort to complete by December 1, 1950. All requisitions were handled on an emergency basis.

The general material situation continued to change rapidly for the worse with deliveries lengthening and prices increasing over a broad range.

An analysis of store stock items was undertaken with the idea of revising maximum and minimum stock levels upward when necessary.

Revised estimates of essential material requirements were received from the P, S, and Power Divisions.

There were 1,635 purchase requisitions screened against project inventories with the result that 2,921 items were furnished from plant sources thus obviating the necessity for the expenditure of new funds for outside purchase.

Materials valued at $463,133.19 were declared excess from the Construction Materials Account 10.20.

Two meetings were held with representatives of the Commission and the Army with respect to final disposition of Pasco Depot.

Shipping activities at the Pasco Depot continued at an accelerated pace--most of the material being shipped to other Government Agencies and Educational Institutions.

As a result of efforts exerted by our Traffic Section, rate reductions were obtained on caustic soda in tank cars which, at our present rate of consumption, will result in annual savings of $20,000. Total savings for the month of July, as a result of rate reductions obtained on various commodities, amount to $5,889.86.

The Interstate Commerce Commission, on July 28, 1950, issued a service order whereby, effective immediately, each common carrier by railroad subject to the Interstate Commerce Act shall include all Saturdays and Sundays after the expiration of free time in computing demurrage charges. H. W. Instructions Letter No. 152 was issued to call this change to the attention of all concerned.

COMMUNITY DIVISIONS

There was a decrease of 19 employees in the Community Divisions during the month of July, 1950.

Applications for housing in Richland increased from 337 to 343 during the month of July, 1950.

MEDICAL DIVISIONS

The Medical Divisions roll remained constant at 288.

Sickness absenteeism declined from 1.34% to 1.20%, while total absenteeism declined from 1.96% to 1.76%.

The hospital average daily census decreased from 77.1 to 70.8 (60.5 adults and 10.3 infants). The census was 51.9 a year ago.

By-laws, rules, and regulations for the Hospital Staff were approved by the Staff Physicians and will be submitted to our management for approval.

Contract for construction of a new wing to the Medical-Dental Clinic was awarded.

The communicable disease level remained low with no serious outbreak of disease threatening.

Two representatives of the State of Washington Department of Rehabilitation visited here to explain the state program for handicapped persons.

Conferences were held with the Public Health & Safety Committee of the Community Council regarding mosquito control and refuse disposal.

The net cost of operating the Medical Divisions (before assessments to other divisions and Workmen's Compensation Costs) was $107,037, an increase of $6,568 over May, but $8,495 below the budget figure.

Kadlec Hospital operated at a loss of $28,424 as compared with $16,489 for May, an increase of $11,935. Revenue was reduced by $7,672 due to (1) decrease in hospital census, (2) June out-patient laboratory and x-ray services were not billed to the doctors until July. Salaries increased due to temporary transfer of personnel from North Richland to Kadlec.

The clinic cost dropped by $2,259 to $1,071 due to a decrease in activities such as collection of accounts receivable and other related work.

GENERAL ACCOUNTING DIVISION

Considerable time was spent in connection with fiscal year end closing. Ledgers were held open late in July to record, where possible, all entries applicable to the Fiscal Year ended June 30, 1950, and in order to liquidate undistributed costs and Indirect Manufacturing Expense variances. Accounting statements normally issued around the 15th of each month were delayed ten to fifteen days. Post closing entries dated June 30, 1950 were prepared on July 25, 1950 which transferred all operating costs, costs-undistributed depreciation, and unusual costs resulting from cancelled projects to the Atomic Energy Commission. Financial statements were prepared on the basis of normal closing entries and footnotes were used to denote the accounts which were transferred.

Advances from AEC were reported at the end of June as being $6 500 000. By direct request from the AEC a July entry was made to reverse the Cash-in-Transit entry in the amount of $431 888 which could not be applied against Fiscal Year 1950 appropriations. The resulting balance of Advances from the AEC amounting to $6 068 112 was further reduced at the end of July to $5 500 000.

The Plant Accounting Section devoted considerable effort toward distribution of "Unclassified Property in Service" to appropriate Plant accounts. $90 000 000 in project costs were so distributed leaving an unclassified balance of only $1 151 000. Two major projects—C-165-A Construction of "H" Area, in the amount of $68 560 000, and Project C-198-V Phase 1, 234-5 Building Program, in the amount of $19 000 000—were included in the amount distributed.

In connection with the General Salary Adjustment, effective July 1, 1950 for monthly paid employees and July 3, 1950 for weekly paid employees, approximately 900 man hours, including approximately 500 man hours of overtime, were

expended in preparation of salary payments at the increased rates. Monthly paid employees received the increased rates in salary checks for the month of July. Weekly paid employees received the increased rates currently in salary checks covering the week ended July 16, which were paid on July 21, 1950. The retroactive payment, covering the week ended July 9, was included in salary checks delivered to weekly paid employees on July 28, 1950.

During the month of July, considerable time was spent on the preparation of the first draft of the Appendix C to the Prime Contract.

Authorizations for check-off of Union Dues in effect at July 31, 1950, cover 539 employee members of 14 Unions.

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

	June*	July
Disbursements		
Material and Freight - GE	$1 162 787	$1 433 544
Payrolls - GE (net)	2 122 541	1 837 467
Payments to Subcontractors	2 492 229	2 444 095
Other	890 426	1 123 565
Total	$6 667 983	$6 838 671
Receipts		
Rents	110 489	110 131
Hospital	43 961	42 587
Telephone	13 731	14 602
Bus Fares	9 317	8 881
Other	57 597	120 021
Total	235 095	296 222
Net Disbursements	$6 432 888	$6 542 449

* Five week month for weekly payrolls.

STAFF

General Manager	G. R. Prout
Manager, Schenectady Office	B. R. Prentice
Assistant General Manager	F. K. McCune
Assistant to the General Manager (Technical and Education Matters)	W. I. Patnode
Assistant to the General Manager	J. R. Rue
Assistant to the General Manager and Manager of the Plant Security and Services Divisions	G. G. Lail
Department Comptroller	F. E. Baker
Counsel	G. C. Butler
Community Manager	L. F. Huck
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

FORCE REPORT JULY 1950

	EXEMPT		NON-EXEMPT		TOTAL	
	6-30-50	7-31-50	6-30-50	7-31-50	6-30-50	7-31-50
GENERAL	18	18	31	27	49	45
LAW	3	2	3	3	6	5
DESIGN & CONST. DIV'S.						
Construction	7	2	38	37	45	39
Const. Acctg.	10	10	59	61	69	71
No. Richland Realty	18	18	83	79	101	97
Design	197	210	204	205	401	415
MANUFACTURING DIVISIONS						
General	12	14	4	4	16	18
Proj. Eng'r. Control	24	24	21	22	45	46
Proj. Eng'r. Design	45	46	66	70	111	116
Proj. Eng'r. Minor Const.	29	28	164	159	193	187
Mfg. Accounting	8	7	50	49	58	56
OPERATING DIVISIONS						
"P"	68	72	280	278	348	350
"S"	106	110	324	355	430	465
Power	83	82	469	480	552	562
MECHANICAL DIVISIONS						
Maintenance	51	51	309	306	360	357
Electrical	50	51	247	244	297	295
Instrument	49	52	194	189	243	241
Transportation	58	58	571	561	629	619
TECHNICAL DIVISIONS						
Administrative	4	4	2	2	6	6
Pile Technology	95	98	75	88	170	186
Separations Technology	100	101	60	56	160	157
Technical Services	117	124	353	344	470	468
MEDICAL	49	48	240	240	289	288
H.I. DIVISIONS						
General	5	5	4	4	9	9
Operational	57	57	171	173	228	230
Development	27	27	69	72	96	99
Biology	25	27	35	37	60	64
ACCOUNTING DIVISIONS						
Acctg. Payroll	9	9	67	66	76	75
Gen. Accg. Accg.	16	18	76	76	92	94
EMPLOYEE & COMM. REL. DIV.	30	30	62	61	92	91
PLANT SECURITY & SERVICES DIV'S.						
Patrol & Security	55	55	531	527	586	582
Safety & Fire	39	38	105	106	144	144
Gen. & Off. Serv.	23	23	211	207	234	230
PURCHASING & STORES DIV'S.						
Purchasing	40	40	55	58	95	98
Stores	21	21	253	253	274	274
COMMUNITY DIVISIONS	216	217	528	517	744	734
GRAND TOTALS	1764	1797	6014	6016	7778	7813

PERSONNEL DISTRIBUTION - JULY 1950

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
GENERAL												
Clerical	-	-	-	-	-	-	-	-	-	-	18	18
Total	-	-	-	-	-	-	-	-	-	-	27	27
	-	-	-	-	-	-	-	-	-	-	45	45
LAW												
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	3	3
	-	-	-	-	-	-	-	-	-	-	5	5
DESIGN & CONST. DIV'S.												
CONSTRUCTION												
Supervisors	-	-	-	-	-	-	-	-	-	2	-	2
Clerical	-	-	-	-	-	-	-	-	-	37	-	37
Total	-	-	-	-	-	-	-	-	-	39	-	39
CONST. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	10	-	10
Clerical	-	-	-	-	-	-	-	-	-	61	-	61
Total	-	-	-	-	-	-	-	-	-	71	-	71
DESIGN												
Supervisors	-	1	-	-	-	-	-	-	-	12	40	53
Engineers & Inspectors	-	8	-	-	-	-	15	-	-	12	108	143
Other exempt	-	-	-	-	-	-	-	-	-	12	2	14
Draftsmen	-	-	-	-	-	-	-	-	-	-	60	60
Clerical	-	1	-	-	-	-	3	-	-	27	114	145
Total	-	10	-	-	-	-	18	-	-	63	324	415
NO. RICHLAND REALTY												
Supervisors	-	-	-	-	-	-	-	-	-	18	-	18
Clerical	-	-	-	-	-	-	-	-	-	23	-	23
Janitors	-	-	-	-	-	-	-	-	-	33	-	33
Others	-	-	-	-	-	-	-	-	-	23	-	23
Total	-	-	-	-	-	-	-	-	-	97	-	97

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MANUFACTURING DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	10	10
Engineers	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	18	18
PROJ. ENG'R. CONTROL												
Supervisors	-	-	-	-	-	-	-	1	-	-	7	8
Engineers	-	-	2	-	-	-	-	2	-	-	12	16
Clerical	-	-	1	-	-	-	-	-	-	-	17	18
Others	-	-	-	-	-	-	-	-	1	-	3	4
Total	-	-	3	-	-	-	-	3	1	-	39	46
PROJ. ENGR. DESIGN												
Supervisors	-	-	-	-	-	-	2	-	-	-	19	21
Engineers	-	-	-	-	-	-	1	-	-	5	19	25
Draftsmen	-	-	1	-	-	-	5	-	-	5	40	51
Clerical	-	-	1	-	-	-	-	-	-	-	8	9
Others	-	-	-	-	-	-	-	-	4	-	6	10
Total	-	-	2	-	-	-	8	-	4	10	92	116
PROJ. ENGR. MINOR CONST.												
Supervisors	-	-	1	-	-	-	1	-	23	-	1	26
Engineers	-	-	1	-	-	-	-	1	-	-	-	2
Craftsmen	-	-	-	-	-	-	-	-	144	-	-	144
Clerical	-	-	-	-	-	-	1	1	10	-	1	13
Tech. Grads.	-	-	-	-	-	-	-	-	2	-	-	2
Total	-	-	2	-	-	-	2	2	179	-	2	187
MFG. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	-	-	49	49
Total	-	-	-	-	-	-	-	-	-	-	56	56

HW 18473-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	3000 Area	700-1100 Area	Total
MANUFACTURING DIV'S.												
OPERATING DIV'S.												
"P"												
Supervisors	9	12	9	10	-	-	-	13	-	-	2	55
Supv. In Training	1	1	-	-	-	-	-	-	-	-	3	5
Engineers	2	-	-	-	-	-	-	-	-	-	10	12
Operators	42	46	40	40	-	-	-	86	-	-	-	254
Clerical	2	2	2	2	-	-	-	5	-	-	4	17
Others	2	1	2	1	-	-	-	1	-	-	-	7
Total	58	62	53	53	-	-	-	105	-	-	19	350
"S"												
Supervisors	-	-	-	-	-	16	36	4	-	-	3	59
Supv. in Training	-	-	-	-	-	6	16	-	-	-	7	29
Engineers	-	-	-	-	-	-	8	-	-	-	14	22
Operators	-	-	-	-	-	115	185	8	-	-	-	308
Clerical	-	-	-	-	-	7	17	-	-	-	3	27
Others	-	-	-	-	-	7	10	-	-	-	3	20
Total	-	-	-	-	-	151	272	12	-	-	30	465
POWER												
Supervisors	12	13	12	11	-	4	8	5	1	-	2	68
Engineers	-	5	-	-	-	-	1	-	8	-	-	14
Operators	84	87	82	86	6	25	49	12	10	-	-	441
Clerical	1	1	1	1	-	-	1	-	4	-	2	11
Others	4	5	4	5	-	6	2	-	2	-	-	28
Total	101	111	99	103	6	35	61	17	25	-	4	562
MECHANICAL DIV'S.												
MAINTENANCE												
Supervisors	1	6	6	4	-	4	12	5	-	-	2	40
Engineers	-	-	2	-	-	-	2	1	-	-	6	11
Craftsmen	17	44	44	28	-	30	69	48	-	-	-	280
Clerical	-	1	3	1	-	1	4	3	-	-	1	14
Others	1	1	2	2	-	2	3	1	-	-	-	12
Total	19	52	57	35	-	37	90	58	-	-	9	357

HW 18473-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	3000 Area	700-1100 Area	Total
MANUFACTURING DIV'S.												
ELECTRICAL												
Supervisors	2	1	1	4	-	1	5	2	17	-	10	43
Engineers	-	-	-	1	-	-	1	1	2	-	3	8
Craftsmen	11	13	14	13	2	8	13	11	69	-	27	181
Clerical	1	-	1	1	-	-	1	1	4	-	25	34
Operation	4	4	4	4	-	-	-	-	10	-	-	26
Others	-	-	-	1	-	-	-	-	2	-	-	3
Total	18	18	20	24	2	9	20	15	104	-	65	295
INSTRUMENT												
Supervisors	1	5	2	3	-	2	6	8	-	-	3	30
Engineers	-	1	-	-	-	-	3	11	1	-	6	22
Craftsmen	13	16	16	15	-	14	29	52	-	-	9	164
Clerical	-	1	1	1	-	1	2	6	2	-	3	17
Others	-	-	-	-	-	-	-	8	-	-	-	8
Total	14	23	19	19	-	17	40	85	3	-	21	241
TRANSPORTATION												
Supervisors	2	3	1	1	-	2	1	1	9	-	34	54
Engineers	-	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	-	163	163
Journeymen	3	5	3	5	-	2	5	-	18	-	70	111
Trainmen	-	-	-	-	-	-	-	-	25	-	-	25
Servicemen	1	11	1	2	-	3	4	4	15	-	18	59
Clerical	1	1	1	1	-	1	1	1	1	-	20	28
Equipment Operators	3	9	3	4	-	3	6	3	19	-	31	81
Others	10	14	3	2	-	12	4	2	9	-	38	94
Total	20	43	12	15	-	23	21	11	96	-	378	619
TECHNICAL DIV'S.												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	6	6

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
TECHNICAL DIV'S.												
PILE TECHNOLOGY												
Supervisors	2	1	1	1	1	-	-	12	-	-	-	18
Metallurgist & Eng'r.	16	3	1	7	-	-	-	32	-	-	-	59
Physicists	1	2	2	3	2	-	-	10	-	-	1	21
Tech. Grads. & Enrg. Assts.	9	-	1	4	-	-	-	7	-	-	-	21
Technologists	6	-	-	-	-	-	-	-	-	-	-	6
Laboratory Asst.	25	5	1	7	3	-	-	10	-	-	-	51
Clerical	-	1	-	2	-	-	-	5	-	-	-	8
Others	2	-	-	-	-	-	-	-	-	-	-	2
Total	61	12	6	24	6	-	-	76	-	-	1	186
SEPARATIONS TECHNOLOGY												
Supervisors	-	-	-	-	-	1	4	15	-	-	1	21
Chemists & Chem. Engr.	-	-	-	-	-	5	10	64	-	-	1	80
Tech. Grad.	-	-	-	-	-	1	1	5	-	-	-	7
Clerical	-	-	-	-	-	-	3	8	-	-	1	12
Chem. Operators	-	-	-	-	-	-	1	23	-	-	-	24
Others	-	-	-	-	-	-	-	13	-	-	-	13
Total	-	-	-	-	-	7	19	128	-	-	3	157
TECHNICAL SERVICES												
Supervisors	-	-	-	2	3	6	14	26	-	-	3	54
Chemists & Engrs.	-	1	1	-	7	1	15	41	-	-	4	70
Technologists, Tech. Grads.	1	-	-	3	-	9	22	21	-	-	-	56
Lab. Assts.	-	-	-	6	-	38	66	43	-	-	-	153
Clerical	-	-	-	1	-	5	3	41	-	-	40	90
Others	-	-	-	-	31	-	-	13	-	-	1	45
Total	1	1	1	12	41	59	120	185	-	-	48	468

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
MEDICAL												
Supervisors	-	-	-	-	-	-	-	-	-	1	28	29
Physicians	-	-	-	-	-	-	-	-	1	2	9	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	7	7
Technicians	-	-	-	-	-	-	-	-	4	3	11	18
Nurses	2	6	4	1	-	4	6	2	-	1	59	85
Clerical	-	-	-	-	-	-	-	1	3	10	51	65
Others	-	-	-	-	-	-	-	-	-	1	71	72
Total	2	6	4	1	-	4	6	3	8	18	236	288
H. I. DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	5	
Clerical	-	-	-	-	-	-	-	-	-	-	4	
Total	-	-	-	-	-	-	-	-	-	-	9	
OPERATIONAL												
Supervisors	1	1	1	2	-	1	9	8	-	-	1	24
Engineers	4	4	4	6	-	4	7	3	-	-	1	33
Clerical	-	-	-	1	-	-	1	1	-	-	-	3
Others	14	15	15	12	-	21	36	47	8	-	2	170
Total	19	20	20	21	-	26	53	59	8	-	4	230
DEVELOPMENT												
Supervisors	-	-	-	-	-	1	5	3	-	-	-	9
Engineers	-	-	-	-	-	4	5	8	-	-	1	18
Clerical	-	-	-	-	-	1	1	2	-	-	-	4
Others	-	-	-	-	-	13	30	14	-	-	11	68
Total	-	-	-	-	-	19	41	27	-	-	12	99
BIOLOGY												
Supervisors	-	-	7	-	-	-	-	-	-	-	-	7
Engineers	-	-	20	-	-	-	-	-	-	-	-	20
Clerical	-	-	3	-	-	-	-	-	-	-	-	3
Others	-	-	34	-	-	-	-	-	-	-	-	34
Total	-	-	64	-	-	-	-	-	-	-	-	64

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	TOTAL
ACCOUNTING DIVISIONS												
GEN. ACCTG. PAYROLL												
Supervisors	-	-	-	-	-	-	-	-	-	-	9	9
Clerical	-	-	-	-	-	-	-	-	-	-	66	66
Total	-	-	-	-	-	-	-	-	-	-	75	75
GEN. ACCTG. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	3	9	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	6	6
Clerical	-	-	-	-	-	-	-	-	-	31	45	76
Total	-	-	-	-	-	-	-	-	-	34	60	94
EMPLOYEE & COMMUNITY REL.												
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.												
PATROL & SECURITY												
Supervisors	5	6	6	5	-	5	9	7	7	-	4	54
Other Exempt	-	-	-	-	-	-	-	-	1	-	-	1
Patrolman	50	66	67	49	-	57	109	70	2	-	37	507
Clerical	-	-	-	-	-	-	-	-	16	-	2	18
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	55	72	73	54	-	62	118	77	28	-	43	582
SAFETY & FIRE												
Supervisors	8	-	-	-	-	-	4	4	9	-	4	29
Engineers	-	2	-	2	-	2	-	2	-	-	1	9
Fireman	42	-	-	-	8	-	14	14	3	-	18	99
Clerical	-	1	-	1	-	1	-	1	-	-	3	7
Total	50	3	-	3	8	3	18	21	12	-	26	144

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-E Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	TOTAL
GEN. & OFFICE SERVICE												
Supervisors	-	-	1	-	-	1	2	1	1	-	17	23
Laundry Operators	-	-	-	-	-	-	2	-	-	-	1	3
Janitors & Serviceman	7	5	5	4	-	4	16	11	4	-	37	93
Clerical	-	-	-	-	-	-	-	-	-	-	32	32
Others	-	-	-	-	-	-	30	-	-	-	49	79
Total	7	5	6	4	-	5	50	12	5	-	136	230
PURCHASING & STORES DIV'S.												
PURCHASING												
Supervisors	-	-	-	-	-	-	-	-	-	-	15	15
Others Exempt	-	-	-	-	-	-	-	-	12	-	13	25
Clerical	-	-	-	-	-	-	-	-	-	2	56	58
Total	-	-	-	-	-	-	-	-	12	2	84	98
STORES												
Supervisors	3	-	-	-	-	-	-	-	-	3	15	21
Clerical	16	-	-	-	-	-	-	-	-	31	47	94
Others	35	-	2	-	-	-	1	-	-	16	105	159
Total	54	-	2	-	-	-	1	-	-	50	167	274
COMMUNITY DIVISIONS												
Supervisors	-	-	-	-	-	-	-	-	-	21	111	132
Other Exempt	-	-	-	-	-	-	-	-	-	-	15	15
Fireman	-	-	-	-	-	-	-	-	-	25	45	70
Patrolman	-	-	-	-	-	-	-	-	-	19	29	48
Journeyman	-	-	-	-	-	-	-	-	-	-	170	170
Serviceman	-	-	-	-	-	-	-	-	-	-	69	69
Truck Drivers	-	-	-	-	-	-	-	-	-	-	48	48
Power Operators	-	-	-	-	-	-	-	-	-	-	43	43
Clerical	-	-	-	-	-	-	-	-	-	-	94	94
Other	-	-	-	-	-	-	-	-	-	-	45	45
Total	-	-	-	-	-	-	-	-	-	65	669	734
GRAND TOTALS	479	438	443	368	63	457	958	896	485	449	2777	7813

HW 18473 Def

1209649

[redacted]

MANUFACTURING DIVISIONS

JULY 1950

SUMMARY

Production Divisions

A total of 95 tons of metal was discharged at the goal concentration. The pile operating efficiency was 89.2 percent. The pile operating levels at month end were 320 MW at B pile, 305 MW at D and F piles, and 400 MW at H pile. Difficulty was encountered in maintaining the H pile level due to the effect of the partial H-10 load (58 percent complete). The average monthly level was 385 MW. The nominal CO_2 concentration in the pile circulating gas at month end was 97, 96, 89, and 94 percent, respectively.

A total of 47 tons of acceptable slugs was canned at a yield of 93.7 percent. The machining yield was 79.0 percent.

The melt plant produced 13 tons of billets at a yield of 76.5 percent.

A new record total of 101 batches was started in the Canyon Buildings, 100 were processed through the Concentration Buildings and 91 through the Isolation Building. It was necessary, at the request of the Atomic Energy Commission, to reduce cooling time to 75 days in order to meet the above schedule. The average purity of completed batches was 98.5 percent.

Plant Utilities and Maintenance Divisions

The Power Division removed essential material from the Temporary Construction Warehouses making approximately 23,000 sq. ft. of warehouse space available to the Purchasing and Stores Divisions.

In line with separate contract billing for process and Richland Village electricity, the peak demands are reported separately: Process - 54,200 KW, Village - 11, 450 KW.

On July 18, a severe electrical storm resulted in damage to the 115 KV System between the Benton Substation and 300 Area, requiring replacement of cross arms and insulators.

The Divisions have completed the initial survey of Inactive General Stores Inventories. Lists of materials valued at $385,151 have been reviewed, with $193,603 of materials declared excess to the requirements of the Manufacturing Divisions.

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

HW-18473 Del

[redacted]

MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF JULY 1950

Richland, Washington
August 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
N O N E	

C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

1201151

[redacted]

[redacted]

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WITH DELETIONS

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DECLASSIFIED
WITH DELETIONS

[redacted]

[redacted]

DECLASSIFIED
WITH DELETIONS

Section 10 Approved by: [redacted]
W. K. Woods, Division Head
Pile Technology Division, Technical Divisions

[redacted]

August 4, 1950

P DIVISION

JULY, 1950

I. 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 - 305 MW until July 29 when the level was increased to 320 MW, D and F Piles - 305 MW, H Pile - 400 MW. The piles operated with a "time operated" efficiency of 91.7%.

The H-10 program, initiated during June (described in document number HW-18221-A) was continued during the month at H Pile. At month end a total of 474 tubes have been loaded. Increases in graphite temperatures in that portion of the pile loaded with H-10 material have resulted in power level reductions for almost the entire month. The average operating level was 385 MW.

The P-10 fuel slug test program was completed at DR Pile during July.

On July 17, the installation of aluminum nozzles on the rear face and galvanized nozzles on the front face of the DR Pile was started as part of the program to ready the pile for operation during October, 1950.

[redacted]

P Division

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll - July, 1950

Beginning of Month	347
End of Month	350
Net Increase	3

R. O. Mehann, Chief Supervisor, was assigned the responsibility for startup preparations of 105-DR in addition to operating responsibilities for 100-D Area, effective July 1.

W. W. Windsheimer, Chief Supervisor, assumed responsibility as Chief Supervisor for 100-B Area, in addition to 100-F and 100-H Areas, effective July 1.

J. A. Finn was hired on July 5 and K. V. Stave and W. G. Albert were hired on July 17 as Supervisors-in-Training for the 100 Areas.

S. M. Gill was hired on July 3 and assigned to the 300 Area as a Supervisor-in-Training.

C. W. Richards transferred from the Health Instrument Divisions as a Technical Graduate on July 10.

One rotational pool employee was assigned to the P Division for a three month period starting July 12.

One operator from 100-D Area and 3 operators from the 300 Area transferred to the S Division. One operator from the 300 Area transferred to the Transportation Division.

Three operators from the 300 Area terminated voluntarily, and one operator from the 300 Area went on leave of absence.

Six operators were hired in the 300 Area.

One Steno.-Typist B terminated voluntarily and one Steno.-Typist B was hired.

III. AREA ACTIVITIES

Pile Summary	PILE B	PILE D	PILE F	PILE H
Time Operated (%)	93.5	93.3	90.3	89.8
Operating Efficienty (%)	92.0	91.0	89.0	84.6
*Nominal Power Level (MW)	320	305	305	400
*Inlet Water Temperature (°C)	18.4	18.6	18.7	18.7
*Outlet Water Temperature (Maximum °C., 10 tubes, 0.240" Zone)	63.5	57.4	59.8	68.8
Number of Scrams	1	1	1	3
Number of Purges	1	1	1	2

* Month end figures.

P Division

Pile Summary (Continued)	PILE B	PILE D	PILE F	PILE H
Helium Consumption (cu. ft.)	0	25,423**	6,426	0
CO_2 Consumption (cu. ft.)	49,368	85,272	38,352	22,962
Metal Discharged (tons)	16.18	21.92	20.44	36.25
Inhours Gained (this month)	+1	-11	+6	-137
*Inhours Poisoned	584	595	518	328
*Inhours in Rods	66	72	87	100
CO_2 Concentration	97	96	89	94

* Month end figures.
** Includes 15,500 cu. ft. for DR Pile.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled	Unscheduled	Length of Outage (Hours)
(1) 7-3-50		H	0.3
7-6-50	B		22.5
(2) 7-6-50		D	0.2
(2) 7-7-50		H	0.3
(2) 7-7-50		B	0.1
(3) 7-11-50	H		42.3
7-11-50	D		24.8
(3) 7-12-50	F		34.1
(2) 7-17-50		F	0.2
7-18-50	D		25.1
(3) 7-19-50	F		38.1
7-25-50	B		22.8
7-26-50	H		32.8
(2) 7-31-50		H	0.2

(1) Unit scrammed due to surge in Beckman circuit.
(2) Unit scrammed when panellit alarm could not be reset.
(3) Includes time down for temporary poison discharge.

Operating Experience

Production tests having operational significance are reported below:

105-81-P (Probe Test of Top Central Tubes)
The following tubes successfully passed a 1.485" probe:

4574-B
4674-D
4674-F

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

DE[redacted]FIED

P Division

105-168-P (Replacement of Pile Atmosphere with CO_2)
The B and D Piles were maintained at approximately 97% CO_2 throughout the month. The F Pile was maintained at 80% until July 24 when all helium additions were stopped to permit the CO_2 concentration to approach 100%. At month end the CO_2 concentration was 89%. No unexpected operating conditions have been observed.

105-291-P (Examination of Inlet Ends of Process Tubes)
Tube 2253-B was removed and replaced as part of the program to evaluate the effects of corrosion products on tube life.

105-337-P (Power Level Increase, B Pile - Supplement A)
On July 29, the B Pile power level was increased from 305 MW to 320 MW over a four hour period and maintained at that level for the remainder of the month. No unexpected operating conditions have been observed.

105-351-P (Charging High Exposure P-10-A Pieces into H-10 Tubes)
During the outage of July 11, six tubes were charged with H-10 loading, using previously exposed feed slugs. No unexpected operational effects have been observed.

A total of 94.84 tons of uranium slugs was discharged during the month at an average concentration of current goal value.

Examination of the ruptured slug from tube 1572-D which caused the June 22 outage at D Pile (Document No. HW-18221-A) has not been completed at month end. Results available to date indicate poor brazing, and a possible pinhole in the weld as contributing factors.

During the outage of July 19, 1950 at F Pile, there were several indications of abnormal activity in the effluent water which could have resulted from a ruptured slug. Analyses of water samples and survey data were not conclusive enough to refute the presence of a ruptured piece, since the available instrumentation does not appear adequate enough to give reliable in-indications of the type of radiation detected. From the evidence presented, it appeared that if a ruptured slug were present, it was located in tube 3270-F. This tube was discharged through a flexible hose into a special can on the floor of the storage basin to minimize the possible spread of contamination to the storage basin water. The pile was reactivated on July 20 and subsequent inspection of the discharged metal did not reveal a ruptured piece. The loss in operating time resulting from this suspected failure was 13.5 hours.

P Division

Operating difficulties due to unexplained surges of the control room Beckmans of H Pile were significantly reduced during the month. One unscheduled outage due to this cause was experienced. In continuance of the corrective program, the signal cable to the #1 Beckman was placed in an isolated conduit on July 26. It is anticipated that this revision will greatly reduce, if not eliminate, further difficulties from this source.

Mechanical Experience

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

a. Horizontal Rod #2-F cannot be withdrawn beyond 300 inches. Corrections are planned for the next extended outage of F Pile.

b. Horizontal Rod #5-F drags for the entire length of travel. Inspections made on July 19 were inconclusive and further investigation will be required before corrective action is planned.

c. 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.

d. Vertical Rod #27-F is scrammable but binds at each joint when operated under power. Repairs have been deferred pending the procurement of a special guide.

e. Vertical Rod #37-F binds in travel and must be jarred to obtain proper operation. Replacement with a flexible rod is planned.

Rod repairs during the month included:

a. Horizontal Rod #6-B, which was binding when operated under power, was repaired by removing a restriction in the oil line to the two-way solenoid valve on July 6.

Tubes 0990-B and 1873-H, which were damaged during charging operations, were replaced during the month. Tube 1973-H was also damaged during charging and is out of service at month end pending replacement during August.

Tube 2285-D, which was removed for graphite sampling, and tube 2584-D, which was damaged by a thermocouple tape during a production test, were replaced during the month.

Tubes 1387-F, 2563-F, and 2675-F were removed and replaced during the month for graphite sampling operations.

P Division

The thermocouples in vertical thimble #26-B which have been inoperable were repaired on July 25 by replacing the top five foot section of wire. Both thermocouples were operating satisfactorily at month end.

Gas Processing Building

Operation of these buildings was normal during the month.

Special Hazards

Significant reductions in the intensity of the beam at the top far side of F Pile were observed during July. Decreases of 33 - 50% for neutrons and 40% for gamma radiation were noted.

Removal of fission product contamination from the 107-D basins was in progress at month end. After experimentation with several methods, the contaminated sludge was being removed satisfactorily to the 107-DR crib by a gasoline driven centrifugal pump.

Project Status

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

C-306 (Front Face Shielding Caps)
Five thousand five hundred fifty nozzle caps have been received to date. Delivery of the balance of the order is expected during August.

C-330 (Improved Ventilation, Building 313-314)
Outside duct work has been completed and final inspection prior to acceptance is in progress. Development tests will begin after acceptance of the facilities.

C-339 (Rolling Mill)
No further action taken this month.

C-347 (Nozzle Replacement)
One thousand two hundred twenty inlet and 3081 outlet nozzles have been received to date. Casting difficulties have held up production on inlet nozzles but it is anticipated that expected delivery rates will be met during August. Replacement of the nozzles on DR Pile was begun July 17.

C-355 (Pile Clearance, Near Side)
B Pile work is scheduled for September. No plans have been made for D and F Piles.

M-711 (Algae Filter)
The filter operated throughout the month.

P Division

M-713 (Flexible Vertical Rod)
Tests on a section of rod of new design are being conducted. Materials have been ordered for the fabrication of three rods.

M-721 (Pile Shield Restraining Clamps)
Project closed out.

M-723 (Repairs to 107-B Basin)
Deferred until B Pile extended shutdown.

C-342 (DR Water Plant)

A. 105-DR

Design was completed and equipment ordered for the elevated storage tank controls which will allow process water flows as low as 5,000 gpm.

B. Part II, Modifications to 115-D

Footings for the three stage unloading compressor were poured in the 115-D fan room and the compressor installed during the month.

Alteration of process piping in the 115-D tunnel was continued on a one shift basis during the two shutdowns of D Pile during July. Plans are being made to complete this phase of the job during the long shutdown of D Area in August and September.

C-388 (P-10-X)
The design organization for the scoping phase has been established and is preparing a design basis, flow sheets and building layout.

Preliminary consideration of contamination control requirements and space required for analytical facilities adjacent to the extraction lines indicates the desirability of locating one extraction and one stripping line on both the second and third floors of 108-D. Alternate layouts are being prepared.

Studies are in progress on the material handling problems associated with the disposition of irradiated food and fuel slugs.

P Division

300 AREA METAL FABRICATION

Production Statistics

Production for the month of July was as follows:

Billets Produced	13 Tons
Rods Machined	83 Tons
Bare Pieces Machined	65 Tons
Acceptable Pieces Canned	47 Tons

Melt Plant

The casting yields were as follows:

	June	July	To Date 1950
Billet (Avg. per furnace run)	80.0	76.5	71.9
Billet (Yield from total scrap processed)	84.9	86.5	82.4
Solid Yield	89.6	90.8	88.6

The decrease in the billet yield (average per furnace run) was caused primarily by difficulties incidental to the training of new operators.

The Melt Plant was shut down during the weeks beginning July 3 and 24 because inventories of uranium scrap were diminished to the extent that continuous operation was not feasible. During these periods, Melt Plant personnel was utilized in the Machining operation.

Machining

The machining yields were as follows:

	June	July	To Date 1950
	78.0	79.0	77.5

The machining yield continued at a near record level during the month.

Four rods were machined in conformance with Production Test 313-110-M, Supplement A, "Lead Dip Canning of Special Rolled Uranium". Two of these rods were rolled slightly below and two above normal rolling temperature (600°C).

Chip Recovery

The chip recovery yield was as follows:

P Division

	June	July	To Date 1950
	90.2	90.1	88.8

The entire chip recovery process was operated four shifts and the press was operated an additional six shifts. A total of 21,381 pounds of TXB was produced from pickled chips.

Work on Production Test 313-111-M, "Substitution of Calcium Nitrate for Calcium Chloride in the Chip Recovery Process", was continued during the month. This test will require approximately three months for completion.

Oxide Burning

The material burned was as follows:

	Weight Out - Pounds		
	June	July	To Date 1950
	15,006	8,183	125,963

Oxide on Hand at Month End (Metal Content)

To be burned	1,672
To be analyzed	1,015
To be shipped	28,070
Total	30,757 lbs.

Canning Operation

The canning yield was as follows:

	June	July	To Date 1950
	92.9	93.7	93.8

Canning rejects, by cause, were:

	Per Cent		
	June	July	To Date 1950
Non seating	1.7	0.8	1.1
Marred surface	1.9	1.5	1.8
Al-Si on outside of can	0.7	1.2	0.8
Frost test	1.0	0.7	0.8
Bad welds	0.5	1.0	0.7
Miscellaneous	1.3	1.1	1.0
Total		6.3	6.2

P Division

The canning yield followed a more favorable trend during the month. An appreciable reduction in non seating and frost test rejects resulted from continued emphasis on processing techniques.

On July 19, the stock of Scovill aluminum cans was exhausted and it became necessary to use Victor cans. Although an improved double crimping technique was developed for processing these cans, Al-Si on the outside of cans continued to be the major cause for canning rejects when using Victor cans.

Canning production was reduced from two lines to a one line schedule during the weeks beginning July 3 and 24 in order to provide operating personnel for various phases of the J-Slug program.

Seventy-two slugs were canned, using the standard lead dip process, as outlined in Production Test 313-110-M, Supplement A, "Lead Dip Canning of Special Rolled Uranium".

The following special request pieces were canned:

Request No.	Content	No. of Pieces
P-10-A	Lithium Aluminum Alloy	3702
"J"	Aluminum - U_{235} Alloy	1005

The "J" piece canning yield was as follows:

Per Cent Yield		
June	July	To Date 1950
91.3	94.2	92.7

The "J" piece canning rejects, by cause, were:

	Per Cent		
	June	July	To Date 1950
Frost test	2.8	2.5	3.1
Air pockets	2.3	0.6	1.1
Marred surface	0.4	0.9	0.9
Non seating	0.9	1.0	1.1
Al-Si on outside of can	0.0	0.7	0.3
Not canned	0.0	0.1	0.0
Bad welds	1.7	0.0	0.6
Penetration	0.4	0.0	0.1
Thin caps	0.2	0.0	0.1
	8.7	5.8	7.3

The higher yield in July resulted primarily from the elimination of bad weld rejects and a reduction in the number of air pocket

rejects. These reductions were effected by continued emphasis on close adherence to process requirements.

Slug Recovery

	Per Cent Recovered		Avo. Wt. - Lbs.	
	July	To Date 1950	July	To Date 1950
"Z" Slugs	66.9	84.6	3.894	3.902
"X" Slugs	29.9	13.5	3.858	3.860
Rejects	3.2	1.9	--	--
Total	100.0	100.0		

Inspection and Testing

Autoclave results were as follows:

June	July	To Date 1950
0.22/M	0.21/M	0.16/M

Five autoclave failures occurred during the month. Three were complete failures and two were partial failures.

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

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

	Per Cent Usable		
	June	July	To Date 1950
Aluminum Caps	99.7	99.8	97.6
Aluminum Cans	90.9	88.0	93.0
Steel Sleeves	45.1	*	85.3

*No new sleeves were inspected during July.

The inspection of a new shipment of Scovill cans was started during the month. The quality of these cans as compared with previous shipments shows improvement. A small number of cans was found to have scored inner surfaces possibly caused by foreign matter adhering to the draw punch.

Inspection of the latest shipment of Victor cans was continued. The quality of these cans has steadily decreased since inspection was started. To date 12 percent of the Victor cans inspected has been rejected because the wall thickness deviated from specifications.

P Division

Material Handling

During the month, 2.5 tons of solid uranium scrap and 4 tons of straightened alpha rolled uranium rods were shipped to Argonne National Laboratory.

Two thousand six hundred five U_{235} alloy slugs were received during the month making a total of 8613 received to date. A total of 5841 pieces has been processed and transferred to the 100 Areas.

305 Test Pile

The test pile was operated on a one-shift five day week schedule during the month except for the weeks ending July 2 and July 30 when a one-shift six day week schedule was followed. The two additional working days were necessary to expedite the testing of material for the H-10 program.

A total of 643 tests was made on "J" material, including 4 tests on Al-Si samples from "J" canning baths. A total of 547 tests was made on P-10-A material. In addition, the following special work request was run:

Request No.	Title	No. of Tests
147	To measure the neutron flux on the outside and inside of a P-10-A slug.	3

Special Hazards

No unusual conditions developed during the month.

August 3, 1950

S DIVISION

JULY, 1950

OPERATING SECTION

I. GENERAL

One hundred one charges were started in the Canyon Buildings, one hundred charges were processed through the Concentration Buildings and ninety-one charges were completed through the Isolation Building. The average purity for completed charges was 98.5 percent.

	B Plant	T Plant	Combined
Number of charges started in canyon	51	50	101
Number of charges completed thru 224	49	51	100
Number of charges completed thru 231	45	46	91

To provide sufficient material for the above schedule, metal cooling time was reduced below the standard limit of ninety days, and plutonium from metal cooled for a total of 75 days was in process at month end.

Canyon and Concentration Building Production Performance Data
(7-1-50 thru 7-31-50, inclusive)

For Completed Charges	B Plant	T Plant	Combined
Percentage of starting product in waste:			
This month	2.9 (a)	3.9 (a)	3.4
Last month	3.1 (b)	3.3 (b)	3.2
Cumulative to date	4.1 (c)	3.9 (c)	4.0
Percentage of starting product recovered:			
This month	95.2	94.3	94.8
Last month	95.0	97.6	96.2
Cumulative to date	96.9	95.6	96.3

	B Plant	T Plant	Combined
Percentage of starting product accounted for:			
This month	98.1	98.2	98.2
Last month	98.1	100.9	99.4
Cumulative to date	101.0	99.5	100.3
Gamma decontamination factor (Log.)			
This month	7.32	7.39	7.36
Last month	7.50	7.44	7.47
Cumulative to date	7.36	7.36	7.36

(a), (b), (c): Includes waste from processing recycle. The recycle wastes are estimated as: (a) 0.007%-T Plant; 0.012%-B Plant. (b) 0.012%-T Plant; 0.013%-B Plant. (c) 0.080%-T Plant; 0.009%-B Plant.

Isolation Building Performance Data (7-1-50 to 7-31-50, inclusive)

	Prepared for Shipment	Recycle	Waste	Retained Samples	Material Balance
Average for this month	94.3	6.12	-0.10	-0.013	100.3
Average for last month	95.8	4.85	0.13	0.01	100.8
Average to date	95.8	4.65	0.06	0.02	100.5

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	431
End of month	466
Net increase	35

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

2 new hires (monthly roll)
8 new hires - Technical graduates (weekly roll)
2 transfers from other divisions (monthly roll)
3 transfers from other divisions - Technical graduates (weekly roll)
25 transfers from other divisions (weekly roll)
2 transfers from another plant site (monthly roll)
1 resigned (monthly roll)
2 resigned (weekly roll)
2 retirements (weekly roll)
1 discharged (weekly roll)
1 transfer to another division - Technical Graduate (weekly roll)

R. G. Zumhoff, T. B. Griffith and N. E. Thompson were promoted from a training status to shift supervisor July 1.

G. W. Morrow was transferred from the Inst. Division as a Supervisor-in-training July 1.

R. C. Tabasinske was transferred from the Project Engineering Division as a supervisor-in-training July 5.

R. M. Shervem was employed as a supervisor-in-training July 10.

P. J. Wiater was employed as a supervisor-in-training July 17.

A. J. Quant was transferred from the Schenectady Test Program as a supervisor-in-training July 24.

R. E. Ruzicka was transferred from the Schenectady Test Program as a supervisor-in-training July 31.

C. J. Rosene, supervisor-in-training, resigned July 6.

III. AREA ACTIVITIES

PRODUCTION PERFORMANCE

B and T Plants and 231 Building

Extraction Waste Losses - B and T Plants

Significant data on extraction waste losses are tabulated below:

	B Plant		T Plant	
	July	June	July	June
Analyses before rework	1.36	1.54	2.03	1.72
Analyses after rework (throw-away)	1.08	1.16	1.52	1.39
Average MWD/Ton	419	390	410	477

Seventeen runs were processed during the month through T Plant from 520 MWD material.

Acid Wash Runs - B and T Plants

Acid wash runs were completed through one parallel line of the Canyon Building and through the Concentration Building in both B and T Plants. Product pick-up by the acid washes was not excessive at any step in the process. The amount of material recovered by the T Plant acid wash was approximately 30 percent below what is normally recovered; however, a thorough investigation has not disclosed any malfunction of equipment or abnormality of process which would cause low recovery. It is concluded, therefore, that the hold-up of material since the previous acid wash has been lower than normal. The data below details the product recovery for these runs:

S Division

Run	Product Pick-up (Percent of a Standard Charge) Extraction	Sect. 12 & 1st Cycle	2nd Cycle	221 Bldg.	224 Bldg.	Total thru Process
B-10-07-AW-1	3.16	15.41	15.57	34.14	7.67	41.81
T-10-07-AW-1	2.28	7.03	6.74	16.05	5.38	21.43

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

In order to reduce the lanthanum fluoride product precipitation time cycle to nine hours with a minimum increase in product losses, several process variations are being evaluated in the T Plant Concentration Building under Production Test 224-T-14. Phase I of the test, in which the hydrofluoric acid concentration for the precipitation was increased from 0.5N to 1.0N, was completed without significant improvement in waste losses. Since an undesirable increase of approximately 50% in iron content resulted from the added HF corrosion of process vessels, acid concentrations were returned to normal. The second phase of the test, in which the concentration of the oxalic acid reagent was increased from 9.6% to 25% to effect a reduction in reagent volume, was carried out successfully with no appreciable change in waste losses. In the third phase of the test the concentration of the lanthanum nitrate reagent was increased to 10% and the rate of addition to process doubled without affecting waste losses. A combination of reduced oxalic acid reagent volume, increased lanthanum nitrate solution concentration and more rapid addition of the lanthanum nitrate solution has been employed for several runs with the average waste losses being maintained approximately normal. Other phases of this production test will be evaluated during August.

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

Process variations are being carried out in the B Plant Concentration Building under Production Test 224-B-5 to accomplish time cycle reductions in the lanthanum fluoride byproduct precipitation step. The first phase of the test, which requires the use of the byproduct cake from alternate runs as a source of lanthanum for the following run (Isolation Building recycle being the source of lanthanum for the other run) has been completed. The average waste losses for a series of 27 runs processed in this manner were identical to the average losses experienced for the previous sixteen runs. In the next phase of the test the conditions in Phase I were maintained, and in addition, the digestion periods in both the oxidation and precipitation steps were reduced. This portion of the test has been in effect only a short time, but results so far give no indication of increased waste losses; however, the decontamination efficiency of this process step has been lowered somewhat by these changes, but to date this has had no deleterious effects on subsequent steps of the process.

[redacted]

Thermal Decomposition of Peroxide in Supernatant from Peroxide Precipitations (Production Test 231-11) - Isolation Building

Thermal decomposition of the hydrogen peroxide contained in the Isolation Building supernatants was carried out on four process runs during the month. Each of the decompositions were effected without incident in approximately three hours.

WASTE DISPOSAL

Status of Concentration Building Waste Settling Tanks - B Plant

Sludge depth measurements taken during the month of the 204-B settling tank, now receiving wastes from the B Plant concentration process, is filled to a depth of 20 feet and is therefore near the end of its effectiveness as a settling tank. This tank has been in service since November, 1948 and has received wastes from a total of 648 standard charges and approximately 60 acid wash runs. A total of four inches of sludge has settled out in the 203-B tank into which the 204-B tank overflows. The capacity of the 204-B tank compares quite favorably with the 201-T tank in 200 West area which had received the waste from 643 runs when sludge depth reached the 20 foot level and the tank was removed from service.

Waste Status

The status of the Waste Storage areas as of July 31, 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	37.0	0	0	0	403	403
x101,2,3,4	Metal	-	-	-	-	-	-	-	-	-
x104,5,6	Metal	-	100	100	0.5	-	0	0	643	643
x105,6,7,8	Metal	-	-	-	-	-	-	-	-	-
x201,2,3,4	Metal	-	100	-	-	-	0	-	-	-
x107,8,9	Metal	-	-	-	-	-	-	-	-	-
x111,12	Metal	-	—	-	0	-	-	-	431	431
x104,5,6	1st Cycle	42.8	-	-	-	256	-	-	-	256
x107,8,9	1st Cycle	100	100	66.7	0	0	0	150	644	794
x109,10,11 12	1st Cycle	-	-	-	--	-	-	-	-	-
x110,111,12	1st Cycle	-	100	66.7	-	-	0	150	-	150
x110	1st Cycle	-	-	-	0	-	-	-	215	215
x115,118	1st Cycle	-	-	-	-	-	-	-	-	-

[redacted] DECLASSIFIED

S Division

B Plant

Bldg. 241 Tanks	Waste	Percentage Full B	C	BX	BY	Reserve Capacity in Batches to process B	C	BX	BY	Total
x104,5,6	2nd Cycle	-	-	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	73.3	-	-	-	122	-	-	-	122
x113,14,16, 17	2nd Cycle	-	-	-	-	-	-	-	-	-

T Plant

Bldg. 241 Tank	Waste	Percentage Full T	U	TX	Reserve Capacity in Batches to Process T	U	TX	Total
x101,2,3	Metal	100	100	-	0	0	-	-
x101,2,3,4	Metal	-	-	54.1	-	-	452	452
x104,5,6	Metal	-	100	-	-	0	-	-
x105,6,7,8	Metal	-	-	0	-	-	973	973
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	-	-	69.9	-	-	266	266
x110,111,12	1st Cycle	-	100	-	-	0	-	-
x110	1st Cycle	-	-	-	-	-	-	-
x115,118	1st Cycle	-	-	0	-	-	439	439
x104,5,6	2nd Cycle	-	-	-	-	-	-	-
x110,11,12	2nd Cycle	79.5	-	-	123	-	-	123
x113,14,16, 17	2nd Cycle	-	-	0	-	-	1147	1147

MECHANICAL PERFORMANCE

Canyon Equipment Failures - B and T Plants

A description of equipment failures in B and T Plant Canyons, for which replacements were necessary since radiation levels made repairs impossible, is given below:

a) Due to a leak in the jet discharge flange, it was necessary to replace the jet assembly for transfer of metal solution from the batch size make-up tank to Section 7 extraction precipitator at B Plant.

b) In T Plant the "A" jet assembly for transfer of slurry from the precipitator to the centrifuge in extraction Section 8 was replaced due to a steam and process leak at the jet.

c) In T Plant the extraction Section 8 jet assembly for transfer of metal waste from the catch tank to the Section 9 neutralizer was replaced because of a severe steam leak at the jet inlet flange.

d) The Section 14 precipitator sparger at T Plant was found to be operating unsatisfactorily and was replaced.

Other Equipment failures which occurred in the Canyon Buildings and appurtenances are described below.

a) On July 14, during a scheduled shutdown of steam to the B Plant Area, the motor on the No. 2 fan at the stack for the canyon ventilation developed bearing trouble. Due to the steam outage, an attempt was made to continue operation of the fan in series with the No. 2 fan in order to maintain proper air balance in the canyon, but the motor failed completely before steam service was restored. The motor, which had been in service since start-up of B Plant, was replaced. Preliminary inspection indicates that this defective motor is damaged beyond repair.

b) Because the 10 gpm jet installed in the "A" position of Cell 19-L in B Plant would not maintain the required 140 lb/min. flow from the precipitator to the centrifuge in Section 19 and was extending operating time cycles, the jet assembly was replaced with one containing a 20 gpm jet. Operation of the new assembly has been entirely satisfactory.

c) In T Plant the "A" jet for slurry transfers from the Section 14 precipitator to centrifuge developed a serious steam leak at the jet flange and was replaced.

Concentration Building Equipment - Failures - T Plant

During the month the following equipment failures were experienced in the T Plant Concentration Building and repairs or replacements were made without incident:

a) A leak in Cell E precipitator heating - cooling jacket at a welded seam was rewelded.

b) The Cell E precipitator distributor corroded and fractured at a point just below the spray slot and required replacement.

Concentration Building Preventive Maintenance Program B and T Plant

Preventive overhaul of Concentration Building centrifuge motors, which has already been completed in B Plant, was continued in T Plant during the month with the replacement of the D Cell centrifuge motor and drive head with a reconditioned assembly.

IV. SPECIAL HAZARDS

Effect of Reduced Metal Cooling

To date no significant data are available concerning the effect of shortened cooling periods on activity backgrounds in the 200 Area and environs.

V. PROCESS CONTROL GROUP

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

No progress was made during the month on the one off-gas filter which is under construction. It is now ready for packing with Type 115 K fibre glass material which is to be delivered early in August.

Fabrication of the silver reactor and heater shells was completed during the month. It is expected that the Berl Saddles will be coated with silver nitrate and loaded into the reactor during the coming month. Procurement of the heater elements for the reactor is being expedited, and it is expected that the unit will be ready for testing and installation early in September providing the heating elements are available at that time.

Increased Capacity for Canyon and Concentration Buildings (C-384)

The request for informal approval for installation of an additional precipitator for the second cycle product section is in the hands of the AEC at month end for approval. Certain pieces of equipment from standard cells in U Plant, which were allocated for this installation, have already been removed from U Plant and placed into position in Cells in B and T Plants.

Fabrication of equipment for rearrangement of the F Cell process is in progress. Installation of control equipment in the F Cell operating galleries is 40% complete.

Conductivity Meters for Individual Cells

A project proposal for installation of conductivity electrodes in the sewers of Cells 7R, 9R, 13R and 17R of the B and T Plant Canyons has been submitted to the A and B Committee for approval.

Settling of Canyon Cell Drainage Wastes

Early in the month the Process Control Group completed a study of the various methods by which Canyon cell drainage wastes can be combined with second decontamination cycle wastes for settling before disposal of the supernatants to underground sumps. In order to make a waste line available in T Plant for carrying cell drainage to the second

decontamination cycle waste storage tanks, it will be necessary to divert the stack drainage to the first decontamination cycle storage system. In B Plant the combining of the two types of waste can be effected without change of the present disposal of stack drainage to second cycle waste. At month end the Project Engineering Division had started on the necessary piping design and preparation of the proposal.

Special Sampling

The following special samples were obtained and delivered to the Chemical Research Division in the 300 Area:

2 liters of unneutralized T Plant Concentration Building process wastes,
1 liter of unneutralized Isolation Building process waste,
1 liter of unneutralized Isolation Building laboratory waste,
1 liter of unneutralized Metal Fabrication Building process waste and
1 liter of unneutralized Metal Fabrication Building laboratory waste.

The Chemical Separations Division, Redox Group, in the 300 Area received 100 ml of T Plant Canyon Building dissolver (metal) solution.

VI. EXPANSION SECTION

Rala

Modification No. 6 of Directive No. HW-128 was issued on July 6, 1950. This directive revised the authorized funds from $2,968,000 to $390,000 on the basis of the General Electric Company estimate of total expenditures and commitments, and recovery and cancellation charges involved in the liquidation of outstanding commitments. The Construction Completion Statement (PM-1987) was issued on July 7, 1950. It is expected that a Financial Completion Statement will be issued by the Design and Construction Divisions as soon as all costs can be definitely determined.

TBP Project

General

A meeting with the G.E. and A.E.C. Security representatives was held relative to the construction personnel clearance requirements and the means of access control for the personnel to the various construction areas. The following general agreements were reached:

1. All work within the present U Area fence will require Q clearance.
2. Work within the present 241 fences will require Q clearance.

3. Work within "outside additions" to present 241 fences will require formal P clearance.
4. A construction personnel entrance will be provided for the U Area in addition to the present operating personnel gate.

Essential Materials

a) HNO_3

After reviewing the economic and procurement studies of the HNO_3 demand for the TBP and Redox Processes it was decided inadvisable to attempt to construct facilities for the production of HNO_3 on the Hanford Works. The HNO_3 procurement problem will be resolved directly with the Purchasing Division by the Manufacturing Divisions.

b) The preliminary specifications for the diluent and tri-butyl phosphate have been approved by the Chemical Development Section and it is anticipated that this procurement problem will be resolved in the near future.

Design

a) Phase I - Metal Removal - One Cascade

1. Kellex has transmitted 29 of the 40 corrected scope prints for this Phase as well as the process specifications, general description, and the outline of design requirements for the first waste removal unit. The Manufacturing Division is currently reviewing and commenting on this scope material.

b) Phase II - Metal Removal - Remaining Cascades

1. Kellex is proceeding with the preparation of the scope material for this phase in accordance with Work Authority C-362 (2) Release No. 5.

c) Phase III - Design of Underground Pipe Lines

1. Work is proceeding on the detailed design for this portion of the phase which is not effected by the re-scope of the TBP Process in accordance with Work Authority C-362 (2) Release No. 7. This detailed design is scheduled to be completed by 1-1-51.

d) Phase IV-- Reactivation and Conversion of the 200-U Area for the TBP Project

1. The re-scope portion of this Phase is approximately 90% complete.

2. A change from the HW-3 to the HW-4 chemical flowsheet for the TBP Process was made. This flowsheet is based on waste neutralization prior to waste concentration. The major items of interest in the HW-4 flowsheet are:

1. The nitric demand of this flowsheet is about 74% of the HW-3 demand; however, the purchased nitric acid consumption for the HW-4 flowsheet will be about 120% of the purchased quantity required for HW-3 due to the elimination of the nitric recovery in the HW-4 flowsheet.

2. The HW-4 flowsheet's concentrated waste volume returning to the underground storage tanks considering the incipient crystallization point of 25 to 30°C. should be approximately equal to the volume originally occupied by the sludge and supernate.

3. The caustic consumption for the HW-4 flowsheet is 163% of the requirements for the HW-3 flowsheet.

3. The Engineer's Flow Sketches, the Engineering Flow Diagrams and the arrangement drawings of the TBP Process on the basis of the neutralized waste concentration and of the use of pulse columns were approved by G.E. and A.E.C. on 7-14-50, and were transmitted to the Kellex Corporation as the bulk of the approved scope material for Project C-362. The Kellex Corporation is proceeding with the preparation of the detailed design for this phase according to Work Authority No. C-362 (2) Release No. 8. The major changes of this scope from the original scope are:

   a) Less piping required in the pipe trench
   b) No new connectors required through concrete
   c) The concentrator units changed from a pot and column design to a vertical long tube evaporator, cyclone separator and column tower pit.
   d) The inclusion of 4 large sampler tanks and a continuous neutralizer tank prior to the waste concentration step.
   e) The provision of a receiver-sampler combination for the UNH solution prior to shipment to the 224 Building.

4. Work is continuing on the remaining scope material which includes instrument prints and the revisions to the Design Instruction Letters which were previously approved but which require alterations due to the change in scope and due to the re-allocation of the 224 Bldg. process between Projects C-361 and C-362. The Design & Construction Divisions expect that the Project Proposal will be completed not later than August 28, 1950.

5. As indicated in Item 3, the Scope Committee approved the recommendation of the TBP Working Committee for the use of pulse columns in the TBP Process and for the services of a consultant to investigate the feasibility and cost for the originally proposed plan for total cell deepening, so that this method of installation for the packed column would be firmed up in case of future need.

6. In Accordance with Work Authority No. C-362 (2) Release No. 6 the Power and Mechanical Divisions are proceeding with the preparation of scope drawings and specifications of the outside utilities integrated with the existing plant system and required for the metal recovery process.

7. The initial approved-for-construction drawings are being received for the 277-U Mock-Up Building. Construction of this unit is anticipated to start September 1, 1950.

e) Phase V - Stripping of 221 and 224 Buildings

1. A letter was issued to the Security Division informing them that the custody of the 200-U Area would be transferred from the S Division to the Design & Construction Divisions effective August 14, 1950. A corrected inventory of U Area equipment and its allocation according to the various projects will be issued to the Design & Construction Divisions as of the above date.

Development

1. A 16" pulse column is currently in operation in the 321 Building. A series of RA and RC runs have indicated very satisfactory performance relative to waste losses and throughput.

2. The development and testing program for the pulsing mechanism for plant use has shown little progress during the month. Various concerns which were thought to be best suited for this development work have been contacted by letter and at present little interest has been shown by the majority of the concerns in considering this development program. Representatives of the Chemical Development Section and the Design & Construction Divisions are planning a trip to the East to contact various concerns relative to the problem.

3. The Peerless and Byron Jackson Companies have been contacted concerning the desired multi-stage pump for usage in the TBP Process. Both companies have submitted drawings for this type of pump incorporating the required features as originally outlined by G.E. After several revisions were made as requested by G.E., the present pump designs appear acceptable for TBP Process usage. A purchase requisition has been issued on 7-26-50 for one Peerless pump so that a pump test program can be conducted on this unit. It is expected that one Byron Jackson pump will also be purchased for similar test work in order to provide additional assurance in having a suitable pump available at the time of plant equipment procurement.

UO_3 Project

Scope of this work has been completed and the project proposal issued by the Design & Construction Divisions to the Manufacturing Division on

7-28-50. Points of major interest in the proposal are:

1. Total project cost (less book value of transfer of capital property) is $1,790,000. This figure is slightly lower than an earlier estimated project cost under a similar basis.

2. Construction is scheduled to start January 1, 1951 and be completed October 1, 1951.

3. The design of the UO_3 Plant will be performed wholly by the General Electric Company.

The Design Division is making a split in the allocation of the design of process and equipment housed in the 224-U Building between the Projects 361 and 362. The TBP Process, Project C-362, will include the two large outside UNH storage tanks, the two UNH concentrator units located in Cells B and D, and part of the tankage in Cell C connected with the 60% fractionating towers. This allocation willbbe included as part of the TBP scope, with Kellex as the Architect-Engineer. The remaining equipment, namely the pot room in Cell F, the packaging facilities in Cell E, and the 40% HNO_3 recovery system housed in Cell A and part of Cell C will comprise the UO_3 Plant, Project 361. G.E.'s Power and Mechanical Division will be the Architect-Engineer for this Project.

Redox

Design

Architect-Engineer (Kellex Corporation)

1. Schematic diagrams of the ventilation control systems for the 202-S and 291-S Buildings were received during the past month along with specification HW-4319, describing the functions of the various units in the system under both normal and abnormal conditions. The type of controls placed on the emergency ventilation system are somewhat more complex than those in existing buildings, however, it is basically dependent only on an adequate steam supply for turbine operation, and for this reason, is deemed acceptable.

2. The Architect Engineer's design of the acid-organic mixing chambers has been received for comment. By agreement between the Manufacturing Division, the Design Division, and the Separations Technology Division, a test program is being established in the 300 Area designed to prove the adequacy of the proposed chamber from the standpoint of reliability, reproducibility, and safety. At the same time it is anticipated that valuable operating data on nitric acid proportioning pumps will be obtained.

S Division

3. The Manufacturing Division has returned a Class I comment to the Design Division covering the installation of the fire fog nozzles in the organic handling cells as shown on the "Approved for Construction" drawings. The location of the spray heads some 10 inches above the upper row of pipe connector nozzles was such that partial blinding of certain connector nozzles was evident, and the spray heads were subject to damage during remote maintenance which would seriously affect the operation of the system. It has been requested that the fog nozzles be recessed into the wall at these locations.

4. Through the joint efforts of a committee composed of members of the Manufacturing Division, the Design Division and the Richland office of the Architect-Engineer, the erection specification, HW-4313 has been revised, approved, and issued to the field.

5. An order has been placed with the Peerless Pump Company for 26 turbine type pumps equipped with shaft seals and explosion proof motors for use in the canyon of the 202-S Building. Of the 26 pumps, 17 are for original installation with 9 being held as spare units. The price of the units depends somewhat on the pump capacity and head characteristics but in every case ranges from $4,700 to $4,900 each.

6. As a result of investigations by the Separations Technology Division, the Design Division has requested the Architect-Engineer to provide a pre-heater on the off-gas inlet to filter F-112 serving the Ruthenium scrubber. It is possible that the moisture in this off-gas stream may seriously interfere with the efficient operation of the filter unless steps are taken to pre-heat the incoming gas. Electrical connectors have previously been provided in the cell wall pattern to meet this condition.

7. As a result of negotiations between the Manufacturing Divisions, the Design Division, the Architect-Engineer, and the A-J Construction Company, it has been agreed that the modification of two existing centrifuges for Redox use will be made by the A-J Company with any necessary technical supervision provided by the G. E. Maintenance Division. This agreement terminates a series of negotiations which at one time involved the return of the two centrifuges to the Byrd Machine Company for alteration.

8. The Manufacturing Division has previously questioned the necessity for the extension scaffolding visualized by the Architect-Engineer for use in the 277-S Building. Recent difficulties in the procurement of this item have again called attention to this unit and, at the request of the Manufacturing Division, the Architect-Engineer has been asked to cancel the requisition for this item.

9. As of 7-31-50, approximately 55% of the total number of drawings to be made by the Architect-Engineer have been received by G.E. during the past month, there has been a noticeable shift of emphasis from architectural drawings to piping drawings both of the in-concrete variety and of the process piping in the remainder of the building. Received either as "Approved for Construction" drawings or as comment issues, have been drawings showing silo piping, aqueous make-up piping, the layout and piping of the PR Cage, pipe tunnel piping, and details of certain representative cell jumpers. Revisions to previously approved architectural drawings are continuing to be received and drawings of one of the major mechanical items, the reactor removal dolly, were also received.

G.E. Design

1. Drawings received for comment or approval during the past month from the Power and Mechanical Division of the G.E. Design Division included utility and facility plot plans of the area surrounding the 202-S Building, details of several of the utility systems, and a portion of the yard piping in the 211-276-S area. At the request of the Manufacturing Division, minor changes were made in the Engineering Flow Diagram for 276-S and the drawing was approved. Details of the electrical system in the 276-S Building have been received, however no firm architectural drawings of this building have been issued. It appears from architectural outlines shown on the electrical prints, that a reduction of approximately 300 sq. ft. in building area may be made without seriously affecting the operability of the solvent treatment equipment. Minor revisions to the vendor's information drawings of the acid, caustic, and salt tanks of the 211-S area along with specifications covering the construction of the storage tanks were processed.

2. An attempt to increase the design capacity for the 222-S Bldg. cribs so that 300 Area Technical Center cribbable wastes could also be disposed of through this facility, has indicated that the absorptive capacity of the soil in the proposed laboratory crib location is not as great as in other areas adjacent to the S Area. Re-investigation of the sites for the 216-S cribs and the 276-S crib has shown that while the absorptive capacity of the ground is somewhat limited, it will be sufficient for 202-S Building uses. Relocation of these cribs is not considered desirable at this time because of the advanced status of design and the initiation of construction on the facilities.

Development

1. Tests on 2" and 3" Teflon gaskets fabricated from "unoriented" Teflon have shown little improvement in the shrinking noted in earlier tests with "oriented" samples of this material. It is believed however, that this characteristic will not be detrimental to the gasket performance since no leakage of any type has been

observed in re-impacted gaskets where the shrinkage from previous exposure to steam has been quite evident. Tests of the Teflon impregnated asbestos gaskets supplied by the Johns-Manville Company have shown that these gaskets are superior for steam service, showing less tendency to extrude under head and pressure, but are not equal in performance to the pure Teflon material in chemical service. Tests of these gaskets in 60% nitric acid and in I AX solution have shown considerable increase in weight indicating penetration of the liquid into the asbestos fibers. The anticipated use of the Teflon impregnated asbestos gaskets has not been firmly established at this time.

Construction

1. 202-S Building

Erection of the forms for the 4th lift of concrete is now in progress. Some pours in the 3rd lift are being delayed pending the arrival of the 24" stainless steel utility header to be installed in the pipe tunnel. The initial kick plate and connector installation, comprising 14 plates in the tunnel side of H & J cells, has begun. Footing forms for the west service area are now being placed.

2. 277-S Building

The steel work for the building is 90% complete. The ten-ton crane from the 272-E shop has been positioned in the building. Erection of sheeting and asbestos shingles is progressing rapidly on the north, east and south sides of the building.

3. Outside Lines, Railroad and Sanitary Facilities

The 12" and 20" CI water mains to the area are estimated to be 51% complete. The process railroad track to the 202-S Building is 42% complete and the 211-S Spur is estimated to be 95% complete. Work is continuing on the septic tank and tile field and the facility is estimated to be 56% complete.

4. Pipe Bending and Testing

A number of jigs for the welding of the various sizes of pipe connectors as well as the instrument and sampling connectors have been set up in the pipe shop and 25-30 welded units per day are being hydrostatically tested. Assembly of the pipe nozzles in the kick plates has begun and additional jigs for this work are being erected. There has been some difficulty in obtaining proper penetration in the circumferential weld joining the nozzle to the adjacent pipe, however, this situation seems to be improving as more experience is accumulated in inert gas welding.

5. 241-S Building

Excavation for the 241-S Building is continuing on a two-shift basis and is estimated to be 33% complete at month's end.

First Cycle Waste Evaporation

1. Design is approximately 70% complete.

2. The Project Proposal for 369-R, one waste evaporator unit in West Area, was approved by the A&B Committee on 7-12-50 and transmitted to the A.E.C. for approval.

3. The 35 design prints received from the Project Engineering Divisions are presently being reviewed and commented on by the Manufacturing Divisions.

POWER DIVISION
JULY 1950

GENERAL

On July 26, an operator at the White Bluffs Ice Plant received a sub-major injury during the ice handling operation, when his foot was caught between two cakes of ice.

The annual inspection of seven Power Division boilers was made by a Travelers Insurance Company certified boiler inspector on July 18. One boiler was inspected in every Power area except 101 Building.

Water treatment for the month was entirely satisfactory with average coagulant feeds of approximately 11 ppm.

All Power Division essential material stocks have been permanently removed from the Temporary Construction warehouses. Essential materials are now being stocked in the 100-H Area permanent warehouse and at points of consumption. This consolidation makes approximately 23,000 square feet of warehouse space available to the Purchasing and Stores Divisions.

PERSONNEL AND ORGANIZATION

No. of employees on payroll	July
Beginning of month	553
End of month	564
Net Increase	11

Ten weekly roll employees and two technical graduates were transferred into the Division, one new operator was employed, one employee resigned and one was removed from the payroll on account of illness. This resulted in the indicated net increase.

One weekly roll employee was promoted to supervisor in training, and one supervisor in training was reclassified to shift supervisor on July 1.

100 AREAS

Satisfactory progress was made on reducing the impeller diameter of the 183 Building process water pumps. This work was completed in the 100-H Area on July 25 with satisfactory results.

Preparations, preliminary to the dismantling of the 185 Building deaerators, were made in the 100-D and 100-F Areas by the subcontractor during the month.

Power Division

The removal of chemical mixing equipment from the 108 Chemical Mixing Building in the 100-D Area was started on July 20. This building is being made available in its entirety to the Technical Divisions for their P-10 Project.

The removal of equipment and piping in the clearwell section of the 185 Demineralizing Plant in the 100-D Area is still in progress.

The 1906 Drainage Lift Station in the 100-H Area was taken out of service on July 17, as flood water receded below the normal sewer outlet.

In the 100-D Area, 190 Process Pump House pipe gallery, the "A", "B", and "D" 24-inch water headers to the 105-DR Pile were disconnected and blanked. A limitorque valve was installed on the "C" header to provide possible future service to the 105-DR Pile.

200 AREAS

In the 200 West Area, on July 7, a 3-inch connection, for construction purposes was made to the 4-inch raw water line serving the 241-U tank farm.

On July 11, at the 234-5 Facility, failure of the valve linkage on the instrument air driers resulted in a disturbance on the ventilation system. Normal conditions were restored without difficulty and changes made in valve linkage to prevent a recurrence of this incident.

Work is currently in progress ot extend the main ventilation control panel in the 234-5 Facility to accomodate plenum pressure and zone differential recorders.

300 AREA

The installation of a 3-inch drain line from the air receiver in the 384 Power House to the process sewer was completed on July 14.

A sewage flow study was conducted on July 13 and 14 to obtain data for sewage disposal requirements.

101 BUILDING

The operation of the boiler on the night shifts and during week end was temporarily discontinued on July 13. One boiler is being operated on days, Monday through Friday, to provide hot water heating.

The installation of drains from the air conditioning units was completed on July 7.

WHITE BLUFFS ICE PLANT

The manufacture of ice was temporarily discontinued on July 19 to preclude the possibility of carrying a large inventory of ice through the winter months.

Power Division

POWER ENGINEERING SECTION

The principle activities of this group were concerned with the completion of a steam line insulation study, the completion and distribution of a new Power Division's Operations Manual of Standard Practices, and rendering engineering assistance on the reduction of impeller diameter of the 183 Building process pumps.

100-DR CONSTRUCTION ACTIVITY

A cumulative cost report for total construction and design costs has been issued by the Design and Construction Divisions showing that, as of June 30, 1950, expenditures, plus commitments, amounted to $10,874,706 for this project. This amount represents approximately 52.5 percent of authorized funds, the plant, as of the same date, was 56 percent physically completed.

Satisfactory progress was made in the 184 Power House on the erection of structural steel, installation of boiler tubes, laying of concrete block walls and installation of Link-Belt conveyor.

In 183-DR, work continues on the installation of piping, chemical feed equipment, and placing filter media in the filter beds.

Progress was made at the 190-DR location on the installation of piping, siding, roofing, motors, turbines, pumps, and ventilating equipment.

HW-18473 Del

POWER DIVISION STATISTICS

From July 1, 1950
Through July 31, 1950

			AREAS			
			100-B	100-D	100-F	100-H
RIVER PUMP HOUSE (Bldg. 181)						
River state Feet above sea level		(max)	410.3	398.5	386.0	391.1
		(min)	399.2	388.9	376.0	381.1
		(avg)	405.4	394.4	381.4	386.7
River temperature	avg. °F.		59.5	59.5	59.9	59.9
Water to Reservoir	gpm avg. rate		40,149	42,513	36,543	49,727
RESERVOIR (Bldg. 182)						
Water to Filter Plant	gpm avg.rate		34,169	37,384	32,480	43,457
Water to Condenser System	gpm avg.rate		4,117	3,159	3,371	*5,472
Water to Export System	gpm avg. rate		1,863	1,970	692	798
	gpm nor.rate		5,323	5,323	5,323	5,323
Chlorine added #1 Inlet	pounds		24,361	26,487	17,400	25,300
FILTER PLANT (Bldg. 183)						
Filter Water Power House	gpm avg.rate		224	265	224	211
Filtered Water to Process	gpm avg.rate		32,042	32,100	29,335	37,917
Filtered water to construction	gpm avg.rate		--	--	--	--
Filtered water to DR Process	gpm avg.rate		--	688	--	--
Filtered water Fire & San.	gpm avg.rate		256	276	263	122
Chlorine for Water Treatment	pounds		6,762	5,193	4,600	7,700
	ppm avg.		2.17	2.04	1.66	1.85
Lime for Water Treatment	pounds		59,768	77,450	75,000	94,000
	ppm avg.		4.7	5.5	6.2	5.8
Coagulant Water Treatment	pounds		111,117	144,800	125,000	215,000
	ppm avg.		8.7	10.4	10.4	13.3
Raw Water pH	pH avg.		7.82	7.72	7.80	7.80
Finished Water pH	pH avg.		7.71	7.71	7.72	7.71
Alkalinity, M.O. - Raw	ppm avg.		53	51	58	56
Finished	ppm avg.		54	48	57	58
Residual Chl. - Settled	ppm avg.		.24	.26	.19	.20
Finished	ppm avg.		.12	.09	.13	.12
Iron - Raw	ppm avg.		.24	.24	.30	.28
North Clearwell	ppm avg.		.014	.010	.013	.012
South Clearwell	ppm avg.		.016	.012	.015	.011
Hardness - Finished	ppm avg.		72	72	66	70
Turbidity - Raw	ppm avg.		10.9	12.0	10.0	11.0
Filtered	ppm avg.		0	0	0	0
* Process Waste Dilution Inc.	gpm avg. rate		0	0	0	904

[redacted]

Power Division

From July 1, 1950
Through July 31, 1950

			100-B	100-D	100-F	100-H
POWER HOUSE (Bldg. 184)						
Maximum Steam Generated	lbs./hr.		123,000	148,000	124,000	121,000
Steam Generated - Total	M pounds		85,457	93,902	82,819	72,215
Avg.rate	lbs./hr.		114,861	126,212	111,315	97,063
225 psi Steam Plant (est)	M pounds		72,250	79,411	70,013	61,020
15 psi Steam Plant (est)	M pounds		218	218	218	218
Coal Consumed	Tons		5,822	6,249	5,716	4,959
Coal in storage (est)	Tons		33,788	34,001	32,792	32,510
DEAERATOR PLANT (Bldg. 185) AND 190-H TANK ROOM						
Water flow	gpm avg.rate		31,792	32,538	29,085	37,667
Chemicals consumed:						
Dichromate	pounds		22,000	25,100	23,000	26,000
Sodium Silicate	pounds		0	0	0	0
Chemical Analysis:						
pH	pH avg.		7.60	7.65	7.63	7.65
Dichromate	ppm avg.		1.8	1.9	1.8	1.8
Dissolved Iron	ppm avg.		.016	.013	.013	No Anal.
Free Chlorine	ppm avg.		.05	.10	.12	No Anal.
PROCESS PUMP ROOM (Bldg. 190)						
Total Water to 105-DR	gpm avg.rate			688		
Total Water pumped	gpm avg. rate		31,617	31,675	28,910	37,492
	gpm nor.rate		32,600	32,293	31,050	40,800
Water temperature	avg. °F.		62.9	62.7	62.6	62.8
VALVE PIT (Bldg. 105)						
Chemicals consumed:						
Solids	pounds		4,150	2,000	900	3,950
Chemical Analysis:						
A,B,C, & D Headers						
Standard Limits						
pH 7.5-7.8	pH	(max)	7.65	7.70	7.65	7.65
		(min)	7.60	7.60	7.60	7.55
		(avg)	7.64	7.65	7.63	7.65
$Na_2Cr_2O_7$ 1.8-2.2	ppm	(max)	1.9	1.9	1.9	2.1
		(min)	1.7	1.7	1.7	1.7
		(avg)	1.8	1.8	1.8	1.8
Iron	ppm	(max)	.020	.025	.020	.022
		(min)	.010	.005	.005	.004
		(avg)	.013	.010	.014	.013
Chlorides	ppm avg.		1.82	1.90	1.60	1.70

[redacted]

Power Division

From July 1, 1950
Through July 31, 1950

		200 AREAS	
		200-E	200-W
RESERVOIR (Bldg. 282)			
Raw Water Pumped	gpm avg. rate	2,273	3,049
FILTER PLANT (Bldg. 283)			
Filtered Water Pumped	gpm avg. rate	345	814
Chlorine Consumed	lb.	396	500
Alum Consumed	lb.	3,101	5,070
Chlorine Residual - Sanitary Water	ppm	.4	.3
POWER HOUSE (Bldg. 284)			
Maximum Steam Generated	lbs./hr.	20,500	39,500
Steam Generated - Total	M Lb.	14,281	25,780
Steam Generated - Ave. Rate	lb./hr.	19,194	34,651
Coal Consumed (Est)	Tons	1,020	1,791
Coal in Storage (Est)	Tons	7,250	19,394

		300 AREA
POWER HOUSE (Bldg. 384)		
Maximum Steam Generated	lbs./hr.	12,000
Steam Generated - Total	M lb.	7,110
Steam Generated - Avg. Rate	lb./hr.	9,556
Coal Consumed - Total (Est)	Tons	527
Coal in Storage (Est)	Tons	2,042
Sanitary and Fire System		
Sanitary Water from 3000 Area	gal.	29,170,800
Well Water Pumped - Total	gal.	9,466,500
Total Water Per Day	gal/day	1,246,360
Total Water	gpm avg. rate	866
Chlorine Residual	ppm	.55

		MISCELLANEOUS AREAS
WHITE BLUFFS		
Ice Manufactured	lbs.	628,800
101 BUILDING		
Coal Consumed	Tons	18

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HW-18473 Del

INSTRUMENT DIVISION
MONTHLY REPORT

JULY, 1950

GENERAL

Some 400 applications for employment received as a result of newspaper and magazine advertisements have been reviewed, in an effort to secure the needed personnel for new facilities. A total of 100 applications received favorable consideration, with following status of processing:

Accepted offer and awaiting clearance	39
Rejected offers due to housing	5
Rejected offers due to low salary	10
Investigation rejects	4
Offers pending	42

It is expected that many of the thirty-nine who have indicated acceptance will possibly find other employment while awaiting clearance.

The 300 Area Machine Shop backlog continues at a low level. Further reduction of this force may be necessary at completion of vacation period.

Plans for the construction of New Instrument and Development Building for the 300 Area are complete and are being circulated for final approval. It is hoped that a contract for construction can be negotiated by September 1, 1950.

100 AREAS (Reference: HW-18521)

New type banana plug jumpers have been installed on the process tube pressure monitor gauges in all areas. This was done to eliminate difficulties experienced with loose connections causing pile shutdowns.

100-B Area

Repairs to both thermocouples in thimble of VSR No. 26 were effected to satisfaction of the Technical Division.

Four lines of P-10 B are nearing completion. Instruments and controls are being calibrated and checked.

100-D Area

An additional pile exit water temperature recorder was added to miscellaneous panel in the 105-D control room. Sensitive element is located in process sewer adjacent to power level recorder element.

100-F Area

The "quadrant" monitor system for pile power level was taken out of service due to failure of one of the remaining two ionization chambers. The galvanometer was connected to chamber under Riser 8 where it will operate until new chambers are installed.

Insulation failure on the process tube pressure monitor caused burn out of relay transformer.

Much of the instrument equipment in the Biology Laboratory 108-F Building has been placed in service.

100-H Area

Signal and high voltage cables from chamber to No. 1 Safety Circuit Amplifier in Control Room were removed from conduit containing other circuits and installed in a separate conduit to remove all possibility of spurious signal pick-up.

A check was made of all pile face thermocouple junction boxes to determine location of faulty thermocouples. It was determined that five of the graphite temperature couples are open inside of pile.

P-13 Job at 105-H

Considerable trouble developed when scram and annunciator circuits of the installation were tested. These have been cleared up and all calibrations have been made. Instrument work is abreast of the other installation work for this project.

100-DR Area

The installation of instrument equipment in the water area is being followed closely in order to insure satisfactory operation upon completion. It is planned to increase the size of crew in this area to begin work in the 105 Building early in August in preparation for start-up.

Shutdown Experience

100-D Area

On July 6, "P" Division noticed low pressure on Pressure Monitor gauge #1678. While attempting to open valve in gauge line at front face, operator screwed stem out of body. Unit was shut down manually to complete repairs to valve.

100-B Area

On July 7, unit was shut down manually when "P" Division discovered Pressure Monitor gauge #1376 indicating no pressure. Faulty gauge trip that allowed alarm to reset was discovered. Maintenance routine revised to insure against recorrence.

1209391

[redacted]

100-H Area

On July 3 unit was scrammed when annunciator tab to No. 1 Beckman dropped. No change in power level was recorded and investigation revealed no deviation in standardization.

On July 7 unit was shut down manually when Pressure Monitor alarm could not be reset in the allotted time. Investigation revealed that gauge no. 3169 had slipped calibration and reached trip point.

On July 31 at 6:31 p.m. the unit was shut down manually due to row #16 Pressure Monitor alarm that failed to reset in 20 seconds. Annunciator reset but light alarm failed. Faulty row relay determined as cause. Other relays scheduled for check.

100-F Area

The unit was shut down manually at 11:14 a.m. July 24 due to unexplained alarm on Pressure Monitor gauge #4674. It was revealed that operator had turned off wrong valve at front face gauge connection.

200 AREAS (Reference: HW-18522)

T & B Plants Production Instruments

Difficulty has been experienced in the past in rotating the 75 ton crane periscopes due to foreign particles lodging in open ball bearings. Sealed bearing assemblies have been purchased and first set installed in the 221-U periscope. The T & B plants units will be replaced as soon as production schedules permit.

Instruments necessary for putting section 20 in Buildings 221-T & 221-B into operation were removed from 221-U. These instruments are being overhauled to put in operating condition.

Project C-384

Instruments necessary for parallel operation of tanks F2 and F22 in buildings 224-T and 224-B have been removed from 224-U Building. These will be installed as soon as panel and piping work will permit.

Z Plant Production Instruments

The HF system in Building 234-5 continues to be a source of trouble. Liquid HF gathers in rotometers and mixing chambers in spite of raising temperatures on gas cylinders, steam tracing lines and application of heat lamps on exposed parts of system. A sample of this liquid was analyzed and showed a water content of 26.9%. Where this water is coming from has not been determined. In case it is originating from purge air another sample has been carefully obtained and sent in for analysis.

The thermocouple on the punch in hood 19 has been modified to provide constant pressure against the punch. The well for the couple on the heater nest has been filled with graphite to give a better heat transfer.

Ventilation System

A supply plenum pressure recorder controller has been installed to open the relief damper wide in the event of power failure or either excessive high or low pressures in the plenum.

300 AREA (Reference: HW-18523)

MANUFACTURING SECTION

Project P-2900-58891 - Fabrication of Neutron Spectrometer

Materials have been requisitioned for the second phase of this work. Several small parts have been fabricated from shop stocks.

P-3330-58 - H. I. Operational Division Survey Instruments

40 Portable GM Survey Meters

All instruments have been received, inspected and delivered to the H. I. Calibrations group. An inspection report was submitted to interested parties.

55 Portable Poppies

To date, the instruments have not been received from the vendor.

P-1920-58891 - Operational Instruments for Biology Laboratory - 108-F Bldg.

1 Chicago-type Fluorophotometer

This completed instrument is being tested by the 3706 Building Technical Services Division.

2 LBA Sets

Shop fabrication is approximately 95 percent complete.

3 LBA Chambers

Field approval of the modified chamber design was received early in the month. Machine Shop work is nearing completion.

DEVELOPMENT SECTION

A feasibility report is being prepared on a beta-gamma clothing contamination detector for the conveyor of the new 200 West Area laundry. A reasonable upper limit of conveyor speed has been determined as 6 feet per minute.

Equipment is being designed to measure the inside dimensions of pile test holes. Differential transformers and a recorder will be used in plotting the contour of the profiles.

DESIGN AND CONSTRUCTION GROUP - 760 BLDG. (Reference: HW-18463)

Project C-300 (100-G Area)

Heat Transfer Test, Project 17

Due to addition of new requirements, instrument design work is only approximately 90 percent complete. Fixed and traveling thermocouple and voltage probes are being designed.

Temperature Mapping

A work order has been issued to the Development Section to design, construct, install and test a demonstration unit for rapid presentation on a cathode ray tube the individual pile tube exit temperatures. An alarm system is also to be provided to indicate excessive deviations.

Project C-362 (Tri-Butyl Phosphate Process)

Instrument engineering flow diagrams are scheduled for approval by August 11. Twenty-five drawings have been distributed for comments and eleven have been returned. These eleven will be ready for committee approval August 3rd.

Project C-361 (Metal Conversion Facilities UO_3)

Instrument engineering flow diagrams, graphic panel layout and conventional panel layouts have been completed. Original scope has been revised into two separate parts:

A. Kellex is to assume and incorporate into TBP design the section of this facility that relates to continuous flow from TBP and the acid recovery step.

B. General Electric is to design and follow construction on the section covering storage of UNH from TBP, conversion to UO_3 and bagging UO_3 for shipment.

Project C-349 (Hot Semi-Works)

Drawings covering instrumentation are approximately 50 percent complete. Final changes have been made in the scope and drafting is proceeding without delay. All drawings except panel cutout drawings will be ready by September 1st.

[redacted]

HW-18473-Del

MAINTENANCE DIVISION

JULY, 1950

The Maintenance Division had 7324 mandays of work on hand at the close of the month. This represents a 28 day backlog for the present force.

100 AREAS

100-B

To overcome corrosion and resulting leaking of the seats of the Mason-Neilon control valves on the third safety control of the pile, a change in the construction of the valve is being made. This involves machining a recess in the plug and installing a rubber facing ring which then makes a dependable seal with the seat. Two valves so altered have been installed.

100-D

All stainless steel nozzles have been removed from the discharge end of the process tubes on the DR pile and twenty-seven rows of replacement aluminum nozzles have been installed. On the front, or charging face of the pile, the stainless nozzles were removed and replaced with galvanized nozzles has proceeded through thirty-eight rows.

100-F

The twenty-one inch vitrified sewer line connecting the 182 condenser turbines hot wells discharge line to the thirty inch sewer failed. Examination revealed the line had not been encased under the roadway between 182 and 183 Buildings and the tile had failed at that point. Replacement was made with twenty inch coated steel pipe. Four and six inch branch lines were provided to eliminate french drains receiving condensate from heating equipment in 182 and 183 Buildings.

100-H

To reduce the possibility of the turbine casings filling with condensate while on standby the drain line was equipped with a thermo bellows type trap on the 105-H emergency fan drive turbines. This eliminates frequent replacement of carbon seal rings due to water damage and possible severe damage to the turbine should it start with excessive water in the casing.

General

In order to reduce the discharge pressure and power consumption of the process water supply pumps in the 183 Buildings, the impeller diameter has been reduced. This reduction from 230' to 165' discharge head pressure has been accomplished on two pumps in "B" Area, three pumps in "F" Area and five pumps in "H" Area.

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[redacted]

Maintenance Division (con't.) DECLASSIFIED

200 AREAS

200-West

Revisions made to the solution make-up facilities, to increase there capacity in the "T" Canyon, included relocating one five hundred gallon tank from "U" Canyon and connecting it in parallel with a similiar tank for iron solution, interconnecting tanks H-312 and H-313 for nitrate solution preparation and interconnecting tanks H-308, 309 and 310 for bismuth solution make-up.

To permit overhaul of the drive head on the D-2 concentration building centrifuge, a spare head was installed as replacement. Downtime for the change was three and one-half hours.

234-5 Building

An extension was fabricated and installed on the top of Hood #12 to permit the sliding door on the enclosed balance scale to be opened sufficiently for service work.

From the condition of oil samples removed from the high vacuum system roughing and fore-pumps, it has been determined that the oil in these pumps should be changed on a scheduled four month interval. This schedule has now been placed in effect and should maintain these pumps at a uniform operating efficiency.

The Hood #26 vacuum system developed excessive leakage. The leak was found to be in the wax seal between the bell jar and bell jar flange. Three replacements were necessary before a bell jar with a acceptable seal was found. Special attention is being given to the improvement of this feature and a development program is in progress.

200-East

The repainting of "B" Canyon deck, sections three to twenty inclusive, was completed, including outline trim and re-lettering of cell and trench covers.

The hydrofluoric acid storage tank in the "B" Canyon tank farm was flushed, inspected internally and tested hydrostatically to one hundred pounds per square inch. Valves on connecting lines were replaced. The tank exterior, auxiliary flash tank and service lines were primed and coated with an acid resisting enamel.

A forty inch centrifuge was removed from "U" Canyon and placed in condition for standby as a replacement when needed.

300 Area

An improved type crucible has been placed in trial service in two bronze melting furnaces in 313 Building. These crucibles have a 1/16 aluminum lining that will reduce the porosity and extend the heating element life.

1209196

[redacted]

ELECTRICAL DIVISION

JULY, 1950

GENERAL

The divisional backlog of scheduled work at the month end was 10,383 mandays, a decrease of 340 mandays during the month, principally within the Distribution Section.

A further review of Project C-341 (Additions to Richland Electrical Distribution System) included consideration of possible additional housing, and the relocation of the new relief feeder to avoid Swift Blvd. parkway at the request of the Community Division.

Under Project C-349 (Hot Semi-Works), detailed recommendations were made to Project Engineering for cathodic protection of stainless steel pipeline.

Study and recommendations were completed for power supply to proposed 100-F Acquatic Biology Laboratory.

Resulting from the elimination of the proposed Rolling Mill in the 300 Area, previous agreements reached with respect to normal power supply to the Hanford Works Laboratory were reviewed. It was agreed among interested divisions that the existing main transformer in the 300 Area (3750 KVA) will be adequate through 1951, and the addition of a second transformer need not be contemplated now. A separate project proposal will cover required normal power facilities for the Hanford Works Laboratory integrated with the present 300 Area system.

Review of Project Proposal C-295, Part II, (Expansion of 251 Substation) was completed, and components of work for second bay and transformer erection were developed indicating time and sequence for each component, outages, and special operating requirements.

In line with separate contract billing for process and Village load, future demands will be reported separately, not necessarily co-incidental.

	Date	Time	KW Demand
Process Load	July 24	10:00 a.m.	54,200
Richland Village	July 24	1:00 p.m.	11,450

AREA ACTIVITIES

Fire alarm and tape recorders in the 100 B, D and F Areas are being moved from the 1717 Buildings to Patrol Headquarters. A survey indicates that the alarm and box loops can be jumped at six locations to eliminate 12,000 ft. of overhead line per area, reducing exposure to possible faults. The change has been approved by the Fire Protection Division.

Lighting circuits in the 184-B Building were reconnected for improved load balance.

During scheduled inspection, 800 HP Process Motor in 190-B was found with one coil lead burned off. This is the tenth failure of this type motor since start-up.

Tie-in work, and acceptance tests for electrical installations in 190-DR (Water Plant) are proceeding on schedule.

Final tests were completed on electrical and instrumentation circuits, Project P-13 (105-H), preparatory to interconnection with safety circuits.

In 291-B (200-E), the No. 2 stack fan motor bearing failed on July 14 requiring motor replacement.

In general, work in the 200 and 300 Areas continues at high level with many minor changes and improvements, new installations, and normal maintenance.

TRANSMISSION AND DISTRIBUTION

During the evening of July 18, heavy lightning damage to the 115 KV system between the Benton Substation and the 300 Area required replacement of nine cross arms and one string of insulators. Damage occurred on the line section which is not protected by static wire. No load was interrupted since the line was only energized and in standby service.

During maintenance (pulling up slack guys) an increasing number of guy anchor log failures have been noted in various areas due to rot. Most guy anchor logs were installed untreated during original plant construction, and an increasing number appear to be approaching the end of their useful life.

Metering of Village schools (M-730) installation is complete except for the recent addition of the High School Farm.

TELEPHONE SECTION

Telephone service in the 200 West Area was cut over to the new 200-E-W exchange on July 31 at noon.

Fifteen employees have completed the training school in operation and maintenance of North Electric relay type dial equipment.

The installation of telephones in Richland new housing areas has been completed.

A 26 pair cable was installed to 108-B and 20 additional line relays to the 100-B Area exchange to provide additional service to P-10 Project (M-743).

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

	June 30	July 31
Lines in Service	3553	3596
Stations in Service	5549	5822
Vacant Lines	447	404

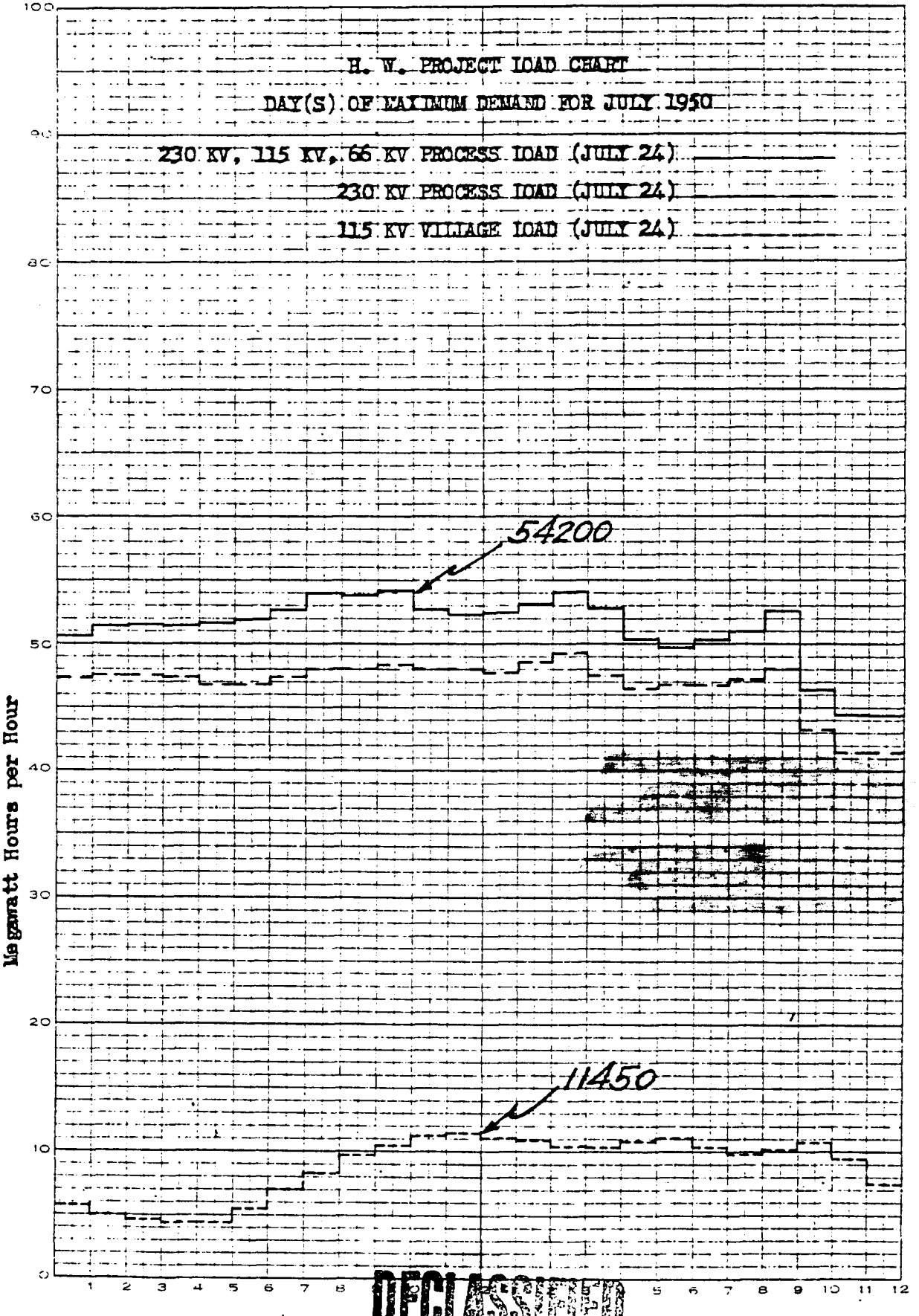
POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING JULY 31, 1950

ITEM	ENERGY - MW HRS. June	ENERGY - MW HRS. July	MAX. DEMAND - KW June	MAX. DEMAND - KW July	LOAD FACTOR - % June	LOAD FACTOR - % July
230 KV SYSTEM						
A-2 Out (100-B)	7,150	7,390	11,600	11,500	85.6	86.4
A-4 Out (100-D)	6,680	7,950	13,100	12,800	70.8	83.5
A-5 Out (100-H)	8,424	8,460	14,250	13,650	82.1	83.3
A-6 Out (100-F)	6,690	6,580	11,000	11,200	84.5	79.0
A-8 Out (200 Areas)	2,952	3,168	5,040	5,040	81.3	84.5
TOTAL OUT	31,896	33,548	54,990**	54,190**	80.6	83.2
MIDWAY IN	32,495	34,047	51,600*	50,400*	87.5	90.8
Transm. Loss	599	499				
Percent Loss	1.8	1.5				
115 KV SYSTEM						
B1-S4 Out (N.Richland)	1,445	1,579	2,765	2,822	72.6	75.2
B3-S4 Out (300 Area)	347	355	912	732	52.8	65.2
B3-S5 Out "	352	346	1,100	1,080	44.5	43.1
BB1-S1 Out (Richland)	3,480	3,200	10,260**	7,560**	47.1	56.9
BB1-S2 Out "	3,128	2,640	10,080**	8,730**	43.1	40.6
TOTAL OUT	8,752	8,120	25,117**	20,924**	48.4	52.2
Benton In	30	0	4,000*	0	10.3	0
S. Richland In	8,208	7,872	21,780*	14,760*	52.3	71.7
TOTAL IN	8,238	7,872	25,780**	14,760**	44.4	71.7
Transm. Loss	-514	-248				
Percent Loss	-6.2	-3.2				
66 KV SYSTEM						
B7-S10 Out (W. Bluffs)	321	270	1,080	900	41.3	40.3
Hanford Out	293	321	600	600	65.5	71.8
TOTAL OUT	614	591	1,680**	1,500**	50.8	52.9
HANFORD IN	613	591	1,400*	1,500*	60.8	52.9
Transm. Loss	-1	0				
Percent Loss	-.2	0				
PROJECT TOTAL						
230 KV Out	31,896	33,548	54,990**	54,190**	80.6	83.2
115 KV Out	8,752	8,120	25,117**	20,924**	48.4	52.2
66 KV Out	614	591	1,680**	1,500**	50.8	52.9
TOTAL OUT	41,262	42,259	81,787**	76,614**	70.1	74.1
230 KV In	32,495	34,047	51,600*	50,400*	87.5	90.8
115 KV In	8,238	7,872	25,780**	14,760**	44.4	71.7
66 KV In	613	591	1,400*	1,500*	60.8	52.9
TOTAL IN	41,346	42,510				
Transm. Loss	84	251				
Percent Loss	.2	.6				

* Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System.... 95.7
Average Power Factor - 115 KV System.... 88.4
Average Power Factor - 66 KV System.... 95.9

[redacted]



HW-18473 Del

TRANSPORTATION DIVISION
MONTHLY REPORT
JULY 1950

GENERAL

A preliminary meeting, called by the Atomic Energy Commission, was held on July 25 relative to operational and policy matters concerning the Village Local and Plant bus operations. Briefly discussed were matters of fare increases, headways, and the possible elimination of shuttles in the Village. A second meeting will be held in August for the purpose of discussing factual data now in development.

Transportation Division personnel forces decreased by 9 non-exempt employees during the month, from 631 to 622 by 4 new hires, 2 transfers-in, 1 re-activation - personal illness, 12 terminations, 2 transfers-out, and 2 de-activations - personal illness.

RAILROAD ACTIVITIES

Commercial cars handled during July declined approximately 58% over June as inbound tonnage decreased generally and coal receipts were substantially lower because of the National Coal Miner's Holiday. Process service continued at an increased rate with all movements being completed as scheduled. Cars handled during July including process movements totaled 1,162 compared with 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 recapitaulation indicates the number of commercial cars handled:

Carload Movements - General Electric Company

Loads In	Empties In	Loads Out	Empties Out
258	18	20	308

Carload Movements - Subcontractors and Others

	Loads In	Empties In	Loads Out	Empties Out
Asbestos Supply Co.	1	0	0	1
Associated Engineers	2	0	0	1
Atkinson & Jones Co.	38	0	0	30
Chicago Bridge & Iron Co.	1	0	0	1
Combustion Engineers Co.	3	0	0	3
F. J. Early Co.	2	0	0	2
Edward P. Erwen Co.	1	0	0	2
V. S. Jenkins Co.	1	0	0	1
C. S. Johnson Co.	3	0	0	3
Parker Schramm Co.	0	2	2	0

Work train service was provided on July 13, 14, 17, 18, and 19 for the movement and spreading of ballast on the new Redox track.

[redacted]

Transportation Division [redacted]

All Milwaukee railroad flat cars leased by the Design and Construction Divisions for the movement of rail and ties from Hanford to Richland in the construction of the Northern Pacific-Union Pacific connection have been jointly inspected and returned.

Completed annual inspection and service on cask cars 10-B-3637, 10-B-3638, 10-B-3642, and 10-B-3643. Overhauled triple valves and brake cylinders, checked and lubricated center castings, checked wheels, adjusted brakes, made air tests and restenciled dates on cars.

Railroad track maintenance and rehabilitation work continued on a normal basis throughout the five sections. Surfacing was in progress on the 100-B lead, "A" line between Stations 732 and 780, coal track in 100-H Area, "A" line between Stations 1153 and 1205, east and west of Yakima River bridge, near the Prosser road crossing, and at May Junction requiring approximately 4,100 manhours. Replaced 314 defective cross ties in the 272 shop track in 200 West Area, switch ties at May Junction and four sets of switch ties on wye turnouts in 200-North Area requiring approximately 1,000 manhours.

AUTOMOTIVE ACTIVITIES

The Area Bus System transported 2.4% fewer passengers in July than in June. The following tabulation indicates the passenger volume by shifts and the total revenue received during the month:

No.1	No. 2	No. 3	Total	Revenue
23,889	49,907	48,262	122,055	$6,102.75

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	10
Passenger busses - 100-H Area	11
Passenger busses - Hanford	5
Passenger busses - 200 East Area	12
Passenger busses - 200 West Area	16
Passenger busses - 300 Area	8
Passenger busses - Riverland	3
Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	2
Passenger busses - North Richland	3
Passenger busses - Pasco	3
700-300 Area Shuttle	25
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

[redacted]

Special shuttle bus service within the Pasco Warehousing Area was rendered to prospective buyers at a public sale on July 10, 11, 12, and 31. This service was requested by the Atomic Energy Commission.

Transportation Division

The Village Bus System transported 12.8% fewer passengers in July than in June. The decrease in passenger volume resulted from the normal seasonal decline and the reduction of schedules which was effected June 19, 1950. Volume of service rendered is indicated in the following statistics:

Total passengers, including transfers	34,137
Total bus trips	3,606
Total bus miles	19,833
Total Revenue	$ 2,715.90

Off-Plant automobile trips (Company business and/or official visitors) totaled 147.

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

Applicants:	Male	88	Number retested	0
	Female	13	Number rejected	1
		101	Number tests given	101

Permits issued:	Limited to driving with glasses	18
	Unlimited	82
		100

Permits reissued: 55

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

	Gasoline	Diesel Fuel	50 Cetane	Kerosene
Stock at start of month	44,436	17,748	19,561	2,818
Received during month	96,242	26,026	23,178	505
Total	140,678	43,774	42,739	3,323
Delivered to Area Stations	99,050	27,668	25,305	1,395
Stock at end of month	41,628	16,106	17,434	1,928

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	398	471,838
1B	Busses	155	193,176
1C	Pick-ups	453	257,490
1D	Station Wagons	96	56,713
1E	Armored Cars	11	341
1G	Weapon Carriers	55	8,881
68 Series	Trucks	320	101,291
		1,488	1,089,730

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[redacted]

Fabricated and installed brackets on the rear seats of 59 GMC coaches. Installed cork insulation over the wheel housing on 42 GMC coaches.

All new automotive equipment requisitioned for fiscal year 1950 has been received except for one stand-drive truck. Seventy-seven sedans, 7 panel trucks, and 9 sedan delivery trucks have been serviced and assigned to-date replacing 1941 and 1942 model Plymouth sedans and other worn out or obsolete units which are being excessed.

The Planning and Methods Section submitted purchase requisitions for 21 4-wheel drive pick-up trucks, 13 4-wheel drive station wagons, and 2 universal jeeps; also, made arrangements to withdraw 75 Ford pick-ups from excess on an exchange basis to replace a like number of International units.

LABOR ACTIVITIES

Completed seal coating of approximately 15 miles of Plant Area roads which required 2,347 cubic yards of 5/8" crushed rock, 392 cubic yards of 1/4" crushed rock, 1,175 gallons of MC 3 oil, 51,950 gallons of MC 5 oil, and 1,867 manhours.

Expended 378 manhours in producing and stockpiling 340 cubic yards of 5/8" crushed rock and 172 cubic yards of 1/4" crushed rock. Expended 359 manhours in manufacturing 600 tons of 3/4" pre-mix material and 260 tons of 1/4" pre-mix material.

The following tabulation indicates in gallons the volume of asphalt road material handled by the Services Section:

	MC 1	MC 3	MC 4	MC 5
Stock at start of month	0	3,732	0	0
Received during month	0	20,045	0	49,992
Dispensed during month	0	4,907	0	37,354
Stock at end of month	0	18,870	0	12,638

The following tabulation indicates the volume of materials handled by the Services Section and a breakdown by Plant Areas:

	100 B	100 D	100 F	100 H	200 W	200 E	300	Total
Cars coal unloaded	63	42	51	45	15	8	0	224
Cars other material	1	3	1	7	8	4	2	26
Cars loaded out	0	2	0	0	0	0	0	2

Expended 3,222 manhours in handling 28 truckloads of lumber, 67 truckloads of equipment, 34 truckloads of pipe, 20 truckloads of pallets, 8 truckloads of lead, 24 truckloads of ballast, 47 truckloads of miscellaneous material, 13 truckloads of equipment, 2 carloads of scrap and 3 carloads of ballast.

Transportation Division [redacted]

Expended 1,032 manhours in handling excess and salvage materials for the Stores Division at the Pasco Warehousing Area which included the loading of 214 trucks, 2 railroad cars, and general clean up.

Expended 1,660 manhours in handling miscellaneous materials for the Stores Division at White Bluffs.

Expended 798 manhours in unloading and warehousing 195 truckloads of incoming material at Warehouse #6 in Richland for the Stores Division.

Expended 1,083 manhours in handling area deliveries, 259 manhours for Stores deliveries, and 857 manhours for moving furniture.

Expended 960 manhours in weed spraying operations throughout the Plant Areas.

Well drilling operations performed by this Division for the Health Instrument Divisions have been completed. Personnel engaged in this work were given lack of work terminations and the equipment is being excessed. Work of this nature will, in the future, be performed by the U. S. Geological Survey.

Routine area maintenance was performed in all operating areas with labor and transportation being furnished for Projects P-192, P-295, P-330, P-333, P-347, P-383, M-749, M-761 and M-804.

[redacted]

[redacted]

PROJECT EN EERING DIVISIONS
MID-MONTHLY STATUS REPORT

DATE JULY 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	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A1034	5-29	185DDF	DISMANTLING OF EQUIPMENT IN THE DEMINERALIZING AND DEALRATING PLANTS	POWER	C-172	360,200		7-11-47	-	-	7-11	3-31-48	4-4	4-7		SUBCONTRACT WORK PROGRESSING
A532	1-7	108F	BIOLOGICAL LABORATORY, PARTS I AND II	H.I.	C-192	1,121,000		3-31-49	4-1	4-1	4-1	3-29	4-3	4-6		WORK PROGRESSING
A1046	6-14	105D	NEUTRON SPECTROMETER	PILE TECH.	C-290	17,400		9-5-48	9-9	9-14	9-14	10-4	10-11	10-11		EXTENSION OF TIME GRANTED
A1060	7-29	100BDF	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		MATERIAL NOW BEING RECEIVED
A1057	4-20	105DF	EFFLUENT DIVERSIONARY OUTLET (105-107 B & F)	P	C-321	153,000		1-12-49	1-14	1-26	1-26					PROJECT BEING REVISED
A1093	3-17	TRACT HOUSE	P-11 PROJECT	PILE TECH.	C-340	328,000		5-23-49	5-20	6-1	6-1	6-28	7-1	7-12		BREMERTON PARTS COMPLETED
A1097	4-27	101	P-12 PROJECT	PILE TECH.	C-346	391,000		8-1-49	8-16	8-17	8-17	10-31	11-3	11-11		INACTIVE AT THIS TIME
A1100	5-27	105BDF	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		DELIVERY SLOW BECAUSE OF FABRICATION DIFFICULTIES
A1110	7-21	105BDF	PILE CLEARANCE - INNER ROD ROOM WALLS 105BDF	P	C-355	40,600		9-26-49	9-26	12-13	12-14	1-18-50	1-19	2-8		WORK SCHEDULED IN B AREA SHUTDOWN
A1129	2-2	108B	P-10-B (COLD FACILITIES)	PILE TECH.	C-368	95,000		3-1-50	3-21	3-21	3-22	4-24	5-1	5-23		FIELD WORK IN PROGRESS
A1125	11-23	105H	FIRST HANFORD PILOT CHANNEL TEST RIG (ANL #140)	PILE TECH.	C-379	105,000		3-31-50	3-31	4-11	4-12	5-23	5-25	6-12		WORK PROGRESSING
A1130	2-3	108B	P-10-A EXPANSION	PILE TECH.	C-383	300,000		4-12-50	4-13	4-20	4-20	5-29	6-1	6-9		IN PARTIAL USE
A1068	10-29	105	DEVELOPMENT OF FLEXIBLE VERTICAL SAFETY RODS	P	M-713	18,500		5-18-49	5-18	5-27	5-27	7-19	7-22	9-26		MOCK UP ROD MANUFACTURE IN PROGRESS
A1101	6-1	105BDF	IBM INSTALLATION FOR INDIVIDUAL PILE TUBE ACCOUNTING	P	M-715	13,400		8-15-49	8-15	9-6	8-7	9-15	9-15	9-22		COMPLETED 6-23-50
A1106	7-21	105BDF	RESTRAINING CLAMPS - PILE SHIELDING	P	M-721	15,000		8-25-49	8-25	9-8	9-8	10-7	10-14	10-17		COMPLETED 7-7-50
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		AWAITING SHUTDOWN
A1135	3-13	108B	P-10-C & P-10-D HOT DEVELOPMENT FACILITIES	PILE TECH.	M-761	200,000 (1,200,000)							S.C.	5-10		DESIGNS PROGRESSING. $50,000 OF ESTIMATED TOTAL COST TO SUB. CONTRACT. FIELD WORK IN PROGRESS
A575	5-1	105DR	PILE TECHNOLOGY STORAGE & TEST BUILDING	PILE TECH.		(95,000)										PRELIM. DESIGN IN PROGRESS
A1059	6-29	100B	INSTALL STEEL PROCESS SEWER 105B - 107B	P		(550,000)										LEAKAGE STUDIES CONTINUING
A1080	2-4	100DDF	HIGH TANK CONTROL VALVES	P		40,000										PROJECT IN PREPARATION
A1116	9-30	111B	HEALTH MONITORING AND STORAGE FACILITIES	PILE TECH.	TECH. NO. 33	16,100		3-20-50	3-20	4-28	4-28	5-23	5-23			WORK BEING SCHEDULED
A1118	10-14	105F	DOWNCOMER REPLACEMENT	P		(100,000)										HELD UP FOR HIGHER PRIORITY WORK
A1119	10-17	100 200 300	COAL METERING FACILITIES	POWER		31,400										TEMPORARILY HELD IN ABEYANCE
A1122	11-9	100	DEVELOPMENT OF FLEXIBLE HORIZONTAL CONTROL RODS	P		(50,000)										WORK TO BE RESUMED
A1141	6-25	108D	P-10-X	P		(4,000,000)										

COMBINED TOTAL OF AUTHORIZED AND PENDING 100 AREA WORK $9,893,300

1209706

PROJECT ENGINEERING DIVISIONS

MID-MONTHLY STATUS REPORT

DATE JULY 15, 19 50

200 AREA PROJECTS

($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	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
E436	2-14	251 & 200EW	ENLARGING 251 SUBSTATION AND ADDITIONAL 13.8 KV FEEDERS 200EW	ELECT.	C-295	1,500,000		8-25-48	10-5	10-12	10-6	10-15	10-13	11-19		TRANSFERRED TO D & C DIVS.
2469	12-30	200	UNDERGROUND GEOLOGICAL & HYDROLOGICAL INVESTIGATION PROGRAM INCLUDING TEST WELLS & OTHER FACILITIES	H.I.	C-326 REV.2 C-337	36,800		5-25-50	5-25	6-13	6-14	7-5	7-10	7-13		REV. PROJ. APPROVED BY AEC
2460	12-23	221TB	EQUIPMENT FOR DISSOLVER OFF-GAS FILTRATION PART II	S	REV.	158,000		12-14-49	12-13	12-20	12-23	1-30-50	2-9	2-16		WORK PROGRESSING
A546	7-19	200E	HOT SEMIWORKS COMPLETE PLANS & SPECS. PARTS I & II	SEP. TECH.	C-349	150,000		2-1-50	2-8	2-8	2-15	3-9	3-16	3-24		DESIGNS PROGRESSING
			HOT SEMIWORKS PART III	SEP. TECH.	C-349	2,540,000		5-31-50	5-31	6-13	6-14					PROJECT AWAITING AUTHORIZATION
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	3-22	4-11	4-14	4-26		FABRICATION OF ENCLOSURE BEING PERFORMED BY SUBCONTRACTOR $25,000 FOR DESIGN AUTH. 4-25-50
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					REV. PROJ. TO BE SUBMITTED FOR WEST AREA UNIT
2490	5-13	221TB	IODINE REMOVAL FACILITIES FOR DISSOLVER OFF-GAS (200EW)	S	C-378	149,000		3-9-50	3-9	3-31	4-12	5-9	5-12	5-23		WORK BEING SCHEDULED
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	6-9	6-15	6-20		WORK BEING SCHEDULED
2540	5-11	234-5	ADDITIONAL UNIT TO SUPPLEMENT THE OPERATION OF HOOD #25, BLDG. 235	S	C-392	25,500		6-1-50	6-1	6-17	6-28					PROJECT AWAITING AUTHORIZATION
2501	9-2	221TB	PARALLEL OPERATION, SECTIONS 19 & 20, BLDGS. 221 T & B — AUTH. ON SUSP. CODE; ESTIM. ENTIRE COST	S	M-742	4,800 / 68,000		6-26-50	6-26					S.C. 5-11		PROJECT PROPOSAL SUBMITTED FOR APPROVAL
2498	8-18	222T	DESIGN AND INSTALL FISSION COUNTER	TECH. SERV.	M-753	14,750		9-1-49	9-1	9-8	9-8	10-7	10-7	1-18-50		COMPLETED 6-23-50
A554	12-23	222U	OFFICE AND STORAGE ANNEX TO BLDG. 222U	H.I.	M-755	9,700		10-26-49	10-26	11-22	11-25	12-7	12-7	2-21-50		SUBCONTRACT AWARDED 7-3-50
2504	7-22	271TB	INSTALLATION OF LABORATORY FURNITURE IN BLDGS. 271TB	TECH. SERV.	M-766	13,600		4-25-50	4-25	5-9	5-10	5-31	6-2	6-14		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		WORK BEING SCHEDULED
A570	3-15	200W	CONSOLIDATED MAINT. SHOPS	MAINT.		(310,000)										PROJECT IN PREPARATION
A571	4-7	200W	ANIMAL EXPOSURE CHAMBER	H.I.		(45,000)										DESIGN HELD UP BY H.I. DIV.
2503	7-22	234-5	DUCT LEVEL FLOOR COVERING AND SAFETY SHOWERS	S		(150,000)										DESIGNS POSTPONED BY S-DIVISION
2533	4-11	234-5	PROCESS WASTE DISPOSAL SYSTEM	S		(50,000)										DESIGN BEING REVIEWED BY S-DIV.
2543	6-1	231	PREPARE PROJ. FOR EXPERIMENTAL HOOD	SEP. TECH.		(25,000)										DESIGN PROGRESSING
2544	6-2	221TB	PREPARE PROJ. FOR INSTALLATION OF CONDUCTIVITY METERS	S		21,698		7-12-50	7-12							PROJECT ROUTED FOR APPROVAL

COMBINED TOTAL OF AUTHORIZED AND PENDING 200 AREA WORK $5,039,298

+209707

PROJECT ENGINEERING DIVISIONS
MID-MONTHLY STATUS REPORT

DATE JULY 15, 19 50

($000,000) HIGH SPOT ESTIMATE ONLY

[ ] WORK PROGRESS DURING PERIOD

WORK PREVIOUSLY DONE

300 AREA PROJECTS

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PERCENT COMPLETE	PROJECT DATE	APPROPRIATION 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	2-1-50	2-3	2-10		SCOPE OF PROJ. COVERS ONLY ENGRG. & DEVELOPMENT WORK AT PRESENT ALL DESIGN WORK HAS BEEN HELD PENDING FURTHER DECISIONS BY THE AEC ON SCOPE OF WORK
A3062	2-9	314	ROLLING MILL ($60,000 AUTHORIZED 12-13 FOR ENGINEERING) AUTHORIZED EST. TOTAL COST	P	C-339	60,000 (2,800,000)		5-23-49	5-23	5-27	6-1	12-13	12-23	12-23		
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		SUBCONTRACT AWARDED 7-3-50
A528	11-14	300	INSTRUMENT MAINTENANCE AND DEVELOPMENT BLDG. 3717-B	INST.	C-377-B	111,000		4-26-50	3-25	4-28	5-10	6-6	6-8	6-19		DESIGN PROGRESSING
A510R	10-10	3701	300 AREA BADGE HOUSE ADDITION PREVIOUSLY AUTH. INF. REQ. PRESENT EST. TOTAL COST	SERV. TECH.		14,500 34,000										REV. PROJECT IN PREPARATION
A574	4-28	300	ADDITION TO BLDG. 3702	SERV. TECH.		(58,000)										PROJECT IN PREPARATION
A548	8-29	300	SOLVENT STORAGE FACILITIES - BLDG. 3706	SERV. ALL		(60,000)										PROJECT IN PREPARATION
A582	6-9	300	MFG. DIVISION ADMINISTRATION BLDG.	MFG.		(70,000)										DESIGNS STARTED
E432	1-11	300	ELECT. POWER SERVICE TO HANF. LAB. & ROLLING MILL	ELECT.		(113,500)										DESIGNS STARTED
E433	1-17	300	TELEPHONE SERVICE TO TECH. CENTER	ELECT.		(5,000)										DESIGNS STARTED
E434	1-13	300	EXPERIMENTAL INDUCTION HEATING FACILITIES BLDG. 3732	PILE TECH.		(50,000)										DESIGNS STARTED
A3083	7-21	313	SEGREGATION OF FLUORIDE SLUDGE	P		(40,000)										DESIGNS HELD PENDING FURTHER DECISIONS ON WORK TO BE DONE
A3085	6-28	RIVER.	HIGH TANK RIVERLAND	TRAN.		50,000										PROJECT PROPOSAL STARTED

COMBINED TOTAL OF AUTHORIZED AND PENDING 300 AREA WORK $3,611,800

1209706

PROJECT E INEERING DIVISIONS
MID-MONTHLY STATUS REPORT
GENERAL PLANT PROJECTS

) HIGH SPOT ESTIMATE ONLY
WORK PROGRESS DURING PERIOD
WORK PREVIOUSLY DONE

ATE JULY 15, 19 50

DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	FIELD WORK PER CENT COMPLETE	REMARKS
ERSION OF RICHLAND EXCHANGE TO AUTOMATIC DIAL ATION	ELECT.	C-138	470,500		3-7-47	-	-	3-10	5-12	5-21	5-13	EXTENSION OF TIME GRANTED BY MOD. NO. 4 TO 9-1-50
TIONAL TELEPHONE CABLES - RICHLAND	ELECT.	C-144	71,000		3-28-47	-	-	4-1	5-5	5-21	5-13	COMPLETED 6-30-50
KV POWER LINE TO RICHLAND PLUS TATION FACILITIES — AUTHORIZED / EST. TOTAL COST	ELECT.	C-177	1,364,000 / 1,500,000		7-17-47	-	-	7-21	8-14	8-26	8-29	PART IV-R (136,000) TO AEC 12-14-49. AWAITING AUTHORIZATION WORK HELD UP
T TELEPHONE PROJECT	ELECT.	C-276	1,548,600		9-8-48	7-13	9-8	9-9	10-3	10-6	10-6	SUBCONTRACTOR PROGRESSING ON REMAINING WORK AS AUTHORIZED
ALLATION OF NEW SECURITY FENCES - ALL AREAS	SERV.	C-291	424,000		8-31-48	9-9	9-9	9-15	10-13	11-8	11-8	WORK PROGRESSING
OPERATIONAL DIVISION SURVEY INSTRUMENTS	H.I.	C-333	85,000		3-30-49	4-1	4-1	4-1	4-20	4-26	4-29	WORK PROGRESSING
TIONS TO RICHLAND ELECTRICAL DISTRIBUTION SYSTEM	ELECT.	C-341-H	173,600		5-29-49	5-29	6-6	6-16	9-2	9-13	9-2	PROJECT BEING REVISED
TIONAL CAPACITY RICHLAND SEWAGE LIFT STATION	VILL.	C-357	47,500		11-22-49	11-22	12-28	12-28	4-6-50	2-23	5-18	SUBCONTRACT & FIELD WORK BY VILLAGE PUBLIC WORKS
NAL BLDG., FIRE PROTECTION & SANITARY LITIES - PATROL PISTOL RANGE	SERV.	C-360	54,000		12-19-49	12-23	2-14-50	2-15				ACTION TEMP. DEFERRED AEC LETTER 3-31-50
TION TO METEOROLOGY BLDG. 622	H.I.	C-365	23,100		3-2-50	2-25	3-9	3-10	4-3	4-5	4-12	SUBCONTRACT AWARDED 7-3-50
DROLOGICAL FIELD STATIONS	H.I.	C-371	30,800		3-25-50	3-25	4-11	4-12	5-9	5-11	5-23	DESIGN COMPLETION AWAITING VENDOR INFORMATION
AREA ROAD MAINTENANCE PROGRAM	TRAN.	C-389	94,000		5-6-50	5-6	6-13	6-14	6-22	6-27	7-3	WORK PROGRESSING
TRICITY METERING - COMMUNITY — INFORMAL REQUEST		M-733	12,400									
ICHLAND — ESTIM. TOTAL COST	ELECT.	C-350-H	331,000		6-15-50	6-15	6-26	6-27				PROJECT AWAITING AUTHORIZATION
DLIDATION OF TRANSPORTATION — PRELIM. ENGRG.		M-	12,000									INFORMAL REQUEST AWAITING
LITIES — EST. ENTIRE COST	TRAN.	C-281-H	2,300,000									APPROVAL
RAL STORES WAREHOUSE IN 3000 — PRELIM. ENGRG.		M-	17,000									
EST. ENTIRE COST	STORES	C-390	(1,800,000)		7-11-50	7-11	7-11	7-11				PROJECT AWAITING AUTHORIZATION
ICAL WING AIR CONDITIONING - KADLEC HOSPITAL ORMAL REQUEST)	MED.	MED. #1	16,100		5-2-49	5-2	5-5	5-5	5-18	5-23	5-27	WORK PROGRESSING
WATER PIPE LINE 784-B TO KADLEC HOSPITAL ORMAL REQUEST)	MED.	MED. #14	9,800		5-18-49	5-18	5-20	5-27	8-4	8-18		SPECIFICATIONS BEING REVISED BEFORE SUBCONTRACT IS AWARDED
SFORMER & CIRCUIT BREAKER OIL REPROCESSING LITIES	ELECT.	MFG. #91	13,300		6-13-50	6-13	6-13	6-14	7-11			INFORMAL REQUEST AWAITING AUTHORIZATION
AMENT FENCING 230 KV AND DISTRIBUTION TATIONS	ELECT.		(170,000)									PROJECT IN PREPARATION AWAITING INFORMATION FROM
CATION OF RICHLAND LINE CREW HEADQUARTERS	ELECT.		(30,000)									ELECTRICAL DIVISION
BIO-ASSAY LABORATORY	H.I.		(100,000)									PROJECT IN PREPARATION
STOS SHINGLES FOR AREA BADGE HOUSE, PATROL QUARTERS, & FIRE STATION	SEC. SERV.		(45,000)									PROJECT IN PREPARATION
AGE AND RECOVERY OF TELEPHONE CABLE AND ANGE EQUIPMENT	ELECT.		(32,600)		6-26-50							ENGRG. WORK PROGRESSING
												COMBINED TOTAL OF AUTHORIZED AND PENDING GENERAL PLANT AREA WORK $9,298,300

1209709

PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN
100 AREAS

DATE JULY 15, 1950

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO.		
A-1001	9-1-49		100	"AS-BUILT" DWGS. SINCE 9-1-46	30	30		WORK PROGRESSING
A-1002	2-1-50	TECH. & P	105	G.E.C. STUDY	30	30		EXTENDED STUDY BY STANDING COMMITTEE
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	20	40	8-30-50	ADDITIONAL FUNDS REQUESTED TO COMPLETE WORK
A-1132	2-8-50	P	105	ROTARY TUBE CUTTER	40	85	7-30-50	TRIAL UNIT TO BE MADE
A-1136	5-11-50	TECH.	108B	P-10-D STACK DESIGN	80	100		DESIGN ISSUED 6-30-50
A-1137	5-11-50	TECH.	108B	P-10 FURNACE EXHAUST FACILITY	60	100		DESIGN ISSUED 7-10-50
A-1139	5-25-50	P	105	INCLINED VSR GUIDE	-	10	9-30-50	IN PROGRESS
A-1140	6-1-50	P	107B	INVESTIGATE SEWER LEAKS	-	10	9-30-50	IN PROGRESS

PROJECT ENGINEERING DIVISIONS

ENGINEERING DESIGN

200 AREAS

DATE JULY 15, 1950

E. R. 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	40	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	5	10		DESIGN PENDING FURTHER STUDY BY S-DIV.
2534	4-17-50	S	234-5	DESIGN NEW SHAFT FOR WASTE SUMP TANK AGITATORS	5	20	8-15-50	LETTERS FROM VENDORS RECEIVED
2535	4-17-50	S	222TB	DESIGN HOOD FOR LIQUID WASTE ASPIRATOR	5	25	8-15-50	DESIGN IN PROGRESS
2536	4-26-50	S	234-5	DESIGN THREE-POSITION TRIPOD FOR HOODS 25 & 26	90	100		DESIGN COMPLETE
2539	5-11-50	S	234-5	REVISE SANITARY WATER SYSTEM	0	40	7-21-50	DESIGN IN PROGRESS
2541	5-15-50	S	234	DESIGN VACUUM BREAKER FOR EVAPORATOR BLDG. 234	20	80		DESIGN BEING REVIEWED BY S-DIV.
2542	5-29-50	-	222TB	DESIGN AIR COND. EQUIP. FOR ROOM 19	0	0		NOT STARTED
2545	6-13-50	M	2704E	DESIGN PIPING FOR TWO FIRE HOSE STATIONS	-	0		NOT STARTED

2097 11

PROJECT ENGINEERING DIVISIONS

ENGINEERING DESIGN

300 AREA

DATE JULY 15, 1950

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	-	-		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	30	30	9-1-50	WORK POSTPONED UNTIL ALL HOODS HAVE BEEN INSTALLED
A-3085	9-27-49	TRAN.	RIVER.	STUDY HIGH WATER TANK - RIVERLAND	95	100	6-22-50	RECOMMENDATION REPORT ISSUED
A-3088	2-13-50	P	314	STUDY GATE TYPE CRUCIBLE, MELT PLANT	80	80	8-1-50	WORK POSTPONED UNTIL TEST OF SIDE POUR CRUCIBLE IS COMPLETED
A-3090	3-7-50	P	314	HOOD FOR OUTGASSING FURNACE	65	70	9-1-50	STUDY PROGRESSING ON HEAT BALANCE
A-3092	4-28-50	P	314	STOKES PUMP EXHAUST GAS TEST	80	90	7-20-50	AWAITING SCHEDULING OF TEST BY P-DIV.

PROJECT ENGINEERING DIVISIONS
ENGINEERING DESIGN
PLANT GENERAL

DATE JULY 15, 1950

E R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO.		
A-537	4-8-49	TRAN.	ALL	SURVEY FOR MAINTENANCE OF ALL RAILROADS INSIDE RESTRICTED AREAS	50	50	9-1-50	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	25	35	9-1-50	WORK PROGRESSING AS REQUIRED
A-578	5-22-50	D.& C.	200	200E-W WASTE TIE-LINE (LAYOUT ONLY)	25	50	8-1-50	WORK PROGRESSING
A-581	6-9-50	TRAN.	-	DESIGN BUS HEATING SYSTEM	5	40	8-1-50	WORK PROGRESSING
A-583	6-13-50	TRAN.	100H	PAINT SPRAY BOOTH INSTALLATION	-	10	9-15-50	WORK PROGRESSING
A-585	6-29-50	S	ALL	STRESS ANALYSIS PROCESS CASK CAR	-	10	8-1-50	WORK PROGRESSING
E-439L	1-12-50	-	ALL	ELECTRICAL AS-BUILTS (LAYOUT WORK ONLY)	30	35		AS REQUIRED
E-406L	8-1-49	ELECT.	1100	ADDITIONS TO VILLAGE DIST. - LAYOUT ONLY FOR PROJECT C-341	90	93		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	60	70		WORK PROGRESSING AS REQUIRED
A-3062A	5-17-50	P	314	ROLLING MILL - ARCH. DESIGN ONLY - C-339	0	0		NOT STARTED
4365D	12-2-49	P	-	PROCESS CHARTS - 300 AREA (FOR IND. ENGRG. GROUP)	70	70		WORK PROGRESSING AS REQUIRED
4377	3-3-50	P	100	PREPARE CHARTS FOR P-10-A STUDY	80	100		COMPLETED

PROJECT ENGINEERING DIVISIONS

ELECTRICAL DESIGN

PLANT GENERAL

DATE JULY 15, 1950

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO		
A-505E	8-19-49	-	ALL	ELECTRICAL STANDARDS - DESIGN & DRAFTING STAFF WORK				CURRENTLY 125 MAN DAYS PER MO. 10 DAYS PER MONTH
A-528E	1-16-50	INST.	300	300 AREA INSTRUMENT SHOP	10	40	8-1-50	WORK PROGRESSING
A-532E	3-4-50	H.I.	108F	BIOLOGICAL BLDG.	90	95	8-1-50	WORK PROGRESSING
A-546E	8-19-49	TECH.	200E	HOT SEMIWORKS	25	30	9-15-50	WORK PROGRESSING
A-562SE	2-27-50	STORES	ALL	WAREHOUSE MODIFICATIONS (HOLD)	12	12	8-1-50	WORK HELD UP
A-565E	3-23-50	H.I.	700	BIO ASSAY LABORATORY	10	10	8-15-50	WORK PROGRESSING
E-427	11-11-49	ELECT.	ALL	ADD'N. ELECTRICAL POLE REPLACEMENT - FISCAL YEAR 1950	10	10		PRELIMINARY WORK STARTED
E-428	11-1-49	ELECT.	HANF.	DISMANTLE DISTRIBUTION LINES AND TELEPHONE CABLE - HANFORD	10	10		PRELIMINARY WORK STARTED
E-436	2-20-50	ELECT.	251	ENLARGING 251 SUB.	10	10	7-15-50	WORK TRANSFERRED TO D & C
E-438	3-30-50	ELECT.	66KV	DISMANTLE 66KV LINE	10	10		WORK PROGRESSING
E-439	4-1-50	-	ALL	AS-BUILTS ALL AREAS	10	10		
A-1129E	2-6-50	TECH.	100B	P-10-B COLD LAB.	80	100	7-15-50	COMPLETED
A-1130E	2-16-50	TECH.	100B	P-10-A EXPANSION	85	90	8-15-50	WORK PROGRESSING
A-1135E	4-2-50	TECH.	100B	P-10-D ADDITIONAL HOT FACILITIES	10	15	9-1-50	WORK PROGRESSING
2490E	2-15-50	P	200EW	IODINE REMOVAL FACILITIES	95	95	7-17-50	WORK PROGRESSING
2491E	9-14-49	S	200EW	FIRST CYCLE EVAP. FAC. - 241 T-X, ELECTRICAL DESIGNS	10	10	8-15-50	WORK PROGRESSING
2501E	2-17-50	S	200EW	F CELLS - BLDG. 221 T & B	-	65	9-1-50	WORK PROGRESSING
2544E	6-12-50	S	200EW	CONDUCTIVITY METERS 221 T-B	-	5	8-1-50	WORK PROGRESSING
A-3061E	12-10-49	TECH.	314	INCREASED VENTIL. - ELECT. DESIGNS ONLY	45	45	8-1-50	WORK PROGRESSING
A-3062E	8-1-49	P	314	ROLLING MILL FOR PROJECT C-339 - ELECTRICAL DESIGNS	5	5	8-1-50	WORK PROGRESSING

PROJECT ENGINEERING DIVISIONS
INDUSTRIAL ENGINEERING
ALL AREAS

DATE JULY 15, 1950

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE LAST MO	PERCENT ENGINEERING COMPLETE THIS MO.	EST. COMPL. DATE	REMARKS
1141	6-16-50	P	100	P-10-X MATERIAL HANDLING & STORAGE	-	30		WORK PROGRESSING
4363	3-21-50	P.E.D.	ALL	PROJECT ENGRG. DIV. PERSONNEL ANALYSIS	90	90		WORK DEFERRED
4365	4-15-49		300	INDUSTRIAL ENGINEERING - P-DIVISION				
		P		OPTIMUM BILLET DIMENSION DETERMINATION	25	70		WORK PROGRESSING
		P		REDUCED CUT-OFF TOOL WIDTH	50	80		WORK PROGRESSING
		P		MELT PLANT MATERIAL HANDLING	5	20		WORK PROGRESSING
		P		AMORTIZATION PERIODS	20	30		WORK PROGRESSING
		P		SLUG & ACID RECOVERY	0	100		COMPLETED
		P		303 PROCESS & ESSENTIAL MATERIALS	0	0		AWTG. PERSONNEL ASSIGNMENT
		P		CHIP RECOVERY EXPOSURE STUDY	5	20		
4370	11-1-49		100	INDUSTRIAL ENGINEERING - P-DIVISION				
		P		CHARGE-DISCHARGE METHODS	45	50		WORK PROGRESSING
		P		SUGGESTION EVALUATION FOR P.C. GROUP	35	50		WORK PROGRESSING
		P		NOZZLE REPLACEMENT STUDY	5	5	10-1-50	WORK DEFERRED
		P		CREW REQUIREMENTS, 105 AREA	0	20		WORK PROGRESSING
		P		S.W.P. STUDIES	0	5		
4374	12-20-49		200	INDUSTRIAL ENGINEERING - S-DIVISION				
		S		CREW REQUIREMENTS 221 & 224 BLDGS.	0	0	12-20-50	AWTG. PERSONNEL ASSIGNMENT
4378	2-5-50	S	202S	LUBRICATION SPECIFICATIONS MJ-1	0	0	4-1-51	AWAITING EQUIPMENT DATA
4379	2-3-50	S	234-5	" " MJ-2	0	0	8-1-51	" " "
4381	2-3-50	S	221U	" " MJ-4	0	0	8-1-51	" " "
4382	3-2-50	S	200	" " MJ-5	0	0	6-1-51	" " "
4383	3-6-50	POWER	ALL	FUEL OIL STUDY	80	95	7-30-50	WORK PROGRESSING
4385	3-6-50	O.S.D.	703	OFFICE PARTITION STUDY	90	100		REPORT ISSUED 6-14-50
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	35	70	7-28-50	WORK PROGRESSING
4389	5-5-50	CONTROL	700	CONTROL - P. & S. DIVISIONS PROCEDURE	80	80	7-28-50	REPORT BEING REVIEWED
4390	5-9-50	CONTROL	100	LUBRICATION SPECIFICATIONS 105H	30	60	7-21-50	WORK PROGRESSING
4391	5-12-50	CONTROL	ALL	INDUSTRIAL LUBRICATION PROGRAM	5	30	11-10-50	WORK PROGRESSING
4392	5-17-50	MAINT.	ALL	METALLIZING J.I.	5	15	9-1-50	DATA BEING GATHERED

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PROJECT ENGINEERING DIVISIONS

INDUSTRIAL ENGINEERING

ALL AREAS

DATE JULY 15, 1950

E. R. NO.	DATE REC'D.	DIV. RESP.	BLDG. OR AREA	DESCRIPTION	PERCENT ENGINEERING COMPLETE		EST. COMPL. DATE	REMARKS
					LAST MO	THIS MO		
4393	5-19-50	POWER	100	LUBRICATION SPECIFICATIONS - 100DR	0	5	8-1-50	WORK INITIATED
4394	6-6-50	P.E.D.	100	GRAPHITE STORAGE FACILITIES	20	25	9-1-50	WORK PROGRESSING
4395	6-28-50	MFG.	ALL	MANUFACTURING DIVISIONS PROCEDURES	-	5	12-1-50	WORK PROGRESSING
4396	6-19-50	S	200EW	AREA PLANNING STUDIES	-	30	9-15-50	WORK PROGRESSING
4397	6-19-50	TECH. SERV.		METHODS STUDY - CLASSIFIED FILES	-	0		AWAITING PERSONNEL ASSIGNMENT
4398	6-25-50	S		CORROSION TESTS - STAINLESS STEEL	-	0	9-1-50	WORK ASSIGNED

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

DATE JULY 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-184	100F	EXPERIMENTAL ANIMAL FARM - FINAL EST.	25	100	5-29-50	6-6-50	7-5-50	334,740	EST. TO R.M. HURST
C-187-D	200	SANITARY WATER TIE-IN 277-S	-	100	6-30-50	7-3-50	7-5-50	4,617	EST. TO D.J. O'NEIL
C-198	234-5	ANALYTICAL LAB. RM. 144	0	100	6-21-50	7-1-50	6-29-50	9,200	EST. TO D & C
C-198	234-5	INSTRUMENT SHOPS	0	100	6-30-50	7-10-50	7-11-50	2,835	EST. TO D & C
C-322	ALL	OSMOSE TREATMENT - ELEC. POLES - FINAL EST.	20	20	5-20-50	5-23-50			
C-357	1100	SEWAGE LIFT STA. - FAIR COST EST.	20	100	5-8-50	5-29-50	6-26-50	17,500	EST. TO R.M. HURST
C-388	100	P-10-X ALTERNATE ESTIMATES - 32	-	100	6-17-50	6-20-50	6-26-50	VARIOUS	EST. TO R.M. HURST
M-742	221B&T	PARALLEL OPERATIONS	-	100	6-12-50	6-19-50	6-23-50	68,000	EST. TO E.M. JOHNSTON
M-761	108B	P-10-C, P-10-D - ORIGINAL	70	100	5-25-50	6-20-50	6-24-50	1,102,000	EST. TO V.W. WOOD
M-761	108B	P-10-C, P-10-D - REV. #1	-	100	6-25-50	6-26-50	6-26-50	1,171,000	EST. TO V.W. WOOD
M-761	108B	P-10-C, P-10-D - REV. #2	-	90	7-6-50	7-12-50			
M-761	100	CONC. STACK - FAIR COST EST.	0	75	7-7-50	7-14-50			
A-557	ALL	FENCES - 230KV & DISTR. SUBSTATIONS	20	40	4-6-50				
A-565	1100	NEW BIO-ASSAY LAB.	0	100	6-26-50	7-5-50	7-10-50	216,000	EST. TO H.F. PETERSON
A-575	100	PILE TECH. STORAGE BUILDING	-	100	6-30-50	7-5-50	7-7-50	42,101	EST. TO H.E. HYLBAK
A-577	-	GATE HOUSES, ETC. - SHAKE SIDING	0	100	6-7-50	6-20-50	7-7-50	29,800 42,400	EST. TO H.E. HYLBAK
A-577	ALL	REMODEL BADGE HOUSES & FIRE STATIONS	0	100	6-7-50	6-19-50	6-24-50	L.S.30,000 P.F.40,000	EST. TO M.R. DEMPSTER
A-586	3000	FENCE AROUND TELEPHONE EXCHANGE BLDG.	0	100	7-7-50	7-11-50	7-12-50	1,800	EST. TO C.A. LYNEIS
A-1132	100	EMERGENCY TUBE CUTTER	-	100	7-6-50	7-10-50	7-7-50	1,418	EST. TO F.A. BOWMAN
A-1138	115	DRY ICE CONVERTER AND STORAGE	-	-	7-10-50	7-13-50			
2355	222T&B	LIQUID WASTE HOODS	0	100	7-10-50	7-11-50	7-11-50	23,400	EST. TO E.M. JOHNSTON
2544	221	CONDUCTIVITY METERS	0	100	6-2-50	6-30-50	6-29-50	21,698	EST. TO E.M. JOHNSTON

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PROJECT ENGINEERING DIVISIONS

COST ESTIMATING WORK SCHEDULE
WORK RECEIVED AND COMPLETED
ALL AREAS

DATE JULY 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.					
4383	ALL	CONVERT BOILERS TO OIL HEAT	-	100	6-19-50	6-30-50	7-3-50		RECOMMENDATION TO C.A. LYNEIS
4394	100	GRAPHITE STORAGE FACILITIES	-	100	6-20-50	6-27-50	6-27-50	VARIOUS	EST. TO C.A. LYNEIS
4396	200	200 AREA PRODUCTION STUDY	0	20	7-10-50	7-22-50			
W.O.# H37931	200E	BURIAL GROUND EXTENSION	0	90	7-10-50	7-14-50			

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JULY 15, 1950

RECAP - ALL AREAS

PROJECT COSTS

	100	200	300	GENERAL	TOTAL
AUTHORIZED	$3,873,900	$2,144,900	$ 405,800	$4,286,400	$10,711,000
AWAITING APPROVAL		3,114,398		570,300	3,684,698
WORK IN PREPARATION	6,019,400	580,000	3,206,000	4,441,600	14,247,000
TOTALS	$9,893,300	$5,839,298	$3,611,800	$9,298,300	$28,642,698
LAST MONTH'S TOTALS	$5,058,300	$5,935,150	$3,746,800	$9,369,900	$24,110,150

PROJECTS COMPLETED DURING MONTH:

			EST. COST
C-144	-	ADDITIONAL TELEPHONE CABLES - RICHLAND	$71,000
M-721	-	RESTRAINING CLAMPS - PILE SHIELDING	15,000
M-753	-	DESIGN AND INSTALL FISSION COUNTER	14,750

SUBCONTRACTS IN FORCE: $366,805

SUBCONTRACTS PREPARING: $279,241

[redacted]

[redacted]

DECLASSIFIED

TECHNICAL DIVISIONS

July 1950 8/10/50

MONTHLY SUMMARY

Pile Technology Division

The H-10 loading in the H Pile was 473 tubes at month-end, and the projected size of the loading was increased from the previous 600 tubes to a new total of 825 tubes. Some curtailment of power level in the H Pile below 400 MW was required because of the high graphite temperatures encountered with the H-10 loading.

Thirteen plutonium solution critical mass determinations were made with cylindrical containers. Fabrication of an eleven inch spherical reactor was completed.

Graphite samples which were pre-irradiated at low temperatures and then oven-annealed at 375°C showed additional annealing of stored energy when irradiated at 340°C. This is further manifestation of the nuclear annealing phenomenon previously observed for dimensional changes and for changes in thermal conductivity.

At month-end, installation of the Navy Test Channel (ANL-140) was being delayed because of unsatisfactory performance of the pressure relief valve.

Examination of the ruptured slug from the D Pile indicated that failure resulted from a combination of a pin-hole in the weld and imperfect bonding between the end-cap and the rest of the slug.

A dilatometer for checking the degree of transformation of production slugs has been installed for demonstration trials. Meantime, preliminary results indicate that the G.E Metals Comparator might be equally reliable and far better suited for routine testing of all slugs.

P-10 billet casting, slug machining and extraction operations were proceeding ten shifts per week at the end of the month. Close liaison with Project Engineering and General Engineering and Consulting Laboratory was directed toward shipment of the metal line by December 1, 1950. Development studies were concentrated on improvement of the glass lines.

Separations Technology Division

Increased output from the separations plant depends upon shortening the process cycle times for two operations in the Concentration Building, as well as certain modifications to the Canyon Building to permit paralleling of one of the operations there. Production tests are in progress to establish the conditions required to meet the nine-hour goal for the lanthanum fluoride by-product and product precipitation steps in the Concentration Building.

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Solvent extraction studies for Metal Waste Recovery have centered on establishing firm specifications for pulse columns used with the TBP process, as these columns have now been selected for plant use. Initial tests have been made with the 16-inch pulse columns, and additional work carried out with 3-inch and 8-inch columns. Low uranium losses are being obtained, well within flowsheet standards and definitive specifications are expected from this work during the coming month, satisfying the requirements of the plant design schedule.

Tests on prototype pumps, rotameter controllers and waste evaporators are continuing with good results. Further work on the concentration of wastes from Metal Recovery indicates that, in spite of the elimination of nitric acid recovery and the consequent increase in bulk to be handled, the neutralized wastes can be reduced to a volume no greater than that originally removed from the underground storage tanks.

In the research laboratory, preliminary results have been obtained on the americium-curium content of plant dissolver solutions of metal at different enrichment levels. This work is needed to establish the relationship of real processing losses to the apparent loss as determined by radiochemical analysis. Work has been completed on the pooling of 5-C and second cycle crib wastes for a 100-fold reduction in product content before disposal. Studies are underway on the neutralization of the large volumes of acidic distillate which will be produced by the volume reduction (evaporation) steps proposed for the separations areas. First attention is being given to percolation through limestone as a means of raising the pH before disposal by cribbing. Other investigations in progress include: (a) extraction efficiency in pulse columns as a function of pulse wave, (b) hydrolysis products of TBP and their effect on solvent extraction behaviour, (c) acid-deficient TBP systems, and (d) manganese dioxide scavenging of dissolver solution.

A prototype of the fiberglas filter to be installed in the dissolver cell at B Plant has been tested with canyon ventilation air. When operated in series with a silver reactor (for removal of I^{131}), the efficiency of the filter at a linear gas flow of 20 ft/min. was found to be in the range of 99.99%.

Technical Services Division

The Analytical Section gave increased attention to the development of methods for the analysis of P-10 product and cooperated with Pile Technology in the selection

[redacted]

for Proj. C-394 (Plot Plan & Utilities), and the A.E.C. has this design proposal. With the help of personnel loaned by D & C, scope designs were completed for certain special equipment (e.g., cells) of the Radiometallurgy Bldg., as required for use by D & C in architect-engineer negotiations. Preliminary design scoping of the Pile Technology Bldg. continued in liaison with the Technical sections for whom this facility is being planned.

Supplementary Project Proposal C-187-E-R-2, covering construction of the Redox Analytical & Plant Assistance Laboratory and Associated Waste Disposal System, was approved by the A & B Committee and forwarded to the A.E.C.

ABG:dg

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August 10, 1950

PILE TECHNOLOGY DIVISION

JULY, 1950

VISITORS AND BUSINESS TRIPS

W. W. Tyler, General Electric Co., Schenectady, N. Y. was here July 6 and 7 to discuss graphite problems.

L. F. Coffin, Jr., Knolls Atomic Power Laboratory, Schenectady, N. Y., was here July 26 - 28 for Materials Testing Program consultation.

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

W. R. Felts visited the General Engineering and Consulting Laboratory, Schenectady, N. Y., July 3 - 7 for P-10 discussions.

W. K. Woods visited Knolls Atomic Power Laboratory, Schenectady, N. Y., July 13 - 14 for P-10 discussions.

A. R. Matheson visited Knolls Atomic Power Laboratory, Schenectady, N. Y., July 17 - 21 for P-10 consultation.

J. H. Bach visited Oak Ridge National Laboratory, Oak Ridge, Tennessee, July 23 - 29 to discuss procedures for the metallurgical examination of materials by means of neutron diffraction.

H. F. Zuhr visited Knolls Atomic Power Laboratory, Schenectady, N. Y., July 24 - 28 for P-10 consultation.

Pile Technology Division

ORGANIZATION AND PERSONNEL

	June	July
Physics Section	43	43
Engineering Section	50	57
Metallurgy Section	32	32
P-10 Project	46	52
Administration	3	3
	174	187

One physicist transferred to Technical Services from the Physics Section and a technical graduate was hired for the Physics Section.

A technologist transferred into the P-10 Project and terminated ten days later. One chemist transferred in from Separations Technology, and five laboratory assistants transferred in from Technical Services.

Dr. A. A. Johnson, section chief of the Engineering Section, terminated this month. One technical graduate transferred in from Separations Technology and two laboratory assistants transferred in from Technical Services. Two chemical engineers, one chemist, one mechanical engineer, and one technical graduate were hired for the Engineering Section.

PILE PHYSICS

Increased P-10 Production

Two additional blocks of the H-10 type load were charged during July bringing the total charged tubes at month end to 473. The existing load has resulted in an unbalanced neutron flux distribution because of the lower reactivity of the H-10 load as compared to the exposed natural uranium which has still to be replaced. The completion of the 600 tube H-10 loading in early August will alleviate this difficulty.

Tubes containing target slugs of 4 inch length are equivalent reactivity-wise to the exposed (400 MWD/ton) natural uranium which they replace. Slugs of this length will be standard for future loadings.

A request has been received from the Atomic Energy Commission to increase the size of the H-10 load to 825 tubes. Charging beyond 600 tubes will be carried out at rapidly as possible during during subsequent shut-downs.

The three shipments of P-10 fuel slugs received during the month were of uniformly high quality and no slugs were rejected for reactivity reasons.

Final experiments in the DR Pile were completed on July 11. Two detailed reports on this work are being prepared covering the theoretical and experimental aspects of the program.

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Pile Technology Division

The DR Pile will require supplementary control to compensate start-up transients when it contains an H-10 type load. For an 800 tube loading the additional control required varies from 60 inhours to 250 inhours depending upon the length of shutdown. Current plans involve use of an ink facility to gain additional control.

Preliminary investigation was made of a proposal to use P-10 fuel slugs to increase the flattening of the neutron flux distribution in a pile. Results obtained to date indicate that P-10 production comparable to an 800 tube H-10 loading and plutonium production equivalent to that of a normal pile could be obtained simultaneously. Approximately one-third more U-235 would be required than for the 800 tube H-10 load.

Plutonium Critical Mass Experiments

Thirteen critical assemblies were made during the month. As before, all experiments were done with the plutonium nitrate solution in a cylindrical stainless steel container surrounded by a full water reflector. Experiments were completed with the twelve inch cylinder and indicated a minimum critical mass of 754 grams of plutonium in this diameter reactor. This value, in conjunction with similar values obtained for ten and eleven inch cylinders and reported last month, determines the minimum critical mass in such cylinders as 725 ± 10 grams. The minimum would occur in a cylinder of 11.5 inch diameter and at a concentration of 35 to 40 grams Pu per liter. All experiments have been carried out with plutonium made at an exposure of 400 MWD/ton.

Some additional temperature coefficient measurements were made confirming previous results that the critical mass increases by approximately 1 gram per °C temperature rise. The exact value of the coefficient has been found to depend strongly on the temperature range. At a concentration of 31.1 grams Pu/liter in the twelve inch reactor, the coefficient had an average value of 0.74 gm Pu/°C over the temperature range 19.5°C to 28.0 °C whereas it increased to 1.27 gm Pu/°C over the range 28 °C to 47 °C. It is not feasible to operate the apparatus at still higher temperatures. Similar behavior was found in other reactor sizes and at other concentrations.

An eleven inch spherical reactor has been fabricated and delivered at the experimental site.

At the request of S Division representatives, an investigation was made of storage limits in Vault A at 231 Bldg. It was found possible to increase the limits to allow storage of ten loaded PR-RC cans, each containing 300 grams of plutonium in solution.

Pile Physics Work

Significant improvements in the flattening of the neutron flux distribution at B Pile contributed to the increase of the power level to 320 MW.

Sixteen synthetic rubber samples and one natural rubber sample were exposed in the "E" Test Hole at F Pile for the Design Division. All samples tested broke under stress after exposure. Vulcanized samples were especially hard and brittle.

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Pile Technology Division

A coefficient test was performed at B pile during the month, the first from the 305 MW level in this area. The results obtained were normal. Evaluation of a similar test performed at F pile late in June also agreed with previously noted trends.

Special Request Program

244 P-10-A pieces and eight special requests were discharged from the piles during July while 96 P-10-A pieces and three special requests were being charged. There are now nineteen special requests on hand ready to be charged. This includes thirty-four radioactive pieces, most of which have a high priority.

An improved type of receptacle slug (uranium slug with internal space for sample exposure) with a screw type closure was used for the first time during the month.

Seven slugs containing one curie radium sources were bubble tested by the Metallurgy Section with assistance from the Physics Section, in preparation for charging into the piles. Two of these slugs were rejected.

One of three ANL-164 samples shipped from Hanford to Argonne National Laboratory on June 19 was not received at that site. Detailed checking both here and at ANL has not revealed its whereabouts.

Shielding

A taper-bore gun barrel assembly was tested at the request of the Reactor Design Division. The initial tests indicated that reliable information could be obtained only by the use of an improved type of testing arrangement which would eliminate radiation streaming and provide a radiation source geometry more closely approximating that which would be encountered in actual use.

A small magnetic spectrometer has been designed which will determine gamma-ray energies by electron recoil and neutron energies by proton recoil. An experimental model is being fabricated in the Technical Shops.

Reactivity

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

	B Pile	D Pile	F Pile	H Pile
In rods	66 ih	72 ih	87 ih	100 ih
In xenon poison	485	475	541	635

Pile Technology Division

The drop of 147 inhours in H Pile reactivity during the month is occasioned by the diversion of this reactivity to P-10 production through the medium of the H-10 loading; neutrons formerly absorbed in poison columns are now being absorbed in poison slugs (P-10 target slugs) distributed through the H-10 loading; B Pile showed no net reactivity change during the month while D Pile lost 11 inhours and F Pile gained 6.

PILE ENGINEERING

Carbon Dioxide Pile Atmosphere

The carbon dioxide in the F Pile atmosphere was being increased from 80% to 100% at the end of the month. After this change has been completed early in August all piles will have a 100% carbon dioxide atmosphere.

Pile Expansion

Measurements of the vertical bowing of the top central tube at the B and D Piles indicate a significant annealing of the central graphite and give further confirmation that a slight annealing of the cooler graphite near the front edge is occurring. In addition to the carbon dioxide atmosphere it is probable that the higher water temperatures during the summer months are also a contributing factor to this annealing.

Curvature measurements in graphite channel 2586-D (with the process tube removed) indicated that there were no vertical offsets between the ends of the graphite blocks. Measurements were made of the diameter of the bore in graphite channels 2253-B and 2286-D. A vertical displacement traverse of the No. 2 horizontal rod track at the D Pile was taken to obtain information for design of improved horizontal rods.

Pile Graphite Temperature

A comparison of graphite thermocouple readings with the heat output of surrounding tubes showed that the H-10 loading increases graphite temperatures about 30% above that of a normal charge. It was found necessary to limit the output of H-10 tubes to a 48°C temperature rise (.285 zone) to prevent estimated thimble temperatures above 400°C. This limitation resulted in an average of 15 MW reduction in power level of the H Pile below the nominal 400 MW. A contributing cause to this loss of production is the uneven flux distribution from the unsymmetrical partial load of H-10 which will be eliminated in the future.

A slight increase in the thermal conductivity of the B Pile graphite has been observed during the past three months. This together with an improvement in the uniformity of neutron flux has lowered graphite temperatures so that a 10% increase in power level appears feasible. A production test was approved at the end of the month to increase the B Pile power level to 335 MW.

Pile Technology Division

Thimble Removal and Ball 3-X

Mock-up flow tests with 3/8 inch steel balls show that the 1/4 inch ledge between the 4 1/2 inch diameter hole in the cast iron block and the 4 inch diameter hole in the graphite should be removed and the transition tapered over a six inch length to prevent retarding the flow of balls. It was also found that ground and polished steel balls would flow 20% faster than unfinished ones. Fabrication of the fluted stepped plug in the 100-F shop is 90% complete.

Graphite Studies

Three metal tube positions were mined from front to rear at the F Pile; all of these were nominally in the flattened zone, with one lying on about the edge of the zone. Very good agreement between the mining data was obtained, with the position near the edge of the flattened zone (lower neutron flux but lower temperature) showing slightly higher values of the Co-spacing. Comparison of these data with a previous point taken in March of 1949 shows that about a 20 percent recovery of the graphite in the relatively cool bore regions of the lattice in the central zones has occurred in the last year during carbon dioxide increases from 40 to 80 percent.

An analysis of the available data on the status of the graphite in the piles has been made, along with suggestions regarding several possibly feasible curative measures, in document HW-18453, Pile Graphite Expansion, P. H. Reinker and E. P. Warekois, July 24, 1950.

Apparatus is being assembled for laboratory studies of the reactions of carbon dioxide with graphite to determine the effects of temperature and irradiation on the rates of reaction. Work along the same lines has been initiated on an "in-pile" test of the reactions between graphite, air, carbon dioxide, and oxygen, while irradiation is proceeding. Information along these lines is desirable before higherpower levels, and consequently higher graphite temperatures, are attempted in the present piles.

Data on the pile annealing of total stored energy have been obtained to exposures of 247 MD/CT in a hot test hole at about 340°C; the graphite samples had been previously damaged at low temperatures and had been oven-annealed for five days at 375 °C. In all cases, annealing occurred on continued pile exposure, with the least damaged sample showing a recovery from an initial value of 140 to a final value of 40 cal/gm. The amount of recovery for all samples was approximately the same on pile exposure and amounted to an average of 110 cal/gm. Samples exposed previously at slightly higher temperatures show a reduced rate of pile annealing in the hot test hole, but the annealing rates appear to increase with increasing exposure in the hot test hole. During a 247 MD/CT exposure, a virgin sample accumulated no detectable amount of stored energy at 340 °C.

A tentative program has been outlined to obtain information on the effects of irradiation on the tensile, compressive, and hardness properties of graphite. A stress relaxation experiment has been planned to determine the effects of irradiation on the creep rate of graphite at present or future pile temperatures.

[redacted]

Pile Technology Division

ANL-140

Installation of the Reactor Test Equipment in the H Pile has been delayed because of unsatisfactory performance of the 2300 p.s.i. relief valve. Several pieces of auxiliary equipment including sampling facilities and some shielding were redesigned and modified during the past month. Operational tests were conducted on individual pieces of equipment. The write up of operational procedures was completed.

Calculations indicated that the radiation shielding above and below the water system were much less than desirable. The shielding below the system could not be increased without exceeding the floor loading design limits. The estimated radiation levels without additional shielding are 500 mr/hr. in the decontamination room below the X-1 level and 300 mr/hr on the X-2 level. Because of the importance of this test it was decided to operate under these conditions even though access to other facilities would be severely limited.

P-10 Fuel Slug Exposure

Measurements of two P-10 fuel slugs after a four month pile exposure showed an elongation of 0.036" and a diameter increase of 0.008".

METALLURGY

Uranium Billet Casting

The quality of Hanford cast uranium, as measured by reactivity tests taken on one stringer per lot, has suffered a general downward trend during the period January, 1949, to February, 1950. Though it has not been possible to group the reactivity data according to casting dates, arrangement according to rolling dates (which gives a fair approximation of casting periods) shows a sharp improvement to -.05 dih average for Hanford cast material rolled in March, 1949, a sharp decline to -.13 dih for material rolled in May, 1949, and a gradual drop to -.175 dih for material rolled in February, 1950. A document covering the study of these data is being issued.

Uranium Rolling

A report, HW-18444, was written covering the experimental rolling tests at Argonne and summarizing the results of previous tests at the Simonds Saw and Steel Company, Lockport, New York.

Plans are being made to continue the investigation of possible methods of fabricating uranium so as to obtain a fine grained structure with a random orientation. Along this line a die has been machined for upsetting slug-size pieces of alpha rolled uranium.

Uranium Slug Canning

Work has been begun on the construction of lockout devices to be installed on each bronze dip furnace for insuring for all slugs full agitation time at specified temperatures.

[redacted]

Pile Technology Division

Two laboratory experiments were conducted in keeping with efforts to reduce the expense attending the use of a tin bath in the 3-dip canning process:

(1) The copper-rich crystal (eta-phase) residues from the present tin-recovery treatment were melted and held at about 450°C until a mass of epsilon-phase high-copper crystals formed. These were removed and the liquid tin held at about 250°C until the eta-phase crystals formed. Upon removal of these about 1/3 of the original volume remained as tin suitable for process use.

(2) A lead - 25% tin melt was held at 600°C for 24 hours to determine whether such an alloy might be sufficiently resistant to oxidation to be used as a substitute for the present tin bath. In the quiescent pot, very little oxide formed.

Uranium Orientation

Some uranium powder compacts prepared by hot pressing at Sylvania Electric were received for examination; they will be checked for orientation and reactivity. These compacts were observed to have a much smaller grain size than the previous sample which had been compacted cold and sintered at an elevated temperature.

Defects in the scaling unit of the XRD x-ray diffraction machine were corrected during the month, and the spectrometer section is now operating properly for the first time since the XRD machine was installed.

Dilatometry

The dilatometer for checking the degree of transformation of production slugs was installed in Building 313 and will soon be ready for trial tests. After the unit has been adjusted, it is planned to have some 20 to 40 slugs a day run in the dilatometer to establish a behavior pattern for canned production slugs.

Expansion coefficients are being determined for alpha rolled uranium specimens heated to and cooled from various temperatures in the alpha range. Cycling in the alpha range does not appear to change the expansion coefficients, hence the orientation, significantly, but the shape of the expansion curve does change on cooling. It was found that the shape of the curve was somewhat sensitive to the rate of cooling.

KAPL Assistance to Hanford

Thirty canned slugs having different degrees of transformation have been tested by use of the G. E. Metals Comparator. Results show good general agreement between the Comparator test listings and the grouping made at Hanford which was predicted from the specific canning procedure for each slug. Although there were possibly some exceptions in this comparison, the degree of transformation of these test slugs will not be known accurately until visual examination of the cross sections of the slugs is made. Examination is currently under way.

Pile Technology Division

Work has begun on rolling and swaging as part of the program for improved fabrication methods to minimize waste, however, the work has not progressed to the stage where results can be reported. Similarly the study of preferred orientation of uranium in rods having different fabrication histories is in the beginning stage. Work on alpha extrusion as a means of fabrication and on the transformation of uranium-chromium alloys are considered of secondary importance and will be begun at a later date.

Radio Metallurgy

The cask containing the ruptured slug removed from tube 1572 in the 100-D pile was opened and several futile attempts were made to remove the up stream mouse holding the slug in position. This failing, the tube section was drawn out of the cask, the position of the slug noted by radiation observations and the process tubing cut off between the mouse and the slug. One swab was removed and the welded end cap viewed. Detailed examination by means of a mirror did not reveal any reason for the failure.

Severe contamination resulted during this operation and considerable time was spent in clean-up and on formulation of a program for the remainder of the examination.

A chisel cut of 2 to 3" was made in the tubing and when this portion of the tubing was pulled from the cask, the cap fell out of the tubing along with one large piece of oxide (~ 1/16" X 1/2" X 3/4") and many smaller particles. A radiation reading from this loose material was ~ 100 Rep/hr. at 6" using a TP monitoring instrument. This was primarily a hard beta activity. The maximum radiation rates encountered by personnel was 15 Rep/hr.

The cap was removed to the 222-B laboratory, and the loose contamination was removed with cold 1:1 Nitric acid and viewed through 3" of lead glass window. It appeared that the rupture was caused by an imperfect weld over a poor braze. A small pin-hole was observed in the weld metal and the view of the inside of the cap showed a section of the side wall of the cap that had been unwetted. The cap also was saucer shaped with a ~ 1/8" depression concave on the inside and covering about a 3/4" diameter near the center of the cap. This would indicate that the water path through this cap bend must have had access to the uranium metal at the center of the slug. Only a few unbonded areas were observed on the inside of the cap and they were not obviously related to the expansion of the oxide. Several photographs of the cleaned caps were made to show the defects observed.

Plans have been made to prepare the slug for processing in 200 Area and to photograph the canning data.

Twelve tensile specimens were cut from a non-irradiated section of thimble and were tested to determine the effect of the surface condition on tensile properties. Three specimens of each (1) polished through 3/0 paper, electropolished, (2) electropolished, (3) polished through 3/0 paper, and (4) as punched, were tested. Results indicate that it will be unnecessary to prepare the surface of the tensile specimens punched from aluminum process tubing and thimbles.

The mock-up of the revolving eccentric manipulator positions was received and installed as one of the end sections of the mock-up cell. The device functions satisfactorily and will be used with the pneumatic manipulator when the latter is received.

Tensile specimens have been cut from those samples of process tubing supplied by the D & C Division and will be tested as soon as a suitable extensometer is available. This tubing varies from the usual supply in that there is no 72 S layer on the inside circumference.

Plaster of Paris replicas were made of two class V (canned 5-28-48 and 9-25-48), bowed, irradiated slugs.

P-10 Alloys

To check the reproducibility of hydrogen analyses made on difference analytical lines, some comparison analyses were run in conjunction with the 100-B Area P-10 Group. Several slug pairs taken from adjacent positions on rods were analyzed, one of each pair on the Metallurgy line and one on the 100-B line. The total hydrogen obtained by Metallurgy varied from 21% more to 42% less than that obtained by 100-B. This variation is similar to that found on duplicate samples run on separate analytical lines at 100-B.

In connection with the study of the effect of heat treatment on contaminant pick-up, it has been noted that the surfaces of slugs darken or corrode non-uniformly when exposed to constant humidity air. This is especially true of non-heat treated slugs. From metallographic data, this behavior appears to be related to inhomogeneous distribution of the alloy phase, and the latter may be responsible for the variance in the hydrogen analyses. An effort is being made to prove that this is the responsible factor.

Except for the completion of some orientation work, development activity on the aluminum-uranium fuel slugs has ceased inasmuch as Oak Ridge has been given full responsibility for the production of this material. No further work will be done at Hanford for the present unless difficulties are encountered in the use of the slugs supplied by Oak Ridge.

Approximately 1000 "J" slugs were canned during the month, with a 92.6% yield. Canning was done under technical observation, the results of which indicate that rejects stem chiefly from variations in operator technique and from improperly functioning control equipment.

Corrosion

Testing of austenitic stainless steels Type 347 and Carpenter 20 in chloride ion-free RAW, TBP-HW-3 Flowsheet is approximately 50% complete. The maximum corrosion rate determined to date was 9.06 mils/year in the case of a Type 347 specimen exposed in the liquid under total immersion conditions at boiling temperature. All other originally scheduled tests in concentrated RAF and concentrated RAW have been completed.

The testing of titanium in these streams is still in progress. Although some corrosion has been observed, its performance is superior to that of the austenitic stainless steels which have been tested.

As a result of 44 days exposure (6 checks) to IAX, IAS, IAF, and 60% HNO_3 under total immersion, static, room temperature conditions, no corrosion rates $>$ 1 mil/yr. have been determined for Kennametal K-501. However, some discoloration of this alloy was noted in the IAX, IAS and 60% HNO_3 streams. In the latter environment a greenish coating, which easily brushed off, was noted. In general, the K-501 appears to be satisfactorily resisting these environments.

A report on the Corrosion of Austenitic Stainless Steel in Mixed Acids, Document No. HW-17981 was issued during the month.

Exposure of Al-Si coupons in the tin concentration range $<$ 0.02% to 1.3% has been completed. Samples are currently in the process of being cleaned and weighed and corrosion rates will be available shortly. Exposure of samples in the tin concentration range 2.0% to 3.0% will not be complete until November 15, 1950.

Exposure of test slugs in the 100-D flow laboratory under dynamic, simulated pile water flow conditions has begun. The first inspection, after two weeks exposure revealed a black film over that area in which Al-Si was exposed by machining through the aluminum can.

Special Requests

Preparatory to bubble-testing the slugs covered by Request ANL-153, it was necessary to overhaul and repair the remote-control bubble tester previously used for testing highly radioactive request pieces.

Considerable effort has been devoted to procurement of data to insure that the plates of Request ANL-140 are properly bonded. Despite much correspondence on the subject, this point is still unsettled.

Ten pieces of ORNL-131 were straightened and gauged and shipped to 100-H Area.

P-10 OPERATIONS

A can opening machine, which is expected to improve the slug stripping operation, has been fabricated and tested and will be installed for routine use in August, 1950.

Two shipments of product fraction were made during the month, one to Los Alamos, and one to Argonne National Laboratory.

Pile Technology Division

In P-10-A slug manufacture, 3396 slugs were machined and sent to the 300 Area for canning. The manufacture of P-10-A material for the original H-10 loading was completed, but the loading was enlarged and an additional 1700 slugs are now scheduled for charging in September, 1950.

Two shipments of billets (total 105) were made to vendors for extrusion into rod during the month.

Slug machining continues on ten shifts per week. Billet casting has been proceeding ten shifts per week since July 18, 1950, to manufacture slugs for the DR loading by September 15, 1950.

The Construction Program Status is as follows:

1. The P-10-A expansion Project has been completed with the exception of the can trimming lathe and the cask hoist (associated with the P-10-D project). The can welder and the air-operated slug machining chuck have been installed but are not in operating condition due to certain inadequacies of design and/or fabrication.

2. The P-10-B Project is complete with the exception of revisions to hot line 5 in the third floor hood room.

3. Work is progressing rapidly on critical phases of the P-10-D installations. Narrative sections of the project proposal have been reviewed with Technical Divisions.

It has been agreed by Design, Procurement, and Minor Construction personnel that the following schedule on critical items can be met:

A.	Test furnace	August 8, 1950
B.	Analytical Room	August 22, 1950
C.	Mass Spectrometer Room (Temporary room)	Room and services, August 15, 1950 Hood and final completion, August 30, 1950.
D.	Two hoods in "cold" Laboratory (P-10-B)	Two hoods September 1, 1950, Complete (exhaust fan delay) September 15.
E.	Revisions to "hot" glass extraction lines.	One per month starting in September.

The Fan Room and stack construction activities are proceeding satisfactorily.

It is expected that the P-10-C metal line will be shipped by the G.E.C.L. as scheduled on or before December 1, 1950. All construction activities are directed towards final completion of the P-10-D project by this date.

Extraction Health Hazards

Contamination control procedures which were added during the month seem to have resulted in reduced personnel exposure and reduced contamination of surfaces in the extraction areas.

It is not known which added (or revised) procedure was effective in improving the control, or if the procedures were actually significant.

[redacted]

Pile Technology Division

The P-10 product survey instrument called "Pete" has been used infrequently in the extraction areas, and more frequently for counting swabs carried to it outside of the extraction areas. This procedure will continue to be used although much effort is being expended to have one or several "Petes" made available for routine exit monitoring of men and materials from the hood room.

P-10 DEVELOPMENT

The recent increased emphasis on P-10 production at Hanford has multiplied many fold the activities of the P-10 Development Group.

Glass Line Improvements

All other developments failing, the P-10 production requirements of Hanford for 1951 will be handled in five glass lines. To assure successful operation of these lines, effort is being concentrated on the development of the most simple, dependable, and foolproof components for incorporation in the glass lines as they are modified one by one starting in September, 1950.

Routine Analytical Determinations

Gas analysis of P-10 target slugs as a means of control of slug fabrication has continued, though a heavy backlog for analysis has been established; however, at month end four analytical lines have been placed in service and it is anticipated that the backlog will disappear quickly.

Product analysis using the Regnault density determination as the primary standard and ion gauges on the equipment as the secondary standard have continued routinely; this primary standard, which assumes a two component system (P-10 and hydrogen), occasionally yields very inaccurate results.

It was decided during the month that responsibility for all P-10 analytical work, including the above routine hydrogen and density determinations, will be transferred from the P-10 Development Group to the Analytical Section of the Technical Services Division. This transfer is to be effected at the earliest practical date.

P-10 Experimental Glass Line

Operation of the P-10 experimental glass line during the month has been concentrated on gas mixtures containing 0-5% P-10 in helium in an effort to establish the degree of separation of P-10 from helium with the palladium thimble and the necessity of stripping P-10 from the by-product fraction before its release to the atmosphere. Effort to date indicates that the use of ion gauges as an analytical tool at these concentrations can be at best qualitative. At month end, the use of the modified RCA hydrogen leak detector for this determination, as suggested by Knolls Atomic Power Laboratory personnel, is being evaluated.

Pile Technology Division

Project P-10-X

With the decision to place P-10-X (production facilities for P-10 starting January 1, 1952) in Building 108-D and to retain facilities in Building 108-B for developmental activities, the P-10 Development Group is supplying technical data to the P-10-X Working and Scoping Committees. Scoping activities will proceed through September, 1950.

Liaison with Los Alamos

Tentative agreement has been reached between the Los Alamos Scientific Laboratory and Hanford on the establishment of the mass spectrometer as the primary standard analytical tool to be used in P-10 product shipments. A mass spectrometer has been purchased and should be placed in service in Building 108-B in September, 1950.

Drawings of the 12 liter metal shipping container for P-10 have been received from Los Alamos and are being checked at Hanford. Los Alamos desires that the metal container be placed in service as soon as possible and will design, fabricate, clean, out-gas if necessary, and test six containers for shipment to Hanford to receive P-10 product.

Liaison with KAPL

The Knolls Atomic Power Laboratory is concentrating the effort of their Chemistry Section on the development of a stripping line for removal of P-10 from by-product gas prior to its release to the atmosphere. By September 15, 1950, they will indicate which of the alternative stripping processes is the better and by January 1, 1951, they will develop the selected process to the point that engineering design, procurement and construction can start. It is hoped that a stripping line can be available at Hanford by mid-1951.

Analytical tools under active development at KAPL by the Applied Physics Section include the buoyancy balance, hyperfine structure equipment employing a diffraction grating system, and the modified RCA hydrogen leak detector employing a palladium window.

The Metallurgical Section at KAPL is completing their work on powdered metallurgical fuel slugs, and is engaged in development of a P-10 target slug of magnesium-aluminum-lithium and in evaluation of a proposal that low melting magnesium-aluminum alloy be used to dissolve the present aluminum slugs. Since the Argonne National Laboratories will develop lead-lithium target slugs, this phase of the program at KAPL has been terminated.

[redacted]

Pile Technology Division

Liaison with GECL

The design, procurement, and fabrication of the first metal extraction line by the General Engineering and Consulting Laboratories is proceeding on schedule (shipment to Hanford December 1, 1950). At month end, a number of drawings were obtained at Hanford for information and checking purposes.

INVENTIONS

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

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

WK Woods:jr

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August 10, 1950

SEPARATIONS TECHNOLOGY DIVISION

MONTHLY REPORT
JULY, 1950

VISITORS AND BUSINESS TRIPS

F. R. Bruce and T. C. Runion of the Oak Ridge National Laboratory visited this site on July 11 and 12 for TBP consultations.

R. P. Genereaux, W. C. Kay, H. A. L. Fritze, and J. E. Cole of the duPont Co. visited the Hanford Works for discussions of separations plant operating and design technology.

C. M. Slansky visited the Radiation Laboratory at the University of Calif. on July 5 for a consultation on solvent extraction.

J. B. Work visited the General Engineering & Consulting Laboratory from July 5 through 7 and the Knolls Atomic Power Laboratory on July 7 for 432 Project consultations.

W. H. Reas inspected laboratory facilities at the Radiation Laboratory, University of California, on July 14.

R. H. Beaton visited the Argonne National Laboratory on July 15 and the Knolls Atomic Power Laboratory on July 20 and 21 for Redox consultations.

W. B. Kerr was at the General Engineering & Consulting Laboratory from July 10 through 28 for 432 Project testing.

K. M. Harmon visited the Knolls Atomic Power Laboratory for Redox consultations from July 18 through 21.

E. F. Curren and E. T. Merrill visited the Knolls Atomic Power Laboratory from July 19 through 21 for SPRU consultations.

H. F. Zuhr consulted on the 432 Project at the General Engineering and Consulting Laboratory from July 26 through 28.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	June	July
Administration	2	2
Special Assignment	1	1
Process Section	27	26
Development Section	96	91
Research Section	34	35
	160	155

One Chemical Engineer was transferred within the Division from the Process Section to the Development Section.

Process Section: One Chemist was transferred to the Pile Technology Division and a Technical Graduate was transferred from the Health Instrument Divisions.

Development Section: Nine Chemical Operators were transferred to the "S" Division. One Chemist, a Technical Graduate, and a Draftsman II were added as new hires. One Technical Graduate was transferred to the Pile Technology Division and one Technical Graduate was transferred from the "S" Division.

Research Section: One Clerk B was added to the Section as a new hire.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Metal irradiated to a nominal level of 525 MWD/ton has been processed at T Plant. The average extraction loss for this material was 1.97%. This loss was 0.35% and 0.86% for material typical of 213 and 391 MWD/ton, respectively. The first cycle product precipitation losses were 0.16%, 0.32%, and 0.67% for the 213, 391, and 525 MWD/ton material in that order. No difficulties were experienced in handling the smaller volumes during extraction.

Concentration Buildings

Production Test 224-B-5, designed to shorten the lanthanum fluoride by-product precipitation time cycle is in progress at B Plant. Runs processed with the lanthanum fluoride by-product waste slurry of one run used as the source of lanthanum for the run following and runs processed with this shortened oxidation and digestion period have resulted in lower waste losses with some loss in decontamination. Centrifugation rates increased to 90 and 110 lbs. per minute from the standard 70 lbs. per minute are currently under test.

Increased hydrofluoric acid concentration was tested under Production Test 224-T-14, designed to shorten the lanthanum fluoride product precipitation time cycle. Losses were lowered by an amount that may not be significant. Satisfactory losses were obtained for runs testing increased lanthanum and oxalic acid reagent concentrations and an increased lanthanum addition rate. Runs are currently being processed on a nine-hour cycle obtained by maintaining a centrifugation rate of 80 lbs. per minute for each of three centrifugations.

Separations Technology Division

The Isolation Building recycle material storage tank (E-4) at T Plant was recalibrated to initiate the use of a manometer for weight determination. The original calibration indicated 2% less pounds per inch of tank than was determined by the recalibration. The new calibration was effective on July 8, 1950.

Isolation Building

Production Test 231-11, testing the destruction of peroxide in supernatant solutions with heat, has been initiated. Limited work has been done on this test, however, due to the pressure of production.

Runs received from T Plant which tested the increased hydrofluoric acid concentration were higher in iron content than average. Erratic and high recycle values were observed during this period. The significance of this observation is being studied since the recycle from T Plant runs was also erratic during a later period.

234-5 Building

The contents of Sample Can 475 contained a small amount of Polystyrene (Polystyrene was evaluated as an adapter plug material some time ago in the 231 Building). The material in this sample can was processed in the 234 Bldg. as Batch X-10-7-31. The P-4 analysis for this batch indicated that approximately 13 units of material remained in the sample can after cutting. Normal processing was carried on for this batch through to Hood 10 without incident. This batch then became a part of Run Y-10-7-16. The yield in Hood 10 for this run was 98.4%. The button, however, was held pending the return of analytical report and was later released when the impurities were found to be normal. The residue in the sample can was dissolved and processed through Hood 8 as a small run. Abnormally large transfer losses occurred during the processing of this small run and only six units of the material was oxidized and fluorinated in Hood 8.

Some accumulated solids and liquids from the de-entrainment chamber in Hood 7 were added to Batch X-10-7-32. The precipitate that formed during purification of this batch was darker in color and more flocculent than normal. The Hood 8 conversion (86.6%) was slightly less than normal. The material was reduced with Batch X-10-7-34 as Run Y-10-7-17. The Hood 10 yield was 98.8%. The button was held at this point until the analytical report on button impurities was obtained. It was later released, however, when the analytical report was received and the impurities were found to be normal.

Production Test 235-2 has been written and approved. This production test approval authorizes the evaluation of different pressure-temperature conditions in Hood 19. A simplified and faster operating cycle will result if higher pressures and lower temperatures can be used for the pressing operation.

[redacted]

Separations Technology Division

A Magna-Gauge has been purchased by the Plant Assistance Group. This instrument is recommended by its manufacturers for measuring magnetic coatings on non-magnetic base metals up to 1 mil in thickness. Coated aluminum dummies are being used to determine its reliability for measuring coating thicknesses up to 6 or 7 mil. A report on this will be written upon completion.

A representative of the Plant Assistance Group has been in Schenectady for three weeks during July reviewing Task I equipment for the RM Line. This is the first of several trips to be made by Plant Assistance personnel to Schenectady during the test work of the RM Line equipment.

REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Solvent Extraction Studies: General

Continuing with the development of optimum specifications for plant-size pulse columns for the TBP Waste Metal Recovery Plant, a total of 92 solvent-extraction studies was completed during July in pulse columns of 3-in., 8-in., and 16-in. diameter. Highlights of new information resulting from the above studies are summarized below:

16-in. Diameter Pulse Column

Studies of RA (extraction section), RC, and RO Column performance were conducted at TBP-HW #4 Flowsheet conditions using a 16-in. diameter pulse column equipped with 71 plates spaced 2-in. apart (12 ft. effective "packed" height) and pierced with 1/8-in. diameter holes to give approximately 23% perforated area over a 15.25-in. circular area of each plate. Uranium transfer in these 16-in. runs has been considerably impaired by what is believed to be solvent (i.e., TBP) decomposition products in both the solvent and aqueous feed solutions. These impurities are believed to have resulted from decomposition of dissolved and entrained solvent on concentrating aqueous uranium solutions by boiling in the process of preparing new RAFS feed from RCU (and in some cases RAW) solutions. Because of this contamination (which is not expected in the TBP plant where aqueous solutions will not normally be recycled) both the solvent and aqueous phases are being replaced with fresh solutions for final plant demonstration studies in the 16-in. pulse column. In spite of the above off-standard performance, the 16-in. studies have been sufficiently definitive for the following tentative conclusions:

1. It now appears almost certain that RA and RC TBP plant pulse columns can be made short enough to fit into the 221-U Bldg. cells without lowering the floors of the cells, and that the flowsheet uranium waste losses of 0.5% of the feed uranium will be attainable in both the RA and RC Columns.

2. Although H.T.U. values for both the 16-in. RA and RC Column studies have been approximately 25% to 100% greater than for comparable operating conditions in a 3-in. pulse column, much if not all of this difference is believed due to the contamination of feed solutions used for the 16-in. column, as mentioned above.

3. In 16-in. RA simple extraction studies, RAW uranium losses of less than 0.1% (H.T.U. values at approximately 1.5 ft.) have been realized (a) at 0.5-in. amplitude, 120 cycles per min., and 1000 gal./(hr.)(sq.ft.), sum of both phases; and (b) at 0.75-in. amplitude, 86 cycles per min., and 1500 gal./(hr.)(sq.ft.), sum of both phases.

4. In 16-in. RC Column studies RCW uranium losses as low as 0.3% have been realized (H.T.U. values as low as 2.0 ft.) at 0.5-in. amplitude, 80 cycles per min., and 800 gal./(hr.)(sq.ft.), sum of both phases.

5. Based on mercury manometer readings taken at the bottoms of the 16-in. and 8-in. diameter pulse columns during operation as RA simple extraction sections, and as RC Columns, apparent densities of the liquid in the plate sections ranged from approximately 1.18 to 1.22 for the RA extraction section, and from approximately 0.85 to 0.9 for the RC Column.

8-in. Diameter Pulse Column

RA, RC, and RO Column studies were also carried out using 50 plates similar to those described for the 16-in. column above, except that the effective "packed" height for the 8-in. pulse column was 8.54 ft. Uranium extraction in both RA and RC studies has been comparable (nearly the same H.T.U.'s) to the above performance for the 16-in. pulse column, and apparently has been adversely affected by contamination of the solvent and aqueous feeds due to the decomposition products discussed above. New information from these studies is summarized below:

1. Based on static pressure data measured at the base of the 8-in. pulse column, it is concluded that not all of the pulse generated by the piston located approximately 15 ft. above the bottom of the 8-in. column (bottom of the piston just even with organic overflow connection) has been transmitted to the column contents when the column was operated by pulsing a static aqueous leg. This is particularly true for RC studies and is probably true for at least some of the RA runs. Analysis of the above data is expected to result in recommended maximum heights for the pulsing pistons on TBP plant RA and RC pulse columns.

2. During one 8-in. RA pulse study, the continuous addition of TBF-HW #4 concentrations of ferrous ammonium sulfate and sulfamic acid to the RAFS stream was apparently beneficial to uranium extraction (waste loss 0.4% instead of 0.7%; H.T.U. 1.4 ft. instead of 1.8 ft.).

3-in. Diameter Glass Pulse Column

A 3-in. glass pulse column has been operated at conditions comparable to the above 16-in. and 8-in. pulse column studies to establish the scale-up factor on going from 3-in. to 16-in. column diameter, and has also been used for further scouting studies with new types of perforated plates such as tabulated below:

a. "Standard" Plates: 54 plates spaced 2-in. apart, 9.1 ft. effective height, 1/8-in. holes, 23% perforated area.

b. Polythene-faced Plates: 53 plates spaced 2-in. apart, 9.05 ft. effective height, 1/8-in. holes, 23% perforated area, underside of each plate flame-sprayed with a coating of polythene plastic.

c. 3/16-in. Perforations: 54 plates spaced 2-in. apart, 9.1 ft. effective height, 3/16-in. holes, 23% perforated area.

d. 10% Free Area: 54 plates spaced 2-in. apart, 9.1 ft. effective height, 1/8-in. holes, 10% perforated area.

The primary objectives of scouting the above new types of plates have been 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. Scale-up factors on going from 3-in. to 8-in. and 16-in. diameter columns have already been discussed above and have been somewhat masked by contaminated feeds used for the 8-in. and 16-in. columns.

2. The polythene-faced plates proved unsatisfactory because although what appeared to be a good mechanical bond between the polythene and the stainless steel was obtained initially, the plastic gradually separated from the stainless-steel plates during pulse operation. By the end of the one RA run followed by one RC run (approximately 12-hours total operation) the plastic film had separated from 33 of the 53 total plates for approximately 50% or more of the plate area. Waste losses and H.T.U.'s for the one RA and one RC run were no better than for the standard plates.

3. The plates with 3/16-in. holes exhibited approximately a 10% higher flooding capacity for the RA extraction section than standard plates, but no increase in flooding capacity for RC Column operation. Uranium extraction in both RA and RC was comparable to, but no better than, for the standard plates.

4. In one scouting RA extraction-section run using plates with 10% perforated area (instead of 23%) the flooding capacity tentatively appeared lower, and the uranium extraction no better, than for the standard plates.

Equipment Development

Pumps

Submerged Pump No. 2, a G.E. & C.L. turbine pump driven through a two-foot long vertical shaft guided by two 60% carbon-filled fluorothene process fluid-lubricated bearings, completed 214 days of operation at 3450 rev./min. with a flow rate of 1.35 gal./min. of 2.0 M $Al(NO_3)_3$ at a discharge pressure of 40 lbs./sq.in.ga. Over this period there were no changes in pump characteristics (Q vs. H) or shut-off head which was steady at 56 lbs./sq.in.ga. Dimensional checks revealed a decrease in the bearing diameter of 0.0012 to 0.0016 inches and decrease in wear rings of 0.0008 to 0.0011 inches. The accumulated operating time on this pump is 363 days; the preceding 149-day period of operation at 1750 rev./min. was likewise uneventful.

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 with upper and lower seals (graphitar to stellite) to isolate the water-lubricated bearings from process solution, has operated 21 days. The initial seven days of operation indicated seal fluid leakage rates of 14 to 1850 ml./hr. The pump

was dismantled, but inspection revealed no wear on the Stellite to Stellite seal faces or causes for high seal leakage rate. The corners of the seal elements were chamfered and operation resumed pumping water containing 0.37 grams Rhodamine B dye per gallon at a flow rate of 2.25 gal./min. and a discharge head of 198 feet. The operation has been uniform and uneventful for the last 14 days with a seal leakage rate of 0 - 2 ml./hr. for the first seven days of the period and essentially zero for the balance of the period. Diffusion or leakage of the process solution into the torque tube has been below limit of detection and may be assumed to be zero.

Roth D-93 Prototype Turbine Pump, driven by a 10-foot long vertical shaft supported on two process fluid lubricated 40 per cent graphite-filled fluorothene "A" bearings - water flooded Duraseal closure, operated satisfactorily for 8 days pumping hexone. At the end of this period the flow to the bottom bearing fell to zero. Inspection disclosed failure of this bearing; apparently due to swelling of the bearing followed by shearing between the journal and the bushing. The middle bearing was intact, but had worn with maximum enlargement at the upper end. The middle bearing had an initial diametrical clearance of 10.6 mils, while the bottom bearing clearance was 4.4 mils. This further substantiates the theory that swelling preceded failure. The lower bearing will be replaced with a boron carbide bushing before resuming operation.

Peerless TD Prototype Turbine Pump, driven by 10-foot drive shaft supported on graphitar bearings - water flooded Peerless double seal, has completed 506 start-stop cycles (5 minutes on - 55 minutes off) in 1.2 M $Al(NO_3)_3$ solution. The performance of the pump remained unchanged. The only measurable wear was in the bearings. The lower pump bearing increased 0.0026 inches, upper pump bearing 0.0037 inches, and the middle column bearing 0.0040 inches.

Flow Measurement and Control

Studies with the Fischer & Porter Co. prototype rotameter transmitter (M-10-1474/2) combined with the Foxboro Dynalog recorder-controller were completed. The performance of this combination was even more satisfactory than that found with the F. & P. recorder-controller. A maximum deviation of 0.61 per cent at 25 per cent of chart was obtained. This further assurance of the predicted performance of the recommended instruments for the Redox Production Plant.

Calibration of the Taylor D/P Cell in the hydraulic test stand is in progress.

Evaporator Equipment

The studies in the tank and coil evaporator simulating the conditions postulated for the TBP-HW #3 Flowsheet nitric recovery operation from RAW solution were concluded after 46 days. The heat transfer coefficient decreased from 475 to 150 Btu/hr./sq.ft./°F. at a temperature differential of 30 - 35°F. The immersed portion of the coils was covered with a light green scale which varied from 1/32 to 1/16 inch in thickness. The scale was removed by boiling 30% NaOH followed by a 40 per cent nitric acid wash.

The long tube evaporator for studies on neutralized RAW solutions per flowsheets HW #4 and #5 was completed and studies on water were initiated. Heat transfer coefficients with water ranged from 431 to 516 Btu/hr./sq.ft./°F. The high value occurred with a tube submergence of approximately 10 feet and the low

value at about 4 feet - total tube length 15 feet. The boil-up rate varied from 60 to 95 lbs./hr. - the anticipated maximum rate for an equivalent tube area in the plant unit is 96 lbs./hr.

The apparent viscosity of a neutralized RAW per TBP-HW #4 Flowsheet solution concentrated to a freezing point of 82 - 85°C. was measured at 26 - 29°C. in a 1-in. IPS pipe line viscometer. The viscosity varied from 2.2 centipoise at 1.67 ft./sec. velocity to 3.7 centipoise at 4.8 ft./sec. The slurry, which was primarily coarse crystals with some fine $Fe(OH)_3$, was readily suspended in the agitated tank and pumped by a Jabsco rubber vane pump.

Process Chemistry

The properties of RAF solutions suitable for use with a low-acid TBP flowsheet have been determined and will be reported in detail in HW-18407. The data indicate that a solution with acidity of 1.87 M and a uranium concentration of 0.18 M (TBP-HW #5; H^+ = 2.01 M, U = 0.184 M) is within the metastable region and will remain in solution at 25°C. for 25 to 35 days. Concentration improves the solubility relationships with the result that RAF per TBP-HW #4 (H^+ = 2.96 M, U = 0.27 M) will be within the region of stable solubility at 25°C. At the higher uranium concentration per TBP-HW #4, it appears possible to reduce the RAF acidity to 2.5 M and still maintain a solution for 10 - 12 days at 25°C.

The freezing points, viscosities and specific heats of neutralized concentrated RAW solutions per flowsheets TBP-HW #4 and #5, have been determined as a function of concentration and will be reported in detail in HW-18405. Concentration to the volume of the parent metal extraction waste results in a saturated solution at 26°C. Reduction to 72 per cent of the original volume results in saturation at 40°C. The viscosity of the resulting slurries measured at 25°C. ranged from 5 to 35 centipoise. Aging of the slurries for periods in excess of 60 hours results in some cementation. However, qualitative observations indicate that all slurries up to 80°C. saturation are pumpable.

The settling rates and viscosities of synthetic and Tk-101-U metal waste slurries prepared in the ratio of 8:1 - supernate:sludge as a function of the amount of shear have been determined employing an empirical relationship of time of mixing.

Hot Semi-Works

The design of the Hot Semi-Works is 70.5 per cent complete as reported by the Project Engineering Design Division. The electrical and process phases are lagging behind schedule; the architectural and mechanical phases are ahead of schedule.

During the month, 84 check prints of new drawings and 30 re-issue check prints were received, making a total of 223 drawings covered to date. Of these, 28 were approved, making a total of 46 drawings approved to date.

Revised Engineering Flow Diagrams (Drawings H-2-4162 to H-2-4173) were completed by the Chemical Development Section.

Construction and Maintenance

Work was finally started on completion of the remaining items of ventilation on Project C-331, and is now about 50% complete. Remaining work consists of installation of a section of duct work, connection of steam and water pipes, and installation of motor operated louvres on the roof exhaust fans.

Installation of the new 16-in. column pulse generator, and alteration of the column for pulsed operation was completed on July 7. The column has been operated on several runs, and hydraulic and mechanical performance have been satisfactory. While piston leakage on this unit has been negligible (piston pulses aqueous phase at bottom of column), it was necessary to rebore one packing gland follower to a slightly larger diameter to prevent overheating.

Operation of the 8-in. column prototype pulse generator continued satisfactorily during the month. Operation during this period was maintained both during and between runs, to accumulate a life test to date of 624 hours, distributed as follows:

Piston at top of column pulsing organic phase	142-1/2 hrs.
Piston at top of column pulsing aqueous phase	395 "
Piston at bottom of column pulsing aqueous phase	86-3/4 "
Total Operating Time	624-1/4 hrs.

During this period, mechanical performance of the piston has been excellent. There has been no evidence of binding or excessive power consumption.

No major revisions were accomplished in the Demonstration Unit during the month. Operation of this equipment continues to be trouble-free and maintenance was of a minor nature. Some items worthy of note are (1) completion of sparing of all Fischer pumps, (2) replacement of several Fischer pump shaft couplings, (3) completion of installation of quick-change feature on all Fischer pumps, and (4) completion of installation of facilities for draining W-15 hydrocarbon wash to S-1 for distillation and return to W-15.

Operations

On the 17th of the month a group of trainees and helpers were transferred to the "S" Division, and the two operating units were set up for alternate operations using the remaining process operators. An effort is being made to prepare feeds on the unit which is not operating to permit rapid interchange of personnel between units at the completion of each solvent extraction study on either unit. While operation at the present time is still geared to the production of data for TBP pulse column design specifications, some training is being accomplished, and this same plan of alternate operation will continue to be pursued later on when operation solely for training purposes becomes of prime importance.

Miscellaneous Demonstration Unit operations during the month consisted of (1) dissolving of two cuts in A-5, (2) concentration of eleven batches of RCU in B-1, (3) feed makeup for low-acid flowsheet runs, and (4) hydrocarbon washing of all RCU prior to concentration, with subsequent distillation and recovery of the purified hydrocarbon. Since initiation of hydrocarbon washing and

distillation of all RCU, coupled with disposal of all RAW from Demonstration Unit runs, "red oil" is no longer detectable in feed solutions, and solvent extraction performance of the columns has been free of uranium distribution troubles.

The major portion of Scale-Up operating time continues to be used for feed makeup and solvent treatment. Although attempts have been made to duplicate Demonstration Unit procedures for elimination of "red oil", this is not entirely possible because of larger material volumes and lack of distillation equipment. As a result some "red oil" continued to form in the system, and about 60 gallons were barrelled out during the month. Lack of large-scale distillation facilities for treatment of the hydrocarbon wash for RCU makes it necessary to discard this wash solvent periodically. Removal of RAW from the system by concentration and disposal of the UNH to underground storage helps to eliminate adverse distribution ratio effects. It should be pointed out here that efforts to save solvent and uranium by recycling all materials have been rather costly in time, effort, and amount of valid data produced to date.

Validity of data from one 16-in. RA and one 16-in. RC run was decreased by contamination of makeup HNO_3 with some H_3PO_4 due to an error in drum labeling. Subsequent 16-in. column studies with correct flowsheet feed compositions resulted in satisfactory performance both from the solvent extraction and operating standpoint.

SEPARATIONS PROCESS RESEARCH

Americium and Curium Content of 8-3-MR Solutions

Samples of Am-Cm from 8-3-MR solutions satisfactory for pulse analysis have been obtained by separating the rare earth activity on Dowex-50 colloidal aggregate resin columns and mounting the effluent on platinum plates. However, the previous plutonium separation was insufficient such that the plutonium content in the samples interfered somewhat with the measurement of the americium peak. The results, which are therefore only tentative, indicate that the Am + Cm contents of 8-3-MR solutions of plant runs B-10-04-F-14 (404 G/t) and B-10-05-F-13 (273 G/t) were 1.7% and 0.90%, respectively. The observed losses in these runs (8-3-WS_2 solutions) were 1.06% and 0.99%, respectively.

Recovery of Americium from Aged Sample Can Material

The Atomic Energy Commission has requested that >50 mg americium be separated for an off-site customer. For this purpose, 25 sample cans have been set aside to allow Am^{241} to grow in from the beta decay of Pu^{241}. It has been proposed that the bulk of the plutonium be separated by the precipitation of plutonium peroxide and that the americium then be concentrated by precipitating the hydroxides of the elements (Fe, Mn, Am, La, and residual Pu) remaining in the peroxide supernatants (combined volume ca. 265 liters) after heat treatment to kill off the excess peroxide. Laboratory experiments have indicated that the americium carrying by this precipitate is complete and that the precipitate settling rate is satisfactory. However, the concentration factor is only ca. 3, since the volume of the settled precipitates is approximately one-third of the initial supernatant volume. Direct evaporation of the supernatant solution is now being studied.

Solubilities of Pu(IV) Arsenates

The solubility of Pu(IV) arsenate has been investigated at 0.607 M HNO_3 at various H_3AsO_4 concentrations. Two different crystalline modifications were found to be stable at room temperature: (1) between 0.1 M and 0.5 M H_3AsO_4 the stable phase is a dense, deep rose colored solid, and (2) at higher H_3AsO_4 concentrations the stable phase is a pale pink, more flocculent solid. The bulk density of the former is ca. 10 times greater than the latter and, thus, is more desirable for metal production steps. The conversion of the flocculent modification formed at room temperature to the dense material takes about one day with constant agitation or a few hours with seeding. Conversion is rapid at higher temperatures.

Ruthenium Tetroxide Distillations

The presence of 0.05 M $KMnO_4$ during ozonization of dissolver solution increased the rate of RuO_4 volatilization such that decontamination factors of 9.7×10^4, 1.26×10^5, and 1.41×10^5 were obtained through extraction-scrubs at the end of 3, 4, and 5 hours of ozonization, respectively. Six hours' ozonization of the same dissolver solution in the absence of permanganate resulted in a decontamination factor of 6×10^4 through extraction-scrubs. The MnO_2 formed by the reduction of MnO_4^- by excess Cr^{+3} carried only ca. 0.03% of the initial ruthenium activity.

The Removal of Permanganate Ion from Dissolver Solution as Manganese Dioxide

Spectrographic analysis indicated that permanganate ion in 2 M UNH (-0.2 M to +0.5 M HNO_3) is quantitatively reduced to MnO_2 by a 5% excess of $Cr(NO_3)_3$. The choice of Cr^{+3} as a reducing agent was made since it is oxidized by MnO_4^- to $Cr_2O_7^=$ which is normally present in oxidized dissolver solution, and column behavior should, therefore, remain unaffected. Dissengaging times of 16-20 seconds were obtained for synthetic IAFS solutions both before $KMnO_4$ addition and after $KMnO_4$ destruction. The precipitation of MnO_2 is slow at room temperature but immediate at 100°C. After a 10-minute digestion at ca. 100°C., the MnO_2 can be centrifuged out completely (visually) at 400 G's. The bulk density of the centrifuged solid (400-1000 G's) is ca. 86 g MnO_2/l. The MnO_2 can be quickly and easily dissolved at room temperature with a two-fold excess of 30% H_2O_2 in 0.1 M HNO_3.

Manganese Dioxide Scavenging of Dissolver Solution

In preliminary experiments 80.6%, 76.2%, 92.8%, and 97.4% of the zirconium activity were removed with 1, 2, 5, and 10 g MnO_2/l, respectively. The amounts of niobium scavenged with the above quantities of MnO_2 were 73.7%, 58.7%, 94.0%, 98.3%, respectively. The MnO_2 was precipitated slowly in the dissolver solution by the addition of 5% excess of $Cr(NO_3)_3$ at room temperature, gradual increase of 50°C. and thirty minutes' digestion at 100°C. Since three moles of H^+ are produced per mole of MnO_2 formed, the final acidity in the above experiments varied from 0.037 M to 0.100 M.

The Precipitation of a Plutonium(IV) Chromate from Acid-Deficient Solutions

The addition of Pu(IV) to 1.3 M $Al(NO_3)_3$, 0.001 M $Cr_2O_7^=$, acid-deficient solutions gave a yellow-orange precipitate of $PuOCrO_4$ whose solubility was found to be >172 mg/l Pu in 1.3 M $Al(NO_3)_3$; 20 mg/l Pu in 1.3 M $Al(NO_3)_3$, 0.2 M NaOH; 6 mg/l Pu in 1.3 M $Al(NO_3)_3$, 0.4 M NaOH; 16 Mg/l Pu in H_2O; >147 mg/l Pu in 1 M HNO_3; 275 mg/l Pu in 3 M HNO_3; and 300 mg/l Pu in 10 M HNO_3. Since Redox streams containing Pu(IV) and $Cr_2O_7^=$ will not normally be acid-deficient, the precipitation of plutonium(IV) chromate is not anticipated; however, it is evident that such conditions are to be avoided.

Reactions between Dichromate and Organic Constituents

The potential reaction between hexone and nitric acid proceeds catalytically through several steps to such products as methylisopropyl diketone, dinitroisobutane and organic acids. The diketone is of special interest in Redox systems since it can form Pu(IV) precipitates in the IIBP stream (HW-17542). The diketone has been found to react readily in aqueous solutions with 0.1 M $Cr_2O_7^=$ and 0.1 - 1.0 M HNO_3, the principal reaction products being one mole of acetic acid and one mole of isobutyric acid per mole of diketone. With equivalent amounts of acid and diketone the reaction is 75% complete in 20-30 minutes at 25°C., whereas hexone and nitric acid under similar conditions have a half life of 50 hours.

Carbon dioxide is also a reaction product in the diketone-dichromate reaction and can be accounted for by the oxidation of diketone to pyruvic acid plus acetone. The pyruvic acid in turn is oxidized to CO_2 and acetic acid. Acetone was not acted upon readily by the aqueous chromic acid.

Another intermediate product of the hexone - nitric acid reaction is isonitroso methylisobutyl ketone which reacts at a rate intermediate between that for hexone and for diketone.

Nitrous acid has been found to be oxidized by dichromate in acid solution in a matter of minutes. Since nitrous acid is the catalyst for the hexone - nitric acid reaction, the possibility of hexone decomposition in Redox streams containing dichromate is materially reduced.

Butyl Acid Phosphate Studies

Since the n-butyl acid phosphates are hydrolysis products of TBP, their chemistry is being investigated. Monobutyl phosphate (MBP) reacts with UNH to form a slightly soluble precipitate of $UO_2C_4H_9PO_4$ whose solubility in water or 15% TBP - Deo Base is 0.06 - 0.12 g/l U. The distribution coefficient of uranium not precipitated in the presence of 1 g/l MBP is approximately one. The solubility of the uranium salt in 1 M HNO_3 is 3.3 g/l U.

To study means of removing MBP from the solvent mixture, RAX (15% TBP in AMSCO 125-90W) was spiked with 1 g/l MBP, scrubbed with equal volumes of various aqueous solutions and the resulting "washed" RAX then equilibrated with a 1 g/l aqueous UNH solution. The E_a° for UNH was 0.0006, 0.017, 0.002, and 0.003 after scrubbing with 10% NaOH, 10% H_3PO_4, 10% Na_2SO_4, and water, respectively. After washing with 10% H_3PO_4, a poor material balance resulted because of precipitate formation. Water, NaOH, and Na_2SO_4 are adequate scrubbing agents for MBP since the E_a° for UNH in the absence of MBP was 0.002.

Addition of 1 g/l dibutyl phosphate (DBP) to 15% TBP in Deo Base increases the E_a° (UNH) between water and the solvent from 0.002 to 20 for 1 g/l UNH and from 0.04 to 0.33 for 10 g/l UNH.

The rate of hydrolysis of MBP to H_3PO_4 in 3 M HNO_3 is a pseudo first order reaction with a half life of 22 and 18 days at 47° and 76°C., respectively.

The distribution coefficient E_a° of MBP between an aqueous 1 g/l MBP solution (1) 100% CCl_4 and (2) 15% TBP - 85% CCl_4 is 0.016 and 0.014, respectively. The E_a° of DBP between CCl_4 and an aqueous 3.3 g/l DBP solution is 2.6. DBP has a solubility in water of 18 g/l at 25°C. and exhibits retrograde solubility.

RC Column Equilibrium Studies

The equilibrium line for the RC Column in 0 and 0.5 g/l HNO_3 and the dilute uranium region was established using U^{233} tracer. The E_a° (UNH) for 0.136 g/l aqueous UNH and pretreated (carbonate wash, two water washes, filtration) 15% TBP - 85% Deo Base is 0.0020 and 0.0043 for 0 and 0.50 g/l HNO_3, respectively. A log-log x-y diagram exhibits the usual S-shaped curve.

Pulse Column Mechanism

The extraction efficiency in the mixer-settler type of pulse column operation is being studied by varying the type of pulse wave. The variation is accomplished by carefully controlling the pulse of each phase through the use of solenoid valves in each stream thereby eliminating the bellows-type pump. The pulse wave is generated by an adjustable timing mechanism which is connected to the solenoid valves and which controls the on-off time of each stream in a predetermined pattern.

The measurement and recording of the on-off time is performed in a novel manner by the alternating current electrolysis of potassium iodide which is impregnated in a moving chart paper. A pattern is obtained which shows a dash for each of the 60 cycles/second of on-time.

TBP Pulse Column Runs

Operation of the 1" x 65" RC Column at 50 cycles/minute, 1,000 gal./sq.ft./hr. total flow and compound plates with 0.046" diameter holes showed nearly the same uranium loss of 0.3 - 0.5% for 12.5% TBP in Shell Spray Base or for 12.5% TBP in AMSCO. However, the flooding capacity was 300-400 gal./sq.ft./hr. greater for AMSCO than for Shell Spray Base using 0.050" diameter plates of either simple or compound construction. RCW losses with 0.076" diameter hole plates (6% free hole area) were 20-30 times larger than for 0.046" diameter hole plates (23% free area).

A notable increase in stage height in the dilute UNH region was observed in RC Column runs.

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HW-18473 - Del

Separations Technology Division

Effect of Acid-Deficiency on Decontamination in TBP Extraction

Previous work has shown that the $Al(NO_3)_3$ salting effect on uranium and presumably on plutonium and the fission products was considerably greater than nitric acid salted feeds having comparable nitrate concentration. Comparison of decontamination from acid and acid-deficient feeds was thus made difficult. To determine comparable conditions for future decontamination studies the salting effects of $Al(NO_3)_3$, both in acid and acid-deficient systems, and of $NaNO_3$ were compared with that of nitric acid. The extract employed was 12.5% TBP in CCl_4. The following conclusions may be drawn from this study: (1) With zero acid feeds, both the distribution into the organic phase and the K values increase markedly as the $Al(NO_3)_3$ concentration is increased. (2) With acid-deficient feeds, the increases in the distribution and K values with increasing $Al(NO_3)_3$ concentration appear to be less marked, presumably due to hydrolysis of uranium and aluminum. (3) With acid present in the feeds, the effectiveness of $Al(NO_3)_3$ as a salting agent was considerably reduced, though still somewhat better than for acid-deficient feeds. (4) With large increases in nitric acid concentration (to 7 M HNO_3 with 0.2 M UNH) the K values actually decreased, probably through reverse salting effects, since nitric acid is extracted by TBP solvents that are not saturated with uranium. (5) The order of decreasing salting strength is $Al(NO_3)_3 \gg NaNO_3 > HNO_3$. (6) A feed 0.2 M acid-deficient and 0.9 M $Al(NO_3)_3$ is roughly equivalent to 3 M HNO_3.

Disposal of 221-5-6 Crib Waste and Second Cycle Waste

Intimate contact of a mixture of the neutralized wastes with soft sludge from the 110 T Tank in the volume ratio 2.5/1/1, 5-6/2nd cycle/sludge, resulted in a supernatant, after centrifugation, containing more plutonium by a factor of about 10 than obtained in the absence of sludge. However, plutonium present in the supernatant following the first contact with sludge could readily be accounted for as being present in the mother liquor accompanying the sludge. This interpretation was confirmed since successive contactings of mixed neutralized wastes with the same portion of sludge resulted in supernatants of decreasing plutonium concentration such that the supernatant from the third contact had the same plutonium concentration, 0.1 μg/l, as obtained in the absence of sludge. Following the third contacting the sludge still contained 2 mg/l Pu. Since the degree of mixing of the incoming wastes with sludge would certainly not be as thorough in practice as was the case in these experiments, solubilization of sludge-contained plutonium seems most unlikely and, at worst, the plutonium sent to crib would be no greater than that presently in the mother liquor associated with the sludge.

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Laboratory work on the problem of pooling 5-6 and 2nd cycle wastes has been completed. A summary report, HW-18412, is in preparation.

Neutralization of Distillate for Cribbing

Previous work on the continuous neutralization of large volumes of slightly acidic distillate showed that an effluent pH >6 could be obtained on passing 0.01 M HNO_3 at 50°C. through a 500-ml bed of $CaCO_3$ (marble chips) at flow rates up to 50 ml/min. Similar pH versus flow rate studies have been made at various temperatures using a commercially available limestone (Spokane Portland Cement Company) sized to $<$3/8" and $>$1/4". The maximum flow rates giving an effluent pH >6 were 70, 60, and 50 ml/min. at 90°, 70°, and 50°C., respectively. Direct weighing of the limestone before and after use indicated roughly 1.1 g consumed per liter of 0.01 M HNO_3 at 60°C. which corresponds (within 10%) to one mole calcium carbonate per mole [redacted]ic acid.

Separations Technology Division [redacted] UNCLASSIFIED

234-5 PROCESS DEVELOPMENT

The hard lumpy fluoride, which was made after the prolonged drying -- 7 hours at 130°C. followed by three hours at 500°C. -- of plutonium peroxide prepared from dissolved metal, gave a reduction yield of 61.5 per cent based on the weight of plutonium in the starting solution. Conversion of the dried material to fluoride was difficult and required four hours of hydrofluorination at 500°C. followed by two hours at 600°C. The behaviour of this relatively pure peroxide appeared to be quite different from that of the peroxides prepared at Los Alamos from cut sample can solutions.

A fluoride, probably ammonium plutonium fluoride, was precipitated from a plutonium nitrate solution by the addition of ammonium bifluoride; a 48% aqueous solution of HF does not give a precipitate when added to plutonium nitrate. The double salt was hydrofluorinated and reduced to plutonium metal with a yield of 39%. The poorly formed button and the adherance of the slag to the crucible wall are indicative of the presence of impurities which let to the formation of a higher melting slag.

The P-4 solution from 234 Building was used for three peroxide runs after the plutonium concentration was adjusted to 40 grams per liter. The solution was 1.5 molar in HNO_3 and 0.24 molar in H_2SO_4 when the peroxide precipitate was struck. The concentration of hydrogen peroxide in the solution was approximately ten per cent at the finish of the strike. The peroxides were converted to fluoride in regular platinum boats with a furnace cycle which had been found satisfactory for handling peroxides precipitated from relatively pure solutions. The bulk density of the fluorides varied from 1.42 to 2.26, and the reduction yields varied from 82.6% to 93.6% for no apparent reason. Further work will be done to determine the suitability of P-4 solution as a starting material for the peroxide process.

The skulls from two remelting and casting runs in the 235 Building were dissolved in 70% nitric acid containing concentrations of HF from 0.01 M to 0.2 M. The dissolution of the first skull was very slow when only 0.01 M HF was used. Dissolution was completed by increasing the HF concentration to 0.04 M; the last residue was dissolved with a mixture of 16 M HNO_3-0.2 M HF. The second skull (41 grams Pu) was completely dissolved in a 16 M HNO_3-0.04 M HF mixture in twelve hours. About 65% of the material in the skull was dissolved in the first hour, but the rate of dissolution from this point on is much slower. The high initial rate is probably obtained during the dissolution of plutonium metal, and the slower subsequent rate is obtained during the dissolution of plutonium oxide. On the basis of the analysis of the solution obtained by the complete dissolution of these two skulls and two other skulls previously dissolved, it has been found that approximately ten per cent of the plutonium charged to the skull is retained by the casting crucible.

A plus four plutonium oxalate was prepared to determine its suitability for metal preparation. The precipitate had a bulk density of 0.14 gm/cc. The procedure used for plus three oxalate was followed in converting the plus four oxalate to oxide. The conversion of the oxalate to oxide was only about 80% complete, but essentially complete conversion to plutonium tetrafluoride was obtained with the standard hydrofluorination cycle. The fluoride was reduced to metal with a yield of 97.1%. This trial was made primarily to determine whether a plus four oxalate can be used in the preparation of metal. Additional work on the wet chemistry will be done to determine the feasibility of this method from the process standpoint.

15 1209752 [redacted]

A special gauge has been made to hold the pieces produced in the 235 Building during the final inspection gauging. The use of this gauge has resulted in better reproducibility in gauging, and has reduced the length of time necessary to gauge a piece. It is now not necessary for the inspector to hold the piece during gauging so that the radiation exposure of the inspector has also been markedly reduced.

The complete absence of thin spots in the coating on the piece, which were caused previously by the tripod points, is clearly shown on autoradiographs of pieces coated on the new nine-point tripod piece holder in the coating hood.

STACK GAS DISPOSAL

The third filter life test is in progress. It has been designed to evaluate the comparative life expectancies of composite Fiberglas filter beds (No. 55 and "AA" Fiberglas) at linear velocities of 25 and 50 ft./min., a model of the present sand filter at 5 ft./min., and the recently obtained Owens-Corning No. 115-K Fiberglas. The pressure drop across the model of the sand filter increased to the point where it was necessary to remove the unit from the system. The quantity of methylene-blue required for a pressure drop increase of 5.0 inches of water was 115 grains/ft^2. The value obtained for the sand filter model operated at 5 ft./min. in the previous test was 140 grains/ft^2. The use of additional pressure taps in the sand filter model employed in the third life test (located one inch above and below each aggregate interface) has revealed that the filter "plugged" at the Type IV-Type V interface. The respective size ranges for these aggregates are 4 to 8 and 8 to 20 mesh.

The investigation of the dust loading of the Canyon ventilation air in the ductwork ahead of the B Plant sand filter has been completed. Eight individual determinations, based upon the correlation of pressure drop increase across a CWS Type 6 monitoring filter with the quantity of solid deposited on the filter, were made. This procedure was presented in detail in the Monthly Report of June, 1950. The values obtained were in good agreement and place the dust loading in the range of .03 to .05 grains/1000 ft^3. A similar study will be made of the dust loading of the dissolver off-gas lines.

A prototype of the Fiberglas filter to be installed in the dissolver cell at B Plant was checked for contamination removal efficiency. Canyon ventilation air was used for the test. A silver reactor was placed upstream to the filter to remove the I^{131} and permit a more accurate evaluation of the particulate removal efficiency. At a linear velocity of 20 ft./min., the efficiency was in the range of 99.99%.

Separations Technology Division [redacted] DECLASSIFIED

KAPL ASSISTANCE TO HANFORD

KAPL-1 - SPRU Redox Studies

The first two of the five scouting runs agreed upon by Hanford and KAPL (see HW-18177) have been carried out, using ORNL #1 Flowsheet and HW #2 Flowsheet. Some difficulty was encountered in determining IAF feed rates, and it was decided to take advantage of the shutdown for centrifuge repairs to overhaul the feed system to provide better control and rate determination. This had been completed at month end, and the centrifuge replaced in Cell #1 following a period of test operation after return from the manufacturer. The next run of the scouting series will be made using the KAPL Hybrid Flowsheet.

KAPL-2 - ANN Recovery Studies at SPRU

The one-gallon scale ANN Recovery Unit was carried through "cold" and tracer shakedown runs during the month, and the experimental program will be under way during the coming period.

KAPL-3 - Separations Chemistry - Redox

Item A-1 - Head End Studies

Work is now in progress on the effect of aging of Super Filtrol cake on plutonium hold-up. In this study synthetic dissolver solution is being scavenged and the cake allowed to stand without washing to determine whether or not trouble should be anticipated in plans to recycle the cake from a second Filtrol contacting in the Redox process.

Equipment has been essentially completed for the experiments on the effect of final dissolver pH on ruthenium volatilization and Zr-Cb scavenging. This work will be started in the next period.

Item A-5 - ANN Recovery Studies

High-level laboratory studies in the 50-ml. apparatus have continued with attention to a scavenging step for Zr-Cb contaminant. Results from this work are not yet complete.

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.

No inventions or discoveries for this period.

R. H. Beaton by C.H.L.

R. H. Beaton
Separations Technology Division
Date: August 1, 1950

[redacted]

TECHNICAL SERVICES DIVISION

JULY 1950

VISITORS & BUSINESS TRIPS

Henry Hunter, of the Naval Shipyard Radiological Laboratory, San Francisco, visited the Statistics Group on July 18 to discuss statistical quality control as applied to radioassay counting rooms.

Business trips of Technical Services Division personnel were as follows:

C. R. McCully spent July 1 through 19 at Los Alamos participating in a program of training for P-10 analysis. July 5 and 6 during this period were spent visiting the Consolidated Engineering Company at Pasadena, Calif., to discuss mass spectrometer specifications.

F. B. Quinlan spent July 6 and 7 at the Western Gear Company and Penberthy Instrument Company plants in Seattle, inspecting "hot" laboratory manipulating and viewing equipment being fabricated for Hanford.

E. Hollister (Fluor Corp. loanee assigned to Engineering Section) visited the Western Gear Company and Penberthy Instrument Company on July 6 and 7, inspecting equipment being fabricated, and on July 24 he returned to Western Gear to accept the completed manipulator and to discuss that company's capacity for future fabrication work of this type.

Jewel J. Lane spent July 10 through July 31 at the Watson Laboratory of Columbia University, in New York City, in a training program on IBM computing methods.

H. R. Schmidt spent July 17 through 21 at the Knolls Atomic Power Laboratory, attending the KAPL analytical chemistry conference with United Kingdom officials and discussing Hanford analytical problems with KAPL personnel.

W. W. Marshall visited the Argonne National Laboratory on July 14 and again on July 25, discussing P-10 analytical methods. On July 25 he also met with representatives of the Great Lakes Carbon Company in Chicago to discuss carbon impurities determinations. July 17-20 was spent at KAPL attending their analytical chemistry conference with United Kingdom officials, and in discussions of other analytical problems with KAPL people. He spent July 24 with the Leeds & Northrup Company, in Philadelphia, discussing emission spectrographs.

E. M. Kinderman spent July 25 at the University of California Radiation Laboratory at Berkeley, exchanging technical information.

R. J. Brouns spent July 25 at the Radiation Laboratory, University of California, inspecting alpha energy analyzers and discussing problems of

isotopic analysis.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized below:

	June 30	July 31
Analytical Section	317	313
Engineering Section*	67	68
Information Group	68	70
Statistics Group	14	15
Administrative	3	3
Division Totals*	469	469

* Not included are two Fluor Corp. engineers on loan to the Equipment Design Unit.

The Analytical Section employed one exempt chemist, and four non-exempt Technical Graduates; two Laboratory Assistants returned from leaves of absence, and two additional Technical Graduates were assigned to it as Rotational Trainees. Seven Laboratory Assistants and one Technologist were transferred to the Pile Technology Division, and one Laboratory Assistant went on leave of absence. Two Technical Graduates, one Technologist, and one Laboratory Assistant resigned.

The Engineering Section transferred one exempt engineer to the Design & Construction Divisions, and added one Steamfitter-welder and one Steno-typist by transfer. The Information Group employed two general clerks. The Statistics Group added one engineer (assignment) by transfer from the Pile Technology Division.

ANALYTICAL CONTROL

Work Volume Statistics

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

	June		July	
	Samples	Determinations	Samples	Determinations
Process Control - 200	3,170	8,727	3,802	12,118
Process Control - 300	438	802	172	378
Water Control - 100, 700	928	3,099	702	2,883
Redox & TBP Programs	4,529	6,879	3,409	4,369
Process Reagents	1,300	1,595	1,618	1,947
Essential Materials	135	599	324	907
Special Samples	1,667	6,837	1,307	9,375
Stack Gas Filters	10	10	0	0
Totals	12,177	28,548	11,334	31,977

[redacted]

100 Areas Water Control

The semi-weekly analyses of the Columbia and Yakima river waters were discontinued this month upon receipt of word from the Atomic Energy Commission that they no longer required these data. However, the Power Division has requested the Analysis of weekly composite samples of Columbia river water at the 100-B and 100-F Areas. The required compositing systems are being established, and collection of samples will begin the first of August. Data from these analyses will show major impurity contents.

200 Areas Control

The increase in work volume statistics noted for Process Control - 200 Area, and for Process Reagents, was a direct result of significantly higher production schedules during the month. The increase in the number of determinations on Special Samples resulted from quality control tests (i. e., correlation of counters) having been added to this category for the first time by the 200 Area Laboratory groups.

The precision of the results of the analysis of the canyon 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:

	Precision (± %)		
Samples	Expected	June Average	July Average
6-3-MR	1.58	1.51	2.26
P-1	2.39	2.38	4.20
AT	1.98	2.69	1.77
P-4	2.51	2.00	2.31

The poorer precision shown for the P-1 results in July was due to one analysis which did not check within prescribed limits.

One BGO instrument (BGO-3) was taken out of service in the 222-B Laboratory on July 25, and it is estimated that $130 annual maintenance savings will be realized. The two BGO instruments that remain should provide adequate service.

Installation of laboratory furniture in the 271-B and T Laboratories (project M-766) continued during July. Preliminary work for Project M-757, Acid Dispensing System for Bldgs. 222-B and T, was started on July 24.

The analysis of standard iron solutions by Methods PSP-1a and PSP-1b in the 231 Laboratory was changed from a weekly to a monthly basis on July 14. On other fronts, however, the test sample program has been augmented. For example, a regular schedule of plutonium test sample analyses will be undertaken in the 231 and 234 laboratories in the near future. The results of the new test sample program will be reported regularly by the Analytical Research Group.

Technical Services Division

Routine weekly standardizations of all stable laboratory reagents used in the analysis of process reagents were discontinued on July 30. In the future, standardization of these reagents will be made only when a new solution is placed in service—ordinarily about once a month per reagent.

The training of Isolation Bldg. Laboratory personnel on Procedure CA-18a, Spectrophotometric Determination of Pu (III, IV, VI and Total), was started on July 14, and the analysis of P-1 and AT samples by this method was started on July 18. One P-1 and one AT sample per day (alternating between T and B Plant material) are currently being analyzed in this fashion.

The determination of Chemical 40-8 in plant plutonium metal samples using the ferrocyanide titration procedure was started on July 20. This new procedure will supplement the analysis by the oxine method until the 234-5 Laboratory personnel have acquired the speed using the new method that is necessary to meet production control requirements.

300 Area Control

The marked drop in July work volume statistics for Process Control - 300 Area resulted from the P Division having shut down for approximately one week (for inventory purposes) during which time very few samples were submitted for analysis.

Preliminary investigations of the X-Ray photometric method for the determination of uranium in the various oxide materials submitted by 300 Area P Division, indicated that this faster method is applicable to all oxide samples except the Bronze Flux (BFC-6) material. The barium (Ca30%) in the BFC-6 material interferes in this method. The analytical data collected are being studied by the Methods Adaptation Group and a formal report will be issued at a later date.

The determination of total nitrates in washed and pickled uranium chips was accomplished by adapting a colorimetric method incorporating phenyldisulfonic acid as the color producing reagent.

Chemical Research Service Laboratory

A sample of plutonium chromate was successfully analyzed for total chromium and chromate ion. A colorimetric method incorporating semi-carbazide as the color reagent was used.

A sample of zirconium chromate was analyzed by first separating the chromium with a peroxide treatment followed by an ether extraction. The extracted chromium was then determined colorimetrically.

Chemical Development Service Laboratory

A work load reduction was brought about by a change in Building 321 operations to alternate operation of the two solvent extraction units, and a change of program from development studies to training runs for S Division personnel. These changes enabled the laboratory to cut from three shifts to two (8:00 A.M. to 4:00 P.M. and 4:00 to 12:00 midnite), effective July 31. Seven-day coverage is being continued. Seventeen analytical personnel and one Shift Supervisor

were transferred to other analytical laboratories, or to other Divisions, leaving a total of 20 persons assigned to this Service Laboratory at month-end. Two additional Shift Supervisors are being reassigned as replacements for expected transfers.

Counting Standards

Several sets of pie plates were counted in the reference A.S.P. #1 and #2 instruments, with and without a 2.5 mg/cm^2 mica absorber, to study the effect of alphaabsorption on the geometry calibration of A.S.P. instruments. Results were as follows:

	Geometry			
	Without Absorber		With 2.5 mg/cm^2 Mica Absorber	
Pie Plate Set	ASP #1	ASP #2	ASP #1	ASP #2
1	49.04	49.04	20.48	21.20
2	48.99	49.08	20.70	20.97
V-2	50.51	50.61	20.24	20.70
9	51.09	51.08	20.16	20.79
Precision Between Sets	4.37%	4.69%	2.68%	2.36%
Precision of Dis. Rate	1.16%	1.16%	1.99%	1.99%

Standards were counted before and after each determination and in all cases were within the limiting precision of the disintegration rates. The previously determined geometries for the two instruments were 50.46% for A.S.P. #1 and 50.45% for A.S.P. #2, in which determinations it was assumed that the range of alpha particle energies had no effect on the geometry. Tests on the alpha energy analyzer have indicated the presence of alpha particles with less than 5.15 Mev.

These figures show poor precision between pie plate sets without absorber, but good agreement between instruments. The precision improved considerably when an absorber was used, although it was still outside the precision of the test (1.99%). This indicates that the absorber tended to "level" the alphas counted in all cases. It also showed that the #2 ASP instrument counted consistently higher than the #1 ASP when an absorber was used, although the standard run without absorber showed the two instruments to be in good agreement. No explanation for this is possible as yet. These data indicate that, if there is significant variation in alpha energies from standard-to-standard, the standards counted in the A.S.V.P. instruments would tend to have their counting rate "leveled" which would result in a variation in establishment of A.S.P. geometries when these standards were used.

The Shonka gamma counter was installed in a cabinet, and a two-range high voltage supply (300V and 600V) was incorporated to allow operation at higher activity levels without "saturation" of the ionizing chamber. The recalibration curves were linear to the upper extreme of the range tested (5.3 x 10^{-10}

amps. for a 100 mg. Ra sample) which indicated no saturation.

Miscellaneous Service Analyses

The present A.S.T.M. procedure for Kauri-Butanol number calls for the standardization of the Kauri Gum solution against benzene. Papers presented at the 1950 A.S.T.M. Convention suggested that toluene be substituted for benzene in this standardization, to reduce the variance in K-B numbers obtained with different gum solutions. Plans have been made to investigate this proposal in the hope that it will yield a more consistent K-B number.

Of the many unusual analyses handled during the month, a problem submitted by the Reactor Division of D & C may be cited as an example. Graphite, in the form of bars, had been subjected to the rolling action of boron glass balls at elevated temperatures. By analyzing for SiO_2 it was possible to determine how much of the glass from these balls had become embedded in the surface of the graphite.

Methods Adaptation Group

The precision of the ferrocyanide method for determination of chemical 40-8 in plutonium was studied using a process sample. The results of a total of fifteen individual titrations by three chemists gave a precision for the analyses (as reported to the S Division) of ± 5.0% at the 99% confidence level. Training of Bldg. 234-5 laboratory personnel in the use of this method has been completed.

In determining the water content of a plutonium nitrate sample from the Critical Mass Project (P-11), it was found that plutonium interfered with the location of the end-point. The method employed (RW-2) was a determination of the Karl Fischer type which utilized polarized electrodes. The interference was attributed to depolarization of the cathode by reduction of plutonium VI and/or IV. The problem was solved by substitution of unpolarized platinum and tungsten electrodes for the two polarized platinum electrodes. For comparison, the water analyses currently requested will also be calculated by difference, utilizing the other analysis requested plus determination of the ratio of plutonium oxidation states in a few samples for calculation of minor corrections.

The Beckman Auto Titrator was received, assembled, and its operation tested. The first results were promising, being fairly reproducible; but a systematic precision study has not yet been made. The stability of the circuit was entirely satisfactory, with consistent reproduction of a buffer solution value over a period of a day. The maximum increment from which no response could be obtained from the circuit was less than 0.1 pH. In titrations of HCl with 0.1N NaOH, the end-point pH was around 7.5, indicating the efficiency of the anticipating circuit. The instrument is flexible and was adapted to a motorized micro titrator; samples containing on the order of a micro mol of acid were successfully titrated automatically. The disadvantages of the instrument are that the exact pH or EMF of the end-point must be known, and the complexity of its design might be a cause for frequent servicing.

Special Hazards Control

Cooperative investigation with H. I. continued on the sources and elimination of persistently high counts of radioactive particles in the laboratory air of the T and B Plant Control Laboratories (Bldgs. 222-T and B). As the decontamination sinks are the primary source of these particles, two design proposals for their revision are under study. Design work is also in progress to provide for the enclosure in gloved boxes of all apparatus used in analyzing the more active samples. It is expected that these steps will effect essentially complete elimination of air contamination in these radiochemical laboratories.

Preliminary tests with a mixture of "Duponol - C" and bicarbonate solution as a decontaminating agent indicate that this mixture shows promise as a skin cleanser, but is of dubious value for decontaminating floor spots and sampling equipment. It is planned to continue these tests.

Radiolanthanum Laboratory - Terminal Report

Part I of the Terminal Report on the Rala Laboratory was completed and issued (as document HW-17769). This part of the report covered the effort expended on the design of this laboratory and its equipment, which was an Analytical Section responsibility.

ANALYTICAL RESEARCH

P-10 Analytical Studies

[redacted]

The mechanism provided on the standard mass spectrometer for magnetic scanning is a manual one. Consolidated has recently developed a two-speed automatic scanning device, and is presently investigating a variable speed scanning unit that provides for a uniform plot of mass with respect to time. Since the latter unit was not perfected at the time of McCully's visit, he arranged with Consolidated to furnish the most suitable scanning device at the time of instrument delivery.

Modifications of the instrument proposed for Hanford use include installation of a separate manifold and exhaust system within a hood to avoid contamination in case of leakage or breakage, introduction of a separate viscous leak from the manifold to the spectrometer tube, and venting of the exhaust from the

two oil pumps. It is considered unnecessary to hood the spectrometer tube and its separate evacuating system, since the pressure of product within these units will be of the order of only 0.02 microns.

Hanford assistance work conducted at KAPL has included an investigation of the application of emission spectrographic procedures to the analysis of P-10 product and involved arrangements for purchase of a Leeds and Northrup direct reading spectrometer for this investigation and for subsequent use at Hanford. In a meeting between representatives of KAPL, Bureau of Standards, Leeds and Northrup, and Hanford, W. W. Marshall pointed out the difficulty encountered by the Hanford Analytical Research Groups in the conduct of this analysis; this difficulty was related to the adsorption of the gaseous sample on the electrodeless discharge excitation chamber. The Bureau of Standards' representative referred to recent work at the Bureau in which this difficulty is eliminated by use of a higher frequency excitation. It was the opinion of the group that the instrument will serve to determine P-10 product to within ± 0.5%, but that it is doubtful if impurities can be determined with the desired sensitivity.

Promising results were obtained using a newly developed method for the direct determination of lithium. This method consists of precipitation of lithium in potassium hydroxide solutions as lithium potassium ferric periodate and subsequent titration of the iodate. The method requires only 45 minutes for a single determination and yielded results of 3.63% and 3.64% on a sample that was known to contain 3.64%.

Assembly and testing of equipment for the high precision determination of uranium in four P-10 fuel slugs for calibration of the 105 Test Pile has been completed. Preliminary testing showed that hydrochloric acid dissolves the sample but yields a turbid solution which is susceptible to treatment by bromine, leaving only a very small residue of silica. The dissolution procedure developed consists of successive treatments with hydrochloric acid, separate treatment of each portion with bromine, filtration and collection in a large jar. A test of the equipment with a natural uranium-aluminum slug showed the system to operate effectively and analysis of the fuel slugs has been started.

In order to expedite the over-all P-10 program the interested Technical Divisions reached agreement late in July that the Analytical Section should, in the near future, assume full responsibility for the purely analytical phases of this program, including analytical development studies conducted at this site, selection of analytical methods, and provision of routine analytical service. The Pile Technology Division will continue its prime responsibility for liaison with other sites engaged in related development studies.

Pile Effluent Water Studies

The Analytical Research Groups have been asked to cooperate in an investigation of the activity of effluent pile cooling water and means for its elimination. Five separate aspects of the problem have been proposed as justification for the work:

1. The presently observed high activity on the backface of the pile which is causing excessive exposure of personnel.

2. The undesirable seasonal high activity of the effluent water and the consequent necessary dilution before emptying into the river.

3. The increasing frequency of purging required.

4. The cost of water treatment.

5. The neutron absorption occasioned by the impurities.

A radioassay was made of a specific sample of effluent water from the H pile and the results, on an activity basis, corrected to four hours after discharge, were as follows: Manganese 30%, sodium 15%, copper 8%, silicon 7%, arsenic 3%, and rare earths 2%. The combined activities of calcium, chromium, gallium, iron, and zinc were less than 1%. The total activity at zero pile time was 500 to 600 c/m/ml and four hours later was 100 to 120 c/m/ml. Several sections of an aluminum tube removed from the B pile were received for identification of the film and for a radioassay of its active contents. In addition, a sample of the soluble oil used during the pushing of slugs was obtained to permit an identification of the impurities present and to find if any reaction occurs between this oil and the calcium used in water treatment. In several conferences with representatives of the "P," Power, Pile Technology, H.I., and Technical Services Divisions, it was agreed to complete these latter analyses before making an attempt to propose a long range program for investigating the problem.

Radiochemical Methods (RDA No. TC-1)

The previously reported direct-mounting radiodetermination of plutonium in uranium-containing solutions has been tested by control laboratory personnel and gave highly satisfactory preliminary results. Multiplicate determinations of the same sample yielded 2.709×10^{-7} and 2.697×10^{-7} d/m/ml. using the lanthanum fluoride carrying procedure and the direct mounting method, respectively. The latter eliminates the need for various items of equipment, eliminates reagents, is less susceptible to operator error, and decreases the time per determination by about one-half.

Spectrochemical Methods (RDA No. TC-2)

Continued investigation of the previously reported X-ray photometer determination of uranium in oxides from the 300 Area Process has shown the method to be well suited to the purpose. Uranium in pure oxide can be determined to about $\pm$ 0.2% and uranium in floor sweepings and sludge can be determined to $\pm$ 2.0% and $\pm$ 0.5%, respectively. The poorer precision in the latter two cases is due to limitations in sampling the non-homogeneous material. The precision and accuracy found by the new method are comparable to those obtained by the presently used volumetric method, but the new method promises to permit the conduct of six determinations in 2 1/2 hours, as compared to seven hours required by the present method.

The previous report of this series described work on the effects of dibutyl phosphate, monobutyl phosphate, n-butyl alcohol, and various solvents on the infrared determination of tributyl phosphate. The two acid phosphates and the alcohol were found to introduce an error in the analysis. Continued work on this problem indicates that extraction with 10% sodium sulfate, 10% sulfuric acid, or 20-40% phosphoric acid is effective in removing DBP or uranium if present separately, but that a combination of the two is removed only with phosphoric acid. N-butyl alcohol is adequately removed by extraction with aqueous solutions. The most promising procedure involves extraction with phosphoric acid followed by extraction with 2% sodium nitrate and treatment with anhydrous potassium carbonate. Two TBP-containing samples were analyzed by this procedure, both before and after spiking with 10 volume percent DBP, 15 volume percent n-butyl alcohol, and 80 g/L UNH. In the first case the original results were 8.73 and 8.65 volume percent TBP and the final results 8.40 and 8.64%. In the second case the original values were 10.45 and 10.39% and the final values 9.96 and 9.88%.

Electrochemical Methods (RDA No. TC-3)

Investigation of coulometric methods over the past several months has led to the establishment of a tentative micro procedure for the automatic titration of uranium. In cooperation with the Methods Adaptation Group, a panel board and automatic instrument are being assembled to permit testing of the method in the control laboratory. The instrument being assembled contains the control unit removed from the recently received Beckman automatic titration unit and the coulometer developed in the Hanford research program. The method consists of conversion of the uranium-containing solution to the bromide, reduction of uranium to U(IV) with a lead reductor, and coulometric titration, with a potentiometer system serving as the endpoint detector.

In the June monthly report it was stated that spectrographic methods do not hold promise of providing sufficient precision for the accountability determination of U-235 in Al-Si bath, and that a polarographic procedure was being investigated. The latter method appears adequate as indicated by determination of standard bath samples containing 0.3 and 0.07%U, for which results of 0.28 and 0.11%, respectively, were obtained. The polarographic uranium wave is well defined but suffers slight interference from a copper or iron impurity. The method involves dissolution of the sample in nitric and hydrofluoric acids, conversion to the sulfate and polarographic measurement.

Conventional Chemical Methods (RDA No. TC-4)

Three plutonium product castings have been analyzed for carbon on the newly installed equipment. The materials contain between 100 and 200 p.p.m., which is well below the specification limit. Acceptable blank determinations of only 10 to 20 p.p.m. were obtained, and recovery on calcium carbonate standards is within 95 to 100%.

In an attempt to resolve the difference between Hanford and Los Alamos on the amount of plutonium transferred, the procedure used by the latter was investigated. Good recoveries were obtained and specific tests showed that chromium in the quantity present introduced no interference. The purified plutonium solution employed in this work was submitted to the 231 and 234-5

Control Laboratories for check purposes. Excellent agreement was obtained by the first laboratory, but the second showed slightly high results. Additional quantities of the material are being made available to serve as standards in connection with plutonium determinations for the critical mass study.

The Analytical Research Groups reorganized and expanded their standards program with the objective of providing precision and accuracy studies of all major analyses performed by the Analytical Section. Information regarding the standards submitted to the control laboratories and the results obtained are included in the following table:

RCW Sample (TBP Process)

Constituent	Conc.	Method	No. of Det.	Found
UNH	1.15 g./l.	Fluorometric	28	1.06 ± 0.48 g./l.
UNH	1.15 "	X-Ray Absorption	29	1.14 ± 0.29 "

U_3O_8 Sample

U	84.40%	Volumetric	In progress

RAFS SAMPLE (TBP Process)

UNH	90.0 g./l.	Volumetric	In progress
UNH	90.0 "	X-Ray	" "
SO_4	15.0 "	Iodometric	" "
PO_4	15.0 "	Volumetric	" "
Na	66.0 "	Photometric	" "
NO_3	305.3 "	Dist.	" "
HNO_3	157.5 "	Potentiometric	" "

The relatively poor accuracy obtained on the RCW sample by the fluorometric method received the attention of the Methods Adaptation Group and a revised and improved procedure was introduced in the laboratory.

Miscellaneous

A conference on analytical methods was held during the month in Schenectady between representatives of the United Kingdom and KAPL, with Hanford personnel in attendance. It was the opinion of the Hanford representatives that the British appear to make considerably greater use of spectrographic methods of analysis and thus take advantage of the more rapid methods even though less precise results are obtained in many cases. The hollow cathode spectrographic excitation source and direct reading spectrometers have received considerable attention by the British and both are serving a very useful purpose. Differential polarography was mentioned as a method for obtaining more sensitive and more precise analytical results.

In preparation for an in-pile experiment to study the rate of reaction between graphite and oxygen, Pile Technology Division requested information on the

argon content of commercially available oxygen, nitrogen, and carbon dioxide. In order that the external parts of the gas circulating system be sufficiently free from activity, it is necessary that the argon content be of the order of 0.002% or less. Since no apparatus is available at the Hanford Works for conducting determinations at this level, W. W. Marshall consulted with personnel of Linde Air Products and General Electric Research Laboratory on the subject. Each has agreed to supply information, and if possible, set aside for possible purchase by Hanford one cylinder of each gas that is known to be within the desired limit.

The Atomic Energy Commission submitted a verbal request that the Analytical Section provide check boron determinations on petroleum cokes. The original values were obtained by the Great Lakes Carbon Corporation in a survey of the purity of petroleum cokes and that corporation has requested verification analyses. W. W. Marshall consulted with J. Van Waser of Great Lakes and agreed with him on the nature of the determinations to be made. The method to be employed will be the photometric one currently used in the General Chemical Laboratory. Copies of this method will be supplied to Van Waser.

The last of the series of Rala reports were issued during the month; these are HW-18299, "Self-Heating of Radioactive Liquids in a Small Sample Container," and HW-18150, "Terminal Report on the Radiolanthanum Laboratory, II. Analytical Methods Research and Adaptation."

ENGINEERING SERVICES

Technical Shops

Bldg. 101 Shops

The work volume statistics for the Bldg. 101 Shops (including the one-man machine shop in Bldg. 3706) are summarized as follows:

	June		July	
	No. of Jobs	Man-Hours	No. of Jobs	Man-Hours
Work on Jobs Completed	119	1,880	113	1,569
Work Backlog (exclus. P-12)				
Jobs started	21	660	44	538
Jobs not yet started	26	638	35	750
Total Backlog	47	1,298	79	1,288
P-12 (Exponential (Pile Project)				
Work done	—	—	—	—
Work backlog	—	5,292	—	5,292

Arrangements were made which provided the P-10 Project with faster service in metal fabrication. One to three machinits are assigned to this work as required, and the necessary close liaison between Pile Technology,

P-10 supervision of Technical Shops Supervision, and the machinists is being maintained. This augmented service was used effectively in the fabrication of metal fittings for the new glass lines in Bldg. 108-B.

Graphite machining was done on twenty-three pieces for the D & C Divisions. This material was then shipped to the Bremerton Navy Yard for testing.

The following fabrication work was completed for the Metallurgy Section:

A metal rack for the storage of samples under water.

Flexible tongs from manipulator-ball, mechanical fingers which were purchased from the Aircraft Specialties Corp. Redesign and development work in the Shops were required on these tongs, which were made in four, six and eight foot lengths.

A special plug and nut for use on a plug lock for the intermediate level cell proposed for the Radiometallurgy Bldg. This plug was machined to seven and one-half inches outside diameter and six inches inside, with tolerance limits of $\pm$ 0.005 inch.

Chalk River cans from 2-S aluminum.

The full-scale metal mock-up of the manipulator-positioner ("wheel within a wheel"). This device was delivered to the Metallurgy Section for service in the mock-up cell at Bldg. 111-B.

Fabrication was begun on the electrolytic polisher (for uranium specimens) ordered by the Metallurgy Section at Bldg. 111-B.

The following work was completed for the Equipment Design Unit:

A device for air filter evaluation was assembled in the mockup area of Bldg. 101. This equipment consists of duct work, blowers, filter connection, orifices and sensing devices.

A 27-place magnetic stirrer was revised to intensify the magnetic field used in agitating the samples. A plastic composition was used to replace part of the metal in this apparatus.

The mock-up of a laboratory hood was revised for air flow tests, and for operation with either a constant volume or constant face velocity.

A number of smaller items were made which included: Plywood dollies, plywood boxes, laboratory glassware supports, wobble stirrers, constant temperature baths, ring heaters, plug pullers, and a 24" tray and track for the cubicle mock-up.

Items fabricated for the Analytical Section included: Stainless steel discs, a heater arm, discs for Petri dishes, Teflon bushings, and a panel board.

Stirrers and two air-locks made of lucite and plywood for installation in gloved boxes were completed for the Chemical Research Section. Other work in progress for this Section included the fabrication of solution holders and lead sample carriers.

A flow control device was fabricated for use in conjunction with the pulse column work of the Chemical Research Section, and a request was received for an additional unit.

Work completed for the Pile Technology Division included a gas seal, glass blowing equipment, a graphite reamer, and lead bricks.

Miscellaneous Bldg. 101 Shops work included the loading and shipment of one carload of graphite to Oak Ridge, completion of the space arrangement for the IBM installation, and several trial blackouts which showed that the 101 Area can be blacked-out in about eight minutes.

Glass Shop

The Glass Shop completed 60 jobs in addition to the considerable volume of special work for P-10. These jobs were as follows:

	June	July
Jobs completed:		
New	30	31
Revisions	11	11
Repairs	7	18
Total	48	60
Job Backlog	76	80

Shop services continued to be restricted to emergency jobs because of vacations and the assignment of two men full-time to P-10 work which is being done in the Shop and at Bldg. 108-B as work requirements demand.

As required for P-10, two additional glass blower trainees began work in the enlarged Glass Shop. These additions brought the glass shop force to a total of seven (one foreman, two experienced glass blowers, and four trainees).

Arrangements were completed for the Glass Shop to assume administrative responsibility for all P-10 glass blowers on August 1.

Equipment Design

Laboratory Equipment Development (RDA No. TC-5)

Development phases of the Junior Caves program progressed, with the preparation of graphic catalog sheets for Junior Caves and accessories. New manipulators were being developed, such as the gear tongs and new model

cable tilt tongs now being fabricated. The contract was let by D & C for Junior Caves for Bldg. 222-S, including manipulator balls and viewer frame, but without lead-glass, manipulators, or inner box. The mobile crane for Junior Cave maintenance for Bldg. 222-S was being designed.

The air flow characteristics of the downdraft hood proposed for the Radiochemistry Bldg. were determined in mock-ups at Bldg. 101, under both constant volume and constant face velocity conditions. This model hood is now being fabricated in all-welded Lucoflex plastic. The contract was let by D & C for the Panelyte "Sectional" hood for Bldg. 222-S.

A test line was set up for evaluating the newly developed fiber glass air filters for use with laboratory hoods, and several types of filters were under test.

Gloved box designs and specifications were firmed-up sufficiently to allow these boxes to be procured on a bid basis.

An in-cell air hoist for the Bldg. 222-S cubicles was being designed. A lifting bracket for the modular panels was built.

Service Work

Outfitting of the three Junior Caves for the Chemical Research Section continued. One is for Ruthenium scavenging, one for Redox column studies, and one for waste treatment studies.

Proposals were made to the Analytical Section for enclosing the decontamination and sampling bench operations in Room 7 of the T and B Plant Control laboratories (Bldgs. 222-T &B). A gloved box also was being prepared for trial enclosure of certain "hot" analyses in these same laboratories.

The Technical Shops were given assistance in their fabrication of a chromium assay panel board for the Analytical Section.

Design work was continued on a complicated "core borer" tool for use by the Engineering Section, Pile Technology Division, in removing samples of irradiated graphite from production piles.

Scope designs for certain special equipment planned for the Radiometallurgy Bldg. were completed (see New Laboratory Planning, below).

Design continued on the "Slice and Dice Box" accessories, "Sugar Loaf Core" tool, Decontamination Cell, etc., for the Metallurgy Section.

Many miscellaneous services were rendered, such as strip-coating small items, designing a valve operation cycle timer, revising electrical limit switches on laboratory apparatus, designing acid catch-tanks, etc.

New Laboratory Planning

Redox Analytical & Plant Assistance Laboratory (Bldg. 222-S)

Supplemental project proposal C-187-E-R-2, covering the construction of

this laboratory building and associated waste disposal system, was approved by the A & B Committee (on July 11) and was forwarded by them to the A.E.C.

Major Contact Engineer efforts on this new facility were directed toward the approving of purchase contracts, review and alteration of specifications and drawings to obtain purchasing advantages, and in field liaison with respect to building construction.

Considerable effort also was applied in assisting with the design of the waste disposal facilities. A study was initiated to determine the feasibility of changing the design locations of crib and retention basin, in order to shorten the waste lines and obtain more suitable soil permeability. The Bldg. 222-S crib is being designed to accommodate also the cribbable wastes from the Hanford Works Laboratory Area.

Radiochemistry Bldg. (Proj. C-381)

The primary design liaison activity on this building was devoted to radiochemical laboratory fume hood design and development, in conjunction with the Equipment Design Unit. Several conferences were held between the D & C and Technical Divisions to discuss this problem, and to observe air flow characteristics of the mock-up equipment in Bldg. 101. Tentative approval of both the constant volume hood and the mechanically controlled constant face velocity hood was obtained from D & C ventilation engineers.

A large number of requests for design information were received from the Architect-Engineer, and replies were supplied to D & C for transmittal.

Radiometallurgy Bldg. (Proj. C-385)

The manipulator for use in the Bldg. 111-B mock-up of the "hot" cell planned for the Radiometallurgy Bldg. was accepted from the fabricator, the Western Gear Co. of Seattle.

Scope designs for the special equipment for this building were completed by the Equipment Design Unit in Bldg. 101. Three men had to be borrowed from the D & C drafting room to assist with this work, as required to assure its completion in time for use by D & C in negotiations with an architect-engineer for a lump-sum bid on the design of this building. These scope designs covered the sample storage cell, the high and intermediate level cells, and the decontamination hood.

Pile Technology Bldg. (GET-17)

The floor space proposed for the laboratories in this building was revised in accordance with information from the Pile Technology Division, and comments on the drawings incorporating these changes were obtained. Equipment lists were being prepared for submission to D & C.

Mechanical Development Bldg.

A cost estimate for this building is being made by D & C, pending receipt of which no specific design consideration has been given this facility

by the Technical Divisions.

Plot Plan and Utilities (Proj. C-394)

The project proposal for the design of the plot plan and utilities for the Hanford Works Laboratory was approved by the A & B Committee and forwarded by them to the A.E.C. Because of topography and problems related to excavation for pipelines and roadways, some of the buildings have been reoriented slightly within their original boundaries. These revisions do not interfere with provisions for future expansion of the buildings involved. Plot plan considerations of this type are continuing.

Study of the Works Laboratory waste disposal problem was continued. While this study is concerned primarily with the disposition of cribbable wastes and with the underground tank storage of highly radioactive liquid wastes, it is being assumed also that even Retention Basin wastes may sometime have activity concentrations that would require them to be handled as crib wastes. Both the cribbable and the hot wastes will have to be transported from the 300 Area to the point(s) of disposition in the 200 Areas, and facilities for these transfers are being included in Proj. C-394. It is being assumed that the cribbable wastes will be unloaded into the Bldg. 222-S crib system, but the best provision for underground tankage of the hot wastes has not yet been determined.

300 Area Services

Normal Bldg. 3706 services continued routinely. Stockroom and work order activity is summarized as follows:

	June	July
Purchase Requisitions:		
Total number processed	72	51
Number requiring special expediting	25	8
Number requiring emergency handling	3	1
Stores Stock Requests Processed	1	0
Store Orders:		
Total number processed	956	1,110
Number requiring emergency pick-ups and deliveries	14	9
Work Orders Processed	59	44

Maintenance Division work orders for the conversion of recently liberated shop rooms 38 and 40 in Bldg. 3706 into laboratories for the Analytical Section were approved, and the work was begun. This move by Analytical will release Room 95 for use by the Chemical Research Section as a "hot" laboratory. As in the case of rooms 38 and 40, capitalized spare units of suitable laboratory furniture are available for most of the room 95 conversion, which may allow this work also to be done on a Maintenance Division work order. Preparation of the work description required for cost estimation is in progress.

Technical Services Division

STATISTICAL STUDIES

300 Area Operations

The current Bldg. 314 melt plant procedure (heating furnace charges of uranium for two hours and ten minutes and holding in the quiescent state for five minutes before pouring) has been justified for continued use on the basis of results from a statistically designed experiment (Doc. HW-18332).

Curve fitting studies relating to the coefficients of thermal expansion of uranium were continued for the Metallurgy Section.

Examination of complete autoclave failures of canned uranium slugs occurring over the past ten months revealed a statistically significant upward trend. Correlation studies were begun to determine if there is a causal relationship between such failures and canning rejects.

Studies were begun on revision of the statistical sampling plans for reactivity testing of bare and canned P-10 fuel slugs (Al, U-235 alloy). It is hoped that this reactivity testing can be reduced as the result of a significant decrease of within-heat bare slug variability.

At the request of the Safety and Fire Protection Division, the accident costs for Hanford Works were compared with those for an average chemical industry of similar size on the basis of data from the National Safety Council 1949 Bulletin of Safety Facts.

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-18452).

200 Area Operations

At the request of the Analytical Section, an experiment was designed to study the effect of four variables on the determination of carbon in plutonium metal.

Data on the radioactivity of fish caught in the Columbia River were studied and summarized for the H.I. Divisions.

For the Chemical Research Section, a study was initiated to establish the most efficient mathematical relationship between the distribution coefficient of Pu(IV) and solution variables.

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 control laboratories in Bldgs. 222-B, 222-T, 231, and 234-5. The monthly report (Doc. HW-18451) also includes AT and P-4 Specific Gravity Relationships; 231-234 plutonium assay differences; and Hanford-Los Alamos plutonium assay differences.

The regular semi-monthly reports of certain Kr-85 computations for the A.E.C.

were completed and forwarded. In addition, the accuracy of these calculation was reviewed and a separate report of findings was prepared.

100 Area Operations

Final statistical analysis of PT 105-238-P, exposure of uranium slugs manufactured by a combination forging and rolling process, revealed a statistically significant increase in the length of the slugs with the increase in exposure (an average of 17 mils longer at 600 MWD/ton than at 200 MWD/ton). The average diameter remained approximately constant, as did the variation of both length and diameter. The blistering was of the same magnitude as that of regular Group V metal (Doc. HW-18440).

To date seven tubes of PT 105-277-P (Alpha rolled, induction heated uranium rods and slugs) have been discharged. These tubes contained a total of 224 slugs, the latest tubes at 350 MWD/ton. All slugs, including the 25% which were Group V metal control Slugs, are exhibiting a consistent tendency to decrease in diameter and increase in length. The largest length increases at the 350 MWD/ton level average 9 mils for slugs representing "RAB" metal (rolled, annealed bars). Only two extensively blistered slugs have been encountered, both being "RAB" and from the same original rod.

A statistical analysis of the MWD/ton exposure level of uranium metal and the yield of plutonium per MWD reveals that the difference between observed yield and expected yield is consistently positive.

IBM Computational Operations

In preparation for the new IBM "Card Programmed Electronic Calculator," scheduled for delivery in October, specialized filing and service equipment was ordered, job descriptions were written, personnel were requisitioned, training was commenced, and card programming for several basic computing operations was completed. Additional programming is in progress.

This work is being headed by P. M. Thompson, who has transferred to the Statistics Group from the Physics Section of the Pile Technology Division.

LIBRARY AND FILES

Plant Library

Library work volume and book statistics were as follows:

	June	July
Number of books on order received	228	188
Number of books fully cataloged	148	124
Number of bound periodicals processed but not fully cataloged	41	14
Pamphlets added to the pamphlet file	1	6
Miscellaneous material received, processed and routed (including maps, photostats, patents, etc.)	21	19
Books and periodicals circulated	2,157	2,216

Unclassified reports processed	106	72
Unclassified reports circulated	162	200
Reference services rendered	994	1,163

	Main Library	W-10 Branch	Total
Number of books	6,181	2,436	8,617
Number of bound periodicals	4,273	100	4,373

Preliminary arrangements were completed for the establishment of a branch of the Plant Technical Library in the 108-F Bldg., where the program of the Biology Division, H. I. Divisions, is concentrated. It is planned to centralize, in this special field Unit, the books and periodicals related exclusively to this program.

A steady increase in the reference use of the Library's facilities is reflected in the above statistics, which report a new high for the second successive month. Following is a representative sampling of the many literature searches made:

Copper oxide cells for control of railroad crossing signals.
Comprehensive strength of cadmium.
Monitoring of laundries.
Number of Ph.D. degrees granted in 1949.
Effect of nitric acid on neoprene.
Design of choke coils.
Diffusion of helium through glass.
Composition of heresite.
Impurities in commercial lead.
Cracking of plaster.
Design of air core solenoids.
Design of pictorial graphs.
Analysis for bound water in animal tissue.
Use of tap water for servicing bus batteries.
Electromagnetic conveying system.

The Technical Abstracting staff also made a number of comprehensive literature searches in the classified document literature. These included the following production pile subjects which were requested by the A.E.C. (Doc. GEH-16,983, dated July 17):

Heat generation after shutdown.
Heat transfer and metal temperatures.
Local boiling in process tubes.
Aluminum corrosion.

Circulation figures on books, periodicals, and classified reports paralleled the increase in reference services, also reaching new highs.

Current procedures for circulation of periodicals were modified in response to a number of suggestions. The three Technical Divisions were circularized to develop a minimum list of technical periodicals to be kept permanently in the 300 Area Library for reference use only. A list of some 15 basic

technical periodicals resulted and reference files of these were established.

Classified Files

Work volume statistics for the Classified Files and the Central Report Publications Unit were as follows:

	June	July
Documents routed	12,750	14,467
Documents issued	5,488	6,280
Reference services rendered	3,352	3,899
Reports abstracted	582	267
Registered packages prepared for offsite	311	290
Inter-area mail sent via transmittal	23,140	26,149
Holders of classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure.	32	33
(b) Because of transfer of work assignment.	5	3
(c) Because of termination.	1	2
Classified documents located which were unaccounted for in previous inventory.	1	0
Inventory reductions:		
Copies of documents destroyed	559	2,645
Copies of documents downgraded	180	6
Copies of reports declassified	0	0
Volume of unclassified mail handled by 300 Area Mail Room	29,795	26,700

Central Report Publications Unit

	June	July
Ditto masters run	866	678
Mimeograph stencils run	1,565	1,256
Ditto master copies prepared	29,227	18,662
Mimeograph copies prepared	86,419	74,530
Formal Research and Development Reports issued	11	12

Plans were completed to supplement the field work of the Audit & Inventory Unit with subsequent quarterly inventory reports by individuals of their classified document holdings. These reports are to list any discrepancies between the documents inventoried and the office records. An H. W. Instructions Letter incorporating this procedure was prepared for issuance, and the necessary reporting forms were printed.

Two further decisions were taken with respect to the procedures of the Audit & Inventory Unit. Following discussion with AEC and GE Security, it was agreed that documents found missing in routine field inventory would be reported to the GE Security Division after thirty days. Excepted would be documents missing at time of termination, or lost under suspicious circumstances, which will be reported immediately.

In addition, a decision was reached that the inventory of classified blueprints by the Audit & Inventory Unit of the Classified Files is not practical, and that the Reproduction Section therefore will establish its own inventory unit responsible for periodic field inventories of classified blueprints.

The problem of equitably liquidating the costs of Classified Files operation was given further study. Particular consideration is being given to the possibility that these costs might be liquidated on the basis of the number of individuals in each division having authorization access to classified information. A list of such individuals was compiled, and the percentages developed are under review.

A special assignment was completed for the AEC Security Division on the Hanford Technical Manual. It involved development of the origin and history of the manual, all data on revisions, available records of distribution, and present location of all copies and sections.

A compilation of Hanford Works codes and jargon was completed and issued by the Abstracting Unit (Doc. HW-18223). Periodic revisions of this basic document are planned. The document was issued as part of the responsibility for Hanford Works codes assigned to the Classified Files under H. W. Instructions Letter No. 135, Section XXIII.

The proposed 300 Files space addition to Bldg. 3702 was given critical review, with the conclusion that there is no satisfactory alternate to this method of providing the additional floor space which is critically needed, and which will not otherwise become available until completion of the Library & Files Bldg. projected for the new Hanford Works Laboratory Area. Project Engineering is being asked to proceed with preparation of the Project Proposal required for this $30,000 (approx.) job.

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 July 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

JULY 1950

Summary

General

Personnel Changes

The Medical Divisions' roll remained constant at 288.

Visits

Doctors Norwood and Fuqua attended the Island Camp, and Dr. Fuqua also visited Knolls #1 and #2, as well as parts of the Schenectady plant, to discuss mutual problems with Drs. Vosburg and Toll.

Industrial

Employee physical examinations increased slightly from 2037 to 2146, while First Aid treatments declined from 6912 to 6857.

Nine major and ten sub-major injuries were treated. No major injuries and four sub-major injuries were sustained by G. E. employees.

The health topic for the month was "Teeth".

Sickness absenteeism declined from 1.34% to 1.20%, while total absenteeism declined from 1.96% to 1.76%.

Communities

The hospital average daily census decreased from 77.1 to 70.8 (60.5 adults, 10.3 infants). The census was 51.9 a year ago.

Nursing hours per patient day were 4.12 for the mixed services, and 5.23 for obstetrics.

Group informational meetings for the discussion of G. E. employee benefit plans were conducted by representatives of the Training Section for all Medical Divisions' employees.

A nurses' training institute covering nursing care of Infantile Paralysis was conducted jointly by the local sections of the nurses' association and the Polio Foundation in Richland.

By-laws, rules and regulations for the Hospital Staff were approved by the staff physicians and will be submitted to our management for approval.

Contract for construction of a new wing to the Medical-Dental Clinic was awarded.

Public Health

The communicable disease level remained low with no serious outbreak of disease threatening.

Conferences were held with the Public Health & Safety Committee of the Community Council regarding mosquito control and refuse disposal.

Material is being prepared for another of the mental health series to be presented over a local radio station this fall.

Two representatives of the Washington State Dept. of Rehabilitation were here to explain the state program for handicapped persons.

MEDICAL DIVISIONS

JULY 1950

Costs (June)
The net cost of operating the Medical Divisions (before assessments to other divisions and Workmen's Compensation costs) was $107,037., an increase of $6,568. over May, but $8,495. below the budget figure.

Kadlec Hospital operated at a loss of $28,424., as compared with $16,489. for May, an increase of $11,935. Revenue was reduced by $7,672. due to (1) decrease in hospital census; (2) June out-patient laboratory and x-ray services were not billed to the doctors until July. Salaries increased due to temporary transfer of personnel from North Richland to Kadlec.

The clinic cost dropped by $2,259. to $1,071. due to a decrease in activities such as collection of accounts receivable and other related work.

MEDICAL DIVISIONS

JULY 1950

Industrial Medical Division

General

The number of examinations increased from 2037 in June to 2146 in July. First aid treatments decreased from 6912 to 6859. General Electric Co. employees sustained four sub-major injuries but no major injuries. Sub-contractor employees sustained nine major injuries and six sub-majors.

The industrial physicians' scientific meeting dealt with the medical aspects of lighting and how it affects the work of employees.

Knolls #1 and Knolls #2, as well as parts of the Schenectady plant, were visited during the month by one industrial physician. Discussions with Dr. Vosburg and Dr. Toll of Knolls #2 regarding health hazards were held.

Two Washington State Dept. of Labor hearings were attended by industrial physicians during the month, which involved cases occuring on construction. Eleven hearings are scheduled for next month.

The Health Activities Committee met on July 20th, and the health topic on "Teeth" was presented. Material on this subject was prepared for distribution to all employees. The mosquito control program was discussed for general information, and this information will be passed on by the committee to supervisors.

The average absence due to sickness during the month for each male employee was reported to be 0.19 day or 190 days per 1,000 employees. For female employees it was 0.38 day or 380 days per 1,000 employees. The average for both male and female employees was 0.24 or 240 per 1,000.

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

Physical Examinations	June 1950	July 1950	Year to date
Operations			
Pre-employment	138	150	888
Rehire	59	38	377
Annual	374	413	2843
Interval	441	346	3194
A. E. C.	12	7	75
Recheck	122	120	902
Termination	94	86	475
Sub-total	1240	1160	8754
Sub-contractors			
Pre-employment	149	681	2994
Rehire	357	0	1821
Recheck	86	0	621
Termination	205	305	1116
Transfer	0	0	0
Sub-total	797	986	6552
Total Physical Examinations	2037	2146	15306

MEDICAL DIVISIONS

JULY 1950

Laboratory Examinations	June 1950	July 1950	Year to date
Clinical Laboratory			
Government	30	417	835
Pre-employment, termination, transfer	4610	4569	37049
Annual	1985	2157	14811
Rechecks (Area)	2223	1778	16666
First Aid	38	1	113
Clinic	2800	2007	19362
Hospital	2680	2692	20410
Public Health	79	58	359
Total	14445	13679	109605
X-Ray			
Government	6	74	141
Pre-employment, termination, transfer	747	739	6203
Annual	385	419	2922
First Aid	140	161	829
Clinic	182	178	1460
Hospital	149	146	1250
Public Health	5	7	44
Total	1614	1724	12849
Electrocardiographs			
Industrial	5	18	214
Clinic	0	3	30
Hospital	18	17	158
Total	23	38	402
Allergy			
Skin Tests	12	10	176
First Aid Treatments			
Operations			
New Occupational Cases	354	364	2485
Occupational Case Retreatments	1103	1028	8525
Non-occupational Treatments	2778	2628	22324
Sub-total	4235	4020	33334
Construction			
New Occupational Cases	578	638	2351
Occupational Case Retreatments	1721	1810	6782
Non-occupational Treatments	378	391	1528
Sub-total	2677	2839	10661
Total First Aid Treatments	6912	6859	43995
Major Injuries			
General Electric	0	0	2
Sub-contractors	9	9	35
Total	9	9	37
Sub-major Injuries			
General Electric	1	4	17
Sub-contractors	5	6	42
Total	6	10	59

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MEDICAL DIVISIONS

JULY 1950

Absenteeism	Male	Female	Total	Percent Absenteeism	Comparison with Previous Month
No. days absence due to all causes	1325	784	2109	1.76%	.20% -
No. days absence due to sickness only	876	559	1435	1.20%	.14% -

Avg. days absent due to sickness by each male employee .19 day or 190 days/1000 employees
Avg. days absent due to sickness by each female employee .38 day or 380 days/1000 employees
Avg. days absent due to sickness by all employees .24 day or 240 days/1000 employees

Absenteeism due to all causes - by Divisions:

Security & Services	1.38%
Community	1.40%
Design & Construction	1.69%
Manufacturing	1.69%
Employee & Community Relations	1.97%
Health Instrument	2.13%
Technical	2.19%
Purchasing & Stores	2.25%
Medical	2.29%
General Accounting	2.87%

Absenteeism investigation:	June 1950	July 1950	Year to date
Total No. calls requested.....	7	9	118
Total No. calls made.....	7	9	118
No. absent due to illness in family...	0	0	2
No. not at home when call was made....	2	3	14

Community Medical Division

General

Medical Divisions' roll remained the same as for the month of June - 288. The average daily adult hospital census decreased from 65.7 to 60.5, as compared to 51.9 a year ago, and represents a continuation of the normal seasonal decline. The average daily infant census decreased from 11.4 to 10.3, as compared to 14.0 a year ago.

Nursing hours per patient day:

Medical, Surgical, Pediatrics	4.12 hours
Obstetrical	5.23 hours

Ratio of hospital employees to patients (excluding newborn) for the month of June was 2.19. When newborn infants are included, the ratio is 1.86. This is a small increase over the respective 1.84 and 1.63 ratios for May, due to decreased patient census and return of three employees from North Richland Medical Center to Kadlec Hospital.

MEDICAL DIVISIONS

JULY 1950

General (continued)
The net expense of the Richland community medical program for June, 1950 was $29,495. as compared to $19,819. for May. Breakdown is as follows:

Kadlec Hospital net expense $ 28,424.

This is an increase of $11,935. as compared to May. Primary factors in this increase were reduced revenue of $7,672. resulting from lowered patient census, and June out-patient laboratory and x-ray services were not billed to doctors until July; and increased expenses resulting from approximately $2,000. in salaries when two technicians and one clerk were transferred from North Richland to Kadlec Hospital. Also, services by Kadlec Hospital to Industrial Medical Division were reduced by $1,652. Payments for purchase of clinical laboratory supplies were greater than the previous month by about $800.

Clinic net expense $ 1,071.

This is a decrease of $2,259. as compared to May, due primarily to a decrease in such activities as collection of accounts receivable and related work.

A Polio Institute is being held at Kadlec Hospital, the dates being from July 24th to August 9th. It is sponsored by the Washington State Nurses' Association, District 24, with the cooperation of the Benton County Chapter for Infantile Paralysis. All nurses in the Tri-city area have been invited to attend, whether or not they are actively engaged in nursing at the present time, to familiarize themselves with the latest methods of caring for polio patients. Three nurses from Medical Divisions, who previously attended a three-day polio institute in Walla Walla, are conducting this program with Mr. Felix Montes, Executive Secretary of the National Foundation for Infantile Paralysis, and Miss C. Bowen, State of Washington consultant in physical therapy, assisting as consultants.

By-laws, rules and regulations for the government of the Medical Staff of Kadlec Hospital have been drawn up and approved by the Medical Staff. They are currently being signed and will be forwarded to G. E. and A. E. C. management for approval in the near future.

Contract for the construction of a new wing to the existing Medical-Dental Building has been awarded to Louis Hopkins Construction Co. of Yakima, Washington, as low bidder.

Kadlec Hospital	June 1950	July 1950	Year to date
Census			
Admissions: Adults.....	391	364	2949
Patient Days: Adults.....	1972	1877	15165
Infants.....	343	320	2324
Total.....	2315	2197	17489
Average Stay: Adults.....	5.0	4.3	4.9
Infants.....	5.1	5.3	5.1
Average Daily Census: Adults.....	65.7	60.5	71.4
Infants.....	11.4	10.3	10.9
Total.....	77.1	70.8	82.3
Discharged against advice.....	1	1	11

MEDICAL DIVISIONS

JULY 1950

Census (continued)	June 1950	July 1950	Year to date
One-day cases	65	46	467
Occupancy Percentage: Adults	73.7%	67.9%	80.3%
Infants	142.5%	129.0%	132.9%
Admission Source: Richland	81.0%	74.1%	81.9%
North Richland	7.7%	9.3%	7.2%
Other	11.3%	16.6%	10.9%
Admissions by employment:			
General Electric	75.2%	71.4%	
Government	3.3%	2.4%	
Facility	4.6%	4.4%	
Sub-contractor	11.8%	13.2%	
Schools	0.8%	0.3%	
Military	1.0%	1.7%	
Other	3.3%	6.6%	
Surgery			
Majors	76	53	456
Minors	68	79	501
E. E. N. T.	56	3	352
Transfusions	49	44	358
Dental	5	0	14
Vital Statistics			
Deaths	3	0	19
Live Births	67	61	443
Still Births	0	0	5
Physiotherapy Treatments			
Clinic	60	30	551
Hospital	73	33	418
Industrial: Plant	154	195	1210
Personal	13	10	129
Total	300	268	2308
Pharmacy			
No. of prescriptions filled	2170	2181	18260
Patient Meals			
Regulars	3096	3197	21715
Specials	880	926	6789
Lights	129	139	976
Softs	1090	1203	11064
Tonsils & Adenoids	145	0	806
Liquids	182	190	1387
Surgical Liquids	77	60	489
Total	5599	5715	43226
Cafeteria Meals			
Noon	1381	1256	10224
Night	197	183	1746
Total	1578	1439	11970

7

MEDICAL DIVISIONS

JULY 1950

Public Health Division

General

The communicable disease level remained low with no serious outbreak of disease threatening.

Dr. C. Farner and Mrs. M. Seamans of the State of Washington Department of Rehabilitation, visited to explain the state program for handicapped persons.

Material is being prepared for the mental hygiene series "Hi - Neighbor" to be broadcast this fall over a local radio station.

Conferences were held with the Public Health & Safety Committee of the Community Council regarding mosquito control and refuse disposal.

Education	June 1950	July 1950	Year to date
Pamphlets distributed	11949	11199	35396
News releases	3	5	38
Classes	6	0	31
Attendance	705	0	995
Staff Meetings	5	2	31
Lectures & Talks	7	3	52
Attendance	217	69	1943
Conferences (among section members)	37	41	326
Attendance	131	97	774
Films shown	6	0	15
Attendance	213	0	543
Immunizations			
Diphtheria	313	19	1871
Influenza	0	0	1
Rocky Mt. Spotted Fever	0	0	13
Smallpox	292	5	1453
Tetanus	13	24	97
Typhoid	1	8	15
Whooping Cough	3	14	17
Tuberculin Test	0	0	16
Total	622	70	3483
Social Service			
Cases carried over	87	81	627
Cases admitted	12	12	113
Total	99	93	740
Cases closed	18	10	118
Remaining case load	81	83	622
Sources of referral:			
Public Health	4	2	19
Doctors	2	0	43
Interested Person	1	1	12
School	0	0	6
Personnel Office	0	1	1
Personal Application	3	4	16
Other Agency	0	4	8
Miscellaneous	2	0	8
Total	12	12	113

MEDICAL DIVISIONS

JULY 1950

Sanitation	June 1950	July 1950	Year to date
Inspections made	150	116	1126
Bacteriological Laboratory			
Treated Water Samples	197	210	1319
Milk Samples (inc. cream & ice cream).	13	15	435
Other bacteriological tests	164	227	1599
Total	374	452	3353
Communicable Diseases			
Amoebic Dysentery	0	0	1
Chickenpox	10	0	145
Erysipelas	0	0	1
German Measles	20	12	152
Gonorrhea	0	1	2
Impetigo	0	0	1
Influenza	0	0	6
Measles	5	2	12
Meningitis	0	0	1
Mumps	0	4	7
Pinkeye	1	0	13
Ringworm	3	2	9
Roseola	2	0	3
Scabies	0	0	8
Scarlet Fever	2	0	49
Syphilis	5	1	20
Tuberculosis	0	1	4
Whooping Cough	5	3	13
Pharyngeal Infection	2	3	6
Total	55	29	453
Total No. Nursing Field Visits	847	623	6988

MEDICAL DIVISIONS

PERSONNEL SUMMARY

July 31, 1950

	1100 Area				3000 Area		
	Division Administration	Industrial	Hospital	Public Health	Industrial	Public Health	Sub-total
Physician	2	4.6	1	1	2		10.6
Nurse *	2	9	52	10	1	1	75.
Anesthetist			3				3.
Nurse Aide		1	25	1			27.
Orderly & Amb. Dr.			6				6.
Tech. - Clin. Lab.			7.4		2		9.4
Tech. - X-Ray			4		1		5.
Tech. - Bact. Lab.			1				1.
Tech. - Phys. Ther.			1				1.
Secretary	2						2.
Cler. Work. Leader	1		1				2.
Steno. & Typist	2	1	2	2	1		8.
Off. Mach. Oper.	1				1		2.
Telephone Oper.	4						4.
General Clerk **	12	11	9	2	9		42.
Pharmacist			3				3.
Dietitian			2				2.
Cook			5				5.
Kitchen Worker			10				10.
Soc. Serv. Couns.				2			2.
Sanitarian				2			2.
Health Educator				1			1.
Janitor		4.6	8.8	.6	.7	.3	15.
Bacteriologist			1				1.
Records Supv.	2						2.
Accounting Supv.	3						3.
Admin. & Asst.	2						2.
Others			7				7.
Total	33	32.2	149.2	21.6	16.7	1.3	254

* Five nurses working part time in hospital.
** One clerk working in clinic files.

Personnel in outlying areas shown on following page.

MEDICAL DIVISIONS

PERSONNEL SUMMARY

July 31, 1950

	Sub-total	Outlying Areas										TOTAL
		100-DR	100-B	100-D	100-F	100-H	200-E	200-W	300	MJ-1	White Bluffs	
Physician	10.6		.2	.2	.3	.1	.1	.2	.3			12
Nurse	75	2	1	4	4	1	4	5	2	1	1	100
Anesthetist	3											3
Nurse Aide	27											27
Orderly & Amb. Dr.	6											6
Tech. - Clin. Lab.	9.4		.4	.4	.4	.4	.4	.8	.8			13
Tech. - X-Ray	5											5
Tech. - Bact. Lab.	1											1
Tech. - Phys. Ther.	1											1
Secretary	2											2
Cler. Work. Leader	2											2
Steno. & Typist	8											8
Office Mach. Opr.	2											2
Telephone Opr.	4											4
General Clerk	42		.5	.5	.5	.5	.5	.5	1			47
Pharmacist	3											3
Dietitian	2											2
Cook	5											5
Kitchen Worker	10											10
Soc. Serv. Couns.	2											2
Sanitarian	2											2
Health Educator	1											1
Janitor	15											15
Bacteriologist	1											1
Records Supv.	2											2
Accounting Supv.	3											3
Admin. & Asst.	2											2
Others	7											7
Total	254	2	2.1	5.1	5.2	2	5	6.5	4.1	1	1	288

Number of employees on payroll:

Beginning of month	288
End of month	288
Net increase or decrease	0

HEALTH INSTRUMENT DIVISIONS

JULY, 1950

Summary

The force increased by eight. No formal Special Hazard Incident was reported.

Surveys by the Operational Division showed radiation control to be normal. High dosage rates were noted during manipulation of a ruptured slug and during miscellaneous pile area activities. Particle contamination in the 200 Area Process Control Laboratories continued to be undesirably high.

Measurements by the Biology and Development Division control groups on the deposition of activity in the environs showed no significant change from levels previously reported.

Development work on tritium hazard evaluation and detection occupied a major portion of the available research man hours in several of the Biology and Biophysics groups during the month.

[redacted]

HEALTH INSTRUMENT DIVISIONS

JULY, 1950

Organization

The composition and distribution of the force as of 7/31/50 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	1	1	8	2	3	10	12	5	0	42
Engineers*	4	4	24	6	9	13	11	3	0	74
Clerical	0	0	3	1	1	2	3	4	0	14
Others	14	15	51	12	28	67	61	13	8	269
Total	19	20	86	21	41	92	87	25	8	399

* includes chemists, biologists, etc.

Number of Employees on Payroll	July 1950
Beginning of month	391
End of month	399
Net increase	8

Additions to the roll included an engineer, a chemist, 8 rotational trainees, a technical graduate, two inspectors, 3 laboratory assistants, and 3 personnel meters clerks.

Removed from the roll were a technical graduate, 3 rotational trainees, an inspector, 4 laboratory assistants, and 2 steno-typists.

General

No formal Special Hazard Incident was reported. In the Class I incident reported last month, the active material continued to be eliminated at the anticipated rate.

The following trip was reported:

H.A. Kornberg - July 16-25 - to KAPL and Argonne National Laboratory.

Health Instrument Divisions

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

Inventor	Title
None	None

The Operational Division section of the report has been radically shortened, and further condensations are planned. Readers who require details formerly presented will find them in appropriate reports of the Operational Division.

[redacted]

Health Instrument Divisions

DECLASSIFIED

OPERATIONAL DIVISION

100 Areas

General Statistics

	June					July					1950
	B	D	F	H	Total	B	D	F	H	Total	To Date
Special Work Permits	703	812	597	636	2748	424	903	420	593	2340	18,167
Routine & Special Surveys	552	563*	406	411	1932*	376	633	405	486	1900	12,426*
Retention Basin	83	87	94	168	432	79	73	96	182	430	2,999
Air Monitoring Samples	107	208	85	153	553	66	118	94	194	472	3,478

* An error in tabulation was made for the June report and these values indicate the corrected totals.

Retention Basin Effluent

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

	100-B	100-D	100-F	100-H
Power level (MW)	305	305	305	400
Average beta dosage-rate (mrep/hr)	1.0	1.1	1.3	1.6
Average gamma dosage-rate (mr/hr)	2.6	2.2	3.2	3.0
Average total dosage-rate (mrep/hr)	3.6	3.3	4.5	4.6
Average integrated dose in 24 hrs.(mrep)	85	79	108	110
Maximum integrated dose in 24 hrs.(mrep)	94	94	125	156
Maximum integrated dose in 24 hrs.(mrep) 1950	120	139	154	194

100-B Area

Pile and Associated Buildings

Radiation control was normal. A badly contaminated transfer cask was detected and sent to the Separations Area for decontamination.

P-10 Operations - 108 Building

General Statistics

	July
Special Work Permits	40
Routine & Special Surveys	19
Air Monitoring Samples	93

[redacted]

Health Instrument Divisions

Hazard control improved. There was no air sample above 10^{-7} μc/cc, and no new high urine sample.

Metallurgical Laboratory - 111-B Building

General Statistics

	June	July
Special Work Permits	116	34
Routine & Special Surveys	61	44
Air Monitoring Samples	0	2

High dose rates up to 100 r/hr occurred during manipulation of a ruptured slug. This intrinsically hazardous operation was well conducted, though some severe skin contamination occurred.

100-D Area

105-D Pile and Associated Buildings

Extensive decontamination followed the episode of the ruptured slug. Cleaning of the retention basin, which had sludge samples reading as high as 600 mrep/hr, started.

Unusual was a dose rate of 10 mr/hr in the control room; a horizontal rod was completely out of the pile at this time. Beta active vapor around the 107-D-DR effluent water valve box made this region a new danger zone.

Airborne contamination up to 1.2×10^{-7} μc/cc in the machinery room was corrected by ventilation changes.

105-DR Building

Experiments by the Technical Divisions were completed with appropriate hazard control.

100-F Area

Pile and Associated Buildings

High activity at the rear nozzle of a process tube and in the corresponding header at first suggested a ruptured slug, but was later attributed to a brown precipitate in the tube. Some other tubes were affected. Widespread contamination developed when the tubes were washed out. Positive air samples in the fan rooms were due to leaks in the duct, which were readily repaired.

A 40% decrease in the gamma ray and neutron dose rates was noted in the beam at the top far edge of the pile.

[redacted]

Health Instrument Divisions

P-11 Operations

General Statistics

	June	July	1950 to Date
Special Work Permits	0	0	5
Routine & Special Surveys	37	41	119
Air Monitoring Samples	50	37	125

Surface contamination totaling a few micrograms of plutonium, and air samples normally low but ranging as high as 4.2×10^{-9} µg Pu/cc, represented normal control standards in this operation.

H.I. Biology Laboratories

There was no deviation from sound hazard control.

100-H Area

Pile and Associated Buildings

There were high dose rates associated with discharge operations, recharge of irradiated P-10A pieces, and work on the experimental level. No undue exposure resulted. Members of 4 different divisions contaminated themselves (without actual harm) by deviations from approved control. Two of the incidents were informally investigated. Dose rates up to 30 mr/hr at 2 inches arose from a contaminated drain line passing through the occupied reactor development room.

There were 14 air samples reading above 10^{-8} µc/cc; several gas leaks were located, and correction is in process.

[redacted]

Health Instrument Divisions

200 Areas T and B Plants

General Statistics

	June			July			1950
	T	B	Total	T	B	Total	To Date
Special Work Permits	304	366	670	271	259	530	5,108
Routine & Special Surveys	482	566	1,048	471	469	940	7,300
Air Monitoring Samples	575	567	1,142	562	686	1,248	9,642
Thyroid Checks	72	63	135	26	63	89	1,093

Canyon Buildings

In the T Plant, many high level process samples required special monitoring assistance. Deck contamination was high. Of 331 air samples 46 showed plutonium contamination above 10^{-12} µg/cc, with a maximum of 1.1×10^{-9} µg/cc; 146 showed more than 10^{-10} µg fp/cc, with a maximum of 6.7×10^{-8} µg/cc.

[redacted]

Health Instrument Divisions

informally investigated.

Twenty-five of 61 air samples showed positive results--maximum 1.2×10^{-11} µg Pu/cc.

General

All thyroid checks were below the warning level.

The Isolation Building

General Statistics

	June	July	1950 To Date
Special Work Permits	25	24	186
Routine & Special Surveys	319	290	1,971
Air Monitoring Samples	407	398	2,546

Air Sample Results

Only 24 of 399 samples showed concentrations above 10^{-12} µg Pu/cc; the highest value was 3×10^{-10} µg/cc.

Operating Cells

Thirty-three unregulated items, one person and 6 floor areas were found contaminated. Abnormal contamination of sample cans was traced to a glycerine bath containing 9 µg Pu/liter. Gamma radiation levels were normal.

Purification Building

General Statistics

	June	July	1950 To Date
Special Work Permits	226	171	1,311
Routine & Special Surveys	747	714	3,936
Air Monitoring Samples	1,518	1,273	9,232

Air Sample Results

Of 1,273 samples, 132 showed concentrations above 10^{-12} µg Pu/cc. High values were 1.3×10^{-9}, 8.3×10^{-10}, and 1.1×10^{-10} µg/cc in the 234 operation, 235 operation and control laboratory respectively.

234 Building - Operating Section

The contamination status of room 228 was unchanged, with spots up to 40,000 dis/min outside the airlocks. Air contamination averaged 5×10^{-11} µg Pu/cc.

[redacted]

Health Instrument Divisions

235 Building - Operating Section

Late detection of a ruptured glove resulted in unnecessary widespread contamination. Attention to base plates and flanges of hoods in room 230 corrected a poor air condition.

General Building

The average air contamination in the 26-inch vacuum discharge was normal. Contamination in the exhaust air of hoods 8-29 increased by a factor of 50 in 3 days. The operating cause was detected and corrected.

200 Area Control Laboratories

	T	B	231	234-5
Items contaminated - not regulated	118	184	210	376
Skin contamination - alpha	3	3	1	6
Skin contamination - beta	1	4	0	0
Contaminated floor locations	38	73	35	93

Three sample spills in 222T and one in 222B gave dose rates of about 18 rop per hour including 500 mr/hr at 2 inches. Clean-up was well managed.

Particle contamination continued to be undesirably high. Concentrations in particles per 1,000 cubic meters were:

	Location	June	July
222B	Outside	4.6	5.7
	Hallway	14.9	23.6
	Room 7	224	210
222T	Outside	8.1	8.5
	Hallway	15.3	20.1
	Room 7	286	176

Health Instrument Divisions

The 300 Area

General Statistics

	June	July	1950 to Date
Special Work Permits	148	78	907
Routine & Special Surveys	203	162	1,243
Air Samples	156	122	1,047

Metal Fabrication Plant

Seventeen of 44 air samples taken exceeded the maximum permissible limit of 5×10^{-5} µg U/cc. The maximum value was 5.9×10^{-4} µg/cc.

305 Pile Building

Miscellaneous tests with P-10 pieces and J slugs were successfully conducted with dose rates on the order of 2 rep/hr.

Technical Building

Seven slugs containing radium were leak tested under appropriate exposure time limits. A section of pile process tubing, a lead pig, and other contaminated equipment, with surface exposure rates between 3 and 15 rep/hr were all adequately handled. Of 45 air samples, 8 read more than 10^{-11} µg Pu/cc, but the high value was less than 2×10^{-11} µg/cc.

Cold Semi-Works Building

All of 26 air samples showed concentrations below the relevant permissible limits. Waste sludge from the Separations Area was introduced safely into a shielded hood, despite potential exposure rates up to 22 rep/hr, with gamma exposure rates of 100 mr/hr at 8 inches.

Hand Score Summary

There were 40,251 alpha and 43,632 beta hand checks recorded. About 0.09% of the alpha and 0.1% of the beta scores were high. No attempt at reduction was recorded for one high beta count. Where decontamination was attempted it was successful in all cases but one which occurred at the 100-F Area.

[redacted]

[redacted]

Health Instrument Divisions

PERSONNEL METERS

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W	300	Total	1950 To Date
Pencils Read	13,568	12,158	13,354	10,176	16,701	25,596	31,820	123,383	888,354
Single Readings (100 to 280 mr)	12	15	10	7	30	28	26	128	1,353
Paired Readings (100 to 280 mr)	0	0	1	0	0	0	0	1	16
Single Readings (Over 280 mr)	35	43	33	27	36	66	71	311	1,590
Paired Readings (Over 280 mr)	0	0	0	0	0	0	1	1	15
Lost Readings	1	0	0	0	0	0	0	1	30

The two significant pencil readings were not confirmed by badge results. Investigation of the lost reading indicated no possibility of an overexposure.

Badges

	100-B	100-D	P-11 101-P 100-F	100-H	200-E	R.R.T. 200-N	200-W	300	Total	1950 To Date
Badges Processed	2115	2191	2534	2791	2021	471	3921	5779	21,823	149,463
Number Readings (100 to 300 mrep)	12	18	15	22	8	0	33	99	207	1,739
Number Readings (Over 300 mrep)	0	0	0	2	0	0	6	1	9	113
Lost Readings	1	2	1	0	1	0	0	2	7	56

Lost Readings were accounted for as follows:

Badges lost in Area	2
Contaminated badge (destroyed)	1
Recovered lost badge	1
Badge dropped in water	1
Light leak	1
Lost in processing	1
Total	7

Investigation of the lost readings indicated no possibility of an overexposure. Eight of the readings above 300 mrep were for a two-week period and do not constitute overexposure. Investigation of the other reading above 300 mrep indicated no possibility of an overexposure.

[redacted]

Health Instrument Division

Badge Resume, Construction Areas

	3745	100-DR	Total	1950 To Date
Badges Processed	56	2,028	2,084	16,465
Number Readings (100 to 300 mrep)	0	0	0	47
Number Readings (Over 300 mrep)	0	0	0	6
Lost Readings	0	0	0	9

Total badges processed 1950,	Operations	149,463
	Construction	16,465
	Total	165,928

In addition to the badge program, a total of 1,540 items of non-routine nature was processed during the month.

Slow Neutron Pencil Summary

	100-B	100-D	100-F	100-H	Total	1950 To Date
Number of pairs issued	101* 56	32	39	840	967	5,742
Number of significant readings	2	10	3	42	57	363
Number of significant readings (Above 50 mrem)	0	0	1	0	1	5

*Not included in June report.

Investigation of the reading above 50 mrem indicated that faulty pencils were used and that the true exposure was less than 10 mrem.

Neutron Film

Badges Processed	100-B	100-D	100-DR	100-F	100-H	200-W	Total	1950 To Date
Personnel	39	29		72	247	10	397	1,292
Special	4	4		10	2	14	34	120

Of the badges showing tracks, the maximum estimated exposure in any case was 150 mrem for a two-week period.

[redacted]

Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

Site Survey

Samples of drinking water, sanitary water, and test wells indicated levels of activity similar to those obtained in previous months. Samples of water at the exit of the Pasco Filter Plant indicated activity densities of $<5 \times 10^{-8}$ μc/cc while samples of the sand from the filter beds indicated up to 10^{-5} μc/gm. An increase by a factor of two or three in the activity density of the Columbia River immediately below the 100-H Area was noted this month. A survey of a high water channel below 100-H, prompted by the Biology Division's high values on fish samples, gave values up to 10^{-5} μc/cc which are higher by a factor of three to five than those obtained from the main channel. Decay studies indicated that most of the activity was Na^{24}.

An increase in the filterable beta activity in air occurred in two downwind locations from the separations area. The maximum increase was at the 200 West Gatehouse where the average activity density was 2×10^{-12} μc/cc as compared to a value of 4.2×10^{-13} μc/cc during June. The maximum one week value at this location was 6.4×10^{-12} μc/cc.

The activity density of the I^{131} on vegetation increased in the immediate vicinity of the separations areas to a maximum of 3.4×10^{-4} μc/gm at the 200 West Gate.

The activity density of the beta emitters in the 100 Areas' effluent basins ranged from 3.1×10^{-4} to 5.8×10^{-4} μc/cc.

Geology

Wells 361-B-1 and 361-B-9 were surged, cleaned, and bailed without affecting sample results. Beta and alpha activity in the latter decreased rapidly in the last several months, suggesting motion of the ground water.

Alpha activity was detected in all 300 Area Wells, except 303-3, which is between the waste pond and the river. The maximum activity (415 dis/min/liter) was found in Well 303-5, 3300 feet west of the pond.

Gamma radiation was measured in wells around the 5-6 crib. Maximum activity occurred at depths of 3 to 11 feet below the crib. Detectable activity persisted to 60 to 100 feet below the crib. Well F-50 near the Yakima Horn road was prepared for routine water table measurements.

[redacted]

Health Instrument Divisions

Meteorology

Routine

Forecasts	Number Made	Percent Reliability
Production	93	87.8
24-hour	62	87.8
Special	17	76.5

The weather for July, 1950 was near normal for the month.

Temperatures during July averaged 75.4, or 0.9 degree below normal. A high of 102 was recorded on both the 24th and 25th. However, a series of cold fronts passed the area following this heat wave, and the monthly low of 49 was recorded on the 30th.

Precipitation during the month amounted to only 0.07 inch, all of which occurred in conjunction with the thunderstorm on the night of the 18th and 19th.

Experimental

It was determined that the conventional oil fog method was still the method of choice for aerosol generation for meteorological purposes. Plans to use the SO_2 emission of the power plant stacks for eddy diffusion experiments were abandoned, due to the variability of the source and the inadequacy of rapid samplers.

The successful use of a silver iodide generator near Prosser to produce artificial precipitation was reported by a commercial group. General weather conditions were studied for the period involved. Widespread rain over a diameter of at least 100 miles and equally upwind as downwind from the generator occurred. Although it is suspected that nature cooperated in most of the excessive precipitation of June, it cannot be categorically denied that the silver iodide nuclei could be carried by upper winds to the affected region. Serious implications in extra deposition of I^{131} in the environment could arise if the emission is pushed close to the naturally tolerable limit.

Bioassay

Five hundred and twenty-nine urine samples were analyzed for plutonium. The samples averaged 0.06 d/m and the blank samples averaged 0.07 d/m. The average recovery for spiked samples was 90%. There were three samples above the resample limit of 0.33 d/m. Results of eight resamples from previous periods were all less than 0.33 d/m. There was no significant difference between samples taken from 234-5 Building employees and other

[redacted]

routine samples taken at the same time. An examination of the record of one employee in 234-5 indicated an average of 0.136 d/m for 10 samples. An effort is now being made to obtain a larger sample for more sensitive analysis.

Five hundred and twenty-eight samples were analyzed for fission products with three samples exceeding the arbitrary resample limit of 10 c/m on the mica window counters.

Ninety-eight urine samples were analyzed for uranium on the fluorophotometer. The maximum individual result was 26 µg/liter from an individual doing machining.

Six hundred twenty-seven measurements were made in analyzing 249 urine samples for P-10 oxide. Fifty-eight samples showed more than 1.6 µc/liter, including seven values from the employee with the high value from last month. One other man had 14 positive values resulting from an exposure of 22 µc/liter at the end of the previous month.

Methods Development

Studies of the LaF_3 precipitation method for determing the oxidation state of the plutonium in electrodeposition studies indicated that considerable error could result from reducing agents present in the reagents. The present procedure is usable if a small amount of dichromate ion is added to the HF.

A flow of ozone as a holding oxidant during the electrodeposition of plutonium gave no increase in yield. The presence of celluloid as a gasket in the electrodeposition was shown to decrease yields significantly. Preliminary tests of Teflon, polyethylene, lucite and fluorethane indicated little loss in yield.

The work on analysis of asbestos filter papers for plutonium indicated that the present analytical procedure gives close to 100% yields for small 1 inch squares of paper as judged by a measurement of the residue. The results of the analysis as compared to the direct count of the paper are erratic, ranging from 100-200%, indicating possible differences in absorption losses in the direct count.

The proportional counter system for P-10 was rebuilt with more efficient condensers, better filtering of the gas, and lead shielding around the counter tubes. The equipment operated satisfactorily with backgrounds of 50-70 c/m and a sensitivity of about 140 c/m per µc/liter of original sample.

Health Instrument Division

Control Laboratory

The low background alpha counters gave some questionable results for reasons unknown. Tests on coating the window of the mica window counters gave favorable results to date. Work started on improved routine analysis of 107 retention basin samples, with special reference to the trace amounts of P^{32}, which contribute disproportionately to the biological hazard.

A summation of the work performed is given below:

Laboratory	Number of Analyses
Vegetation	1,042
Water	1,945
Solids	457
Fluorophotometer	579
P-10 (other than urine)	44
Miscellaneous	142
TOTAL	4,209

Counting Room	Number of Analyses
Beta measurements	4,268
Alpha measurements	3,978
Control points	2,433
Decay curves (points)	1,293
Absorption curves (points)	213
TOTAL	12,185

Physics

Tritium measurement by immersion of X-ray film in liquid samples was affected by chemical fogging, which occurred even in the purest available water. Track counting of tritium beta radiation on immersed nuclear track emulsions was successful.

Direct ion chamber readings on tritium labeled water vapor were possible at 60°C, and the system is being carried up to 100°C to increase the water vapor burden and still avoid saturation, which fouls the insulators. At present, this scheme does not compete in sensitivity with the more involved acetylene or methane methods.

Substantial progress was made in the analysis of 1,400 recoil proton tracks for neutron spectrum determination.

Industrial Hygiene

A filter efficiency test apparatus was designed. This equipment will permit efficiency tests to be run on nearly all types of filtering media in common

use on the project.

Instrument Development

A study of the apparent long decay times in the P-10 Project Kanne chamber installation revealed that low air flow through the chamber was the cause. With adequate air flow chamber contamination was negligible.

A cylindrical point counter with open screen window and methane as the counting gas was built for scanning-type monitoring for the P-10 Project. With adequate gas flow it operated in any position and should prove useful for monitoring small and irregular shapes.

A conductivity meter type instrument for hand contamination monitoring was studied. Promising results were obtained with an alpha source, but tritium detection was unsatisfactory so far.

Calibrations

	Number of Routine Calibrations		
RADIUM CALIBRATIONS	June	July	1950 to Date
Fixed Instruments			
Gamma	368	343	2,611
Portable Instruments			
Alpha	304	270	1,961
Beta	673	611	4,031
Gamma (Radium)	1,076	995	6,505
X-ray Scanning	1	--	13
Neutron	85	450	1,020
Total	2,139	2,326	13,530
Personnel Meters			
Beta	589	581	4,618
Gamma (Radium)	7,320	6,636	51,020
X-ray	7,888	6,835	43,957
Neutron	15	30	72
Total	15,812	14,082	99,667
GRAND TOTAL	18,319	16,751	115,808

[redacted]

Health Instrument Divisions

BIOLOGY DIVISION

General

Less than normal work from the division is reported, because time was spent in transfer to and settling down in the new laboratory. Also, the order of problem reporting has been adjusted to conform with that in the quarterly research and development series.

Analyses Group

1. Radioactivity in Carcasses

No progress.

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 animal tissue. Types of precipitating agents, and types of digesting agents, are being investigated.

Methods of preparing Aquatic Biology samples for beta activity determinations were also investigated. Comparisons between direct counting, dry ashing and counting, and wet ashing and counting, were made, and a procedure for routine analyses established, based on the results.

3. Radioelements in Organisms in Pile Effluent

No progress.

4. Physical Processes Affecting Methods for Isotope Use

A procedure was developed for the standardization of I^{131} solutions by gamma counting. Comparisons between the old method of diluting and standardization by beta counting and the gamma counting method are being made each week. Results indicate the gamma counting method to be as good as the old method with a saving of 8 man-hours for each standardization.

5. Waste Disposal Methods for Biological Specimens

No progress.

6. Physical Chemical Methods for Dosimetry due to Deposited Isotopes

No progress.

[redacted]

Health Instrument Divisions

Analytical Services

Analytical services to other groups consisted of calibrating shipments of I^{131}, preparation of spike solutions for feeding, the analyses of 380 sheep tissue and exudate and vegetation samples. Other work included analyses for I^{131} in human urine from the Swedish Hospital, for contaminants in a Sr solution from Oak Ridge, for Y^{90} in Russian thistle, for beta identification in fish samples, and for alpha activities in specimens from Arco and Hanford.

Aquatic Biology Group

1. Effect of Pile Effluent Water on Aquatic Life

Monitoring pile effluent with juvenile trout was initiated during July. Groups of the fish are being held in raw river water, 2% area effluent, 5% area effluent, and 5% area effluent cooled to river water temperature. No differences have yet been observed.

Equipment is being renovated in preparation for the resumption of monitoring using salmon in October.

2. Biological Chains

Activity densities of yearling trout being held in 5% pile effluent, and fed a diet containing algae from the 107 Basin, remained at approximately the same level as found during May (4×10^{-3} μc/g of scales). These fish, together with their control groups, were transferred into outside ponds during the first week of the month and all have shown substantial gains in weight. The size of trout held in control river water and being fed standard hatchery diet is now about the same as that of the fish held in the 5% effluent which previously had been growing faster in the warmer water. The food value of uncontaminated algae appears to be superior to that of contaminated algae, as measured by the growth rate of control fish. This requires more critical study.

3. Radiobiological-ecological Survey of the Columbia River

Abnormally late freshet conditions continued to preclude the collection of bottom organisms.

Routine collection of fish was continued, and demonstrated unexpectedly high levels of radioactivity in a small channel of the Columbia River immediately below the 100-H Area. Activity densities on the order of 0.1 μc/g were found in midge (chironomid) larvae, and small fish (dace) feeding upon these midge larvae showed activity densities as high as 0.075 μc/g. A separate report on the contamination of aquatic forms of this area has been issued as Document #HW-18438.

Activity densities of small fish collected at other locations ranged from about 10^{-5} μc/g above all pile areas to 1.4×10^{-3} μc/g at Hanford (where maximum values usually are found). Values decreased downstream to 2.5×10^{-4} μc/g at Richland, and 6×10^{-5} μc/g at Bonneville Dam. For large fish, a maximum activity of 3.3×10^{-3} μc/g was found in the scales of a sucker captured at Hanford.

Activity density of plankton at Hanford showed a slight increase from 1.3×10^{-3} μc/g for June to 2.0×10^{-3} μc/g for July. The number of planktonic organisms present in the river water at the 100-F Area decreased to about 4,000 organisms per liter, approximating the abundance found during May.

Biochemistry Group

1. Relative Biological Effects via Biochemical Systems

No progress.

2. Absorption of Pu from the G.I. Tract

No progress.

3. P-10 Hazards Biological Investigations

In collaboration with the Physiology Group, an experiment is now being planned to determine the absorption of P-10 and P-10 oxide through the skin of young swine. Special glassware and equipment is being fabricated, and the availability of experimental animals investigated.

4. Possible Therapeutic Agents for Radiation Damage

No progress.

5. Percutaneous Absorption of Radioelements

No progress. (See #3)

Miscellaneous

Operations in the Clinical Laboratory in the 1705 Building are proceeding routinely, and data which are collected there are being graphed and charted according to plan.

Botany Group

1. Separations Area Control Plot

No progress other than collection of samples from the R-3 Danger Zone.

Health Instrument Divisions

2. Agricultural Field Station

Samples of soil, vegetation, and irrigation water showed similar activities in both the experimental and control plots.

3. Translocation of Radioelements in Plants

Young Russian thistle and tomato plants were transplanted to sand cultures containing 0.1 μc Y^{90}/gm. Analysis of the alleged Y^{90} sample showed only 80% Y^{90} activity, with the balance alkaline and rare earth activities. It was elected to run a scouting experiment with this substandard material. On a dry weight basis, tomatoes apparently concentrated activity 3 to 6 times more than Russian thistle after a 3 to 7 day growing period, when maximum activity was observed.

An experiment on the uptake of Sr^{89} by Russian thistle, tomato, corn, oxalis, alfalfa, and bean plants, is nearing completion.

4. P-10 Botanical Investigation

Work not started.

5. Effects of Radiation on Plant Life

Work not started.

Physiology Group

1. Biological Effects of Active Particles

Work not started.

2. Bone Metabolism of Radioelements

Work not started.

3. Techniques in Autoradiography

Work not started.

4. Services

Tissue preparation on all sacrificed sheep was accomplished, and several photomicrographs were taken to show differences between normal lambs and those born to ewes receiving 1800 μc/day I^{131}. These latter animals show definitely disorganized thyroid tissue with extravasated blood, vacuolization of colloid material, a larger cell nucleus in the secretory epithelium with a reticulated appearance and much pale cytoplasm.

Health Instrument Divisions

Zoology Group

1. Biological Monitoring

Sixteen animal specimens from Arco, Idaho, were received and assayed for beta activity to establish background levels prior to the operation of that installation.

Three goats from the vicinity of 100-D Area were sampled. All organs and tissues were below the MPC, with the highest levels being found in the thyroid glands. Two kids exhibited levels of 10^{-3} and 2×10^{-3} μc/g in the thyroids, while the adult contained 4×10^{-4} μc/g.

A wood rat taken in the 271-T Building in 200 E yielded a thyroid activity of 0.2 μc/g. This exceeds the MPC of I^{131} by a factor of fifty. Bone beta activity was 2×10^{-3} μc/g.

Seven specimens taken in the vicinity of 100-F Area showed all tissues to be lower than the MPC. Highest level found was 7×10^{-4} μc/g in the thyroid of a wood rat taken at the Experimental Animal Farm.

Two Canada geese reared on the river showed activity below the MPC in all cases. Highest levels were in thyroid and bone, at 2×10^{-4} and 10^{-4} μc/g, respectively.

Seven specimens were taken from the vicinity of the 100-H Area near the region of extraordinary high concentration of effluent waste. All organs and tissues were below the MPC except bone in a cormorant, which exhibited an activity density of 10^{-3} μc/g. Highest thyroid activity was that of a night hawk, which had an activity of 2×10^{-3} μc/g.

2. Toxicology of I^{131} in Stock Animals

Lambing is complete and lambs in the main experiment are showing a normal growth with no noticeable differences in the various feeding level groups.

The second ewe in the group receiving 1800 μc I^{131}/day gave birth to twin male lambs on July 5. Neither was completely normal in appearance nor in reactions. The larger (4.0 kg) expired after 15 hours without standing or suckling. The smaller (3.4 kg) lived for three days, and during that interim it was able to suckle only with assistance. It was quite unresponsive to stimuli, and walked aimlessly about with an unsteady gait, suggesting characteristics not unlike those of acute cretinism. Upon examination, the lambs were found to have macroscopically atypical thyroid glands. The glands were unusually small and lacked the orderliness and clear lines of tissue demarcation found in normal tissues.

Necropsies were performed on 8 animals during the month.

The grounds of the farm have been successfully grassed for dust control, and are now being grazed by farm ewes not in the main experiment.

GENERAL ACCOUNTING DIVISION

July 1950

GENERAL

Considerable time was spent in connection with fiscal year end closing. Ledgers were held open late in July to record where possible all entries applicable to the Fiscal Year ended June 30, 1950, and in order to liquidate undistributed costs and Indirect Manufacturing Expense variances. Accounting statements normally issued around the 15th of each month were delayed ten to fifteen days. Post closing entries dated June 30, 1950 were prepared on July 25, 1950 which transferred all operating costs, costs-undistributed depreciation, and unusual costs resulting from cancelled projects to the Atomic Energy Commission. Financial statements were prepared on the basis of normal closing entries and footnotes were used to denote the accounts which were transferred.

Advances from AEC were reported at the end of June as being $6 500 000. By direct request from the AEC a July entry was made to reverse the Cash-in-Transit entry in the amount of $431 888 which could not be applied against Fiscal Year 1950 appropriations. The resulting balance of Advances from the AEC amounting to $6 068 112 was further reduced at the end of July to $5 500 000.

The Plant Accounting Section devoted considerable effort toward distribution of "Unclassified Property in Service" to appropriate Plant Accounts. $90 000 000 in project costs were so distributed leaving an unclassified balance of only $1 151 000. Two major projects: C-165-A Construction of "H" area in the amount of $68 560 000 and Project C-198-V Phase 1 234-5 Building Program in the amount of $19 000 000 were included in the amount distributed.

In connection with the General Salary Adjustment, effective July 1, 1950 for Monthly Paid employees and July 3, 1950 for Weekly Paid employees, approximately 900 man hours, including approximately 500 man hours of overtime, were expended in preparation of salary payments at the increased rates. Monthly Paid employees received the increased rates in salary checks for the month of July. Weekly Paid employees received the increased rates currently in salary checks covering the week ended July 16, which were paid on July 21, 1950. The retroactive payment, covering the week ended July 9, was included in salary checks delivered to Weekly Paid employees on July 28, 1950.

During the month of July, considerable time was spent on the preparation of the first draft of the Appendix C to the Prime Contract.

Authorizations for check-off of Union Dues in effect at July 31, 1950, cover 539 employee members of 14 Unions.

General Accounting Divisions

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

	June*	July
Disbursements		
Material and Freight - GE	$1 162 787	$1 433 544
Payrolls - GE (Net)	2 122 541	1 837 467
Payments to Subcontractors	2 492 229	2 444 095
Other	890 426	1 123 565
Total	$6 667 983	$6 838 671
Receipts		
Rents	110 489	110 131
Hospital	43 961	42 587
Telephone	13 731	14 602
Bus Fares	9 317	8 881
Other	57 597	120 021
Total	235 095	296 222
Net Disbursements	$6 432 888	$6 542 449

* Five week month for weekly payrolls.

General Accounting Division

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on Payroll at beginning of month	7 758	1 764	5 994
Additions and transfers in	157	27	130
Removals and transfers out	(109)	(6)	(103)
Transfers from Weekly to Monthly Payroll	-0-	19	(19)
Transfers from Monthly to Weekly Payroll	-0-	(3)	3
Employees on Payroll at end of month	7 806	1 801	6 005

Employees on Payroll at end of month	June	July*
Manufacturing	3 278	3 313
Design and Construction	609	618
Community	741	732
Others	3 130	3 143
Total	7 758	7 806

Overtime Payments		
Weekly Paid Employees	$39 564	$33 261
Monthly Paid Employees	10 709 (1)	10 054 (2)
Total	$50 273	$43 315

Number of Changes in Salary Rates and Job Classifications	592	890

Gross Amount of Payroll		
Manufacturing	$1 389 013	$1 177 394
Design and Construction	236 758	212 698
Community	266 388	230 801
Others	1 124 103	986 395
Total	$3 016 262 (3)	$2 607 288 (4)

Annual Going Rate of Payrolls		
Manufacturing	$14 760 352	$15 271 435
Design and Construction	2 579 568	2 728 106
Community	2 876 208	2 926 381
Others	12 239 572	12 688 017
Total	$32 455 700	$33 613 939

Average Salary Rate Per Hour (5)

	June			July *		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$2.009	$2.657	$2.123	$2.062	$2.735	$2.183
Design and Construction	1.537	2.713	1.979	1.575	2.812	2.055
Community	1.719	2.157	1.847	1.766	2.233	1.902
Others	1.629	2.486	1.825	1.668	2.563	1.874
Total	$1.801	$2.532	$1.965	$1.847	$2.614	$2.021

*Statistics for July include General Adjustment of 3% with a minimum of four (4) cents per hour, effective July 3, 1950 for weekly paid employees, and July 1, 1950 for monthly paid employees.

(1) Payments cover period from 16th of previous month to 15th of current month, inclusive, except that in the case of Design and Construction Division, payments cover period May 1, 1950 to May 31, 1950, inclusive.

(2) Payments cover period from 16th of previous month to 15th of current month, inclusive, except that in the case of Design and Construction Divisions, payments cover period June 1, 1950 to June 30, 1950, inclusive.

(3) Includes payments for the five (5) week period ended June 25 in the case of weekly paid employees.

(4) Includes payments for the four (4) week period ended July 23 in the case of weekly paid employees.

(5) Includes shift differential and isolation pay. Excludes overtime premiums, commissions, suggestion awards, etc.

General Accounting Division

Employee Benefit Plans

Pension Plan

	June	July
Number participating at beginning of month	6 552	6 549
New participants and transfers in	62	46
Removals and transfers out	(65)	(67)
Number participating at end of month	6 549	6 528
% of eligible employees participating	94.7%	94.6%

Employees Retired	July	Total to Date
Number	7	138 (1)
Aggregate Annual Pensions Including Supplemental Payments	$1 613	$33 360 (2)
Amounts contributed by employees retired	$1 431	$18 660

(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*

	June	July
Number participating at beginning of month	5 709	5 717
New participants and transfers in	51	66
Cancellations	(9)	(18)
Removals and transfers out	(34)	(55)
Number participating at end of month	5 717	5 710
% of eligible employees participating	77.7%	76.9%

*Statistics exclude 44 pensioners as of the end of June and July who were granted lump sum pension settlement and who are paying premiums at Hanford Works

Group Life Insurance Claims

	July	Total to Date
Number of claims	2	42
Amount of insurance	$10 900	$214 547

Group Disability Insurance (1)

Personal Coverage

	June	July
Number participating at beginning of month	5	3
New participants and transfers in	-0-	-0-
Cancellations	(2)	-0-
Removals and transfers out	-0-	-0-
Number participating at end of month	3	3

Dependent Coverage

Number participating at beginning of month	3	2
Additions and transfers in	-0-	-0-
Cancellations	(1)	-0-
Removals and transfers out	-0-	-0-
Number participating at end of month	2	2

General Accounting Division

Group Disability Insurance (1) (continued)

Claims (2)	June	July
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	4	-0-
Daily Hospital Expense Benefits	16	10
Special Hospital Services	17	9
Surgical Operations Benefits	14	9
Dependent Benefits Paid		
Daily Hospital Expense Benefits	-0-	-0-
Special Hospital Services	-0-	-0-
Amount of claims paid by insurance company:		
Employee Benefits	$1 835	$1 021
Dependent Benefits	-0-	-0-
Total	$1 835	$1 021

Premiums		
Personal - Employee Portion	$ 5	$ 5
- Company Portion	3	3
- Total	$ 8	$ 8
Dependent- Employee Portion	$ 2	$ 2
- Company Portion	-0-	-0-
- Total	$ 2	$ 2
Grand Total	$ 10	$ 10

(1) Group Disability Insurance Plan was discontinued November 30, 1949. June and July 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	June	July
Number participating at beginning of month	6 955	6 965
New participants and transfers in	103	113
Cancellations	(4)	(2)
Removals and transfers out	(89)	(71)
Number participating at end of month	6 965	7 005

Dependent Coverage		
Number participating at beginning of month	4 635	4 639
Additions and transfers in	45	70
Cancellations	(12)	(6)
Removals and transfers out	(29)	(38)
Number participating at end of month	4 639	4 665

General Accounting Division

Group Health Insurance (1) (continued)	June	July
Claims (2)		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	82	45
Daily Hospital Expense Benefits	129	109
Special Hospital Services	153	114
Surgical Operations Benefits	119	91
Dependent Benefits Paid		
Daily Hospital Expense Benefits	223	171
Special Hospital Services	257	194
Surgical Operations Benefits	157	149
Amount of claims paid by insurance company:		
Employee Benefits	$20 881	$15 197
Dependent Benefits	22 071	18 380
Total	$42 952	$33 577
Premiums		
Personal - Employee Portion	$14 977	$15 061
- Company Portion	7 217 (3)	7 257 (3)
- Total	$22 194	$22 318
Dependent- Employee Portion	$12 984	$13 059
- Company Portion	10 340 (3)	10 401 (3)
- Total	$23 324	$23 460
Grand Total	$45 518	$45 778

(1) Group Health Insurance Plan was made effective December 1, 1949
(2) Statistics cover only claims paid and not all claims incurred during the month
(3) Gross company cost before dividend

Vacation Plan

Number of employees granted permission to defer one week of their 1950 vacation to 1951

	July			Total to Date		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	5	11	16	131	44	175-a)
Design and Construction	2	9	11	12	16	28
Community	6	5	11	23	16	39
Technical	3	7	10	26	28	54-b)
Health Instrument	1	1	2	4	3	7-b)
Employee & Community Relations	0	0	0	3	4	7
Plant Security & Services	10	5	15	86	24	110-c)
Purchasing & Stores	2	0	2	14	5	19
Medical	0	0	0	7	1	8
General Accounting	0	1	1	5	1	6-b)
General Administrative	0	1	1	0	1	1
Total	29	40	69	311	143	454

(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)	July	Total to Date
Number issued	1	71

Employee Benefit Plans (continued)

U. S. Savings Bonds	Mfg.	D&C	Comm'y	Other	Total
Number participating at beginning of month	1 701	253	317	1 433	3 704
New authorizations	27	7	4	52	90
Voluntary cancellations	(29)	(3)	(9)	(34)	(75)
Removals and transfers out	(6)	(4)	(4)	(13)	(27)
Transfers in	5	2	3	1	11
Number participating at month end	1 698	255	311	1 439	3 703
% Participating	51.3%	41.3%	42.5%	45.8%	47.5%
Bonds issued					
Maturity Value	$102 575	$15 075	$17 225	$76 975	$211 850
Number	1 849	260	320	1 414	3 843
Refunds issued	23	1	7	27	58
Revisions in authorizations	24	8	5	29	66
Annual going rate of deductions					
G.E. Employees Savings & Stock Bonus Plan	$706 539	$101 123	$119 732	$567 652	$1 495 046
General Electric Savings Plan	$203 675	$ 31 487	$ 36 509	$141 039	$ 412 710
Total	$910 214	$132 610	$156 241	$708 691	$1 907 756

Suggestion Awards	July	Total to Date
Number of awards	34	681
Total amount of awards	$355	$11 235

Employees Sales Plan

	July		
	Major Appliances	Traffic Appliances	Total
Certificates Issued	120	435	555
Certificates Voided	6	6	12

Salary Checks Deposited

	June		July	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle First National Bank	805	814	831	823
North Richland Area Office - Seattle First National Bank	8	7	9	7
Richland Branch - National Bank of Commerce	149	98	161	113
Out of state banks (Schenectady Staff)	--	3	--	2
Total	962*	922	1 001**	945

* Week Ended 6-25-50
** Week Ended 7-23-50

Special Absence Allowance Requests	June	July
Number submitted to Pension Board	8	5

Absenteeism (Weekly Paid Employees)		
January 1 to July 23	1949	1950
	2.41%	2.33%

General Accounting Division

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING

Number of Employees	June	July
On Payroll at beginning of month	176	169
Removals and transfers out	(9)	(5)
Additions and transfers in	2	5
Number at end of month	169	169
Net increase (or decrease) during month	(7)	-0-
% of terminations and transfers out	5.1%	2.9%
% of absenteeism	1.92%	2.62%

Changes by division in number of Accounting Division employees during July were as follows:

General: No Change

Accounts Payable: Increase of one employee

One new hire

Cost: Increase of one employee

One transfer from Plant Security and Services Division

General Accounts: Increase of one employee

One transfer from Plant Security and Services Division

Plant Accounting: Decrease of two employees

One retirement
One termination

Weekly Payroll: Decrease of two employees

One new hire
One illness removal
One transfer to Purchasing and Stores Division
One termination

Monthly Payroll: No Change

Special Assignments: No Change

Budgets: No Change

Internal Audit: Increase of one employee

One new hire

Injuries	June	July
Major	-0-	-0-
Sub-major	-0-	-0-
Minor	1	-0-

8.

PERSONNEL AND ORGANIZATION - GENERAL ACCOUNTING (continued)

Number of Accounting Division employees as of July 31, 1950 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	3	3	6
Accounts Payable	13	2	15
Cost	12	1	13
General Accounts	14	2	16
Plant Accounting	21	3	24
Weekly Payroll	60	6	66
Monthly Payroll	15	2	17
Special Assignments	1	1	2
Budgets	3	1	4
Internal Audit	-0-	6	6
Total	142	27	169

Non-exempt employees may be summarized as follows:

Classification	Number as of	
	6-30-50	7-31-50
Accounting A	1	1
Accounting C	3	3
Accounting D	5	5
Business Graduate	9	9
Clerical Working Leader	5	5
Cost Clerk A	1	2
Cost Clerk B	2	1
Cost Clerk C	1	1
Cost Clerk D	2	2
Field Clerk C	1	1
General Clerk A	23	22
General Clerk B	36	36
General Clerk C	19	20
General Clerk D	8	7
General Clerk E	1	1
Office Machine Operator A	8	7
Office Machine Operator B	5	5
Secretary B	-0-	1
Steno-Typist A	3	2
Steno-Typist B	6	6
Steno-Typist C	2	2
Steno-Typist D	3	3
Total	144	142

Open employment requests as of July 31, 1950 were as follows:

Accounting C	1
Accounting D	1
Business Graduate	7
Steno-Typist C	1
Total	10

General Accounting Divisions

	June	July
Accounts Payable*		
Balance at Beginning of Month	$ 71 649	$ 75 637
June accrual reversed during July	2 240	2 240
Vouchers Entered	952 431	1 036 971
Cash Disbursements	950 684 Dr.	1 085 327 Dr.
Cash Receipts	1	1 672
Balance at end of month	$ 75 637	$ 53 713
Number of Vouchers Entered	1 999	1 609
Number of Checks Issued	1 288	1 112
Number of Freight Bills Paid	246	217
Amount of Freight Bills Paid	4 965	3 903
Number of Purchase Orders Received	1 111	1 074
Value of Purchase Orders Received	211 650	182 557

Cash Disbursements	June	July
Community	$ 57 608	$ 55 726
Design & Construction	2 778 646	3 133 785
General	3 225 941	3 097 820
Manufacturing	605 788	551 340
Total	$6 667 983	$6 838 671
Material and Freight	$1 162 787	$1 433 544
Lump Sum and Unit Price Subcontracts	331 294	92 703
CPFF Subcontracts		
Labor	1 730 145	1 651 673
Others	430 790	699 719
Payrolls (Net)	2 122 541	1 837 467
Payroll Taxes	290 623	303 119
U. S. Savings Bonds	152 716	175 026
General & Administrative Expenses	200 000	200 000
Miscellaneous	247 087	445 420
Total	$6 667 983	$6 838 671

Cash Receipts		
Community	$ 101 256	$ 139 357
Design & Construction	28 652	37 703
General	8 577 121	6 041 310
Manufacturing	12 981	9 740
Total	$8 720 010	$6 228 110

* General Divisions Only.

10.

General Accounting Divisions

	June	July
Detail of Cash Receipts		
Advances from AEC	$8 484 915	$5 931 888
Rents	110 489	110 131
Hospital	43 961	42 587
Telephone	13 731	14 602
Scrap Sales	10 862	54 986
Bus Fares	9 317	8 881
Miscellaneous Accounts Receivable	7 065	57 689
Refunds from Vendors	1 007	3 628
Employee Sales	794	449
Educational Program	5	-0-
All Other	37 864	3 269
	$8 720 010	$6 228 110
Number of Checks Written		
Community	173	189
Design & Construction	366	381
General	1 288	1 112
Manufacturing	620	622
Total	2 447	2 304
Bank Balances at End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$3 061 966	$2 610 521
Seattle First National Bank - Richland		
Contract Account	2 053 542	2 038 096
U. S. Savings Bond Account	247 700	208 795
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	31 078	28 803
Seattle First National Bank - Seattle		
Escrow Account	57 496	57 496
National Bank of Commerce - Richland		
Contract Account - Manufacturing	494 212	348 660
Contract Account - Community	42 392	44 274
	$6 038 386	$5 386 645
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	$ 20 631	$ 17 662
Cash Advance balance outstanding over one month*	690	850
Traveling and Living Expenses:		
Paid Employees	22 881	19 106
Billed to Government	21 788	17 358
Balance in Variation Account at end of month	-0- (1)	1 748 Dr.

* General Divisions Only.

(1) The balance of this account in the amount of $8 743.21 as of June 30, 1950 billed to Schenectady.

General Accounting Divisions

	June	July
Hospital Accounting		
Accounts Receivable		
Balance at Beginning of Month	$ 143 513	$ 128 044
Invoices Issued	40 776	39 642
Refunds	1 744	1 070
Cash Receipts	43 961 Cr.	42 587 Cr.
Payroll Deductions	14 394 Cr.	12 621 Cr.
Bad Debts Written Off	197 Cr.	-0-
Bad Debts Reinstated	563	82
Balance at End of Month	$ 128 044	$ 113 630
	Total to Date	**July**
Scrap Sales		
(a) Number of Sales	219	13
(b) Revenue (Not Including Sales Tax)		
Revenue to G. E.	$233 776	$54 986
Revenue to A.E.C. (Sale of Tract Houses	32 723	-0-
Total Revenue	$266 499	$54 986

General Accounting Divisions

ACCOUNTS PAYABLE

The number of vouchers booked during July decreased considerably as compared with June. However, the value of disbursements increased. In July there were 1 609 vouchers booked amounting to $1 063 971 as compared with 1 999 vouchers valued at $954 671 processed during June.

The number of checks issued also decreased as indicated below:

	July	June
Chemical Bank & Trust Company	339	385
Seattle First National Bank	773	903
	1 112	1 288

The number of checks issued as reported above includes checks written to transfer funds between bank accounts voided checks, and replacement checks for those reported lost. A total of 1 687 vouchers were paid averaging 1.52 vouchers per check as compared with an average of 1.48 during June.

At the end of the month, the total number of vouchers on hand requiring additional supporting data before forwarding to the AEC was reduced to 1 150 as compared with 1 168 at the end of June. This decrease of 18 vouchers becomes considerably more important when noted with the fact that paid vouchers on hand lacking necessary support decreased by 92 while unpaid vouchers not yet processed increased by 74. Included in the total of 175 paid vouchers on hand were 5 which were over 90 days old and 15 which were over 60 days old.

Only 217 freight bills amounting to $3 903 were processed during July as compared with a total of 246 valued at $4 965 during June. The balance in the general ledger Freight Account representing charges not yet distributed to proper cost, inventory or plant accounts amounted to only $167.

The general ledger Accounts Payable balance as of July 31, 1950 was $53 712.86, most of which (94%) represents items recorded in July which are not due for payment until August. Details of this balance by months are as follows:

	July	June
February	$	$ 9.95 Dr.
March	34.10 Dr.	36.07 Dr.
April		505.64
May	784.05 Dr.	751.66
June	4 793.04	74 424.92
July	49 737.97	
Total	$ 53 712.86	$ 75 636.20

General Accounting Divisions

ACCOUNTS PAYABLE (Continued)

New purchase orders pertaining only to the General Accounting Division decreased in both quantity and amount as compared below:

	July		June	
	No.	Amount	No.	Amount
New Purchase Orders	1 074	$182 557	1 111	$211 650
Alterations	53		63	

During July, the first new employee assigned to the General Accounting Division on the rotating training program was received. Training was started in the Accounts Payable Section and will continue for several weeks.

The decrease in the volume of work indicated throughout this report has not offset the decrease in personnel due to transfers and terminations. Two additional employees are on requisition.

BUDGETARY CONTROL

During the first of the month a copy of Document GEH - 16 900 Estimates of Appropriations for the Fiscal Year Ending June 30, 1952, was received. This document contained budget estimates for Hanford Works for fiscal years 1951 and 1952 as submitted by Hanford AEC in preliminary submission form to Washington AEC. An analysis was made of this document to determine if there were any variances between the budget estimates contained in this document and the budget estimates submitted to AEC by the General Divisions. The analysis revealed variances in the following General Divisions budget:

Research and Development Budget
Construction Budget
Operating Equipment Budget

Detailed schedules were prepared and forwarded to division managers and division heads on each of the above budgets showing a comparison of the G. E. budget submitted AEC in May 1950 and of the AEC budget submitted to Washington in June 1950 and explaining briefly the reasons for the variances reflected between the two budgets.

In connection with the reduction of $450 000 in estimated assessments to Manufacturing Divisions for fiscal year 1951 from General Divisions, revised budget schedules were prepared for each division affected by the reduction and are in the process of being forwarded to the respective division managers.

On July 18, 1950 a request was received from AEC requesting additional information in connection with the housing request. The additional information requested was initiated by the Bureau of the Budget and covered a forecast of General Electric personnel through fiscal year 1956 by the major new programs.

General Accounting Divisions

BUDGETARY CONTROL (Continued)

Each of the General Divisions managers were informed of the request and were given instructions for furnishing the information. All General Divisions forecasts together with narrative explanations of differences between periods were received from the divisions on July 24, 1950 and processed for submission to AEC on July 26, 1950.

In addition to the above personnel forecast the AEC also requested additional information in connection with Research and Development costs for fiscal years 1950, 1951 and 1952. This request was initiated by the Bureau of the Budget and specifically requested a segregation of salaries and other costs including personnel requirements by programs for each fiscal year. This information was compiled and forwarded to AEC promptly.

COST

General Divisions Operating Reports for the month of June were issued on July 24, 1950. Detailed report of Research and Development costs was issued on July 27, 1950. Due to the Fiscal Year Closing which delayed this issuance of all June reports, the Summary of Cost Report, now being prepared, will be issued early in August.

The letters normally issued to division managers furnishing a comparison of June and April charges and analyzing the underlying factors led to points of major variation between the two months were also delayed pending completion of the above reports but will also be delivered early in August.

Considerable time was spent on a detailed write-up of the current liquidation procedures for General Divisions. In addition, detailed reports of charges to Manufacturing, Community and Medical Divisions for the month of May were prepared.

The work on standard and unit cost studies was continued, however, no new studies were undertaken due to the time required for Fiscal Year end closing.

GENERAL ACCOUNTS

The General Accounting Division issued 1 112 contract checks during July amounting to $3 097 820. This represents a decrease of $128 121 in expenditures as compared with June.

Prior to final closing of the books for the end of the Fiscal Year but after the monthly accounting statement was issued, a request was received from the Atomic Energy Commission that the cost-in-transit balance as recorded be reversed. This request was the result of Government requirements concerning fiscal year appropriations.

GENERAL ACCOUNTS (Continued)

This change is recorded below along with a comparison of Advances from AEC which were reduced in July to $5 500 000.

	July	June as Reported	June as Adjusted
Cash in Bank - Contract Accounts	$5 041 550	$5 652 112	$5 652 112
Cash in Transit	30 771	431 888	
Expenditures Disallowed by AEC	17 679	6 000	6 000
Cash in Bank - Salary Accounts	50 000	50 000	50 000
Travel Advance Funds	60 000	60 000	60 000
Advances to Subcontractors	300 000	300 000	300 000
	$5 500 000	$6 500 000	$6 068 112

Net disbursements to be applied against advances from the Atomic Energy Commission were reduced by $11 679 this month increasing Expenditures Disallowed by the Atomic Energy Commission to $17 679. Of this total, $7 000 represents disallowed expenditures in connection with payments to straight day workers - GAO Informal Inquiry No. GE-37 and the balance is in connection with GAO Informal Inquiry No. GE-36 which refers to payments made in connection with policy adopted by Operations Committee in connection with reimbursement of expenses of transferred employees.

There were 93 Expense Reports processed amounting to $11 839 during July. Of this total, the Atomic Energy Commission reimbursed for $11 417 and the balance of $422 was charged to the Travel and Living Expense Variation Account. The open Travel Advances to Employees were $17 662 as of July 31 compared with $20 631 the previous month.

The Travel and Living Expense Variation Account was charged with $1 748 (All Divisions) this month. Of this total $379 was for entertainment expenses and $1 369 represents the difference between expenses incurred by employees and reimbursements received from the Atomic Energy Commission.

Memorandum Billings were received from Knolls Atomic Power Laboratory covering General Engineering and Consulting Laboratory Assistance to Hanford in the amount of $19 009, KAPL Assistance to Hanford of $23 159, and Research Laboratory Assistance to Hanford in the amount of $456. To date General Engineering and Consulting Laboratory has transferred charges amounting to $3 340 797 covering 22 jobs.

General Ledger Trial Balances were received from all Accounting Divisions by July 27, 1950. Hanford Works Financial Statements were completed on July 31, 1950 and Consolidated Financial Statements are expected early in August.

General Accounting Divisions

GENERAL ACCOUNTS (Continued)

The balance of Government Cost Transfers decreased $1 266 692 so far this month. This decrease is due primarily to the fact that the Atomic Energy Commission did not transfer any costs to General Electric in July except telephone charges, KAPL Assistance to Hanford, and Research Laboratory Assistance amounting to only $24 971 while so far this month $1 291 663 has been transferred to the Atomic Energy Commission. These transfers to AEC consist of Excess Materials, Assessments, and Special Requests and Back Charges.

During July 13 scrap sales were completed amounting to $54 986. To date 219 scrap sales have been completed in the amount of $266 499.

Government copies of all Accounts Payable Vouchers prior to May have been transmitted to the Atomic Energy Commission with the exception of five vouchers from General Division, six from Design and Construction Division, and one from the Manufacturing Division which require additional detail.

INTERNAL AUDITING

Three auditors have been engaged for the past two weeks in conducting an "Analysis of Charges Made to Manufacturing by Other Divisions, for the period from September, 1948 through May, 1950." The purpose of the analysis is to determine the source and cause of increased charges to Manufacturing, particularly during the 1950 fiscal year. As a basis for detailed analyses, the average costs and liquidations for the two three-month periods ending July 31, 1949 and May 31, 1950 are being compared for eight General Divisions which contributed 91.6% of the increased charges to Manufacturing between the two periods.

Audits of cash change funds, as of the end of the fiscal year, June 30, 1950 were performed jointly by representatives of General Accounting Office, Atomic Energy Commission and General Electric Company. Sixty-nine per cent of all change funds outstanding were audited. Audits indicated lack of certain internal controls at Kadlec Hospital and the need for strengthening procedures and controls in connection with bus revenues. These two exceptions are to be followed for correction by this Section. Except for the above and minor cash shortages amounting to $2.45, out of $4 485.00 worth of change funds counted, the funds were found to be in order.

Work is not yet completed on Excess Material records at North Richland. However, it is still anticipated that posting of the accounts will be transferred to the General Accounts Section not later than August 25, 1950.

MEDICAL ACCOUNTING

The decrease in the accounts receivable balance from $128 044 in June to $113 630 in July was anticipated and was due to the following:

(1) Sales decreased in the amount of $1 134 because of normal seasonal decline in in-patient census.

(2) Charges to ledger accounts were less than payments on account and payroll deductions.

(3) Clinic accounts are being liquidated which is reducing the outstanding balance in our ledgers.

General Accounting Divisions

MEDICAL ACCOUNTING (Continued)

Out patient invoices numbered 1 572 and amounted to $7 694. This was an increase over June when invoices numbered 1 556 and amounted to $6 052. Of this months total, cash invoices numbered 967 and amounted to $2 543, while charge invoices numbered 605 and amounted to $5 151.

In-Patient revenue decreased $2 777 as compared with June, mainly due to normal seasonal fluctuation.

A complete review of all outstanding accounts was made during the month and extensive collection efforts were made, with generally favorable results.

Cost

Beginning July 1, our new cost system as proposed by the Hospital Consultants, went into effect. The changes in reporting costs are, briefly stated, to prorate all costs that are common to sections within the Medical Divisions on a percentage of usage basis. For example, instead of charging Industrial Medical at fee schedule rates for laboratory and x-ray work performed for them, they will be charged with a percentage of costs of operating these departments. This will hold true of not only clinical Laboratory x-ray but also Pharmacy, Bacteriological Laboratory, central supply and Physical Therapy. A percentage of hospital nursing salaries will no longer be charged to Industrial Medical on the basis of standby personnel.

We are now assessing the Government for their Pro-rata share of Industrial Medical costs based on the number of personnel. Prior to this time these costs were distributed to the Community, General and Manufacturing Divisions.

PLANT ACCOUNTING

All efforts in July were directed toward completion of entries necessary for the Fiscal Year closing. All divisions remained open to record these entries, the last of which were not received until July 24, 1950.

Approximately $90 000 000 in project costs previously held as "Unclassified Property in Service" were distributed to appropriate Plant Accounts having an undistributed balance of approximately $1 151 000. Distribution included Project C-165A-Construction of "H" Area in the amount of $68 560 000 and Project C-198 Phase 1 - 234-5 Building in the amount of $19 000 000.

Plant Accounting statements for the period ended June 30, 1950 are in preparation and will be ready for distribution shortly after August 1, 1950.

During July, but as a post-closing entry dated June 30, 1950, total Undistributed Depreciation expense in the amount of $34 479 000, cost of cancelled projects amounting to $6 156 000, Expense Portion of Cancelled Projects amounting to $314 000, Extraordinary Depreciation Expense in the amount of $29 000, and Plant Appraisal Adjustments amounting to $542 000 credit were transferred to the Atomic Energy Commission.

General Accounting Divisions

PAYROLLS

During the month of July, there were 109 removals from Payroll of which 5 were removals due to lack of work, and there was 1 transfer to another unit of the Company. There were 157 additions to the Payroll, including 4 transfers from other units of the Company. The result is a net increase of 48 employees on the Payroll.

* * * * * * * * *

Quarterly Federal and State Tax Reports were prepared and filed with the respective government agencies during the month of July. Checks were issued covering the employees' and employer's portion of such taxes.

* * * * * * * * *

In connection with the General Adjustment, effective July 1, 1950 for Monthly Paid employees and July 3, 1950 for Weekly Paid employees, approximately 900 man hours, including approximately 500 man hours of overtime, were expended on changing addressograph plates, posting new rates on employee record cards, and computing salaries at the increased rates. Monthly Paid employees received the increased rates on salary checks covering the month of July. Weekly Paid employees received the increased rates on salary checks covering the week ended July 16, which were paid on July 21, 1950. The retroactive payment, covering the week ended July 9, was included in salary checks delivered to Weekly Paid employees on July 28, 1950.

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During the month of July, 124 authorizations for deductions from payroll for the purchase of safety shoes were received in Payroll Divisions.

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Approximately 103,377 items were addressographed in Weekly Payroll Division during July in addition to regular routine addressograph work.

At the request of Employee and Community Relations Division, an addressograph file of 143 names and addresses of Richland Facility Operators was prepared for use in mailing the weekly issue of the Hanford Works News. The issue of the Works News dated July 28, 1950 was addressographed for mailing to the Facility Operators from this new file and future issues will be addressographed for mailing each week.

* * * * * * * * *

Under the General Electric Employees Savings and Stock Bonus Plan, 152 participating employees withdrew from the Plan 1,038 U. S. Savings Bonds having a maturity value of $48,750. U. S. Savings Bonds and Custody Receipts covering purchases by employees through payroll deductions in June were delivered to employees on July 28, 1950. There were 838 U. S. Savings Bonds and 3,577 Custody Receipts distributed to employees.

As of July 31, 1950, percentage of Hanford Works employees participating in the G. E. Employees Savings and Stock Bonus Plan and General Electric Savings Plan was as follows:

General Accounting Divisions

PAYROLLS (CONT.)

	Manufacturing	D & C	Community	Other	Total
G. E. Employees Savings and Stock Bonus Plan	46.8%	37.1%	38.0%	41.4%	43.0%
General Electric Savings Plan	12.0%	8.0%	9.3%	8.8%	10.1%
Both Plans	51.3%	41.3%	42.5%	45.8%	47.5%

* * * * * * * * *

Under the Group Health Insurance Plan, 369 claims for benefits by employees were forwarded to Metropolitan Life Insurance Company during July, and 739 checks were received from the Insurance Company covering payment of 492 claims submitted by employees for benefits under the Plan.

* * * * * * * * *

During July, 72 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:

Union	Number
International Union of Operating Engineers, Stationary Local 280	18
International Chemical Workers Union, Local #369	10
United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, Local #598	4
International Brotherhood of Teamsters, Warehousemen, Garage Employees and Helpers, Local #839	6
Building Service Employees' Union #201	6
Instrument Craftsmen's Guild	3
Hanford Industrial Firemen, #37	25
Total	72

H.A.M.T.C. submitted authorization cards for one employee member of International Association of Machinists, Lodge 1743, who transferred to International Association of Machinists, Local #1951 and for two members of the International Union of Operating Engineers, Local 370-C, who transferred to the International Union of Operating Engineers, Stationary Local 280. Authorizations for check-off of union dues in effect at July 31, 1950 cover 539 employee members of 14 unions.

General Accounting Divisions

PAYROLL (CONT.)

Seven authorizations were cancelled as a result of four employee members transferred from Weekly Payroll to Monthly Payroll and three removals from Payroll.

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During the month of July, considerable time was spent on the preparation of the first draft of the Appendix C to the Prime Contract.

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Permission to defer one week of their 1950 vacations until 1951 was granted by Division Managers in July to 29 Weekly Paid employees and 40 Monthly Paid employees. To date permission to defer one week of 1950 vacations until 1951 has been granted to 311 Weekly Paid employees and 143 Monthly Paid employees.

* * * * * * * * *

Tuesday, July 4, 1950 was an observed holiday at Hanford Works and weekly salary checks for employees of the outer areas for week ended July 2, 1950 were delivered to the areas on Thursday, July 6, 1950 between the hours of 5 PM and 9 PM. Salary checks for employees in Richland, North Richland, and Pasco were delivered to division representatives in the usual manner on Friday, July 7, 1950. Overtime work was not required for the preparation of the Payroll during this short work week. Delivery of the salary checks to the outer areas required only eight hours of overtime.

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There were 21 weekly salary checks covering vacation payments, issued to employees prior to normal pay day on the request of supervision.

* * * * * * * * *

There were 34 time cards received late in Weekly Payroll during the month of July as follows:

Week Ended	Number
7-2-50	3
7-9-50	9
7-16-50	21
7-23-50	1
Total	34

* * * * * * * * *

At the end of July, Bank Reconciliations were complete as follows:

1. Weekly Payroll through Payroll No. 200 for week ended June 25, 1950.

General Accounting Divisions

PAYROLLS(CONT.)

2. Weekly Salary Vacation Payroll through Payroll No. 200 for week ended June 25, 1950.
3. Monthly Salary Payroll No. 45 and 46 for May and June 1950.
4. Bond Account for May and June.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - JULY 1950

SUMMARY

There were no lost time injuries during the month. There have been only two lost time injuries for the year to date making a frequency rate of 0.23.

There were eight minor fires in the industrial areas with a total loss of $40.00

The 70C Area laundry volume was 20% less than the previous month.

Mail volume also decreased slightly, while Office Equipment repair and Printing volume increased.

A contract was awarded on July 31, 1950 to Critcher and Graber, Seattle, for construction of the proposed Records Service Center.

Installation of a uniform filing method was begun in the Health Instrument and Security and Services Divisions.

Studies completed by the Office Methods Section during the month indicate savings of $5900. for the first year, and $6500. on a recurring annual basis.

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - JULY 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	3	3		
Patrol and Security	588	593	5 (a)	
Safety & Fire Protection	143	144	1 (b)	
Office Services (General Services, Clerical Services, Records Control and Office Methods)	232	228		4 (c)
TOTALS	966	968	6	4

NET INCREASE: 2

(a) - Patrol and Security

1 - New Hire (Security)
1 - Returned from Leave of Absence (Patrol)
10 - Transferred from Community Division (Patrol)
4 - Removed from Roll due to Leave of Absence (Patrol 2, Security 2)
3 - Terminations (Patrol)

(b) - Safety and Fire Protection

1 - New Hire (Safety)
1 - Transferred from Community Division (Fire)
1 - Transferred to "S" Division (Fire)

(c) - General Services

1 - Returned from Leave of Absence
1 - Transferred to "S" Division
4 - Terminations
1 - Retirement

Clerical Services

8 - New Hires
6 - Transferred to other Divisions
1 - Termination

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	104
Accumulated Exposure Hours since last Major Injury	4,240,078
Major Injury Frequency Rate (start-up to date)	0.82

	June	July	Year to Date
Major Injuries	0	0	2
Sub-Major Injuries	1	4	17
Minor Injuries	315	301	2,180
Exposure Hours	1,232,815	1,226,625	8,647,647
Major Injury Frequency Rate	0.0	0.0	0.23
Major Injury Severity Rate	0.0	0.0	0.002
Minor Injury Frequency Rate	2.56	2.45	2.52

Sub-Major Injury No. 179

On July 3, 1950, an employee of the Transportation Division working in the 100-F Area received a fracture of the distal phalanx of the left great toe. The injured and fellow workers were unloading timbers in sling loads with a hydro crane from a truck. While listening to instructions from his foreman, the injured released the tension on the standing part of the choker which allowed a timber to fall striking the injured on the left great toe. Employee was not wearing safety shoes.

Sub-Major Injury No. 180

On July 13, 1950, an employee of Village Power working in the Power House received a fracture to the distal phalanx, right little finger, when he caught it between the handle of a hoe used for cleaning fires and the top edge of a portable chute used for guiding ashes from the furnace door opening to the ash ejector tube.

Sub-Major Injury No. 181

On July 18, 1950. at approximately 8:40 P.M., a Supervisor in Training, "S" Division, sustained a deep wound in the palmer surface of the right middle finger with fracture of proximal phalanx while attempting to operate a freight elevator in the 271-B Building without using safety hooks provided. His hand was caught between the closing doors.

Sub-Major Injury No. 182

On July 26, 1950, an employee of the Power Division, working at the Ice House at White Bluffs, sustained a complete irregular cuboid fracture extending into the tarsus of the left foot when it was caught between two 300 pound cakes of ice.

Plant Security and Services Divisions

Safety Activities

An investigation was made of the use of an unapproved type gas mask by an employee in the 200-West Area. Failure to follow procedure outlined in Safety Bulletin E-2, through lack of instructions, nearly resulted in serious injury.

The problems relative to handling, storage, and use of G. E. Cocoon are still under study.

An investigation is being made of the hazards involved in the use of the new Nickel Cadmium type batteries being used here as requested by the Instrument Division.

Assistance was given the Instrument Division in the design and arrangement of acetylene tank locations, piping, and protection for an outside installation at the 100 Area Instrument Shops.

A violation of the Lock and Tag Procedure in the 184-D Building was discussed with supervision concerned and action has been taken to eliminate any recurrence.

Injury occurrence in the P-10 group has taken a sharp upward trend. Investigation reveals several factors to be considered:

(a) The influx of new inexperienced employees; some just out of school and not impressed with regard to safety.
(b) Congestion.
(c) A laxity in good housekeeping practices.
(d) Failure to use safety equipment where required.
(e) Lack of a definite job safety training program.
(f) A tolerance of unsafe practices and ideas that new men have introduced here from their previous employment or school laboratories.

Suggested methods of correction have been submitted.

A study was made of a proposed operation where air pressure was to be used by the Technical Division (Pile), 100-D Area. Recommendations were made restricting air pressure to 10 pounds per square inch and only with pre-tested equipment. They were also advised as to personal protective equipment needed for operation.

Investigation was made of the occurrence of lime burns in the Transportation labor crew. It was learned that although adequate protective equipment is provided some men fail to use it properly. Consequently, during the extremely hot weather, the lime dust combining with perspiration on the skin has resulted in a sudden increase in chemical burns. It was recommended that the foreman give closer supervision to the use of protective equipment.

Research disclosed that Anthracene would cause serious dermatitis when in contact with the skin. Adequate protection was recommended.

The Safety Engineer in the 300 Area has been appointed to attend the "P" Division Staff safety meetings in an advisory capacity.

Plant Security and Services Divisions

Fire Protection Activities

Three fires were investigated during the month. On July 3, a carelessly discarded cigarette ignited trash in a floor drain in the 183-F Building. On July 7, careless burning of trash or discarding of smoking material started a fire in the outer area that burned part of three tract houses before it could be extinguished. These houses had been sold, therefore, they are of no Government loss.

On July 21, a short developed in the wiring of a patrol car and the resulting fire did $30.00 damage.

A fire alarm demonstration panel was acquired from the Community Fire Division. It was used to give additional training to officers in the Fire Department.

A lecture was given the Supervisors-in-Training. Subjects covered were: Fire Procedures, Fire Causes, Fire Losses, and Fire Alarm Systems. On the latter, the fire alarm demonstration panel was used.

A carelessly discarded cigarette caused a fire in the cushion of a devenport in the 3707-C Bldg., 300 Area. Damage amounted to $10.00.

Building surveys were completed on the following: 1713-B, 2715-E, and 2707-E.

Fire Protection of the Redox Analytical and Plant Assistance Laboratory, Building 222-S, was reviewed and recommendations made.

Redox Mock-up Building 277-S was reviewed and recommendations made.

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
	Outer	2	Probable discarded smoking material	None
	Outer	1	Lightning	None
	Total	3		

Industrial Investigations

Technical	300	1	Cigarette	$ 10.00
Technical	200-E	1	Infra Red Lamp	None
Power	100-F	1	Cigarette	None
"P" Division	300	1	Spontaneous Ignition	None
Security & Patrol	100-B	1	Defective wiring	30.00
	Total	5		$ 40.00
TOTAL INDUSTRIAL FIRES		8	TOTAL LOSS	$ 40.00

Plant Security and Services Divisions

OFFICE SERVICES DIVISION

General Services

Laundering volumes were as follows:

Plant Laundry (Building 2723)

	June	July
Coveralls - Pieces	26,383	22,405
Towels - Pieces	7,963	7,457
Miscellaneous - Pieces	65,751	57,490
Total Pieces	100,097	87,352
Total Dry Weight - Lbs.	132,259	117,830

Richland Laundry (Building 723)

Flatwork - Pieces	58,040	48,322
Rough Dry - Pieces	29,739	26,684
Finished - Pieces	2,589	2,196
Total Pieces	90,368	77,202
Total Dry Weight - Lbs.	78,938	58,024½

Monitoring Section (Building 2723-W)

Poppy Check - Pieces	84,721	68,420
Scaler Check - Pieces	99,556	94,601
Total Pieces	184,277	163,021

The decreased volume of work in the 700 Area Laundry during the past month necessitated a reduction of two laundry sorters.

Clerical Services

Mail Room

New sedan delivery trucks were received to replace all pickups.

	June	July
Pieces of internal mail handled	567,543	541,514
Pieces of postal mail handled	75,268	53,773
Pieces of registered mail handled	1,244	1,127
Pieces of insured mail handled	840	994
Pieces of special delivery mail handled	239	334
Total mail handled	645,134	597,742
Total amount of postage used	$ 2,056.58	$ 1,457.41

Plant Security and Services Divisions

Mail Room (Contin)

	June	July
Total teletypes handled	3,117	4,129
Total number of store orders filled and delivered	1,397	779

Office Equipment Section

A request was submitted to the A & B Committee for the purchase of required office equipment for the first four months of this fiscal year.

A Marchant Calculator Company serviceman spent one week training mechanics in our shop.

	June	July
Office Machines repaired in shop	208	213
Office Machines service calls	309	318
Total Machines Serviced	517	531

Printing Section

It was necessary to work the Printing Section overtime two Saturdays to handle special priority emergency orders.

	June	July
Multilith orders received	193	206
Multilith orders completed	165	195
Multilith orders on hand at month end	58	69
Mimeograph orders received	697	643
Mimeograph orders completed	697	582
Mimeograph orders on hand at month end	0	61
Ditto orders received	396	266
Ditto orders completed	392	273
Ditto orders on hand at month end	9	2

Stenographic Services Section

	June	July
	Hours	Hours
Dictation and Transcription	16:54	11:45
Machine Transcription	95:15	33:45
Letters	87:12	125:10
Manual and Procedures	258:05	253:20
Duplicating - Stencils, Ditto	481:48	331:35
Special	823:45	604:40
Training	263:06	138:25

Plant Security and Services Divisions

Stenographic Services (Contin)

	June Hours	July Hours
Unassigned time during month	100:48	20:00
Meeting Time	40:00	34:30
Holiday and Vacation	----	128:00
Total Hours	2,166:53	1,686:10
Employees loaned to other divisions	961:30	993:50
Total Hours Available	3,128:23	2,680:00

Clerical Services - General

Approval was received and work has been started on the painting of the interior of the Administration Building.

Work was started during the month on the remodeling of Building 722-A.

All divisions and the AEC agreed to a new general allotment of space in the Administration Building.

Records Control Division

Quantity of records received, processed and stored:

Community Divisions	31	Standard	Storage	Cartons
Design and Construction Divisions	70	"	"	"
General Accounting Division	59	"	"	"
Health Instrument Division	104	"	"	"
Instrument Division	3	"	"	"
Manufacturing Accounting Division	26	"	"	"
Plant Security and Services Divisions	5	"	"	"
Power Division	6	"	"	"
Purchasing Division	3	"	"	"
Stores Division	115	"	"	"
Transportation Division	2	"	"	"
TOTAL	424	Standard	Storage	Cartons

Persons provided records services: 380

Standard storage cartons issued: 470

The Construction Division of the Atomic Energy Commission sent out invitations to bid on the proposed Records Service Center on June 19. Bids were opened on July 19, the low bid (concrete construction) being $113,085 without State Sales tax, the high bid being $145,574 including States Sales Tax. The contract was awarded July 31 to Critcher and Graber, Seattle, Washington, who will begin work within seven days from July 31, having 150 calender days to complete the project.

Plant Security and Services Divisions

Records Control Division (Contin)

Receipt of the 424 cartons of records this month required use of almost all of the shelving space available. Shelving on order will be shipped August 31, therefore, records received in the future will have to be stacked on the floor until the shelving is received.

Installation of a uniform filing method was begun July 3 in the Health Instrument Divisions. It is complete with the exception of one area office.

Installation of the filing method has also been started in the Plant Security and Services Divisions.

A followup will be made in every office in which the new method is installed to check its effect and value and to make any adjustments that may be necessary.

Office Methods Section

Our new system of assigning form numbers is beginning to be of assistance when reviewing printing orders for forms. During July it was found that sixteen forms used by the Manufacturing Division were being ordered on an average of once each week in quantities ranging from 200 to 500 each. By adjusting the quantities being ordered on these forms, it is estimated that an annual savings of approximately $1100.00 is to be obtained. Four of these forms will be placed in Stores stock.

General Activities -

	June	July
Printing orders reviewed	361	286
New numbers assigned	320	247
Printing orders cancelled	12	8
Forms re-designed	26	22

A study was made in the 700 Area Laundry to establish a basis for comparing present laundry costs against bids to be submitted by commercial laundries. Final determination to be whether it is more economical to operate a Plant Laundry or to obtain this service from a commercial laundry.

A recommendation was made and adopted that all Motor Pool vehicles be placed in a common pool instead of certain vehicles being assigned to each division, also that Motor Pool operating costs be distributed on the basis of actual usage rather than the previous method of allocating costs on the basis of the number of vehicles assigned to a division.

It was recommended that a collator be purchased for use in our Printing Plant. Based upon our present volume of work an annual savings of approximately $4800.00 is to be obtained in labor costs.

Total estimated savings created by the above activities were $5900.00 for the first year; thereafter, $6500.00 will be saved on a recurring annual basis.

Plant Security and Services Divisions

PATROL AND SECURITY

General

Effective July 5, a new post was established in the 190-F Building. This post will be known as construction escort and will operate from 9:00 A.M. to 5:00 P.M.

The post at 105-DR badge house was discontinued July 14. This post was consolidated with the 105-D exclusion area.

A new post was established in the 100-DR Area July 17 and will be known as 105-DR tunnel badge house. Post requirements will be one man on a 24-hour basis.

Construction on the 722-A Building was started on July 17. This building is to be used by the Cost Accounting Division when completed. One patrolman is assigned to this work to act as escort during the No. 2 shift only.

Construction was started on the 3745 Building in the 300 Area on July 24. This construction is being done by the Erwin Construction Company and is an addition to the 3745 Building.

On July 26 Security Patrol Operations Order No. 103, Rev. No. 2, was issued changing the method of handling contraband cameras and film confiscated at the plant barricades. Film and cameras picked up from persons entering the barricades will be held and returned to the owner at the time they leave the area. Film confiscated from persons leaving the plant through the barricades will be forwarded to the Security Office to be checked for classified information.

Security Patrol Procedure Memorandum No. 35 for handling unauthorized entrance to the plant area through the barricades was established on July 26. This procedure provides for protective measures and mobilization when necessary.

Security Patrol Procedure Memorandum No. 36 was issued on July 27. This procedure establishes methods to be used by the Emergency Officer in issuing area clearances during periods other than regular business hours.

On July 31 a Chevrolet sedan delivery vehicle was placed in the 300 Area for use in controlling traffic. A .30 and .50 caliber machine gun with necessary ammunition and tear gas grenades were placed in this vehicle and will be standard equipment. This vehicle will be used for dispatch to any location within the barricades when necessary during an emergency.

Ten new sedans for Patrol use were delivered to the Security Patrol during the month. These cars will replace ten old over mileage sedans.

Night plant inspections were made by the Security Patrol Duty Officers on the following dates: July 2, 15, 16, 20, 24, 25, 26, 27, 28, and 31st.

Plant Security and Services Divisions

Patrol

The 200 Areas handled 133 process escorts between the areas during the month.

Requests handled totaled 643, consisting mainly of opening doors, buildings, gates and issuing keys for employees of other departments.

A total of 64 Unusual Incident Reports were received, consisting mainly of Security Violations, lost badges, pencils, contraband picked up at barricades, traffic accidents and fires,

A total of 773 pat searches were made of employees leaving the operating areas during the month.

Classified escorts totaling 329 were handled during the month.

A total of 112 traffic escorts were handled during the month.

Patrol made 19 ambulance runs for the Medical Division during the month.

Practice evacuations were held as follows:

100-B Area	7-13-50	10:46 A.M.
100-D Area	7-26-50	9:38 A.M.
100-DR Area	7-28-50	12:29 P.M.
100-F Area	7- 5-50	8:26 A.M.
100-H Area	7-24-50	9:43 A.M.

Practice Blackouts were held as follows:

100-B Area	7-28-50	11:01 P.M.
100-D Area	7-28-50	10:01 P.M.
100-F Area	7-28-50	11:01 P.M.
100-H Area	7-28-50	10:01 P.M.
100-H Area	7-24-50	9:45 P.M.
101 Area	7- 8-50	10:09 P.M.
101 Area	7-11-50	9:51 P.M.
101 Area	7-28-50	11:03 P.M.
200-East Area	7-25-50	9:30 P.M.
200-East Area	7-26-50	9:30 P.M.
200-West Area	7-25-50	9:30 P.M.
200-West Area	7-26-50	9:30 P.M.
P-11	7-28-50	11:03 P.M.

Practice Blackout Alerts were held as follows:

100-D Area	7-25-50	1:55 A.M.
100-F Area	7-25-50	1:55 A.M.
100-H Area	7-25-50	1:56 A.M.

Practice Mobilization Plan A:

100-F Area	7-13-50	6:30 P.M.

Plant Security and Services Divisions

Arrest Summary

	June	July
Warning tickets issued	0	1
Verbal warning given	0	0
Citation tickets issued (traffic only)	0	1

Accident Summary

Total accidents	0	4
Government permits suspended	0	0

Training

Training courses held during the month were as follows:

	Hours
Pistol	3
M-1	1 1/2
Security	1/2
Health	1/4
Safety	1/4
Operations Class No. 1	1 1/2
Operations Class No. 2	1/2
Operations Class No. 3	1/2

Security

"Q" orientation talks were given during the month by representatives of the Security Division to 124 new employees.

There were 255 security meetings held and attended by 3,575 General Electric employees during the month.

Employee Clearance

Class "Q" clearances received on old employees this month	0
Class "Q" clearances received on old employees to date	4,460
Class "Q" clearances received on new employees this month	80
Class "Q" clearances received on new employees to date	6,683
Class "Q" clearances received on both old and new employees since February 17, 1947	11,143
Formal "P" clearances awaiting change to "Q"	118
Authorization clearances issued this month	91

Plant Security and Services Divisions

Statistical Summary of Outstanding Area Badges

	June				July				
	A	B	C	Total		A	B	C	Total
100-B	1819	577	440	2836	100-B	1837	587	437	2861
100-D	879	933	473	2285	100-D	889	953	469	2311
100-F	706	1132	397	2235	100-F	710	1150	392	2252
100-H	1709	922	508	3139	100-H	1710	955	505	3170
200-E	912	1860	336	3108*	200-E	926	1901	327	3154*
200-W	1397	1798	329	3524	200-W	1380	1846	320	3546
200-N	26	845	126	997	200-N	27	852	122	1001
300	1302	1738	214	3254	300	1319	1766	211	3296
100-DR	2255	6		2261	100-DR	2344	7		2351
P-11	49			49	P-11	50			50

* Includes 37 "A" badges at Riverland Yards

* Includes 37 "A" badges at Riverland Yards

Visitor or Temporary Badges

Area	June	July
100-B	683	743
100-D	1168	1212
100-F	1100	1151
100-H	641	709
200-E	992	1047
200-W	1536	1593
200-N	766	768
300	1907	1981
100-DR	41	74
P-11	16	20
Total	8,850	9,298

Special Clearance Section

Following is a statistical summary of clearance status of vendor and consultant vendor companies:

Total companies forwarded to AEC this month:	9	Personnel:	14
Total companies forwarded to AEC last month:	4	Personnel:	8
Total companies forwarded to AEC to date:	274	Personnel:	2,549
Total companies cleared for "Restricted Data" this month:	10	Personnel:	13
Total companies cleared for "Restricted Data" last month:	7	Personnel	26

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Plant Security and Services Divisions

Security (Contin.)

New companies forwarded to Atomic Energy Commission this month:

Valey Electric Company
620 Sixth Street
Prosser, Washington

Acadia Electric Company
107 W. Front Street
Kennewick, Washington

X-Ray Products Corporation
4844 W. Jefferson Boulevard
Los Angeles, California

Number and type of clearance granted by the Atomic Energy Commission this month to vendors and consultants:

Formal "Q"	10
Formal "P"	24
Reinstated "Q"	2

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING JULY 31, 1950

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
MEDICAL DIVISION							
I. Visitors to this Works							
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Medical consultation	W. D. Norwood, M.D. P. A. Fuqua, M.D.	7-28-50	7-29-50	X		
II. Visits to other Installations							
P. A. Fuqua, M.D. to: Knolls Atomic Power Lab. Schenectady, New York	Discuss radiation hazard health problems	H. Rozendaal M. W. Toll	7-18-50	7-20-50	X		
DESIGN AND CONSTRUCTION DIVISIONS							
I. Visitors to this Works							
E. Long Knolls Atomic Power Laboratory Schenectady, New York	Design work on 432 Project and test equipment for this Project	G. Thayer	6-14-50 7-15-50	7-15-50 8-1-50	X		200-W 234 and 235 TS Drafting room
R. W. Lockhart Knolls Atomic Power Laboratory Schenectady, New York	Consultation on shielding problems	P. E. Lowe R. T. Jaske	7-6-50	7-6-50	X		109-D 105-D
II. Visits to other Installations							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. L. Klein to: Puget Sound Naval Yard Bremerton, Washington	Consult with inspectors on machines being manufactured there	S. L. Allison	7-26-50	7-31-50	X		
G. H. Syrovy to: Battelle Memorial Inst. Columbus, Ohio	Discuss development work on heavy aggregate concrete	M. J. Snyder	7-19-50	7-23-50		X	
W. E. Johnson to: Knolls Atomic Power Lab. Schenectady, New York	Contracts and procedures	W. H. Milton C. G. Suits W. S. Macaulay B. R. Prentice	7-27-50	7-29-50	X		
W. C. Royce to: L. S. Rosener Company San Francisco, California	Coordinate work on HW Laboratory	L. S. Rosener	7-22-50	7-26-50		X	
P. D. Lee to: General Electric Company Schenectady, New York	Discuss problems of accounting	H. A. MacKinnon A. D. Crouch	7-4-50	7-12-50		X	
G. S. Cochrane to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation regarding design and installation of equipment for 432 Project	D. H. Marquis	7-11-50	5-31-50	X		
T. Williams to: Crane Company Chicago, Illinois	Design conference	P. M. Weiss	7-12-50	7-20-50		X	
ELECTRICAL DIVISION							
I. Visitors to this Works							
L. C. Ford Apparatus Department General Electric Company Pasco, Washington	Inspection of installations and equipment furnished by Apparatus Department	F. J. Mollerus	7-6-50	7-7-50		X	300-XXX 100-H-XXX 100-DR Con.

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
II. Visits to other Installations							
A. L. Vosmer to: Gen.Eng. & Consulting Lab. Schenectady, New York	Consultation on design and testing of R.M. Line equipment	D. H. Marquis	7-10-50	Six weeks	X		
HEALTH INSTRUMENT DIVISIONS							
I. Visits to other Installations							
H. A. Kornberg to: Knolls Atomic Power Lab. Schenectady, New York	Radiation health protection problems	H. Rozendaal M. W. Toll	7-18-50	7-20-50	X		
H. A. Kornberg to: Argonne National Lab. Chicago, Illinois	Recent developments in biology of P-10, therapeutic angets for radiation damage	H. M. Patt	7-24-50	7-24-50	X		
INSTRUMENT DIVISION							
I. Visits to other Installations							
M. G. Peterson to: Gen. Eng. & Con. Lab. Schenectady, New York	Assist in general engineering and test work on equipment being assembled for Phase III, 234-5 program, pertaining to instrumentation	D. H. Marquis	7-10-50	9-5-50	X		
PROJECT ENGINEERING DIVISIONS							
I. Visitors to this Works							
E. C. Robinet Crosby Steam Gauge & Valve Co. Los Angeles, California	Give information necessary for installation and operation of high pressure, high temperature relief valves on Naval Test Rig, Project C-379	S. F. Schure	7-28-50	7-31-50		X	100-H XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
II. Visits to other Installations							
H. J.Bellarts to: Puget Sound Navy Yard Bremerton, Washington	Check progress of P-11 fabrication work	S. L. Allison	7-12-50	7-14-50	X		
L E. Hoff to: Rust Engineering Company Portland, Oregon	Consult on fabrication phases of the flue inlets and access openings to P-10-D stack, project C-388	B. Smith	7-31-50	7-31-50		X	
S. F. Schure to: Gen. Eng. & Con. Lab. Schenectady, New York	Discussions and inspection of design work in connection with P-10 Program	B. R. Prentice D. H. Marquis	7-10-50	7-11-50	X		
MAINTENANCE DIVISION							
I. Visits to other Installations							
J. F. Heberer to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	D. H. Marquis	7-11-50	7-14-50	X		
POWER DIVISION							
I. Visitors to this Works							
A. H. I.Hedner Travelers Insurance Company Seattle, Washington	Inspection of boilers	H. F. Moasley	7-18-50	7-19-50		X	100-B-XXX 100-D-XXX 100-F-XXX 200-E-XXX 200-W-XXX 100-H-XXX 300-XXX
"S" DIVISION							
I. Visits to other Installations							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. A. Brown to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	D. H. Marquis	7-13-50	6 months	X		
C. T. Groswith to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	D. H. Marquis	7-24-50	8-7-50	X		
C. T. Groswith to: Knolls Atomic Power Lab. Schenectady, New York	Observe waste evaporation facilities for C-187-D Project	L. B. Bragg	7-27-50	7-27-50	X		
C. T. Groswith to: Argonne National Lab. Chicago, Illinois	Observe equipment for C-187-D Project	H. H. Hull	7-31-50	7-31-50	X		
S. D. Smiley to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	D. H. Marquis	7-24-50	7-29-50	X		
S. D. Smiley to: Knolls Atomic Power Lab. Schenectady, New York	Observe waste evaporation facilities for C-187-D Project	L. B. Bragg	7-27-50	7-27-50	X		
S. D. Smiley to: Argonne National Lab. Chicago, Illinois	Observe equipment for C-187-D Project	H. H. Hull	7-31-50	7-31-50	X		
S. G. Smolen to: Gen. Eng. & Con. Lab. Schenectady, New York	Procedures and testing program for 432 Project	D. H. Marquis	7-24-50	8-24-50	X		
TRANSPORTATION DIVISION							
I. Visitors to this Works							
W. F. Wahlenmaier Fairbanks-Morse Co., Portland, Oregon	Inspection of pump	A. P. Mitchell	7-14-50	7-14-50		X	100-D-XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
PLANT SECURITY AND SERVICES DIVISION							
I. Visitors to this Works							
C. G. Kruse International Business Machines Pasco, Washington	Repair IBM equipment Corp.	D. Haley C. G. Stevenson	7-12-50	7-12-50		X	300-3706
C. G. Kruse International Business Machines Pasco, Washington	Corp. Repair IBM equipment in 3702 Bldg.	D. Haley C. G. Stevenson	7-17-50	7-17-50		X	300-3702
PURCHASING AND STORES DIVISIONS							
I. Visitors to this Works							
D. A. Westermeyer Consolidated Freightways Pasco, Washington	Deliver material on order HW 61073M	H. H. Hart	7-6-50	7-6-50		X	100-B- 108-B
H. L. Halverson United Truck Lines Pasco, Washington	Deliver material on order HW 63705M	H. H. Hart	7-11-50	7-11-50		X	200-E 271-B
G. Mulholland Lee and Estes Pasco, Washington	Deliver material on order HW 63685M, HW63707-M and HW 63708M	H. H. Hart	7-11-50	7-11-50		X	100-B 108-B 200-E 275
M. Kelso Inland Motor Freight Pasco, Washington	Deliver material on order HW 61067M	H. H. Hart	7-12-50	7-12-50		X	200-E XXX
E. Winkelman Inland Motor Freight Pasco, Washington	Deliver material on order HW 61067-M	H. H. Hart	7-12-50	7-12-50		X	200-W XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. Winkelman Inland Motor Freight Pasco, Washington	Deliver material on order HW 63704M	H. H. Hart	7-13-50	7-13-50		X	300-303J
A. E. Twinger Consolidated Freightways Pasco, Washington	Deliver material on order HW 61073	H. H. Hart	7-14-50	7-14-50		X	100-B 185
D. Mock Consolidated Freightways Pasco, Washington	Deliver material on order HW 61073	H. H. Hart	7-14-50	7-14-50		X	100-H 190
B. Stolz Yakima Cement Products Co. Yakima, Washington	Deliver material on order HW 66473M	H. H. Hart	7-20-50	7-20-50		X	100-B 108-B
A. Schumann United Truck Lines Pasco, Washington	Deliver material on order HW 63705M	H. H. Hart	7-21-50	7-21-50		X	300- 303-J
W. P. Hannum Shell Oil Company Pasco, Washington	Deliver material on AEC Order 54969	H. H. Hart	7-26-50	7-26-50		X	300- 321
T. Raeder Layrite Concrete Products Co. Yakima, Washington	Deliver material on order HW 66473M	H. H. Hart	7-27-50	7-27-50		X	100-B 108-B
T. Raeder Layrite Concret Products Co. Yakima, Washington	Deliver material on order HW 67091M	H. H. Hart	7-28-50	7-28-50		X-	100-B 108-B
F. Reed Yakima Cement Products Co. Yakima, Washington	Deliver material on order HW 66704M	H. H. Hart	7-28-50	7-28-50		X	100-B 108-B
L. E. Bird General Electric Company Seattle, Washington	Installation of equipment from Apparatus Dept. on order HWC-8027	H. A. Hauser	7-31-50	8-4-50		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
O. J. Bartl Stephens Adamson Company Los Angeles, California	Installation of equipment from his firm on order HWC-8508	H. A. Hauser	7-17-50	8-17-50		X	
E. L. Gardner Worthington Pump & Machinery Wellsville, New York	Installation of equipment from his firm on order DC-60084	H. A. Hauser	7-19-50	8-19-50		X	
F. G. C. Stinchcombe Arthur Forsythe Company Seattle, Washington	Installation of equipment from his firm on order HWC-8431	H. A. Hauser	7-31-50	8-31-50		X	
K. E. Atwood Bailey Meter Company Seattle, Washington	Installation of equipment from his firm on order HWC 8265	H. A. Hauser	7-17-50	8-17-50		X	
A. C. Gaal Ingersoll Rand Company Phillipsburg, New Jersey	Installation of equipment from his firm on order HWC-7926	H. A. Hauser	7-19-50	8-19-50		X	
II. Visits to other Installations							
C. P. Lawson to: Builders Providence Company Providence, Rhode Island	Expedite material from Robert's Filter Company for DR Water Works Project	- -	7-20-50	7-28-50		X	
TECHNICAL DIVISIONS							
I. Visitors to this Works							
D. H. Ahman Knolls Atomic Power Laboratory Schenectady, New York	Assistance to Hanford Program, particularly P-10 and 234-5 chemistry	A. B. Groninger W. M. Harty	7-31-50	8-5-50	X	100-B-105,108 108-F-105 200-W-221-T, 231,234 300-3706	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
L. F. Coffin, Jr. Knolls Atomic Power Laboratory Schenectady, New York	Discussion of creep program and Materials Testing Program	J. B. Lambert	7-27-50	7-28-50	X		100-B-105 100-D-105 100-F-105 100-H-105 300-3706
W. W. Tyler General Electric Company Schenectady, New York	Discussion of graphite problems	P. H. Reinker	7-6-50	7-7-50	X		100-H-105 300-3706
H. Hunter San Francisco Naval Yard San Francisco, California	Discuss establishment of statistical analysis program	B. F. Butler	7-18-50	7-18-50	X		300-3703
R. C. Robin General Electric Company Schenectady, New York	Discuss Classified Files and Records Management Problems	C. G. Stevenson	7-25-50	7-27-50		X	- -
F. R. Bruce Oak Ridge National Laboratory Oak Ridge, Tennessee	TBP consultation	R. H. Beaton V. R. Cooper	7-11-50	7-12-50	X		300-3706, 321
T. C. Runion Oak Ridge National Laboratory Oak Ridge, Tennessee	TBP consultation	R. H. Beaton	7-11-50	7-12-50	X		300-3706,321
W. E. Browning California Research Lab. Pasadena, California	Discuss problems of radiation damage	W. K. Woods R. E. Nather	7-17-50	7-21-50	X		300-3706 100-H-105
R. O. Bolt California Research Lab. Pasadena, California	Discuss problems of radiation damage	W. K. Woods R. E. Nather	7-17-50	7-21-50	X		300-3706 100-H-105
D. S. Billington California Research Lab. Pasadena, California	Discuss problems of radiation damage	W. K. Woods R. E. Nather	7-17-50	7-21-50	X		300-3706 100-H-105

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Unclass Areas
R. P. Genereaux E. I. du Pont de Nemours & Co. Wilmington, Delaware	Separations plant discussions	R. H. Beaton	7-25-50	7-28-50	X	100-B-108 P-11 200-E-271-B 200-W-271-T,231 300-3706, 321
W. C. Kay E. I. du Pont de Nemours & Co. Wilmington, Delaware	Separations plant discussions	R. H. Beaton	7-25-50	7-28-50	X	100-B-108 P-11 200-E-271-B 200-W-271-T,231 300-3706, 321
H. A. L. Frotze E. I. du Pont de Nemours & Co. Wilmington, Delaware	Separations plant discussions	R. H. Beaton	7-25-50	7-28-50	X	100-B-108 P-11 200-E-271-B 200-W-271-T,231 300-3706, 321
J.E. Cole E. I. du Pont de Nemours & Co. Wilmington, Delaware	Separations plant discussions	R. H. Beaton	7-25-50	7-28-50	X	100-B-108 P-11 200-E-271-B 200-W-271-T,231 300-3706, 321
II. Visits to other Installations						
A. B. Greninger to: Gen. Eng. & Con. Lab. Schenectady, New York	Technical consultations	D. H. Marquis M. A. Edwards	7-6-50	7-12-50	X	
A. B. Groninger to: Knolls Atomic Power Lab. Schenectady, New York	Technical consultations	K. H. Kingdon	7-6-50	7-12-50	X	
R. H. Beaton to: Argonne National Lab. Chicago, Illinois	Redox consultation	S. Lawroski	7-15-50	7-15-50	X	
R. H. Beaton to: Knolls Atomic Power Lab. Schenectady, New York	Redox consultation	J. Marsden L. B. Bragg	7-19-50	7-21-50	X	
W. K. Woods to: Knolls Atomic Power Lab. Schenectady, New York	P-10 discussions	K. H. Kingdon	7-13-50	7-14-50	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. K. Woods to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 discussions	D. H. Marquis	7-13-50	7-14-50	X		
C. M. Slansky to: Radiation Laboratory Berkeley, California	Solvent Extraction consultation	H. Crandall	7-5-50	7-6-50	X		
J. B. Work to: Knolls Atomic Power Lab. Schenectady, New York	Consultation on 432 Project	J. Marsden	7-5-50	7-7-50	X		
J. B. Work to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	D. H. Marquis	7-5-50	7-7-50	X		
W. H. Reas to: Radiation Laboratory Berkeley, California	Inspection of laboratory facilities	H. Crandall R. E. Connick	7-14-50	7-17-50	X		
W. B. Kerr to: Gen. Eng. & Con. Lab. Schenectady, New York	432 Project testing	D. H. Marquis	7-9-50	7-21-50	X		
K. M. Harmon to: Knolls Atomic Power Lab. Schenectady, New York	Redox consultation	J. Marsden	7-18-50	7-21-50			
E. F. Curran to: Knolls Atomic Power Lab. Schenectady, New York	SPRU consultations	L. B. Bragg	7-19-50	7-21-50	X		
E. T. Merrill to: Knolls Atomic Power Lab. Schenectady, New York	SPRU consultations	L. B. Bragg	7-19-50	7-21-50	X		
H. F. Zuhr to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	C. Mannal	7-24-50	7-25-50	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
H. F. Zuhr to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	7-24-50	7-26-50	X		
H. F. Zuhr to: Gen. Eng. & Con. Lab. Schenectady, New York	432 Project consultation	D. H. Marquis	7-26-50	7-28-50	X		
A. R. Matheson to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	J. Marsden	7-17-50	7-21-50	X		
A. R. Matheson to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	7-17-50	7-21-50	X		
J. H. Bach to: Oak Ridge National Lab. Oak Ridge, Tennessee	Metallurgical consultation	C. G. Shull	7-23-50	7-29-50	X		
F. B. Quinlan to: Western Gear Company Seattle, Washington	Inspect manipulating being fabricated for Hanford	G. Moore	7-6-50	7-7-50		X	
E. Hollister to: Western Gear Company Seattle, Washington	Inspect manipulating being fabricated for Hanford	G. Moore	7-6-50	7-7-50		X	
F. B. Quinlan to: Ponberthy Instrument Co. Seattle, Washington	Discuss fabrication of lead glass viewing windows	L. Ponberthy	7-6-50	7-7-50		X	
E. Hollister to: Ponberthy Instrument Co. Seattle, Washington	Discuss fabrication of lead glass viewing windows	L. Ponberthy	7-6-50	7-7-50		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. Hollister to: Western Gear Compah Seattle, Washington	Accept completed manipulator and discuss future fabrication	G. Moore	7-24-50	7-24-50		X	
J. J. Lane to: Watson Laboratory Columbia University New York, New York	Training in IBM computing methods	- -	7-10-50	7-31-50		X	
H. R. Schmidt to: Knolls Atomic Power Lab. Schenectady, New York	Conference with United Kingdom officials and KAPL personnel on analytical methods	J. Marsden	7-17-50	7-21-50	X		
E. M. Kinderman to: Radiation Laboratory Berkeley, California	Exchange of technical information	G. T. Seaborg E. H. Huffman	7-24-50	7-27-50	X		
R. J. Brouns to: Radiation Laboratory Berkeley, California	Inspect alpha energy analyzers and discuss problem of isotopic analysis	A. Ghiorso	7-24-50	7-28-50	X		
C. R. McCully to: Los Alamos Scientific Lab. Los Alamos, New Mexico	P-10 Analytical consultation and study	E. S. Robinson B. B. McInteer	7-1-50	7-19-50	X		
C. R. McCully to: Consolidated Eng. Co. Pasadena, California	Discuss mass spectrometer specifications	H F. Wiley	7-5-50	7-6-50		X	
W.W. Marshall to: Argonne National Lab. Chicago, Illinois	Discuss P-10 analytical methods	F. S. Tomkins F. S. Tonkins	7-14-50 7-25-50	7-14-50 7-25-50	X X		
W.W. Marshall to: Great Lakes Carbon Co. Chicago, Illinois	Discuss analytical methods	J. Van Wazer	7-25-50	7-25-50		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. W. Marshall to: Leeds & Northrup Co. Philadelphia, Pennsylvania	Discuss emission spectro-graphs	I. M. Stein	7-24-50	7-24-50		X	
W. W. Marshall to: Knolls Atomic Power Lab. Schenectady, New York	Conference with United Kingdom officials and KAPL personnel on analytical methods	J. Marsden	7-17-50	7-20-50	X		
R. J. Brouns to: Gordon Research Conference New London, Connecticut	Attend instruments section of Gordon Research Conference at A.A.A.S.	- -	7-31-50	7-31-50		X	
W. M. Haussler to: Argonne National Lab. Chicago, Illinois	Materials testing program	H. Etherington	7-31-50	7-31-50	X		
C. E. Lacy to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss of Hanford assistance programs and metallurgical consultation	J. H. Frye, Jr.	7-31-50	8-2-50	X		
J. B. Lambert to: Argonne National Lab. Chicago, Illinois	Materials testing program	H. Etherington	7-31-50	7-31-50	X		

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PURCHASING AND STORES DIVISIONS
SUMMARY
JULY, 1950

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

	Total Personnel as of 6-30-50	Total Personnel as of 7-31-50	Net Change
Exempt	55	55	
Non-Exempt	306	307	Plus 1
TOTALS	361	362	Plus 1

The number of purchase requisitions received and the number of purchase orders placed declined during the month as compared with the previous month.

The procurement phase of the DR Water Works was practically completed with 95% of all purchases shipped or available on the plant.

Termination of orders due to cancellation of Rala was completed. 40 orders were involved -- 9 of which required cancellation charges and 6 required the return of material to the vendors for credit -- the remaining 25 were cancelled without charge.

Procurement for the P-10-D Project was accelerated in an effort to complete by December 1, 1950. All requisitions were handled on an emergency basis.

The general material situation continued to change rapidly for the worse with deliveries lengthening and prices increasing over a broad range.

An analysis of store stock items was undertaken with the idea of revising maximum and minimum stock levels upward when necessary.

Revised estimates of essential material requirements were received from the "P", "S", and Power Divisions.

1635 purchase requisitions were screened against project inventories with the result that 2921 items were furnished from plant sources thus obviating the necessity for the expenditure of new funds for outside purchase.

Materials valued at $463,133.19 were declared excess from the Construction Materials Account 10.20.

Two meetings were held with representatives of the Commission and the Army with respect to final disposition of Pasco Depot.

Shipping activities at the Pasco Depot continued at an accelerated pace -- most of the material being shipped to other Government Agencies and Educational Institutions.

PURCHASING AND STORES DIVISIONS
SUMMARY

As a result of efforts exerted by our Traffic Section rate reductions were obtained on Caustic Soda in tank cars which, at our present rate of consumption, will result in annual savings of $20,000. Total savings for the month of July, as a result of rate reductions obtained on various commodities, amount to $5,089.86.

The Interstate Commerce Commission, on July 28, 1950, issued a service order whereby, effective immediately, each common carrier by railroad subject to the Interstate Commerce Act, shall include all Saturdays and Sundays after the expiration of free time in computing demurrage charges. H. W. Instructions Letter No. 152 was issued to call this change to the attention of all concerned.

PURCHASING AND STORES DIVISIONS
STAFF SECTION
JULY, 1950

GENERAL

During July, the Methods and Procedures Group examined and offered recommendation on two proposed GM Bulletins and on three HA Bulletins. The two proposed GM Bulletins are:

1. Stores and Special Materials Inventories.
2. Contracts and Purchases.

The three HA Bulletins are:

1. Handling of Returnable Containers.
2. Receiving, Inspection and Marking Properties.
3. Control of Small Tools.

Final acception of all above are still pending.

The reconciliation of the 10.10 Account was continued. To date, 54 classes representing an inventory book value of $6,450,000.57, have been reconciled and adjusted. The net adjustment was a credit of $4,802.44.

The major equipment accounts have been completed except for documentation of the net gain of approximately $200,000.00. This is currently being performed and should be completed by the middle of September.

The initial procedure for the Excess, Salvage and Scrap Accounting Section was issued in June. Revisions were made in July and it is expected that this procedure will be installed in the near future. A survey of accomplishment datas and completion date was initiated to plan and control a rigid schedule to meet the deadline evacuation date at the Pasco Depot. A daily progress report form was originated and installed to control the shipping document status to secure a definite trend of work load.

An inspection tour of the Pasco Warehouses was undertaken with the A.E.C., the Army Engineers and the representatives of the North Pacific Railroad to determine availability date and suitability of the Pasco Base as a shipping center.

The adaptability of machine postings of stores records was reconsidered. Four Machine Manufacturer representatives were contacted for consultation. These were Burroughs, I.B.M., National Cash and Remington Rand Companies. All four are preparing proposals to be submitted in August.

A new survey of work loads of operating and maintenance stores personnel was made. It shows that the units of work are consistent with previous surveys on this subject.

PURCHASING AND STORES DIVISIONS
STAFF SECTION

Several meetings were held with the General Accounting Division regarding the liquidation of within the division charges. Several new procedures have been proposed, but no final decisions have been reached.

Unit cost studies are continued with members of the General Accounting Section. Several meetings were held with A&J Management, resulting in a smoother coordination of procuring material on stores orders.

Eight suggestion reports were investigated and our recommendations were submitted to the Committee and to the Maintenance Division.

The statistical program of fact findings for the layout of the proposed central warehouse were continued with members of Project Engineering.

A survey plotting sketch is in the development stage.

The material statistical (A-B-C-D) analysis has been completed and recommendations are under consideration for appropriate action. This study covers all captions, except 903-11 Automotive, 903-27 Stationery, 903-8 Scale, Pumps and Machine Parts. The major point developed was that 23% of the non-moving items show no sales or reorder for the last twelve months. These items should be deleted from the Inventory Accounts. In addition, 39% of the items show sales activities, but no reorder, meaning that material inventories on the 39% are still in excess of desired inventory levels. If this is accomplished we would turn our stocks over five times a year or 19.80%. At that time we would reconsider to study any revision of our methods of reorder points.

A study was made of existing methods and procedures for controlling electric motors, transformers and poles. This analysis was made as a result of a proposal submitted by the General Accounting Division. Recommendations will be made that the present method will be continued.

Recommendations were completed during the month regarding Stores Division assuming custodial responsibility for materials held in the areas by the Manufacturing Division.

Recapitulation reports of inventory balances as per financial statement and inventory accounts controlled by Purchasing and Stores and Others were turned over to the Commission for April and May business. This will be a continuing monthly report.

The Rotational Training Program was started with one member in Stores and one member in Inspection. A curriculum is in the process of preparation.

PURCHASING AND STORES DIVISIONS
STAFF SECTION

The Deep Well, Building 186-D survey was finished. The building is not as suitable for storing spare parts or essential materials, as it would be centralized in one location.

The Audit and Inventory Group completed the following physical inventories and reconciliation of accounts:

903-24	Medical	100%
903-25	Gases	100%
903-22	Lumber	50%
906	Cash Sales	50%

Methods and procedure for cash sales is being reviewed to simplify existing methods of physical inventory taking.

The money transfer of the Hanford Railroad Yard has been made to account 10.20-23 in the amount of $411,090.63.

In making audits variances were evident and were discussed with the line organization, also warehouse conditions were discussed.

Consolidation report of inventories controlled by G.E. Stores Division was prepared in the beginning of the month and distributed.

Several field trips were made again to White Bluffs and a program has been developed whereby the transfer of negative items from "Held for future construction to Excess" has been accelerated.

The Staff Section compiles currently and issues the following monthly and quarterly reports:

a. Force Report
b. Force Forecast
c. Overtime Request
d. Material inventory controlled by Purchasing and Stores Divisions
e. Quarterly summary of G.E. Business vs Competitors

The following is proposed work schedule that will be followed during the next three months with the personnel now assigned to this section.

Catalogues on Captions:

August		September		October	
903-32	100%	903-12	100%	903-4	100%
903-9	100%	903-13	100%	903-15	100%
903-14	100%	903-20	100%	903-23	100%
903-16	100%	903-3	100%	903-25	100%
903-2	100%				
903-3	50%				

PURCHASING AND STORES DIVISIONS
STAFF SECTION

Inventory of Captions:

August		September		October	
906	100%	903-32	100%	903-12	100%
903-21	100%	903-10	100%	903-4	100%
903-22	100%			903-15	100%
903-23	100%			903-16	100%
903-32	50%				

PERSONNEL

	As of 6-30-50			As of 7-31-50			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Methods-Procedure Cost & Budget Control	1	5	6	1	5	6	0	0	0
Audit Section	2	13	15	2	13	15	0	0	0
Total	3	18	21	3	18	21	0	0	0

Safety and Security Meetings held - 1
Number of Employees attending - 9

STATISTICS

Recapitulation of short and long range surveys made by the Staff Section covering May, June and July 1950, and percentage completed.

	May	June	July
1. Analyze, review and change methods for establishing reorder quantities for stores stocks.	80%	90%	95%
2. Examination of record cards for excess materials to reflect total quantity of like items available to centralize record keeping.	25%	25%	25%
3. Plan and study centralized warehousing in cooperation with Project Engineering Div. and Supt. of Stores for Design, Layout and Construction.	40%	40%	50%
4. Examine the Area warehousing in cooperation with Manufacturing Divisions for Stores Division assuming custodial responsibilities for materials held in the area by Manufacturing Division.	75%	75%	75%

PURCHASING AND STORES DIVISIONS
STAFF SECTION

		May	June	July
5.	Formulate plan for controlling Hanford Railyard materials for Stores Division to control Railyard materials	70%	98%	100%
6.	Analysis of construction inventory account 10.20 in preparation for physical inventory.	15%	25%	100%
7.	Actual reconciliation of Account 10.10 (Surplus, Salvage, and Scrap Section)	3%	60%	85%
8.	Establish spot audit procedure.	75%	75%	75%
9.	Manual of Standard Practices (Stores Div.)	0	3%	3%
10.	Analysis of Studies & Recommendations for Business Machine utilization.	60%	60%	75%
11.	Organizational Studies			
	A. Inv. Control Section (Operations & Maintenance Stores)			
	a. Functional Job Description	90%	90%	90%
	b. Form and Paper Work Write Ups	75%	75%	75%
	c. Functional Flow Charts	60%	60%	60%
	d. Work Load Statistics	0	0	0
	e. Analysis and Recommendations	0	0	0
	B. Receiving, Warehousing, Disbursing Section (Operations & Maintenance Stores)			
	a. Functional Job Description	95%	95%	95%
	b. Forms and Paper Work Write Ups	95%	95%	95%
	c. Functional Flow Charts	0	0	0
	d. Work Load Statistics	0	0	0
	e. Analysis and Recommendations	0	0	0
	C. Inv. Control (Construction Hold Matls)			
	a. Functional Job Descriptions	98%	98%	98%
	b. Forms and Paper Work Write Ups	98%	98%	98%
	c. Functional Flow Charts	0	0	0
	d. Work Load Statistics	0	0	0
	e. Analysis and Recommendations	0	0	0
	D. Excess, Salvage and Scrap Section			
	a. Functional Job Descriptions	90%	90%	90%
	b. Form and Paper Work Write Ups	90%	90%	90%
	c. Functional Flow Charts	90%	90%	90%
	d. Work Load Statistics	20%	20%	20%
	e. Analysis and Recommendations	0	0	0

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
JULY, 1950

GENERAL

The number of purchase requisitions received in the division and the number of purchase orders placed took a sharp drop during the month. 1647 purchase orders were placed as compared with 1891 placed in June. 2369 purchase requisitions were received and assigned as compared with 2975 during June. Requisitions on hand at month end totaled 675 as compared with 765 at the end of the previous month.

The procurement phase of the DR Water Works is practically completed with 95% of all purchases already shipped and available on the plant site. The bulk of the material for Project C-187-D is on order. Vendor shop drawings for approval are being expedited; however, design changes requested by the Architect-Engineers are delaying this phase of procurement.

Termination of orders due to cancellation of Rala Project was completed. Forty purchase order cancellations were handled, nine of which required contract settlement proposals to negotiate cancellation charges and six involved the return of material to the vendors for credit.

Field erection engineers from six companies were requested during the month to supervise installation of equipment in the 100-DR Water Works.

A total of 486 purchase orders issued by the Atkinson-Jones Construction Company were audited and certified prior to submission to the Atomic Energy Commission for reimbursement.

An expediter was sent to Providence, Rhode Island, to expedite shipment of control instruments and equipment from the Builders Providence Company urgently needed in the 183-DR filter plant. Complete shipment by August 5 was accomplished as against an original promise of September 1, 1950.

The procurement schedule for the P-10-D Project was speeded up in an effort to complete this project by December 1, 1950. All requisitions for P-10-D material are being handled on an emergency basis.

In addition to participating in the regular Technical Trainee Program, arrangements were made with Mr. Curtis to assign engineering trainees to the Purchasing Division for 90 days of training with field inspectors in vendors' plants.

General market conditions reflected the impact of the world situation. Deliveries on such products as steel, chemicals, rubber and copper were most affected. However, other items normally carried in west coast stocks are now being quoted two to four weeks shipment from the mill. The steel mills were virtually the only major industry that did not announce general price increases. Mill representatives were non-commital regarding future action. Many industries are again including escalator clauses on all quotations.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

ANN contract negotiations with General Chemical Division, Allied Chemical & Dye Corporation, were successfully concluded. Other contracts awarded include rock salt, potassium hydroxide, and soda ash covering our requirements for the coming year. Vendors are as follows:

Rock Salt	- Leslie Salt Company
Potassium Hydroxide	- Niagara Alkali Company
Soda Ash	- West End Chemical Company

The successful bidder on annual requirements for sodium bismuthate is the General Chemical Division, Allied Chemical & Dye Corporation. The purchase of sodium bismuthate on an annual contract basis, instead of by means of spot purchases, effected savings of approximately $8,000 per year.

Revised estimates of essential material requirements have been received from "S" Division and Power Division. "P" Division and Village estimates have not as yet been received. A study is in progress to determine if additional items should be purchased under contract instead of spot purchase.

Firm estimates and specifications on new essential materials for Projects C-187 (Redox) and C-362 (Waste Metal Removal and Recovery Facilities) are promised during the month of August. All preliminary studies are complete and further work will await receipt of this information.

Contract negotiations with the C.M. St. P & P Railroad Company for the use of their rail testing car are nearly completed. Contract has been sent to the Atomic Energy Commission for approval.

To augment our stock of Carbon Dioxide and Chlorine cylinders, 500 CO_2 cylinders and 100 one-ton chlorine cylinders were obtained on a "no-charge, loan basis" from the Government. These cylinders will be reconditioned and when placed in service will materially improve our ability to maintain the proper stock position.

PERSONNEL

	As of 6-30-50			As of 7-31-50			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	1		1	1		1			
Purchasing	12	12	24	12	12	24			
Expediting	4	8	12	3	10	13	-1	+2	+1
Inspection	13	2	15	14	3	17	+1	+1	+2
Clerical	1	16	17	1	16	17			
TOTALS	31	38	69	31	41	72	—	+3	+3

SAFETY AND SECURITY

Safety and Security Meetings scheduled	4
Number of Employees attending	54
Minor injuries	0

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

STATISTICS

	G	D	Total
Requisitions on hand 7-1-50 (includes 73 assigned to Government)	623	142	765
Requisitions assigned during July	2,202	167	2,369
Requisitions placed during July	2,241	218	2,459
Requisitions on hand 7-31-50 (includes 65 assigned to Government)	584	91	675

	Number	Value
HW Orders placed	1,471	$ 659,637.22
HW Alterations placed	89	44.944.05 Cr.
Total ----	1,560	$ 614,693.17
HWC Orders placed	176	1,486,058.75
HWC Alterations placed	33	63,547.42 Cr.
Total ----	209	$ 1,422,511.33
AEC Orders placed	126	$ 106,350.45
DC Orders placed	7	13,239.95

	OR	ORC	Total
Government Transfers	2	0	2

	Number
Return Orders Issued	58

OPEN ORDERS

HW Orders ----------	1287
HWC Orders----------	374
Government Orders ----	34

Number of new orders requiring inspection during month ----------	68
Number of orders requiring inspection completed during month -----	34
Number of orders outstanding requiring inspection at month's end -	177
HW Orders expedited (Special Request) ----------	190
HW Orders expedited (Routine) ----------	640
HWC Orders expedited (Routine) ----------	408

PURCHASING AND STORES DIVISIONS
STORES DIVISION
July, 1950

GENERAL

Materials valued at $5,827.30 were declared excess from active inventories during the month. This was accomplished by excessing materials representing more than a year's supply and by the deletion of 295 obsolete stock items.

1635 purchase requisitions were processed through screening and 2921 items were furnished from plant sources. The number of items furnished in ratio to the number of purchase requisitions screened increased approximately 100% over the previous month.

In view of present market conditions, an analysis of active stock items relative to availability, delivery time, and price was started during the month and was progressing satisfactorily at month end.

Materials valued at $463,133.19 were declared excess from the Construction Materials Account (10.20). This was accomplished by excessing items on firm negative lists prescreened by all subcontractors.

Railroad material located at Hanford with a value of $462,057.07 was established as an inventory account in the Construction Materials Section (10.20) during the month.

Two meetings regarding disposition of the Pasco Depot were attended on July 20, 1950 and July 29, 1950 respectively. Representatives of the Commission; District Engineers, Seattle and Walla Walla; Seattle Port of Embarkation; Transportation Corps., Seattle; N. P. Railroad; Transportation Corps, Washington, D. C.; Sixth Army, Presidio of San Francisco, California; and General Electric Company were in attendance. Preliminary plans for ultimate Army control of the Depot was discussed and it is anticipated that specific requirements will be known in the near future.

Shipping activities at the Pasco Depot continued at an increased rate as 443 truckloads and 5 carloads of material and/or equipment were shipped to schools or government agencies.

Material and equipment valued at $1,172,766.71 were withdrawn from excess and returned for use on the Project.

218 shipping documents valued at $1,248,917.26 were processed and shipped.

11 formal excess lists totaling $1,536,212.10 were submitted to the Commission during the month.

81 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating sale of scrap and transfer of excess properties.

PURCHASING AND STORES DIVISIONS
STORES DIVISION

PERSONNEL

	As of 6-30-50			As of 7-31-50			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	3		3	3		3			
Construction Matl. Sect.	4	48	52	3	47	50	-1	-1	-2
Operations Matl. Sect.	4	96	100	4	92	96		-4	-4
Surplus, Salvage & Scrap Materials Section	5	97	102	5	101	106		+4	+4
TOTALS	16	241	257	15	240	255	-1	-1	-2

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	13
Number of Employees Attending	225
Minor Injuries	8

STATISTICS

INVENTORY CONTROL SECTIONS

Construction Materials Section	
Items in Stores Stock	49,046
Items in Small Tools (Estimated)	8,776
Items added to Stock	3,118
Items completely liquidated from Stock	3,105
Store Orders Posted - Materials (Items)	3,052
Store Orders Posted - Tools (Items)	336
Number of Requisitions Screened - A.J.	442
Number of Items furnished from Stock	327
Value of Disbursements - Materials	$151,961.85
Value of Disbursements - Tools	24,397.65
Inventory Valuation at month end - Materials	9,216,921.51
Operations Materials Section	
Number of items added to Stores Stock	98
Number of items deleted from Stores Stock	295
Items in Stores Stock at month end	47,415
Store Orders Posted	17,144
Number of requisitions screened this month - G.E.	1,193
Number of items furnished from plant sources this month	1,201
Inventory valuation at month end (903-all captions, 906 & 912)	$1,246,980.39
Inventory valuation at month end (Spare Parts)	1,689,655.49
Inventory valuation at month end (Special Materials)	3,174,675.19
Total value Inventory Accounts	6,111,311.07

STATISTICS (Continued)

Operations Materials Section (Continued)

Value of disbursements, not including cash sale items		$172,885.10*
Value of Cash Sales		380.78
Value of Sales, Payroll Deduction		875.31
Value of Materials declared excess		5,827.30
Value of Materials returned to Stores stock for credit		6,218.95

* Includes $7,175.14 disbursed to Construction and CPFF subcontractors.

Surplus, Salvage and Scrap Materials Section		
Balance of Account 10.10 as of 6-25-50		$15,951,977.62
Receipts 6-25-50 to 7-25-50		
Lumber	$ 45,006.22	
Material & Supplies	470,307.71	
Automotive Equipment	191,450.32	
Miscellaneous Equipment	16,884.51	
Office Furniture	60.83	
Household Furniture	524.28	
Machine Tools & Equipment	6,274.94	730,508.81
Adjustments - Classes & Current Market Prices		18,480.35
		$16,700,966.78
Disbursements 6-25-50 to 7-25-50		
On Project		
Material & Supplies	$ 52,059.32	
Automotive Equipment	967,097.97	
Miscellaneous Equipment	109,997.13	
Household Furniture	45.00	
Machine Tools & Equipment	43,567.29	
Transfers from Excess to Account 10.20		
Material & Supplies	399,629.48	
Process Equipment	996.00	
Off Project		
Lumber	$ 21,547.94	
Material & Supplies	457,601.08	
Automotive Equipment	720,705.02	
Miscellaneous Equipment	38,136.35	
Office Furniture	10,926.77	2,822,309.45
Balance of Account 10.10 as of 7-25-50		$13,878,657.33
Total Receipts to Date		$31,752,135.74
Total Disbursements to Date		$17,873,478.41

STATISTICS (Continued)

Surplus, Salvage & Scrap Materials Section

Scrap and Salvage Disbursed

Scrap Sales Completed	21
Scrap Sales in Process	8
Scrap Sales Revenue for month of July	$50,331.93
Total Scrap Sale Revenue to Date	$127,333.90

WAREHOUSING, RECEIVING, DISBURSING & SHIPPING SECTIONS

Construction Materials Section

Store Orders Filled	3,388
Items Excessed	2,695

Operations Materials Section

Receiving Reports Issued	4,114
Emergency Store Orders Filled	2
Returnable Containers on hand Month End	3,263
Shipments Processed (Container & Material)	253
Shipments Received	5,470
Store Orders Registered	20,364

Surplus, Salvage & Scrap Materials Section

Store Orders Filled	505
Truckloads of Material Shipped	443
Carloads of Material Shipped	5

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
JULY, 1950

GENERAL

At the June 15, 1950 Docket Meeting of the North Coast Rail Lines the carriers approved the establishment of a rate of 33¢ per cwt., including all increases, on liquid Caustic Soda, in tank cars, 100,000 pounds minimum, from Tacoma, Washington, Willbridge and Portland, Oregon to Lewiston, Idaho which will become effective some time in November upon completion of a new pulp mill at that location. In view of this action on the part of the carriers, it was apparent that the present rate of 38¢ per cwt., including all increases, applicable on this commodity from the same origins to Hanford and Richland was too high.

An emergency proposal requesting publication of a rate of 25¢ per cwt., including all increases from Tacoma, Washington, Willbridge and Portland, Oregon to Hanford and Richland, Washington was presented to the carriers for consideration at the July Docket Meeting of the North Coast Rail Lines. This proposal pointed out that approval of a rate of 25¢ per cwt. to Hanford and Richland would produce revenues per car mile and per ton mile which would compare favorably with the approved rates to Lewiston, Idaho. Furthermore, the carriers were advised that thorough investigation had disclosed that it would be possible to transport our requirements of liquid Caustic Soda via barge from Willbridge to Umatilla, Oregon and thence via tank truck to Hanford at a through rate which would not exceed 26¢ per cwt.

In considering our proposal the carriers first offered a rate of 30¢ per cwt., which we stated was unsatisfactory. After further consideration the carriers stated they would publish a rate of 27¢ per cwt.; however, we stood firm on our proposal for a rate of 25¢ per cwt., and were finally successful in having the carriers agree to publication on this basis. At our request, applications were immediately filed by the carriers with the Interstate Commerce Commission in Washington, D. C. and the State of Washington Public Service Commission in Olympia, Washington seeking permission to publish the reduced rate on less than statutory notice. Permission to publish this rate on one day's notice, effective August 5, 1950 was granted by the Washington Public Service Commission for Intrastate application. However, such permission was denied by the Interstate Commerce Commission for Interstate application and this rate will become effective on statutory notice August 28, 1950.

As a result of the above, all shipments of liquid Caustic Soda, in tank cars, from Tacoma to Richland or Hanford on or after August 5, 1950 will reflect a savings of 13¢ per cwt., or approximately $130 per car. In addition, if our supplier must ship from Willbridge or Portland, Oregon prior to August 28, 1950 the excess freight amounting to 13¢ per cwt. will be for his account in accordance with the terms of our contract. As a result of this reduction, annual savings in excess of $20,000 will be realized.

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

GENERAL (Continued)

In response to our proposal, the Northern Pacific and Union Pacific Railroads have agreed to publish on statutory notice a rate of 15¢ per cwt. on sand from Pioneer, Washington to Richland, Washington. This will result in a reduction of 2¢ per cwt., and effect a savings of $20 per car.

Negotiations with the Union Pacific Railroad have resulted in the establishment of free Pickup and Delivery service on less carload freight consigned to or from Richland, Washington effective July 21, 1950. This new service will eliminate the handling of less carload freight by trap car, project trucks or common carrier truck lines between Kennewick and Richland, Washington, effecting savings not only to Hanford Works but also to the community as a whole.

The motor carriers have approved our request and will publish on statutory notice through class rates from Bellingham, Sedro Wooley and Everett, Washington to Hanford and Richland, Washington which will reduce rates as much as 59¢ per cwt.

The Interstate Commerce Commission on July 28, 1950 issued Service Order No. 856 entitled "Demurrage on Railroad Freight Cars." This provides that each common carrier by railroad subject to the Interstate Commerce Act shall include all Saturdays and Sundays occurring after the expiration of free time when computing demurrage charges.

H. W. Instructions Letter No. 152 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 payment of demurrage charges and undue delay to railroad freight cars.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of July amounting to $5,889.86. This makes a total savings from September 1, 1946 to date of $1,318,192.01.

PERSONNEL

	Total Personnel as of 6-30-50	Total Personnel as of 7-31-50	Net Change
Exempt	2	2	0
Non-Exempt	7	7	0
TOTALS	9	9	0

SAFETY AND SECURITY

Safety and Security Meetings scheduled ---------- 1
Number of Employees Attending ---------- 6
Minor Injuries ---------- 0

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS

Savings Report

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for July	Savings 9-1-46 thru June. 1950	Total Savings 9-1-46 to date
Acid, Nitric	Dupont, Wash.	$2,371.40		
Acid, Sulphuric	Dupont, Wash.	181.66		
Gas, Chlorine	Tacoma, Wash.	312.00		
Soda Ash	Trona, Calif.	404.02		
Soda, Caustic	Willbridge,Ore.	2,040.46		
Ferric Sulphate	Stege, Calif.	436.32		
Iron and Steel	San Francisco, Calif.	144.00		
		$5,889.86	$1,312,302.15	$1,318,192.01
2. Freight Bill Audit		1,144.49	48,633.68	49,778.17**
3. Loss and Damage and Over-Charge Claims		703.24	97,481.92	98,185.16
4. Ticket Refund Claims		428.73	8,253.32	8,682.05
5. Household Goods Claims		19.34	13.860.82	13,880.16
		$8,185.66	$1,480,531.89	$1,488,717.55

** Includes $19,495.23 for A.E.C.

Work Volume Report

Reservations Made	Rail	31
	Air	88
	Hotel	53
Expense Accounts Checked		82
Household Goods & Automobiles	Movements Arranged Inbound	8
	Shipments Traced	6
	Insurance Riders Issued	9
	Furniture Repair Orders	4
	Claims Filed	2
	Claims Collected - Number	1

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

Work Volume Report (Continued)

Ticket Refund Claims	Filed	12
	Collected - Number	14
	Collected - Amount	$ 428.73
Freight Claims	Filed	8
	Collected - Number	6
	Collected - Amount	$ 703.24
Freight Bill Audit Savings		$ 1,144.49
Freight Shipments Traced		31
Quotations	Freight Rates	156
	Routes	172
Bills Approved	Air Freight	4
	Air Express	14
	Boat	3
	Carloading	143
	Express	145
	Rail	232
	Truck	196
Carload Shipments	Inbound - General Electric	258
	Others	44
	Outbound- General Electric	20
	Others	5

Report of Carloads Received

	MILW	N.P.	U.P.	TOTAL
General Electric Company				
Anthrafilt	6			6
Hydrated Lime		3	3	6
Steel Pipe		1		1
Cement		2	2	4
Steel	1		3	4
Caustic Soda	6	3	5	14
Soda Ash	1		2	3
Coal			129	129
Express	5			5
Transformers	2			2
Castings	1			1
Merchandise	4	1	1	6
Nitric Acid		8	8	16
Tubing			1	1
Ferric Sulphate	1	2	1	4

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (Continued)

	MILW	N.P.	U.P.	TOTAL
General Electric Company				
Petroleum Naptha Distillate			1	1
Salt		1	1	2
Phosphoric Acid			1	1
Sulphuric Acid		1		1
Liquid Chlorine	1	3		4
Machinery	2	1		3
Infusorial Earth		1		1
Gravel	13			13
Telephone Equipment	3			3
Valves	1			1
Liquid Asphalt	7			7
Chemicals	1			1
Sand	17			17
Cylinders	1			1
TOTAL	73	27	158	258
Atkinson-Jones Construction Company				
Asbestos		1		1
Roofing	2			2
Steel Sections with Glass	3			3
Steel	7	1	2	10
Sand		2		2
Cement		9		9
Gravel		1		1
Mineral Wool	1			1
Valves		1		1
Fir Lumber		1		1
Machinery	2			2
Pipe	1			1
Merchandise	3			3
TOTAL	19	16	2	37
Fred J. Early Company				
Crane		1		1
Contractor Equipment		1/2		1/2
TOTAL		2		2
Associated Engineers, Inc.				
Pipe and Pipe Fittings		1		1
E. P. Erwin Construction				
Wool	1			1
C. J. Johnson Company				
Tanks	3			3
TOTAL	23	19	2	44
TOTAL - ENTIRE PROJECT	96	46	160	302

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SUMMARY - JULY, 1950

The number of applicants interviewed decreased from 1,451 during June to 1,287 during July. 282 of these applicants were individuals who applied for employment with the General Electric Company for the first time. In addition, 187 new applications were received through the mail. Open nonexempt, nontechnical requisitions increased from 147 at the beginning of July to 154 at the end of the month. Total plant roll increased from 7,778 to 7,813. Turn-over rate increased from 1.31% in June to 1.45% in July. During July, 26 new requests for transfers to other type of work were received in the Employment Office. Forty-nine employees who had filed requests were transferred during the month. Total response at the end of July to advertising for instrument mechanics amounted to 694 inquiries with 51 instrument mechanics and 73 instrument trainees being placed in process for employment. Demand for designers and draftsmen necessitated advertising in newspapers in Seattle, Washington, and Portland, Oregon. At the end of the month a total of 44 inquiries had been received. Effective July 1, a procedure was established in the Employment Office whereby all employees removed from the rolls with their continuity of service protected will be notified in writing when their service is broken by virtue of continued absence.

During the past month the Employee Services Group cooperated with the Union Relations and Wage Rate Division in comparing the new insurance and pension plan with the old plans, so that information might be presented to the HAMTC. Five retired employees were interviewed during July for the purpose of arranging for photographs and news stories in the Works News concerning their activities since retirement. Twelve inquiries were received from pensioners requesting information concerning the availability of Company merchandise at employee prices. Six employees retired during July, and two employee deaths occurred during the month. Six investigations were made and letters prepared regarding the status of employees on leave of absence. Sixty-eight employees confined to the Kadlec Hospital were visited during July, and fifty-one salary checks were delivered to employees in the hospital. Eleven visits were made to employees confined at home due to illness. 551 employees are members of the military reserve, and 145 additional employees are subject to the Selective Service Act. Thirty-five suggestion awards, totaling $ 355, were made during July. These suggestions resulted in an estimated savings of $ 3,341.01. Seventy-two compensation claims were reported to the Department of Labor and Industries, and two property damage claims were reported to the Travelers Insurance Company during July.

The first four groups of supervisors began "Principles and Methods of Supervision" on July 18. There are a total of 79 supervisors participating in these meetings which are held in Dormitory W-10 and the Hanford High School. One thousand sets of material for "Principles and Methods of Supervision" have been ordered from the Sales Analysis Institute. Two issues of the Hanford Works SAGE, prepared by the Training and Program Development Group, were distributed to supervisors on July 12 and July 26. Four meetings were held during the month with a total of 33 supervisors of the Medical Division attending for the purpose of reviewing Company policies and Benefit Plans. Eight meetings with a total of 187 nonexempt Medical Division employees attending were also held during July. Requests were received from the Purchasing Division, Accounting Division and the Technical Personnel Office for a special program on letter writing and report writing.

Employee and Community Relations Divisions
Summary

Formal acceptance by the Council of the Company's wage increase, pension and insurance proposal was received on July 17, to be effective July 3. After the receipt of the NLRB certification of the Building Service Employees International Union, negotiations commenced on July 21 with the idea of patterning the contract after the HAMTC Agreement.

Federal Mediation and Conciliation Service intervention in the DST dispute was unsuccessful. Two Unions have failed to sign the Settlement Agreement and the offer has been withdrawn. Arbitration has been recommended by A-J. Wage increase negotiations between A-J and the Office Employees Local No. 100 reached an impasse necessitating the services of the Federal Mediation and Conciliation Service. A-J has suggested that consideration, based on an "Improvement Factor", might be given to increasesnot to exceed $2.50 per week to certain employees. The Union has authorized a strike to enforce their wage demands for increases in excess of $15 per week. Negotiations relative to the Master Agreement for 1950-51 between A-J and the Unions continued, with A-J resisting demands for a Building Trades Agreement. The Contractors suggested that the present Agreement remain in effect for another year.

Certification of the Technical Engineers, Architects and Draftsmen Local No. 17 was received from the NLRB effective July 17, 1950. A notice of desire to open the Agreement for revisions and wage increases was received from this Union on July 21.

Negotiations between A-J and the Teamster Local No. 556 and Ironworker Local No. 14 were attended by a member of this Division.

The Operating Engineers vs. Machinists (IAM-Independent) representation election was held on July 21, 1950. Results: For IAM - 37, for Operating Engineers - 21.

A work stoppage on the part of Boilermaker-Welders was successfully concluded on July 20.

All of the work incidental to the general increase effective July 3, relative to wage rate records, was completed. Wage Rate representatives participated in discussions with the Union representatives and supervisors relative to grievances filed concerned job classifications and rates of pay. The review of Draftsman and Designers jobs continued. The semi-annual Northwest Community wage rate survey was completed. One hundred six requisitions for new employees were reviewed and processed; over 500 reclassifications and transfers were reviewed; 330 increases, both automatic and merit, were handled; and 130 additions to the weekly roll were approved.

Employee and Community Relations Divisions
Summary

General Electric Company's offer to the Hanford Atomic Metal Trades Council was the occasion for a concerted effort by all Community and Public Relations groups during July to assist Union Relations in presenting the story of the "Security Package" and the 3 per cent wage increase specifically to all members of the Negotiating Committee, and generally to all Hanford Works employees.

Another event during the month which became a joint activity of all Community and Public Relations groups was the Distinguished Service to Safety award presented by the National Safety Council to the Nucleonics Department. The Works News was used extensively for publicizing the event to Hanford Works people.

A talk by the General Manager at the Pasco Chamber of Commerce received very favorable coverage in both the Columbia Basin News and the Tri-City Herald.

A total of 63 releases of information were made by the News Bureau during July, 50 of which were releases of stories and/or photos to the "local list" of media. The variety of subjects treated continued to be wide, including organization changes, a large number of stories about recreation for the community, and safety.

Activities of the Community Divisions Public Information supervisor during the month of July included assistance to members of the Richland Community Council in publicizing the activities of the committees they represent. This supervisor also served on the Community Defense Plan, the Richland trailer storage lot, and the garbage regulation committees appointed by the Community Manager during the month.

Arrangements were completed by Public Functions and Services whereby the approximately 1,000 members of the Army Anti-Aircraft Artillary group located at North Richland will see regular showings of General Electric films. In addition, 14 G.E. film showings were arranged for plant and community organizations during July.

In the field of radio programming, Public Functions and Services produced "Lady From Safety Land", a new weekly feature on radio station KALE which is intended as community safety education for children ages 4 to 9. In addition, the Distinguished Service to Safety award ceremony was recorded, edited, and will be broadcast at an early date by two radio stations in the area.

Hanford Works Photo House handled an increasing number of assignments for the Reactor Division involving highly technical photography.

A new stenographic manual entitled "This Way--Please," being produced by Special Programs contains a particularly outstanding group of finished drawings created by the Public Functions and Services commercial artist.

Employee and Community Relations Divisions
Summary

The Company's offer to the Union and the Distinguished Service to Safety award were the subjects of several communications prepared by Special Programs for delivery to supervisors and employees in the form of letters, Works News articles, and a special supplement during the month of July.

Hanford Works News was the medium for reporting to Nucleonics Department employees concerning the results of the Suggestion System activities during the first six months of the year. In addition to the half-year summary, the Works News carried front page feature articles concerning suggestion awards winners. It is felt that this medium has proven especially valuable in bringing about an increased number of suggestions.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

JULY, 1950

ORGANIZATION AND PERSONNEL

Employee Relations

Employment:

There were no organization changes in this Group during the month of July.

Employee Services:

Effective July 17, 1950, one Technical Graduate was assigned to the Employee Services Group for three months, as a part of the Rotational Program developed for Technical Graduates at this Works.

Training and Program Development:

There were no organization changes in this Group during the month of July.

Union Relations and Wage Rates

One Steno-Typist A terminated voluntarily on July 28, 1950.

Community and Public Relations

No organization changes were made in this division during July.

Number of employees on roll	July, 1950
Beginning of month	91
End of month	91
Net gain or loss	0

Employee and Community Relations Divisions

ACTIVITIES

Employee Relations

Employment:

	June, 1950	July, 1950
Applicants interviewed	1,451	1,287

282 of the above applicants interviewed during July were individuals who applied for employment with the Company for the first time. In addition, 187 new applications were received through the mail.

Open Requisitions	June, 1950	July, 1950
Exempt	3	6
Nonexempt	147	154

Of the 147 open, nonexempt requisitions at the beginning of the month, 79 were covered by interim commitments. Of the 154 open, nonexempt requisitions at the end of the month, 98 were covered by interim commitments. During July 104 new requisitions were received requesting the employment of 138 nonexempt employees.

	June, 1950	July, 1950
Employees added to the rolls	205	157
Employees removed from the rolls	106	122
Net gain or loss	+ 99	+ 35

Of the 122 employees removed from the rolls, 9 terminated due to lack of work, 4 of which were outside the bargaining unit.

Turn-over:	June, 1950		July, 1950	
	Male	Female	Male	Female
Excluding employees laid off for lack of work	.87%	3.14 %	1.02%	3.26%

Over-all Plant Turn-over:	June, 1950	July, 1950
Excluding employees laid off for lack of work	1.31%	1.45%

At the end of July, there were 193 employees in lack of work status divided into the following categories:

	June, 1950	July, 1950
Nonbargaining unit employees	56	49
Bargaining unit employees	147	144

Employee and Community Relations Divisions

During July, 26 new requests for transfers were received and reviewed by the Employment Office. Transfers were effected for a total of 49 employees during the month who had filed requests for consideration for transfer.

Additional inquiries continued to be received during July in response to newspaper advertisements throughout the East, Middle West and on the West Coast for instrument mechanics. By the end of the month a total of 694 inquiries had been received in response to this series of advertisements. As a result of these inquiries, there are now 51 instrument mechanics and 73 instrument trainees in process for employment.

As the result of requests received for designers and draftsmen, advertisements were inserted in newspapers in Seattle, Washington, and Portland, Oregon, for qualified individuals in this type of work. By the end of July, a total of 44 inquiries had been received from these advertisements.

Effective July 1, a procedure was established by the Employment Office whereby all employees who have been removed from the rolls with their continuity of service protected will be notified in writing when their continuity of service is broken in accordance with Company policy. During July, 14 former employees were informed of the fact that their continuity of service had been broken.

Employment Statistics

Number of employees on rolls	6-30-1950	7-31-1950
Exempt	1,764	1,797
Nonexempt	6,014	6,016
TOTAL	7,778	7,813

ADDITIONS

	Exempt	Nonexempt	Total
New Hires	22	114	136
Re-engaged	0	1	1
Reactivations	2	13	15
Transfers (from other plants)	5	0	5
Actual Additions	29	128	157
Payroll Exchanges	12*	0	12
Gross Additions	41	128	169

TERMINATIONS

Actual Terminations	7	87	94
Removals from Roll	1	27	28
Payroll Exchanges	0	12**	12
Gross Terminations	8	126	134

* Transferred from Weekly Salary Roll
** Transferred to Monthly Salary Roll

Employee and Community Relations Divisions

Approximately 90% of all terminations were on a voluntary basis, and most of these were for the following reasons (a) Personal reasons (b) Another job.

GENERAL

	6-30-50	7-31-50
Applicants interviewed	1,451	1,287
Photographs taken	286	227
Fingerprint impressions taken (in duplicate)	356	311
Procurement letters written	1,183	676

ABSENTEEISM STATISTICS
(Weekly Salary Roll) *

Male	1.76%	1.42%
Female	2.77	2.55
Total Plant Average	2.00	1.69

INVESTIGATION STATISTICS

Cases pending at beginning of month	1,134	1,087
Cases received during the month	219	198
Cases closed	266	155
Cases pending at month end	1,087	1,130
Cases found satisfactory for employment	193	166
Cases found unsatisfactory for employment	13	6
Cases closed before investigation completed	18	22
Special investigations conducted	22	7

*Statistics furnished by Weekly Payroll Division

Employee Services:

During July the Employee Services Supervisor spent several days with the Union Relations and Wage Rate Division reviewing and comparing the new insurance and pension plan with the old insurance and pension plan in order that this information might be presented to the Hanford Atomic Metal Trades Council negotiatin committee.

Five retired employees were interviewed during July for the purpose of arranging for photographs and news stories concerning their activities since retirement for publication in the Works News. Failure of retired employees to forward their current mailing addresses has resulted in six inquiries being mailed to relatives of retired employees to obtain this information. During July, as a result of letters directed to employees who have retired, bringing to their attention that they have the right to obtain Company merchandise at employee prices, 15 letters were received 12 of which requested information as to where they might purchase Company merchandise. Information was also obtained during the past month from W. H. McClung, Supervisor of Employee Sales, Apparatus Department, to the effect that all pensioners should request such merchandise through his office in Schenectady. Traffic appliances are shipped direct to pensioners, while major appliances are obtained through the nearest General

Employee and Community Relations Divisions

Electric Supply distribution point. Arrangements for major appliances are arranged by the Supervisor of Employee Sales.

Five pension checks were delivered personally to retired employees during the month.

The following employees retired during July:

Erma K. Laing, Technical Services Division, (Optional);
Jacob S. Lee, Community Power Division, (Optional);
Arthur Johannsen, Accounting Division;
Sallie K. Burns, Medical Division;
Juan B. Sanchez, Manufacturing Power Division; and
Jesse M. Smith, Plant Security and Services 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 employee deaths occurred during the month of July, namely:

Design Division; and
Manufacturing Maintenance Division.

One tax letter and one letter of administration were received during the month of July from beneficiaries of deceased employees and were forwarded to Schenectady through the Payroll Division. These documents were completed and returned in order that the deceased employee's stock bonus could be paid to the beneficiary.

Six investigations were made and letters prepared regarding the status of employees on leave of absence because of illness or personal reasons.

Four publications of Employee Benefit Plans Information were prepared and released to the Works News for publication during July.

The following visits were made with employees during the past month by representatives of the Employee Services Group:

Kadlec Hospital	68
Employees at home	6
Salary checks delivered to employees confined to Kadlec Hospital	51
Salary checks delivered to employees confined at home	5

Three trips were made to all areas for the purpose of posting union bulletins and Suggestion System posters on the Company Bulletin Boards.

As of the first of July, participation in Company Benefit Plans were as follows:

Pension Plan	94.7%
G.E. Group Life Insurance	77.7
G. E. Group Health Insurance	94.6
Employee Savings & Stock Bonus	43.

120983

261

Employee and Community Relations Divisions

Selective Service

As the result of the Government ordering up numbers of the military reserve and National Guard, questionnaires were prepared and distributed to all employees during July, for the purpose of obtaining complete information relative to our employees' military status. With 95% of these questionnaires returned, results indicated that there are 551 employees who are members of the military reserve and National Guard. These employees are seggregated as follows:

Active reserve	96
Inactive reserve	347
Reserves in volunteer units	93
National Guard	15
	551

Lists of all personnel in the military reserve and National Guard were forwarded to the Manager of General Payroll in Schenectady during the latter part of the month. The statistics with respect to employees effected by the Selective Service Act are as follows:

Technically trained employees classified as 1-A	21
Technically trained employees for whom deferment has been requested but not yet granted	1
Number of employees for whom deferments have been requested and granted	6
Number of nontechnically trained employees in 1-A classification	117
	145

Information concerning those employees in the military service, National Guard, and those effected by the selective service act is being furnished to each division manager.

Suggestion System

	June, 1950	July, 1950	Total since 7-15-1947
Suggestions received	192	186	5,758
Investigation reports completed	165	178	4,754
Awards granted by Suggestion Committee	37	35	736
Cash Awards	$ 690.00	$ 355.00	$ 11,310.
Estimated savings resulting from suggestions	8,502.04	3,341.01	

Publicity concerning awards made by the Suggestion System during the month were carried in the Works News issues of July 7 and 28. In addition, the July 14 issue featured a front-page story describing the increase of suggestions received during 1950 over those received during 1949.

The largest suggestion award made during last month was in the amount of $ 70. to an Accounting Division employee for a suggestion which simplified the method of handling and journalizing inventory material.

Employee and Community Relations Divisions

Insurance and Compensation

Compensation

-- The claimant was injured on August 30, 1943, while in the employ of subcontractor of He sustained rather severe back injuries and on September 10, 1945, was paid $ 2,160 representing 60% permanent partial disability for unspecified injuries. On April 22, 1946, he was allowed an increased award of 15% of the maximum allowable for unspecified disability, and 15% as compared to the amputation value of the left leg at the hip. These additional awards resulted in the claimant receiving a total of $ 3,240. On October 3, 1949, the claimant appealed to the Board of Industrial Insurance Appeals for a rehearing alleging greater disabilities than existed previously, all of which were due to the injury of August, 1943. A hearing was conducted in Vancouver on November 16, 1949, at which time the claimant's medical witness testified that he was totally and permanently disabled. A continuance was requested for the purpose of presenting employer's testimony. The continued hearing took place on June 6, 1950. The Board of Industrial Insurance Appeals sustained the earlier order denying the claimant's application for reopening on the ground of aggravation. Their findings were that the claimant had suffered no increase in disability, since the closure of the claim. That he is not permanently and totally disabled and has in fact been gainfully employed in full time work. This decision represents a savings of $ 15,180 which is calculated after considering the claimant's age and the sum of the monthly payments to which he would be entitled, if the pension had been granted.

-- The claimant sustained an injury to his right foot and ankle on November 21, 1947, while employed as a carpenter with the Company, a subcontractor, at this location. He was awarded a permanent partial disability of 75% as compared to the amputation value of the right leg below the knee and the limb is not amputated. The claimant appealed this award order alleging that he had not been awarded the proper amount of disability which he sustained as a result of the injury of November 21, 1947. A hearing was then conducted on April 6, 1949. A continuance was granted and further medical testimony was presented on November 2, 1949. Two orthopedic specialists were present on behalf of the employer who evaluated the claimant's disability as 75% as compared to amputation of the right leg below the knee. The medical witness presented by the claimant stated that it was his opinion that the claimant had a permanent partial disability of 75% of the amputation value of the right leg at the hip; 20% amputation value of the right arm at the shoulder and 40% for unspecified disability. The Board of Industrial Insurance Appeals ruled that the qualifications of the employer's medical witness clearly outweighed those of the claimant's medical witness, and that the employer's witness had had a better opportunity to observe the claimant's condition and that the extent of disability was 75% as compared with the amputation value of the leg below the knee. This decision resulted in a savings of $ 3,237.50.

-- The claimant was injured on January 7, 1948, while in the employ of the a subcontractor. He sustained an injury to his back at that time. The claim was allowed and closed without payment of a permanent partial disability award whereupon the claimant made application for an appeal contending that he should receive a permanent partial disability award. A hearing was allowed on May 25, 1949, to enable

the claimant to present his testimony. The employer was also allowed to present his testimony at a later date and the hearing was conducted on June 7, 1950. The claimant's medical witness was Dr. R. W. Armstrong who was of the opinion that a percentage rating of unspecified permanent partial disability should be as follows: 20% for traumatic psychoneurosis, 20% for sacroiliac condition and 40% for right side, arm and vertebra or 80% of the maximum allowable for unspecified permanent partial disability. An orthopedic specialist was present on the employer's behalf who stated that the claimant had completely recovered and was not in need of further treatment, was able to return to his former employment and that no permanent partial disability resulted from the injury. The Board of Industrial Insurance Appeals later held that the claimant had in fact fully recovered and suffered no permanent partial disability as a result of the injury of January 7, 1948. Case was closed without allowance of a permanent partial disability award. This decision resulted in a savings of $ 3,600.

was injured on December 14, 1944, while in the employ of a subcontractor of The claim was allowed and he was given extensive treatment without much success. He was later determined to be totally and permanently disabled and was allowed a pension of $ 50 a month effective January 1, 1949. On July 12, 1950, a General Order was issued by the Department of Labor and Industries to the effect that the pension was to be commuted to a lump sum settlement in the amount of $ 5,000 effective July 15, 1950.

Life Insurance

Code information for use by insurance companies in issuing insurance to employees of this Works was furnished to 64 insurance companies and investigating agencies during July.

Insurance Statistics	6-1950	7-1950	Total since 9-1-1946
Claims reported to the Department of Labor and Industries	49	72	3,472
Claims reported to Travelers Insurance Company	5	2*	444

* Of the above claims reported during July to the Travelers Insurance Company, all were property damage claims.

Training and Program Development:

During the month of July arrangements were made for the first four groups of supervisors to begin the "Principles and Methods of Supervision". These meetings actually started on July 18 with two groups meeting in Dormitory W-10 where a room has been assigned exclusively for use in presenting these methods. Two groups met on the following day at the Hanford High School. There are a total of 79 supervisors participating in these group meetings at the present time. Prior to the time these meetings were started the Supervisor of Training

met with each Division Manager and his staff on July 12 and 13 at which time the purposes, as well as the procedures to be followed in connection with the "Principles and Methods of Supervision", were explained in detail. A long range program, however, has been prepared and schedules are presently being arranged so that all of the supervisors at the Hanford Works will have an opportunity to participate in the "Principles and Methods of Supervision" sometime in the future. One thousand sets of the material have been ordered from the Sales Analysis Institute. The conferences being held at the present time last approximately two hours and will be held once each week for a period of twenty weeks.

Two issues of the Hanford Works Sage, a publication prepared and published by the Training and Program Development Group, were distributed to all supervisors on July 12 and July 26. This publication is for the purpose of forwarding to our supervisors quickly information concerning employee and community relations activities, as well as keep them currently informed particularly of training programs. In addition, information on human relations, leadership, economics, as well as any change in administration of Company policies, will be disseminated through this media. A number of comments have been received since this publication has been issued from supervisors indicating their approval of this method of disseminating information.

As the result of conferences with the Medical Division for special programs with their exempt and nonexempt employees for a review of Company policies and Benefit Plans, 4 meetings were held during July with a total of 33 supervisors attending and 8 meetings with a total of 187 nonexempt employees attending. Indications are that the employees participating in these meetings are receiving considerable benefit. An outline of the material presented to these employees was reviewed with the Management of the Medical Division and approved prior to the time the meetings were held.

During July, 20 additional copies of the Supervisor's Handbook on Employee Relations were distributed to supervisors in various divisions. A total of 1,380 Handbooks have been issued to date.

During July, a total of 143 new employees were given orientation. Of this number 62% elected to participate in the Group Life Insurance Plan and 81% elected to participate in the Group Health Insurance Plan. In addition, 1 re-engaged employee and 4 transferred employees were given orientation, of which 80% elected to participate in the Group Life Insurance Plan and 100% elected to participate in the Group Health Insurance Plan.

During July conferences were held with members of the Training Group together with members of the Employee Services Group for the purpose of discussing a contemplated Benefit Plan Program, based on the new and revised Benefit Plans which were included in the offer and accepted by the Hanford Atomic Metal Trades Council.

During July a request was received from the Purchasing and Stores Division for a special program on letter writing. A program on report writing was requested by the Accounting Division, and the Technical Personnel Office has requested that a program be developed for use in the School of Nuclear Engineering, this program to cover both letter writing and report writing.

Union Relations and Wage Rates

Union Relations - GE Personnel:

The Company and the Council concluded their negotiations for a general wage increase and other pension and insurance benefits on July 7, 1950. The Council representatives indicated their acceptance of the Company's proposal and formal ratification was received from the Council on July 17, 1950. In accordance with the Company-wide proposal, the wage increase became effective July 3.

Certification from the NLRB recognizing the Building Service Employees International Union as the sole bargaining agency for certain personnel in Kadlec Hospital was received on July 7. As a result, negotiations with Building Service Employees International Union commenced July 21, 1950. The initial meeting with the Union representative was very brief with the Company and the Union both indicating a desire to pattern a new contract that will parallel as closely as possible the existing HAMTC Agreement.

In accordance with the HAMTC Agreement, a majority of the seniority lists were revised and transmitted to the Council for its review and acceptance.

Grievance Statistics:

Twenty-one grievance reports were received during the month, bringing the total received this year to 131. Three hundred seven grievances have been received since the grievance procedure was established. Grievances were received this month from the following divisions:

H. I. Operational	2
Minor Construction	1
Mfg. Instrument	5
Mfg. Power	1
Mfg. "S" Division	3
Mfg. Transportation	5
Mfg. "P" Division	3
Plant Security & Services	1
Total	21

Employee grievance reports received during the month of July were regarding the following subjects:

Jurisdiction	3
Hours of Work	6
Sick Leave	2
Seniority	1
Wage Rates	8
Miscellaneous	1
Total	21

Employee and Community Relations Divisions

The status of all grievances received to date is as follows:

	1949	1950	Total
Settled Satisfactorily, Step I	56	21	77
Settled Step I, per time limitation	59	72	131
Pending at Step II		18	18
Settled at Step II	61	20	81
	176	131	307

Only 13% 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:

Daylight Saving Time:

On July 5, 1950, Mr. Leo Kotin of the Federal Mediation and Conciliation Service again met with the Union and Atkinson-Jones representatives individually at the Desert Inn at which meeting Atkinson-Jones agreed to a statement to become a part of the Agreement as follows: "Nothing in the above in any way limits the right of the parties concerned to make proposals or to negotiate on any or all provisions of any future Contract."

Assurances were given by the Union representatives that this addition would remove all objections to the Agreement and that settlement could be concluded. It failed to change the attitude of the Carpenters and Laborers even though the Agreement, as revised, was signed as a recommended settlement by the Grievance Committeemen. A-J has favored the delay of any further action pending the results of efforts to secure the signatures of the Carpenters and Laborers, but has now recommended Arbitration. No definite action in this regard has been taken.

Office Workers Negotiations:

At the request of the Union, A. L. Peterson of the Federal Mediation and Conciliation Service was called into the negotiations between A-J and the Office Employes Local No. 100. The Union has remained firm in their demands for across the board wage increases in excess of $15 per week, and A-J has countered with a proposal to continue the present Agreement in effect for another year. Through the efforts of Mr. Peterson, A-J has suggested that consideration might be given to wage increases, not to exceed $2.50 per week, to those employees who have 12 or more months of continuous service at the

top rate in their respective groups, such an increase to be based on an "Improvement Factor". The Union members employed by the contractors concerned have authorized a strike, if necessary, to enforce their wage demands. A forthcoming meeting of the entire Union membership will take a strike vote which is expected to endorse the action taken by the contractor group.

Negotiations relative to the Master Agreement for 1950-51 between A-J and the Unions continued during the month. The Unions continue to press for a Building Trades Agreement, the contractors have resisted demands that the new Agreement take this form and have suggested that the present Agreement remain in effect for another year.

The Washington State Federation of Labor (AFL) Convention in Tacoma was attended by a member of this Division.

Certification of Results of Union Authorization Election was received from the NLRB, effective July 17, 1950, for the International Federation of Technical Engineers, Architects and Draftsmen, Local No. 17. On July 21, 1950, the Technical Engineers notified A-J of a desire to modify, delete, amend and renegotiate provisions of their Agreement which has an effective date of June 22, 1949, extended to September 22, 1950 by mutual agreement. The demands consist essentially of the following:

a. A shift bonus of 10% for the second shift and 15% for the third shift.

b. Increased leave privileges after two years' service.

c. Increase in isolation pay from $1.50 to $2.00 per day to $2.50 and $3.00 per day.

d. Two new classifications to replace the one classification of Instrument Man.

e. Wage increases.

Wage negotiations between Atkinson-Jones and the Ironworkers Local No. 14 were attended by a member of this Division.

The Operating Engineers vs. Machinists (IAM - Independent) representation election was held on July 21, 1950. Results: For IAM, 37; for Operating Engineers, 21. The mechanics included are in the White Bluffs machine shop for which the classification "Precision Mechanic (Heavy Stationary Machine Tools)" at $2.35 an hour, was recently established.

Negotiations between Atkinson-Jones and the Teamsters Local No. 556 were attended by a member of this Division.

Employee and Community Relations Divisions

Requests for Reimbursement Authorizations handled:

Bricklayers - Overtime Rates
Plumbers - Travel Allowance

Reimbursement Authorizations received:

None

A work stoppage involving Boilermaker-Welders who were engaged in welding work in 100-DR Area for Consolidated Western Steel occurred on July 12, 1950. The dispute involved only four men and work was resumed on July 20.

A strike vote within the Office Employes Local No. 100 to enforce demands for wage increases previously discussed will be taken at a general meeting of the entire membership on Wednesday, August 2, 1950 (exact date not confirmed). In view of the fact that a previous vote, taken at a meeting of the Hanford Works members of this Local, sanctioned the strike, it is expected that the vote of the entire membership will confirm that decision.

Wage Rates:

All of the work incidental to the general increase effective July 3 was completed during the month. This involved notification of Payroll of the new rates for all nonexempt personnel, the change of all individual wage rate records, and the publication and distribution of revised Unit and Non-Unit Wage Rate manuals reflecting the change in rates.

During the month of July, representatives of the Wage Rate Division participated in several discussions held with Union representatives and supervisors relative to grievances filed concerning job classifications and rates of pay.

The review of Draftsman and Designers jobs was continued during the month. The purpose of this review to place employees on the proper classification and rate in accordance with the new schedule developed for these classifications.

During the first week in the month, the semi-annual Northwest Community wage rate survey was completed.

During the month 106 requisitions for new employees were reviewed and processed, over 500 reclassifications and transfers were reviewed and approved or disapproved. Many of these recommendations required individual reviews and discussions with project supervisors. Three hundred thirty increases were handled, this figure includes both automatic and merit increases. One hundred thirty additions to the weekly salary roll were approved during the month.

Employee and Community Relations Division

The normal program of individual job studies was conducted during the month, jobs were reviewed discussed with supervisors and classifications and rates determined.

A meeting with union representatives and Industrial Division supervisors resulted in an agreement as to the experience factor requirements before an employee is eligible for consideration for upgrade to the next higher classification.

Employee and Community Relations Divisions

Community and Public Relations Division

PUBLIC INFORMATION - News Bureau

During the month of July, 63 releases of information were made by the News Bureau.

Local News Releases

During July, 50 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 KPKW, KWIE, KIT and KALE.

Personnel - General -- Obituaries concerning two Hanford Works employees were released.

Organization Changes -- Dr. A. A. Johnson to employment outside the company; E. S. Bell to staff of Manufacturing Divisions manager; G.A. Hirst to chief of the Industrial Fire Department. Three photos of Hirst were sent to local papers.

Community -- Electrical interruptions - residents were forewarned of 12 power outages during July.

Housing -- Persons with trailers, cars or other property stored in the lot north of Abbot Street were warned that they must be removed by August 31.

Recreation -- Two news releases were distributed on the following events in the summer recreation program; one release announced the coming of the event, the other announced winners attendance, etc.; Indian Day, a Bicycle School contest; a square dance for adults; a doll show; an evening sports program for adults; notice that certain activities for adults would be discontinued; a children's horseshoe contest; a community band concert; a pet show for children; a tether ball tournament; appointment of a new band director for the remaining concerts; a children's dramatic class; a free dance for teen-agers and adults; a song title contest; a hopscotch tournament; a ping-pong tournament and an announcement that a picnic kit is available free of charge to Richland persons planning picnics.

Public Works -- Residents were urged to conserve water and to report excessive sand found in their water supply in two releases during July. It was announced that residential parking compounds in Richland are being repaired by a full-time working crew.

Medical -- It was announced that the Richland Public Health Department was waging all-out war on mosquitoes. A local release stated that prominent state and local authorities on polio will take part in an Institute on the Modern Nursing Care of Polio Patients at Kadlec. A description of the equipment used to combat mosquitoes in the Richland area was distributed in a release. Two photographs of the equipment were sent to local papers.

Employee and Community Relations Divisions

Safety - Three stories were released urging children in Richland and North Richland to attend the Patrol-sponsored bicycle school training classes to be held throughout the month of July. Five photographs and five news stories were released to local media to mark the award of a National Safety Council Distinguished Service to Safety Certificate to Hanford Works employees for their 1949 low accident record. The releases publicized a b nd concert and award ceremony held in Riverside Park.

Releases Sent Throughout the Northwest

During July, 13 informative news releases were sent to 72 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:

Fire Protection - It was announced that a new short wave radio network for the Richland Fire Department would be installed in the near future.

Union Relations - The acceptance by the HAMTC of General Electric Wage and Security Package offer was announced through the daily list of newspapers. This story was also sent to 143 weekly newspapers in the state of Washington.

Speakers - A story was released which stated that R.E. Curtis of the Technical Personnel Office would make three talks as part of a special course for summer students at the University of Colorado.

Employee Benefit Plans - It was announced that General Electric people at Hanford Works have earned $4290 in suggestion awards during the first half of 1950. This amounts to an increase of 243 per cent over the first half of 1949.

Medical - It was announced that Mrs. Mary Harrison, Chief Pharmacist at Kadlec, was elected national president of Lambda Kappa Sigma sorority, an honorary pharmaceutical sorority. Three photographs of Mrs. Harrison were released.

Safety - The supervisor of the Safety and Fire Protection Division announced that the first six months of 1950 was the safest half-year in the history of Hanford Works.

Plant Construction - During July releases were made announcing that bids would be invited on contracts for paving and street construction work in Richland; the installation of a radio communication system for the Fire Department; the repainting of 141 houses, 24 dormitories, and three office buildings; and the construction of an Instrument Maintenance and Development building at Hanford Works. Also during the month the following apparent low bidders were announced: A. C. Grant of Kennewick to move 10 prefabs into Richland and Louis A. Hopkins to build an addition on and make alterations to the Medical Arts Building. It was also announced that a contract has been awarded to the American Steel and Wire Company for the erection of approximately one mile of six foot fence.

Employee and Community Relations Divisions

Tri-City HERALD Only

A series of nine questions concerning Richland water supply and the possibility of a water shortage this summer was submitted by the local Tri-City HERALD correspondent. He was given answers to all the questions.

A statement by the Manager of the Medical Division as well as other statistics and information were given to the local correspondent for International News Service in response to an inquiry concerning the fertility and birth rate of Hanford Works employees.

A series of questions was received from the HERALD on the subject of tolls for telephone calls between Richland, Pasco and Kennewick. The questions were submitted to F.E. Baker, Department Comptroller, and with his help they were answered.

Certain questions from the HERALD about the changes proposed in the G.E. Pension Plan were answered in a news release.

A request for a statement on negotiations between G.E. sub-contractors and the Pasco, Kennewick Building and Construction Trades Council on daylight saving time was answered by stating that there were no new developments.

Columbia Basin NEWS Only

A statement was given to the NEWS concerning a reorganization of Richland and North Richland Patrol. The story was released in answer to a request the NEWS had submitted.

Walla Walla Union-BULLETIN Only

A general round-up of commercial construction in Richland was given to the BULLETIN at their request.

Releases to KWIE, KPKW, and KALE Only

Three stories on the Richland recreation program and one story on the bicycle safety classes were re-written especially for radio and sent to KPKW, KWIE, and KALE.

Birth Rate

An inquiry concerning the effects of radiation on birth rates was received from INS through Lloyd Weir. Apparently, INS wanted more information than they received from their local correspondent. An additional statement was given. This information was accumulated to answer an article which appeared in the British Medical magazine "Lancet" that claimed that working at an atomic energy installation lessens fertility.

Acme News Photo

A general story about Richland written by an Acme photographer was reviewed by this office and returned to him with some photographs which he was unable to take while he was in Richland during June.

Employee and Community Relations Divisions

Yakima River Bridge

A magazine article on the construction of the railroad bridge across the Yakima River south of Richland was written and mailed to the "Pacific Builder and Engineer" at their request. Six photographs with cut lines showing the different phases of construction were also sent to the magazine.

Yakima Morning HERALD

A two-hour discussion with the Valley Editor of the Yakima Morning HERALD about the sort of news that that paper can use about Richland and Hanford Works should result in the appearance of more News Bureau stories in that paper.

"Chemical Engineering" Magazine

A photograph of D. W. McLenegan was sent to this magazine to be used with a story announcing his appointment as head of the Graduate School of Nuclear Engineering.

Communication

Local newspapers and radio stations were supplied with extra copies of Richland Telephone Directories by the News Bureau. A letter was sent with the directories.

Construction Plans

Four inquiries were received during the month from the Portland DAILY JOURNAL OF COMMERCE and "Pacific Builder and Engineer" for names and addresses of contractors who hold plans for contracts to te awarded on the project. This information was obtained from the Contract Section of the Design and Construction Divisions and forwarded to the media. They print this information so that small concerns interested in sub-contracting part of the construction work can have access to the plans.

PUBLIC INFORMATION -- Community Divisions

Assistance to Community Councilmen - At the request of a Richland Councilman, Community Divisions Public Information Supervisor prepared newspaper and radio publicity aimed at stopping residents from dumping rubbish on the outskirts of the Community. This supervisor also assisted the Councilman in his efforts to publicize "Little League Baseball" in Richland.

Community Divisions Public Information Supervisor helped the Council's publicity chairman write an article on the "best way and best time to sprinkle a lawn". The article was designed to help residents in their efforts to conserve water.

Assistance of the types noted above undoubtedly goes a long way toward winning the goodwill of councilmen for the G.E. Community Divisions.

Employee and Community Relations Divisions

Service on Community Manager's Committees - The Supervisor of Community Divisions Public Information served as publicity chairman and public relations counsel on the following committes appointed by the Community Manager:

1. Community Defense Plan - organized to outline a skeleton plan for the defense of Richland, in the event of war.

2. Richland Trailer Storage Lot - functioned to effect the closing of this lot.

3. New Garbage Regulation - outlined the procedure to be followed in putting the regulation into effect.

"R. Felloworker and Public Relations" - Community Divisions Public Information Supervisor wrote a short skit for SAGE, bi-monthly supervisor's publication, aimed at showing how every G.E. employee is a public relations representative for his Company.

Jeanne Weller's Visit to Hanford Works - During the visit of Miss Jeanne Weller, member of the Company's Advertising and Publicity Department in Schenectady, Community Divisions Public Information Supervisor took her on a tour of Richland and furnished her with background material on the Community, preparatory to the writing of her "Adventures Ahead" article, "Youth In an Atomic Town."

G.E. Management-Richland Businessmen Luncheon - A report of this meeting was written by Community Divisions Public Information Supervisor and submitted to the Division Head, Community and Public Relations, for his approval. The report will be forwarded to the Community Relations Manager in the New York Office, and to other interested parties there.

Local Advertising Campaign Suggestions - At the request of the Division Head, Community and Public Relations, Community Divisions Public Information Supervisor submitted a list of subjects, believed to be of interest and concern to employees, local residents, and area residents, around which a series of newspaper advertisements and/or radio broadcasts might be developed. The benefits the Company and the A.E.C. would receive from a local advertising campaign were noted in the report.

Community and Plant Meetings Attended - The Community Divisions Public Information Supervisor attended the July meeting of the Richland Community Council, to keep abreast of its activities and proposals; attended the monthly meeting of the Richland Safety Council; attended all Community Divisions and Community and Public Relations Division staff meetings, in an effort to maintain close liaison between these groups.

Community Divisions Activities - By attending the Community Manager's staff meetings and contacting superintendents of the Community Divisions, regularly, Community Divisions Public Information Supervisor, with the assistance of various groups in the Community and Public Relations Division, released information of interest and concern to residents via newspaper, radio, letter, and other public information media.

Employee and Community Relations Divisions

PUBLIC INFORMATION - Public Functions and Services

Papers and Speakers - "Business Opportunities in Richland" forms the subject of the material submitted to M. R. Blum, of Community Divisions, for use in his visitations to Northwest communities in soliciting new business concerns.

Technical Graduate recruitment activities conducted at the University of Colorado Summer School by R. E. Curtis of the Technical Personnel Office, who spoke before a group of students, were benefited by the addition of new color slides provided by Public Functions and Services.

An important speaking engagement slated in London, England in July, for the Manager of the Health Instrument Divisions, was cancelled. Some consolation, however, was received from the announcement that his text would be presented by a member of the International Congress of the Radiological group.

Front page coverage in the General Electric Company Papers and Speakers Schedule was the honor conferred upon the Nucleonics Department for the month of July.

Film Showings - Over 1,000 5th Group Anti-Aircraft Personnel will be entertained by General Electric Film Showings in the forthcoming months, following arrangements made through Public Functions and Services between Miss Virginia Garland of the Apparatus Department Film Library at Seattle and Captain Flaherty, Battery Commander at North Richland.

In addition, 14 General Electric film showings were arranged by this group for plant and community organizations during July.

Radio Programs - "Lady From Safetyland", a Public Functions and Services production, is now a weekly feature of radio station KALE on Saturday afternoons at 5:30 PDT, and is providing real interest for children ages 4 to 9.

"Distinguished Service to Safety" is the title of the coveted award made by the National Safety Council to the Nucleonics Department for which appropriate presentation ceremonies were arranged and staged by Public Functions and Services including two radio broadcasts in the tri-city area.

Twenty radio scripts were written to announce weekly events of Community Recreation activities for Richland youth and spot announcements cautioning drivers and vacationists against safety hazards on the road and in camp were prepared for broadcasting by local radio stations.

Art Work - A particularly outstanding group of finished drawings was created by the artist in Public Functions and Services for the forthcoming Stenographic Manual, "This Way--Please," being produced by Special Programs.

Additional art work produced for July includes an interest-provoking two-color poster on S F Accountability and layout work for Works NEWS supplement on the Company's "Security Package," the Security Division booklet, the Patrol Division booklet, the Wall Street JOURNAL article on Hanford Works, end six Security and editorial cartoons drawn for Works NEWS.

Employee and Community Relations Divisions

Photo House Activities - An exceptional photo assignment conceived and planned for a recent visitor from the Advertising and Publicity Department resulted in an interesting photo-story of "An Evening in Richland With a Typical Teen-Age Couple."

The reduction in the number of assignments and prints produced in July is a normal seasonal condition, but, was double that produced a year ago; this was timely in that it provided the Photo House personnel the occasion to concentrate on some involved processes of unusual photo assignments.

Portraiture photography is increasing and attention is called to the 195 portraits produced for Rotational Training Section of the Technical Personnel Office which requires specially finished work.

Reactor Division assignments are increasing and now require a photographer to make three visits weekly to procure difficult scenes of unusual subjects. This has provided the Photo House an opportunity to demonstrate its ability to employ distortion correction and obtain a unique balance of photography under light-loss conditions.

Safety Award Books entered by Community Safety Division in National Competition recently won for Richland top Safety Awards and these honors were achieved partially through the exceptional quality of photographs, prepared by the Photo House, which told the story of the efforts expended by Nucleonics Department people to bring about the Safety Accomplishments reported.

Nine hundred feet of color motion picture film has been exposed of Community Recreation Section's Summer Activities Program for Richland youth and this will form a part of the documentary film assignment planned for public showing this fall.

A statistical report by the Hanford Works Photo House is attached covering work accomplished during the month of July.

The Employee and Community Relations Divisions Safety Program Council developed an effective program for the month of July wherein each Division Head assembled his respective group of personnel and conducted an informal conference on safety topics and divisional matters.

EMPLOYEE INFORMATION - Works NEWS

Safety publicity was featured throughout the month. Material included announcement that Hanford Works people completed safest half year in plant history, and presentation of the Distinguished Service to Safety Award by the National Safety Council to the G.E. Nucleonics Department.

Hobbies of Hanford Works people were featured as part of Works NEWS objective to include more stories of human interest. Stories included ash trays made from agates, woman's page feature on articles made during bustrips to areas, and gardening efforts.

G.E.'s proposal to Union was given detailed explanation in Works NEWS. A lead story contained information concerning ratification of the agreement,

and additional details were given in a full page ad, and a special insert prepared for the Works NEWS. Information on start of increased wages was also included.

"Adventures Ahead" publicity was continued, informing G-E people of the approaching deadline for renewing subscriptions.

Suggestion System highlights of the first six months of the current year were reviewed, and additional publicity was given through front page feature articles.

Activities of Pensioners, now that they have retired from the Company, were reviewed for the second time in the Works NEWS. These features are being run periodically in an effort to keep G-E people acquainted with what Company pensioners are doing.

Community Activities included frequent publication of information on scheduled power outages, possible shortage of water, and Atomic Frontier Days publicity.

EMPLOYEE INFORMATION - Special Programs

The Company's recent offer to the HAMTC was explained to employees through such Special Programs activities during July as: the preparation of a Hanford Works NEWS insert entitled, "Highlights of the Company's Recent Offer to HAMTC"; preparing advance mimeograph copies of this Works NEWS insert for use by the HAMTC in explaining the offer to Union members; preparation and distribution of a letter for Union Relations to which was attached mimeograph copies of "What's It Worth To Me?" an explanation of what the G-E "Security Package" would cost if purchased individually; revising and preparing a chart showing the new insurance costs and benefits under the proposed offer; preparing a summary of the increased benefits provided by the offer at the request of the Nucleonics Department News Bureau; and devising charts at the request of the Employee Services group through which pension plan changes could be explained to the HAMTC Wage Negotiating Committee. All of these activities were directed toward increasing understanding of the offer by both bargaining unit and non-unit employees, but also was essential to the HAMTC Wage Negotiating Committee in explaining the Company's offer adequately to Union members, thereby obtaining ratification of the offer by the various member-unions of the HAMTC.

Promotion of "Adventures Ahead" magazine during July included continued Works NEWS publicity, a letter to Supervisors which announced the subscription deadline, and a letter prepared by Special Programs and mailed to all present subscribers who have not as yet re-subscribed. Subscription blanks received during July were listed alphabetically, and a copy of the list was sent to the "Adventures Ahead" editor in Schenectady.

Atomic Energy Commission approval in response to a letter of request prepared by special Programs during June, was received which permits making subscriptions to "Adventures Ahead" magazine available to teen-age relatives of G.E. employees living in this area.

Employee and Community Relations Divisions

Announcement of payment of the 3 per cent increase for weekly salaried employees on a current basis was made in a letter prepared by Special Programs for the signature of the Employee and Community Relations Divisions Manager and distributed to all Supervisors during July. The letter also announced the date for paying retroactive payment of the 3 per cent increase.

Reports of the Telephone Building open house and the Kadlec Hospital open house promotion activities were prepared during July, copies of which were sent with covering letters to the Vice President, Advertising and Publicity Department; Community Relations Division Manager; Medical Division Manager; Superintendent of the Electrical Division; and the Area Engineer in charge of the Telephone Section. A summary of the two open houses was prepared for possible publication in "Community Relations Bulletin."

The Distinguished Service to Safety Award which was presented to the Nucleonics Department during July was publicized through a promotion plan prepared by Special Programs which included a series of news releases prepared and released by the News Bureau, Works NEWS publicity, and after-the-fact newspaper publicity and photographs. Special Programs also prepared a program covering the award presentation and the band concert at which the presentation was made, as well as a letter to all Supervisors from the Manager, Employee and Community Relations Division, urging them to call the Award Ceremony to the attention of their people.

A suggested advertising plan outline covering basic consideration for G-E Institutional Advertising in the Tri-City area was prepared during July by Special Programs.

A statement covering certain proposed pension plan changes was written by Special Programs and approval obtained from Employee Services for the Nucleonics Department News Bureau in response to a request for this information by a local newspaper.

A report of recruitment classified advertising which was written and placed during the period from January 1, 1950, through June 30, 1950, by Special Programs was prepared during July.

Recruitment Classified Advertising for Draftsmen and Design Draftsmen was written and placed in two newspapers each in Portland and Seattle during July. Payment also was arranged during July for classified advertisments placed previously in ten different newspapers. In arranging payment, it was necessary to write letters to eight newspapers requesting additional tear sheets.

Advertising for Instrument Mechanics during the month comprised a one-third page advertisement written and placed in the July issue of "Instruments" magazine which includes the "Journal" of the Instrument Society of America. This advertisement was also scheduled for insertion in the August issue of "Instruments."

A letter to Richland businessmen which served as a follow-up to the recent G-E luncheon for Richland businessmen, informed them that they would be placed on the Hanford Works NEWS mailing list. This letter was prepared by Special Programs for the Community Divisions Public Information Supervisor.

Employee and Community Relations Divisions

The July Health Topic of the Month, "Fatigue", was publicized in the Hanford Works NEWS through efforts of Special Programs. This publicity included photographs taken at the Health meeting held in 200-E Area. A member of Special Programs attended the regular monthly Health Activities Committee meeting to advise on publicity matters.

Closing of the trailer storage lot in Richland was publicized by Special Programs through preparing and placing an announcement advertisement in the Tri-City HERALD, and the writing of copy for a sign for posting on the trailer lot fence. The advertisement is scheduled for insertion in several issues of both the Columbia Basin NEWS and the Tri-City HERALD during August.

A three-part "Adventures Ahead" article on how to construct a one-tube radio was obtained at the request of Employee Services for a teen-age resident of Richland who at present is not a subscriber to the magazine.

An institute on the modern care of polio patients which was held during July at Kadlec Hospital, and which was sponsored jointly by Kadlec Hospital, the local chapter of the Washington State Nurses Association, and the Benton County Chapter of the National Foundation for Infantile Paralysis, was publicized through a news story prepared by Special Programs and released to local news media through the News Bureau. The fact that the Institute was in part sponsored by the Medical Divisions and also that Kadlec Hospital nurses are able to attend the institute should have a favorable effect upon the Community's attitude toward care provided patients at Kadlec Hospital.

The office methods manual revision, accomplished during July by Special Programs, included the editing and revising of the Security section of the book, thereby bringing to light certain inconsistencies in the present procedure for handling classified documents. Clarification of these is being accomplished by Security. Other portions of the book which have been rewritten or revised have been returned to the Records Control Division for approval. Through coordination with the Purchasing Division, ring binders for the book were ordered during July.

EMPLOYEE INFORMATION - Women's Activities

Two Women's Pages were prepared for the Works NEWS during the month of July. A story and pictures on "Backyard Play Apparatus" was the main feature of the July 7 issue of "Today's G.E. Woman." Also featured was a G.E. Consumer's Institute receipe for fried chicken.

An article on a G.E. employee whose off-the-job hobby is needlework done during her daily hour-long bus rides to and from 100-D area was included in the July 21 issue of the Works NEWS. The feature included a photograph of the employee finishing a piece of needlepoint. On the same page a G.E. Consumer's Institute mat gave "Hints to Homemakers" on making daily bread tastier. In addition an article on care of garden hose appeared.

"What's Doing" is an article published as a service in the Works NEWS to Hanford Works people interested in local recreation events. Included in

Employee and Community Relations Divisions

"What's Doing" during July were the following events: free picnic kits available to Richlanders; Richland summer band concerts; and the coming Atomic Frontier Days celebration.

"Share A Ride", provided as a service to readers of the Works NEWS, answered 240 requests for riders or rides on week-end or vacation trips. Requested were received for rides or riders to the following destinations: Spokane, Seattle, Yakima, Portland, Pullman, Lewiston, Wenatchee, San Francisco, Denver, Kansas City, Los Angeles, Calgary, Great Falls, El Paso, Salt Lake, and various towns in Minnesota, New York, Missouri and Tennessee. The week July 3-14 was spent replacing the Editor of the Works NEWS, who was on vacation.

Nineteen stories on recreation activities provided by the Community Activities Division were written and released through the News Bureau to local media during July.

Recreation information was compiled for the Community Activities Division for their publication of the new "Guide to Richland."

A feature article stating that Dr. Charles V. Larrick is the first member of the Richland A.I.E.E. Section to be appointed to an A.I.E.E. Technical Committee was released to "Electrical Engineering," "Electrical Works," "Monogram," the Hanford Works NEWS and the local list of newspapers.

Approximately 25 requests for vacation information were filled during July.

DIVISION	8"x10"	5"x7"	2"x4"	2"x2"	NEGATIVES	COLOR SLIDES	PREFAB. A BADGES	COLOR MOTION PICTURES	LAMINATED CARDS	PORTRAITS
EMPLOYEE & COMMUNITY RELATIONS										
Employment			368	1833	227		368		22	
Special Programs	13				11					
News Bureau	106				80					
Works NEWS	109				118					
Community Div. Public Information	14				11					
MANAGEMENT										
Rotational Training										195
COMMUNITY DIVISIONS										
Community Activities	14				10			300'		
Community Safety	53				32					
DESIGN DIVISION										
Reactor Division	64				55					
Design & Construction	6				3					
TECHNICAL DIVISIONS										
Technical Services	18									
Pile Technology	6				3					
MANUFACTURING DIVISIONS										
Instrument	18				9					
Transportation	32				25					
Project Engineering Division	24				8					
Minor Construction	12				8					
Electrical	45				12					
MEDICAL						4				

	July	June										
TOTAL PRINTS	2,930	4,455	JULY	534	0	368	1833	612	4	368	300'	22	195
TOTAL NEGATIVES	612	840											
TOTAL ASSIGN.	75	111	JUNE	1100	0	383	2972	840	12	383	1400'	36	0

COMMUNITY DIVISIONS
SUMMARY - JULY, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End of Month
Community Administration	6	5
Community Accounting	29	30
Community Public Works	443	437
Community Safety	3	3
Community Commercial Facilities	14	15
Community Housing	44	43
Community Fire	102	99
Community Patrol	82	71
Community Activities	18	19
	741	722

There was a decrease of nineteen (19) employees in the Community Divisions during the month of July, 1950.

	Reduced	Increased
Community Administration	1	-
Community Accounting	-	1
Community Public Works	6	-
Community Safety	-	-
Community Commercial Facilities	-	1
Community Housing	1	-
Community Fire	3	-
Community Patrol	11	-
Community Activities	-	1
	21	3

GENERAL

Applications for housing in Richland increased from three hundred thirty-seven (337) to three hundred forty-three (343) during the month of July, 1950.

A lease was entered into covering the operation of a dog boarding kennel.

MTBinns/jak
8/10/50

PUBLIC WORKS DIVISIONS
MONTHLY REPORT
JULY 31, 1950

ORGANIZATION AND PERSONNEL

	EXEMPT	NON-EXEMPT	TOTAL
Number of employees on payroll:			
June 30 1950	57	386	443
July 31, 1950	58	379	437

Personnel changes made during month:

New Employees	9
Transfers from Minor Construction	3
Transfers from Mfg. Maintenance	1
Transfers from Community Patrol	1
Transfers from Transportation	1
Transfers to Minor Construction	1
Transfers to Plant Fire	1
Transfers to Manufacturing Power	6
Transfers to Community Housing	1
Transfers to "S" Division	2
Transfers to Transportation	1
Transfers within Public Works (One employee from Village Labor to Village Engineering)	
One employee changed to monthly status	
Returned from Leave of Absence	1
Terminations	10

GENERAL

Water consumption has been the highest in the history of the Community, reaching an average for the month of 18 million gallons per day which is equal to the peak day's consumption last year. The water table is in very good condition. A trap has been placed in the 14" main from North Richland. This will remove the sand from the line. When consumption drops sufficiently to allow the 24" main to be taken out of service, a similar trap will be installed in that line.

PROJECTS

C-203-III - "Water Supply & Sewage Facilities for Richland and North Richland Construction Camp" - Construction completion notice issued 7-22-50.

Community Public Works Divisions

PROJECTS (CONTD)

C-232 "Construction of Carmichael Jr. High School" - Field Release (2) issued 7-21-50. Water lines have been tapped and temporary water lines extended over the area around the school building to saturate the soil. The job of re-grading the grounds in preparation for the irrigation system has been started.

C-233 "Construction of Spalding Elementary School" - Field Release (2) was issued 7-21-50. Spalding School site grading has been completed and the area turned over to the subcontractor for the installation of irrigation system. Work by subcontractors started July 24, 1950.

C-282-R "Richland Community Dust & Pollen Program" - Project forces have prepared grade and saturated area around the cemetery in preparation for grass seeding. Site grading for the bleacher area at Columbia Playfield is complete. Remainder of the site grading is being held up until bleachers are moved. Drainage for this area has been started.

C-333 "Air Conditioning - Dorms" - Design plans and specifications complete. Contract Section has for processing.

C-351-R "Irrigation System - Public Grounds" - Request for modification of directive was issued 7-14-50. Field Release (2) was prepared and issued 7-21-50.

C-356 "Recreational Facilities - Schools & Parks" - Work request for moving bleachers was issued 7-19-50. Rough draft specifications for fence and backstop at Columbia baseball field were revised 7-31-50.

C-357 "Increased Capacity - Sewage Lift Station" - Negotiations were completed with three bidders, and recommended award was forwarded to the Contract Section.

C-363 "Exterior Rehabilitation of Prefabs" - Field Release (1) was prepared and issued 7-31-50. Rough draft specifications were issued for comment.

C-367 "Moving 10 Prefabs from Columbia Camp" - Request for modification of directive for extension of time was issued 7-24-50. A.C Grant was successful bidder. Awaiting approval of award from AEC.

C-372 "Exterior Painting of Houses" - Specifications are complete. Advertising for bids. Painting is scheduled for 8-22-50.

C-376 "Irrigation Laterals - Carmichael & Spalding" - Field Release (2) was prepared and issued 7-21-50. Subcontractor started 7-24-50.

Community Public Works Divisions

PROJECTS (CONTD)

C-382 "Additional Water Supply Well 1100-D" - Negotiations completed with Packard Pipe and Pump Company to drill well and equip. Packard received approved assembly August 1, 1950. Tentative schedule for construction is 8-7-50.

C-386 "1950 Street Patching & Seal Coating" - Plans and specifications have been prepared and submitted to Contract Section. Bid opening is set for 8-3-50.

C-287 "Interior Painting of Dorms" - Specifications are complete. Awaiting comments before approval.

"S" PROJECTS

S-240 "Prefab Roof Maintenance" - Initial roof resurfacing complete, maintenance to continue to September 7, 1950.

S-255-A "Grass Seeding - Marcus Whitman & Frankfort Playground" - Field Release (1) was prepared and issued. Cost codes were issued. Plans and specifications are being completed.

S-255-D "Parking Lot - Columbia Playfield" - Field Release (1) was prepared and issued. Bid opening will be August 3, 1950.

S-258 "B.O.Q. Dorm Re-roofing" - Award of contract was made to Roof Service, Inc.. Contract forwarded to subcontractor for signature July 31, 1950.

S-290 "Automatic Traffic Signals" - Design is complete. Contract is awaiting AEC approval and notice to proceed.

S-299 "Radio Communication - Fire Division" - Field Release (2) prepared and issued. Bid assembly ready. Advertising being done at present.

S-311 "Remodeling 722-A Bldg." - Field Release (2) prepared and issued. Construction is in progress and is 69% complete.

S-321 "Valve Pit Re-arrangement - Dorms" - Rough draft of specifications and preliminary prints were issued for comments.

S-342 "Repair of Roof over New Wing, 703 Building" - Field Release (2) was prepared and issued. Work is to start as soon as materials are on hand.

S-349 "Interior Painting 703 Bldg." - Work request (1) issued 7-21-50. Field Release (1) issued 7-24-50. Painting started July 31st.

S-350 "Improved Lighting 705 Bldg." - Reason sheet for informal approval issued for processing for approval of funds.

Community Public Works Divisions

"S" PROJECTS (CONTD)

S-394 "Moving Warehouse 1125-1" - In hands of Contract Section - Scheduled for advertisement August 9, 1950.

S-397 "Radio Communication - Public Works & Housing Divisions" - Final draft reason sheet prepared. Awaiting appropriation request from Community Cost.

S-405-A "Emergency Grass Seeding 1951 Dust & Pollen Control" - Rough draft reason sheet prepared 7-11-50.

S-405-B "Street Tree Planting - 1951 Dust & Pollen Control" - Reason sheet ready for final draft.

S-415 "Hospital Soft Water Line" - Specifications returned by Contract Section. Project Engineering rewriting and is scheduled for re-issue 8-3-50.

S-432 "Extension of Swift Boulevard" - Rough draft of project proposal completed for review.

ENGINEERING DIVISION

Organization and Personnel

Number of employees on payroll:	EXEMPT	NON-EXEMPT	TOTAL
June 30, 1950	18	13	31
July 31, 1950	18	14	32

Personnel changes made during month:

Transfers from Community Patrol	1
Transfers from Village Labor	1
Terminations	1

Miscellaneous

Material procurement items handled during the month are as follows:

Purchase requisitions	47
Store stock requests	2
Store stock adjustments	1
Purchase orders expedited	17

Community Public Works Divisions

Miscellaneous (Contd)

The following number of jobs were completed on continuous engineering service requests:

ESR #97-CH - Elec. & Struct. Insp.	20
ESR #98-CH - Alteration Inspections	3
ESR #118-CF - Approved Alteration Permits	4

The following Engineering Service Requests were completed or cancelled:

Job No.	Description	Date Completed
177-CA	South Side United Protestant Church Site	7-13-50
179-CA	Nazarene Church Site	7-17-50
183-CA	Richland Baptist Church Site	7-14-50
255-CA	Development of School Areas	7-14-50
272-PW	Duane Avenue Street Improvement	7-13-50
281-CF	Ellis Photographic Studio	7-13-50
288-CF	The Mart	7-13-50
343-CF	Spencer-Kirkpatrick Ins. Agency	7-13-50
345-CF I & II	Playland Park	7-14-50
375-PW	Domestic Water Line Relocation	7-13-50
380-CF	Desert Inn - Improvement Fund	7-13-50
396-CA	Additional Site - Richland Lutheran Church	7-14-50
409-MD	Medical Arts Bldg. West Wing Addition	7-1-50

Technical information and instructions were furnished the following prospective facility operators, clubs, churches, and schools:

Northwest United Protestant Church
Redeemer Lutheran Church
Roller Skating Rink
First Baptist Church

The status of Commercial Facility Sponsored Construction is as follows:

Theater - Construction started 12-14-49 - 70% complete

Cascade Radio Station - Awaiting information

Morgan & Olberg Drugstore - Detailed plans and specifications approved 7-28-50. Awaiting construction

Ellis Photographic Studio - Construction started 2-28-50 - 100% complete

McVicker Food Store - Construction started 5-22-50 - 100% complete

Playland Park - Construction started 4-12-50 - 100% complete

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Community Public Works Divisions

Commercial Facility Sponsored Construction (contd)

Spencer-Kirkpatrick Insurance - Construction started 5-3-50 - 100% complete

Joseph's Investment Bldg. - Construction started 5-22-50 - 85% complete

Carnation Milk Company - Awaiting information

Johnny's Minute Man Building - Construction started 6-29-50 - 50% complete

Drive-In Restaurant - Construction started 7-24-50 - 5% complete

McVicker's Investment Addition Bldg - Construction started 7-26-50 - 5% complete

Addition to Masonic Temple - Awaiting detailed plans and specifications

Outdoor Roller Rink - Awaiting plans and specifications

The status of Community Activities Sponsored Construction is as follows:

Latter Day Saints Church - Construction started 2-5-49 - 98% complete

South Side United Protestant Church - Construction started 11-5-48 - 100% complete.

Richland Baptist Church - Construction started 11-27-48 - 100% complete

Assembly of God Church - Construction started 5-23-50 - 3% complete

Church of Nazarene - Construction started 4-12-49 - 100% complete

Church of Christ - Construction started 12-19-49 - 99% complete

Swimming Pool Association - Awaiting information

Reorganized Latter Day Saints Church - Construction started 8-22-49 - 40% complete.

Christian Science Society - Awaiting information

Catholic Church Site - Awaiting information

Northwest United Protestant Church - Plans and specifications approved 7-21-50. Awaiting construction

Westside United Protestant Church - Awaiting detailed plans and specifications

First Baptist Church - Awaiting detailed plans and specifications

Episcopal Church - Awaiting information

Community Public Works Divisions

Community Activities Sponsored Construction (contd)

Redeemer Lutheran Church - Plans and specifications revised 6-16-50 - Waiting construction

Relocation of Masonic Temple - Building permit issued 5-19-50 - Contact work complete

The status of School Construction is as follows:

Chief Joseph School - Construction started 4-24-50 - No called inspection to date

New Elementary School - Awaiting information

Farm Shop Building - Construction started 3-6-50 - 90% complete

Columbia High School Addition - Plans reviewed

Lewis & Clark School, Rewiring & Relighting - Plans and specifications revised 6-17-50.

Jefferson School Rewiring and Relighting - Plans and specifications reviewed 6-25-50

Sacajawea School Rewiring and Relighting - Plans and specifications reviewed 6-27-50

Marcus Whitman School Rewiring and Relighting - Plans and specifications reviewed 6-27-50

Columbia High School Rewiring and Relighting - Plans and specifications reviewed 6-27-50

Progress of AEC Sponsored Construction is as follows:

Airport Control Bldg. - Plans and specifications were reviewed, and field survey is complete.

Records Service Bldg. - Plans and specifications were reviwed 7-11-50.

Richland Public Library - Plans and specifications were reviewed, and field survey is complete.

Leased areas were surveyed and plot plans prepared for the following:

Drive-In Restaurant
Church of Nazarene

West Side U.P. Church
Additional Ground Space
Assignment - Automatic
Laundry #1 Bldg. Addition

Community Public Works Divisions

Miscellaneous (Contd)

The following work was done on streets and storm sewers:

Crew was organized for patching of compounds. This crew will devote its full time in patching of compounds until all compounds are repaired.

One new parking lot was built and two parking lots were enlarged.

Work done on Grounds Maintenance is as follows:

The portion of the levee from Hains to the drainage ditch was accepted by the U.S. Engineers, and turned over to this Division to be maintained. A system of fixed irrigation has been designed and staked, which will provide water for the new portion of levee from Hains to the drain ditch. The area will be added to the inner-block areas and will be watered and mowed by labor forces.

Report on Additional Cost due to Poor Design and Construction:

Klopfenstein's Basement - Investigation of sewer trouble revealed the following:

a. Improper laying of original sewer resulted in its failure and consequent stoppage.

b. "As-Built" plans showed the sewer in a position other than where it actually was placed.

c. Cleanouts in the line as shown on plans could not be located in the field.

The first item was a direct cause of the expense for repair. The other two items materially contributed to the increase of expenditure.

OPERATION AND MAINTENANCE DIVISION
MAINTENANCE SECTION

Organization and Personnel

	EXEMPT	NON-EXEMPT	TOTAL
Number of employees on payroll:			
June 30, 1950	19	177	196
July 31, 1950	19	176	195

Personnel changes made during month:

New Employees	1
Transfers from Minor Construction	1
Transfers from Mfg. Maintenance	1
Transfers to Minor Construction	1
Terminations	3

Community Public Works Divisions

Miscellaneous

Renovations of vacant houses completed during month of July amounted to a total of 48 orders, 30 of these being conventional type houses, and the remainder (18) prefab houses. Work on these orders included 40 complete paint jobs, 8 partial paint jobs, and miscellaneous repairs and cleaning as required to place these houses in acceptable condition. There are 18 orders open at the close of the month.

The renovation group has developed a method of stripping the finish and bleaching the wood of soft wood floors, after which two coats of seal are applied for protection of the floors. This method not only results in a finished surface, but more important, eliminates the cost of sanding these floors and also extends the life of the soft wood (which would be very short, if sanded repeatedly). It has been agreed by the Housing Division that we will treat all floors in vacant houses which are in poor shape in this manner.

A total of 66 prefabs were completed in the interior paint program. This includes all carpentry repairs and painting throughout.

Painting of walls which were water stained was completed in 59 houses, and the interior of 16 kitchens and 60 bathrooms were touched up or completely painted. All of the men's dorms were spot painted on the interior after general repair work was made to walls and ceilings.

Interior painting of the dental clinic was completed during the month.

The interior and exterior of 1182 Building (pump house) was completed, using two coats of paint.

Road striping was continued throughout the month on village streets and area roads. The painting of curbs for no parking space was completed.

Plans and preparations have been made to start the interior painting of 703 Building on July 31, 1950.

Carpentry labor as necessary to prepare 26 railroad carloads of excess material and equipment was furnished to Stores Division.

780 square feet of roof was constructed over loading dock at Warehouse #6.

The south side of 1131 Garage Building was covered with cello siding, and 51 posts were replaced in bus lanes at the 1131 Bus Lot.

General repairs to conventional houses in Division #1 as necessary to prepare these houses for exterior painting is 55% complete. Forty three step forms for asphalt steps were replaced to conventional houses.

The west wall of block foundation under a "F" type house at 904 Torbett was removed and relaid.

Four precut floors were leveled, and 19 prefab foundations were replaced as a result of deteriorated timbers.

Miscellaneous (Contd)

The sewer line at Klopfenstein's Store in downtown Richland was repaired.

Leaking or cracked concrete bath tubs were replaced with metal tubs in 44 houses and tile-board installed at the same time. In addition to these 44 tile-board completions, tile-board was installed in 50 houses where bath tubs were not replaced, or a grand total of 94 tile-board completions.

Approximately 800 feet of domestic 14" water main was replaced on Lee Boulevard west of Stevens.

The summer overhaul of the boilers and 700 area system is approximately 75% complete.

The installation of sand traps in the water feeder lines from North Richland well is in progress and will be completed next month.

Approximately 300 calls were handled for minor maintenance of evaporative air coolers.

Twenty-two shower stalls were rebuilt in prefab homes during the month.

A listing of miscellaneous work completed during July, 1950, includes replacement of 8 refrigerator units, 46 laundry trays, 11 kitchen sinks, 2 wash basins, 13 water heaters and one prefab stop and waste valve; repair or replacement of linoleum on 122 floors and 83 kitchen sinkboards; the sealing and caulking of linoleum edge around sinks in 269 houses; repair of 20 roofs, 14 refrigerators, and 90 screen doors and repair and re-upholstering of 17 chairs, 6 cushions, 2 davenos, and repair and refinishing of 16 chairs.

Service Order Group

A total of 1648 orders were completed by the Service Order Group, 96.2% for Housing Division, 1.8% for General, 1.8% for Concessions, .6% for Public Works, and .6% for various other divisions.

The following is a status report on service orders as of the end of July:

On hand at beginning of month	223
Received during month	1622
Completed during month	1648
On hand at end of month	197

UTILITIES SECTION

Organization and Personnel

Number of employees on payroll:	EXEMPT	NON-EXEMPT	TOTAL
June 30, 1950	9	56	65
July 31, 1950	9	57	66

Community Public Works Divisions

Organization and Personnel (contd)

Personnel changes made during month:	EXEMPT	NON-EXEMPT
New Hires		3
Transfers to Manufacturing Power		2
Returned from Leave of Absence		1
Terminations		1

Steam Facilities

Routine normal operations were carried on throughout the month. The boiler steam load has been somewhat higher most of the month. Experience gained in operating the newly installed blowdown control and heat exchanger should improve this condition.

Several shutdowns have been made on the steam distribution system to facilitate routine annual maintenance and repairs to the system. The No. 2 boiler feed pump and turbine was completely overhauled and returned to service during the month.

On July 19, 1950, a boiler inspector from The Travelers Insurance Company inspected Boilers No. 1 and 3 at the 734 Steam Plant, Boilers No. 1 and 2 at the 1131 Garage heating plant and the boiler at Pasco Warehouse Area. No official report has been received from the inspector's office as yet, however, with the exception of a few minor items of maintenance, the inspector indicated that the conditinn of all boilers was very good.

Central Steam Plant

Steam Generated	10,104 M lbs.
Steam Sent Out	8,278 M lbs.
Coal Consumed	1,554 M lbs.

Domestic Water

Routine normal operatinns have been continued through the month. Domestic water consumption has been somewhat higher than any previous month. Domestic water consumption for July, 1950 was 559 million gallons as compared to 478 million gallons for July, 1949. Although water production from wells has been increased considerably, the underground water table has not been seriously affected. This is undoubtedly partially due to the water level in the Yakima and Columbia Rivers being high much later in the season than usual.

11.

Community Public Works Divisions

Domestic Water (Contd)

A considerable amount of trouble has been experienced with sand in the domestic water system. Whenever sand in the system is reported, fire hydrants in the areas affected are being blown off to remove the sand and alleviate the condition as much as possible.

Plans have been made and at present work is in progress on installation of sand traps on the water mains from 3000 Area and Columbia well fields. As soon as these sand traps can be put in operation, we will systematically blow off sand from the distribution system and operate sand traps to prevent further sand from accumulating in the distribution system.

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg.Daily Consumption
Richland	203.4200	6.5619	475.4774	15.3380
North Richland	254.0500	8.1952	54.4626	1.7569
Columbia Field	101.7912	3.2836		
300 Area			29.1114	0.9391
Totals	559.2612	18.0407	559.0514	18.0340

Sewerage System

Routine normal operations have been continued throughout the month. Pumping off effluent from No. 1 plant over the dike was discontinued on July 14th. The dike in effluent ditch was removed and gravity flow commenced.

Cleaning work on the No. 1 plant digester has progressed some during the month, but at present it appears that it will be necessary to remove the remainder of digester contents by pumping. Arrangements are being made to start pumping in the near future.

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G.P.D.	Average Rate Flow Gals. per Min.
Plant No. 1	40.000	1.2903	896
Plant No. 2	60.136	1.9399	1347
Totals	100.136	3.2302	2243

Community Public Works Divisions

Irrigation Systems

On Thursday, July 20th the irrigation canal washed out the bank about one quarter mile down stream from the yellow bridge near Twin Bridges. This wash-out was apparently caused by high water level in the ditch and faulty bank where gophers had been working. The water level in the ditch had been raised by weed growth in the ditch channel blocking the flow. On Wednesday, July 26th the entire irrigation canal system was treated with "Ortho Aquatic" weed control solution to kill the weed growth. Indications at present are that the treatment was very effective.

Miscellaneous

Pumping operations at the Richland drainage were discontinued on July 22nd as the river water level had receeded sufficiently to allow gravity drainage.

LABOR SECTION

Organization and Personnel

	EXEMPT	NON-EXEMPT	TOTAL
Number of employees on payroll:			
June 30, 1950	8	138	146
July 31, 1950	9	130	139

Personnel changes made during month:

One employee changed to monthly status	
New Employees	5
Transfers from Transportation	1
Transfers from Minor Construction	2
Transfers to Plant Fire	1
Transfers to Mfg. Power	4
Transfers to Community Housing	1
Transfers to "S" Division	2
Transfers to Transportation	1
Transfers to Village Engineering	1
Terminations	5

Miscellaneous

The garbage and refuse collection continued as usual, with the residential collection Wednesday of each week. Two complete collections of garbage were made weekly in the residential areas. Five men required on sixth day each week from Commercial garbage and trash.

Grounds maintenance and planting group work continued during the month.

Community Public Works Divisions

Miscellaneous (Contd)

Seven acres new seeding completed at Jefferson Playground. Grading and site work completed at Spalding School prior to contractor.

Maintenance of Village orchards and shelterbelts and maintenance and repair of all public areas and parkways continued during July.

All public areas, inner-block parkways and playgrounds mowed once weekly during the month.

Miscellaneous trucking and hauling continued during the month for the Facilities and Activities Groups.

Miscellaneous labor and earthworks crew completed approximately twenty-five work orders on excavations and backfill for repair of utilities, sewer and water lines. The excavation for the installation of two sand traps on water mains was started last week. The earth plug was removed from the dike southeast of Sewage Plant and spoil was leveled so the Army Engineers could lay out pump house site. Routine work orders included removal of sludge from 784-A Building, removal of waste oil from filling stations, mower maintenance, janitor and watchman service.

Irrigation of public areas and parks continued this month. A night watering crew consisting of sixteen men and one foreman, working from 12 M to 8:00 A.M. was started the tenth of June. This has proven very satisfactory. The results obtained are better grassed areas as well as lightening the load on domestic water during the day.

At present the day crews are caring for approximately forty vacant house lawns and also maintaining ball diamonds, watering street trees, by tank trucks and keeping irrigation equipment in repair.

Road and street maintenance is continuing, but due to a shortage of blade operators is not up to schedule. The hot oil crew has been in operation two weeks, mostly on residential parking compounds and drives. Some parking lot extensions have been made off the narrow streets where no parking is allowed.

Materials used this month:

Pre-Mix:	
Road Maintenance	48.5 Tons
Steps and Service Walks	43 Tons
Parallel Walks	2.7 Tons
Total	94.2 Tons
Bitumuls:	
Used for all blacktop work	300 Gallons

Community Public Works

Materials Used this Month (Contd)

Gravel & Chips:	
3/4" Minus Gravel:	
Purchased by Transportation	74 C.Y.
Columbia Playground	80 C.Y.
Road Maintenance	50 C.Y.
Parking Lots	50 C.Y.
Miscellaneous	7 C.Y.
Total	262 C Y.
3/4" Clean Chips:	
Parking Lots	19 C.Y.
5/8" Clean Chips:	
Purchased by Transportation	24 C Y.
Columbia Playfield	21 C.Y.
Maintenance Parking Lots	44 C.Y.
Total	89 C.Y.
1-1/4½ Gravel:	
Columbia Playfield	50 C.Y.
1/2" Clean Chips:	
Maintenance of Blooding Roads	20 C.Y.
Miscellaneous	6 C.Y.
Total	26 C.Y.
Gravel & Chips:	
Pit Run Gravel:	
Canal Stabilization by R T. Cooke's	181 C.Y.
R.R. X-Ties:	
Parking lot bumper logs	224

Materials purchased this month:

Concrete:
11 C.Y. for base of R.R. X-ing signs

Oil:
1400 Gallons of MC-5 Road Oil from Transportation
4 Bbls. of Asphalt Bitumuls

COMMUNITY COMMERCIAL FACILITIES DIVISION

July, 1950

ORGANIZATION AND PERSONNEL	JULY
Number of employees on payroll	
Beginning of month	14
End of month	15
Net Increase	1

COMMERCIAL FACILITIES:

Number of Commercial Facilities Employees:	
June	1,099
July	1,109
Net Increase	10

The following routine items were processed:

Work Orders	25
Back Charges	2
Service Orders	32

CONTRACTS AND NEGOTIATIONS:

Commercial Facility Lease was entered into with the following individual:

John C. Miller - Lease dated May 1, 1950 - covering the operation of a dog-boarding kennel on Government-owned property located on a portion of Tract K-772, Richland, Washington.

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Supplemental Agreement was entered into with the following individual:

Virgil O. McVicker - Supplemental Agreement No. I, dated June 10, 1950 - covering the construction of an addition, 13'4" x 13'4", at the rear of the existing building to provide space for refrigeration equipment and additional storage.

A Grazing Lease, dated April 1, 1950, was entered into by and between General Electric Company and F. H. Moller and Ray Moller, which provides for grazing horses on the demised premises.

Stanley N. Randolph was authorized to sublet space in the building being leased by him at 713 George Washington Way to Columbia Basin Publishers, Inc.

Angerman Company, Inc. was authorized to sublet space in the facility building of Hughes of Richland, Inc., Uptown Business Area, to Raemars, Inc. of Salem, Oregon, for the operation of a women's shoe department.

Automatic Laundry Company was authorized to construct an addition 25' x 80', immediately south of their Investment Building #1, Block 4, Uptown Richland, and to sublease the addition to Messrs. Sam Volpentest and George Forsyth for the operation of a tavern.

COMMUNITY COMMERCIAL FACILITIES DIVISION JULY, 1950

	June	July
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	10	11
(c) Total businesses operating in Government-owned buildings	59	60
2. Number of Privately-owned Buildings	31	32
(a) Number of businesses operated by Prime Lessees	35	36
(b) Number of businesses operated by Sublessees	12	14
(c) Total businesses operating in Privately-owned buildings	47	50
3. Total number of businesses in operation	106	110
4. Doctors and Dentists in private practice, leasing space in Government-owned buildings	22	23
5. Privately-owned Buildings under construction	4	5
6. Leases awarded	0	1

Columbia Basin News opened for business July 3 as a sublessee in the Stanley N. Randolph Insurance Building.

Spencer-Kirkpatrick Insurance Agency moved into their new building and opened for business July 10.

International Business Machines, Inc., a sublessee of Spencer-Kirkpatrick Insurance, opened for business July 10.

Weiss, Baker & Crutcher, Accountants, a sublessee of Spencer-Kirkpatrick Insurance, opened for business July 12.

Sadler Printing Company, a sublessee of Spencer-Kirkpatrick Insurance, opened for business July 13.

Construction was started on Meyers Drive-In Restaurant at the intersection of Duane and Gillespie Streets on July 24.

Construction was started on the addition to McVicker's Building #1 at the rear of Ernie's Restaurant on July 26.

On July 12 Alteration Permit was issued to C. C. Anderson Company for a building remodeling program.

An award was made to Seldon Mason for the construction and operation of an outdoor type roller skating rink, to be known as "Starlite Roller Rink", located on Stevens Drive.

COMMUNITY COMMERCIAL FACILITIES DIVISION JULY, 1950

EXPRESSIONS OF INTEREST IN ESTABLISHING BUSINESSES IN RICHLAND:

A number of individuals and firms, the majority of which were not interested in constructing their own buildings, expressed a desire during the month to establish and operate businesses in Richland. The types of establishments desired are shown in the following list:

Drugstore	Delicatessen	Office Machine Service
Chiropractor	Delivery Service	Floor Coverings, Draperies
Butcher Shop	Electrical Appliances	Food Store
Chiropody	Insurance Office	

COMMUNITY DIVISIONS

COMMUNITY HOUSING DIVISION

July, 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll	July
Beginning of month	43
End of month	43

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	T	Pre Cut	Ranch	Pre Fab	Apt	Tract	Total
G. E. Employees	2204	260	6	377	835	1157	60	43	4942
Commercial Facilities	90	7	1	27	70	58	3	5	261
Medical Facilities	7	11	-	2	1	1	1	-	23
Community Activities	9	-	-	1	7	3	-	1	21
Post Office	6	-	-	1	2	12	-	3	24
AEC	106	32	-	13	40	24	4	4	223
School District	42	-	-	5	13	48	1	-	109
Kellex Corporation	1	5	-	5	5	-	-	-	16
Atkinson-Jones	9	14	-	6	11	2	4	-	46
J. G. Turnbull	-	1	-	1	4	3	-	-	9
C. T. Main Company	2	-	-	5	4	1	1	-	13
J. A. Terteling	-	-	2	1	1	-	-	-	4
Newberry Neon	3	1	-	1	-	-	-	-	5
Vernita Orchards	-	-	-	-	-	-	-	4	4
Roberts Filter	-	-	-	-	-	1	-	-	1
Fred J. Early Company	-	-	-	-	1	-	-	-	1
TOTAL HOUSES OCCUPIED	2479	331	9	445	994	1310	74	60	5702
Houses assigned-Leases written	9	1	-	3	3	4	-	-	20
Houses assigned-leases not written	6	1	1	1	3	8	-	-	20
Houses available for assignment	6	-	-	1	-	10	-	-	17
TOTAL HOUSES	2500	333	10	450	1000	1332	74	60	5759

COMMUNITY HOUSING DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2478	28	27	2479	Plus 1
Block Type	331	2	2	331	---
"T" Type	8	2	1	9	Plus 1
Precut Type	446	4	5	445	Minus 1
Ranch Type	991	11	8	994	Plus 3
Prefab Type	1302	37	29	1310	Plus 8
Apartments	74	1	1	74	--
Tract	60	--	--	60	--
TOTAL	5690	85	73	5702	Plus 12

Dormitory Statistics

Dormitories		Occupants	Vacancies	Total Beds
Men - Occupied	13	516	0.	516
Men - Unoccupied				
Women Occupied	13	*409	**222	631
Women Unoccupied	2			

Women's Dormitories occupied by:	
G. E. Office	1
Education	1
Apartments	1
	31

* This includes space of 4 beds in W-9 used for supply rooms and dormitory offices.
** This includes 100 beds in "Standby Condition" in W-17 and W-20.

GENERAL		Allocation Section Statistics	
Houses Allocated to new tenants	41	Voluntary Terminations	19
Exchanged houses	10	R. O. F.	4
Moves (Within the Village)	17	Discharge	-
Turnovers	6	Transfer	4
Total Leases Signed	85	Retirement	2
Terminations	40	Move Off Project	8
Total Cancellations	73	Houses assigned "As is"	31
Applications Pending	343	Houses sent to renovation	30

Women's dormitory W-21 was closed to women on July 31, 1950 and reopened the following day to house the 49 General Electric men who were living in North Richland. The 17 women were moved to available space in other dormitories.

TENANT RELATIONS

Processing of Service Orders, Work Orders and Service Charges

	Issued from July 1, to July 31, 1950	Incomplete July 31	Issued Previous Month
Service Orders	1648	197	2015
Work Orders	813	3150	857
Service Charges	168	10	169

ITEMS OF INTEREST

	Total Outstanding	Total Outstanding Previous Month
Laundry tubs	34	65
Bathtubs	185	177
Kitchen Sink Linoleum	170	142
Bathroom Tileboard	358	137
Bathroom floor linoleum	208	177
Kitchen floor linoleum	25	30

Alteration permits issued during the month of July totaled 171 compared to 108 in June.

Air conditioners	78	Clothes Poles	1
Cooling pads	14	Fence	14
Basement partitions	2	Patio	3
Water softener	3	Automatic washer	12
Backdoor prefab	4	Driveway	6
Basement excavation	5	Fireplace	6
Stoker	2	Dishwasher	4
Refinish Floors	2	Remove broom closet	1
Electric wiring	4	Dryer	2
Shelving	2	Trellis	1
Raise threshold	1	Tile bathroom	1
Deep freeze	1	Breadboard	1

1559 Inspections were made during the month of July as compared to 606 made during the month of June.

Alteration permits	370	Bathtubs	75
Cupboards	36	Drainage	18
Driving on grass	5	Floor boards	15
Grass seed	17	House siding	3
Jack and Shim	46	Leaking basements	11
Linoleum	176	Lot Lines	21
Paint	7	Porch and Steps	34
Screen Doors	80	Shades	46
Shower stalls	22	Sidewalks	102
Sinks	16	Tileboard	106
Toilet Seats	15	Top Soil	37
Trailers	2	Walls	25
Windows	16	Miscellaneous	258

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DORMITORIES

Necessary maintenance work is being done to the exterior of both the Men's and Women's Dormitories in preparation for the Paint Program.

Painting repairs are being completed to the interior of the dormitories to damage caused by water.

Main steam line valves were replaced during the month of July on all dormitories.

M. S. WAREHOUSE SUMMARY FOR July 25, 1950

TOTAL INV. $99,932.67
INVENTORY ITEMS AMOUNT $62,512

RECEIVED IN INVENTORY	AMOUNT	
ON STORE ORDERS	$1044.27	
ON PURCHASE ORDERS	709.28	
FROM EXCESS	154.00	
FROM HOUSING (20-20)	43.33	
FROM DORMS (21-20)	42.15	
FROM W. O. 6601	37.50	
TOTAL RECEIPTS		$2032.53

INVENTORY DISBURSED		
MISC. CHARGE	$ 434.79	
INV. ADJUSTMENT OVERHEAD REM.	3521.98	
TO SALVAGE	108.72	
TRANSFERRED TO PLANT	216.91	
FREE ISSUE	1758.12	
CASH ITEMS	93.43	
DORM. SUPPLIES	789.18	
DORM. LINENS	412.79	
DORM. SHADES AND REFLECTORS	38.70	
DORM. FURNITURE	35.59	
WHSE. SUPPLIES	110.86	
TOTAL DISBURSED		$7,521.07
INVENTORY ITEMS BALANCE		$57,024.17
PLANT ITEMS AMOUNT		$41,164.41

	AMOUNT	
RECEIVED	$1,840.08	
DISBURSED	823.29	
REC. FROM INV. ITEMS ABOVE	216.91	
TOTAL DISBURSED		$823.29
PLANT ITEMS BALANCE		$42,398.11
GRAND TOTAL INVENTORY		$99,422.28

DORM. FURN. EXCHANGED	45
RANGES EXCHANGED	6
REFRIGERATORS EXCHANGED	15
PREFAB HEATERS EXCHANGED	13
SENT TO MAINTENANCE	77
RECEIVED FROM MAINTENANCE	147

NOTE: Plant items include such things as ranges and refrigerators.

COMMUNITY SAFETY DIVISION

July 1950

ORGANIZATION AND PERSONNEL

Number of employees on Payroll	July
Beginning of month	3
End of month	3

GENERAL

Paul Sevedge, Chairman of the School and Child Safety Committee of the Richland Safety Council, was interviewed over KWIE in a July 4th safety program entitled "Enjoy A Glorious Fourth - Not a Tragic Fifth". Approximately 110 column inches newspaper coverage was published in connection with the Richland Safety Council's July Fourth program, prior to the holiday. This office assisted in publicizing the Fireworks Program sponsored by the American Legion. This program, held at the Bomber Bowl, received an attendance of approximately 8,000 people. There were no major accidents over the holiday.

In keeping with the Operation Safety Theme, "Vacation Driving", a number of Traffic Safety news articles and statements by members of the Richland Safety Council were published by local papers.

Vacationland Signs were installed on posts at the east and west end of the city and posters were placed in all service stations as a reminder to vacation drivers.

The thirty minute program, "Lady From Safety Land", originated by the Richland Safety Council, was on the air for the first time, over KALE, Saturday, July 15th. Mrs. Betty Szulinski and organ accompanist, Art Cooper, are currently preparing one program ahead each week.

The current Bike Safety School was publicized fully during the month and attendance to this date has been very good.

Many public safety films have been shown to various organizations during the month, with fairly large attendance at each showing. The safety films loaned out from this office have received favorable comment, and in some cases, requests for second showings have been made.

Two new 24-Sheet Posters ("It's Her Street, Too") were ordered for the sign boards at each end of the village, to be posted this month.

COMMUNITY FIRE PROTECTION DIVISION

JULY 1950

Organization and Personnel

	July
Number of employees on payroll	
Beginning of the month	102
Transfers	- 3
End of the month	99

	Richland	North Richland
Response to alarms	20	18
Fire Loss (estimated)		
Hanford Works	$273.00	$79.00
Personal	280.50	43.00
Investigation of minor fires and incidents	20	18
Safety Meetings	8	4
Outside Drills	84	73
Inside Drills	47	17
Fire alarm boxes tested	182	74

Miscellaneous Fire Department Activities

Assisted Utility Division in putting pressure test on newly installed water main at Stevens and Lee.

First Aid instruction given to a group of Public Utilities employees.

Firefighting material inventoried for the purpose of determining the additional number of trucks that can be equipped for emergency fire-fighting.

Repainted running boards on Truck #15 and turntable on Ladder Truck.

Tested and flushed booster line and tank on Truck #2511.

Tested seventeen sections of 1½ inch hose which were reloaded on Trucks #2908 and #2511.

Tested all spare nozzles and gate valves.

Steamed cleaned Trucks #2908, 2609, 2513 and Tanker.

COMMUNITY FIRE PROTECTION DIVISION JULY 1950

Richland Fire Prevention

Fire Inspections:		Fire Extinguishers:	
700 Area Buildings	44	Inspected	252
1100 Area Buildings	28	Recharged	12
Commercial Facilities (Gov't owned)	37	Installed	7
Schools, Clubs & Churches	18	Removed	4
Government Airport Buildings	6		
Total	133		

Demonstrations and Lectures:

A fire prevention lecture on "Home Fire Hazards" was given to 15 employees of Community Maintenance Division at 722 Building.

A lecture concerning the duties and operation of the Fire Department and Fire Prevention Division was given members of Richland Safety Council.

On July 21st a fire drill was conducted in the Kadlec Hospital. All visitors, waiting patients and employees having no assigned duties, were evacuated. A simulated evacuation of bed patients was conducted. The entire evacuation was very satisfactory.

Miscellaneous Activities:

Held meeting with School Superintendent, School Engineer, Atomic Energy Commission Community Management, Atomic Energy Commission Safety, General Electric Community Engineering, Community Safety and Community Fire Protection personnel relative to the responsibility of correcting fire hazards in schools.

Tested fire evacuation alarm systems and inspected all schools and school district office buildings, submitting recommendations on necessary corrections.

Assisted in final acceptance inspection of four churches and four commercial facility buildings.

Reviewed plans on new library building.

W-13 apartment building air conditioner motors were wired to fire alarm system so they will shut off when alarm operates.

On recommendation of this office, work orders were issued to change alarm system in 720 Building to break glass type boxes.

COMMUNITY DIVISIONS

COMMUNITY PATROL

JULY 1950

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	July
Beginning of month	82
End of month	71
Net Decrease:	11

Reason: 1 Transfer from Office Services Division
10 Transferred to Security and Services Division
1 Transferred to Community Public Works Division
1 Transferred to "S" Department

GENERAL

Patrol building space in the 770-B Building was made available to Community Management and converted into a Community Council Room on July 6, 1950.

The State Patrol discontinued the issuance of drivers licenses in Richland during the month of July and will resume issuance of licenses on the first Monday in August.

During the month, Patrol received seven new Chevrolet sedans to replace seven which were returned to the Transportation Pool.

The Community Patrol force in North Richland was reduced by 12 patrolmen during the month at the request of Construction Management for economy reasons. Ten of the 12 were transferred to the Security Patrol, one was transferred to the "S" Department, and one to the Community Public Works Division.

Emergency procedures, including evacuation and mobilization, were revised, distributed, and reviewed during the month.

Patrol was advised that the trailer compound in the south part of town was being discontinued and that property not removed by August 31, 1950, would be turned over to the Benton County Sheriff for final disposition. Frequent checks of the trailer compound were made.

A quantity of School Boy Patrol equipment for the fall school term was received during the month.

Four new motion picture films were received during the month. Titles were: Traffic Accident Investigation, Traffic Law Enforcement, Point Control and The Last Date.

During the month, Patrol received new gun holsters for use in the Richland area. These are of the same type as previously worn by Patrol.

During the month, 126 traffic violations reports were received which consisted mainly of Speeding, Stop Sign Violations, and Negligent Driving. A total of 163 other reports were received which consisted mainly of Petit Larceny and Public Intoxication.

Community Patrol Division - Continued

During the month, a total of 73 letters were received, consisting of 68 inquiries on arrests and 5 requests for assistance.

During the month, 20 prisoners were processed through the Richland Jail.

During the month, 23 gun registrations were taken by Community Patrol.

During the month, 42 bicycle registrations were taken by Community Patrol.

TRAFFIC

Traffic accidents declined from 16 in June to 11 in July. Traffic volume over the roads and streets of Richland showed a slight increase in July over the previous month.

There were no fatalities or major injuries. Three persons received minor injuires requiring First Aid treatment. Right of Way traffic violations and negligent driving were the most prevalent causes of the accidents.

Traffic law enforcement remained about the same as the month of June, with 97 persons arrested for violations of traffic laws. Three drivers were arrested for Drunken Driving and eleven for Negligent Driving. The balance consisted of Speeding, Stop Sign, etc.

The Richland Patrol conducted a Bicycle Training School for all elementary school age children desiring to enroll. Classes were held at each of the elementary schools, including North Richland. Attendance was fair, with an average of 40 children to each class. Subjects taught included traffic laws relating to bike riding, safe riding, and care and maintenance of the bike.

All of the main and secondary arterials in Richland were center-striped during July. George Washington Way, between Falley Street and Symons Street, was converted into a four lane artery.

TRAINING

Subjects covered in the lieutenant's training classes for the month of July were as follows:

Public Relations
Mobilization Plans
Evacuation Plans

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Advance training for Community Patrol members at the small arms range for the period in field instruction was as follows:

Pistol 1½ hours

Qualifications on the F. B. I. Course were as follows:

Unqualified	9	43%
Marksman	4	19%
Sharpshooter	2	10%
Expert	6	28%

A total of 21 men reported to the Range for training.

Community Patrol Division - Continued

ACTIVITIES AND SERVICES (RICHLAND)

	May	June	July
Check on absentees	1	0	1
Persons assisted *	140	201	225
Doors and windows found open	40	26	46
Lost children	16	11	17
Ambulance runs	34	23	20
Lost dogs reported	4	8	6
Dog, cat, loose stock complaints	44	35	43
Persons injured by dogs	10	10	13
Bank escorts and details	42	40	40
Fires investigated	18	20	25
Miscellaneous escorts	22	18	10
Complaints investigated	60	77	56
Natural deaths reported	0	0	1
Lost and found articles	46	26	34
Totals	477	495	537

ACTIVITIES AND SERVICES (NORTH RICHLAND)

	May	June	July
Check on absentees	0	0	0
Persons assisted *	14	73	104
Doors and windows found open	44	25	48
Lost children	10	2	0
Ambulance runs	5	6	5
Lost dogs reported	1	0	0
Dog, cat, loose stock complaints	2	3	3
Persons injured by dogs	2	1	1
Bank escorts and details	4	4	4
Fires investigated	9	7	17
Miscellaneous escorts	13	5	5
Complaints investigated	0	2	1
Natural deaths reported	0	0	0
Totals	104	128	188

*. Includes: Assisting other departments, assisting outside police agencies, assisting private persons, delivering emergency messages, etc.

PATROL DIVISION - TRAFFIC CONTROL STATISTICS
July - 1950

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	June	July	June	July	June	July	June	July
Richland	16	11	0	0	0	0	3	3
North Richland	2	2	0	0	0	0	0	0
Totals	18	13	0	0	0	0	3	3

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	June	July	June	July	June	July	June	July
Richland	2	2	10	4	0	0	4	5
North Richland	1	0	1	0	0	0	0	2
Totals	3	2	11	4	0	0	4	7

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	June	July	June	July	June	July	June	July	June	July	June	July	June	July
Richland	0	0	0	1	66	26	2	0	0	2	0	0	68	29
North Rich.	0	0	0	0	23	24	0	0	6	1	0	0	29	25
Totals	0	0	0	1	89	50	2	0	6	3	0	0	97	54

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.		Totals	
	June	July	June	July	June	July	June	July	June	July	June	July	June	July	June	July	June	July
Richland	16	18	15	18	1	3	1	0	7	3	10	11	24	17	27	27	101	97
N. Rich.	7	4	5	11	0	1	0	0	2	0	3	7	0	0	15	5	32	28
Totals	23	22	20	29	1	4	1	0	9	3	13	18	24	17	42	32	133	125

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on 7-15-50, on George Washington Way at Yakima River Bridge, INBOUND TRAFFIC, - 5,477 Motor Vehicles.

Average 24-hour Traffic Volume Count for week ending on 7-15-50, on George Washington Way at Yakima River Bridge, OUTBOUND TRAFFIC, - 5,428 Motor Vehicles.

TOTAL -10,905 Motor Vehicles.

Note: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

MONTHLY REPORT

COMMUNITY PATROL DIVISION
RICHLAND, JULY, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
PART I				
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	0
6. Larceny-Over $50.00	8	2	3	1
Larceny-Under $50.00	35	2	11	5
Bicycle Theft	14	0	0	6
7. Auto Theft	5	2	0	3
TOTAL PART I CASES	64	7	14	15
PART II				
8. Other Assaults	3	0	1	1
9. Forgery & Counterfeit	4	0	1	0
10. Embezzlement & Fraud	3	0	3	0
Impersonation	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	2	0	2	0
15. Offenses Ag. Fam. & Child.	1	0	1	0
16. Narcotics-Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	11	0	11	0
19. Disorderly Conduct	10	0	8	2
20. Vagrancy	2	0	2	0
21. Gambling	0	0	0	0
22. Driving While Intoxicated	1	0	1	0
23. Violation Rd. & Dr. Laws:				
Speeding	17	0	17	0
Stop Sign	19	0	19	0
Reckless Driving	0	0	0	0
Right of Way	3	0	3	0
Negligent Driving	16	0	16	0
Defective Equipment	1	0	1	0
24. Parking	16	0	16	0
25. Other Traffic Violations	24	0	24	0
Improper License	1	0	1	0
26. All other offenses				
Slander	1	0	1	0
Trespassing	1	0	1	0
Public Nuisance	3	1	0	1
Prowlers	13	2	0	0
Pickup for Outside Agency	1	0	0	1
Destruction Pers. Property	6	0	0	4
Malicious Mischief	7	0	7	0
Vandalism	4	0	2	0
27. Suspicion	5	0	5	0
TOTAL PART II CASES	176	3	144	9

(Continued on Page Two)

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
PART III				
28. Missing Persons	7	0	4	5
Lost Persons	14	0	0	14
Lost Animals	5	0	0	0
Lost Property	13	0	1	2
29. Found Persons	0	0	0	0
Found Animals	2	0	0	1
Found Property	28	0	0	16
TOTAL PART III CASES	69	0	5	38
PART IV				
30. Fatal Mot.Veh.Traf.Acc.	0	0	0	0
31. Pers.Inj.Mot.Veh.Traf.Acc.	3			
32. Prop.Dam.Mot.Veh.Traf.Acc.	$2,385.56			
33. Other Traffic Accidents	11			
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents				
38. Dog Bites	2	0	0	2
39. Suicides	0	0	0	0
40. Suicide Attempts	1	0	1	0
41. Sudden Death & Bodies Fd.	1	0	0	1
42. Sick Cared For	0	0	0	0
43. Mental Cases	1	0	1	0
TOTAL PART IV CASES	19	0	2	3
COMPOSITE TOTALS PARTS I,II,III,IV CASES	328	10	165	65

Value of Property Recovered $579.00

*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

Larceny—Over $50.00—1 Case Perp. by 1 Juvenile, Age 14 (Male)
Larceny—Under $50.00—3 Cases Perp. by 4 Juveniles, Ages 15,16,17, & 17(Males)
Vagrancy—1 Case 1 Juvenile Age 13 (Female)
Malicious Mischief—2 cases Perp. by 3 Juveniles, Ages 14,16, & 17.(All Males)
Disorderly Conduct—1 Case Perp. by 3 Juveniles, ages 16,16, & 17.(All Females)
Missing Persons—1 Case Perp. by 1 Juvenile, Age 13 (Male)
Lost Property—1 Case Perp. by 1 Juvenile, Age 14 (Male)
Vandalism—2 Cases Perp. by 3 Juveniles, ages 7.9, & 14. (All Males)

No Colored Persons Involved.

MONTHLY REPORT

COMMUNITY PATROL DIVISION
NORTH RICHLAND, JULY, 1950

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
PART I				
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.	1	1	0	0
6. Larceny—Over $50.00	4	1	0	2
Larceny—Under $50.00	6	0	0	2
Bicycle Theft	0	0	0	0
7. Auto Theft	0	0	0	0
TOTAL PART I CASES	11	2	0	4
PART II				
8. Other Assaults	1	0	1	0
9. Forgery & Counter.	1	0	1	0
10. Embezzlement & Fraud	0	0	0	0
11. Stolen Prop:buy.rec.poss.	0	0	0	0
12. Weapons:Carrying.poss.	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offenses	1	0	1	0
15. Offenses Ag.Fam. & Child.	0	0	0	0
16. Narcotics-Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	10	0	10	0
19. Disorderly Conduct	2	0	1	1
20. Vagrancy	2	0	2	0
21. Gambling	0	0	0	0
22. Driving While Intoxicated	1	0	1	0
23. Violation Rd. & Dr. Laws:				
Speeding	4	0	4	0
Stop Sign	13	0	13	0
Reckless Driving	0	0	0	0
Right of Way	0	0	0	0
Negligent Driving	8	0	8	0
24. Parking	0	0	0	0
25. Other Traffic Violations	5	0	5	0
26. All other Offenses				
Public Nuisance	2	0	2	0
Prowlers	1	0	0	0
Dest. of Gov. Prop.	1	0	0	0
Dest. of Pers. Prop.	1	0	1	0
Malicious Mischief	1	0	1	0
27. Suspicion	1	0	0	0
TOTAL PART II CASES	55	0	51	1

(Continued on Page Two)

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED* OTHER
PART III				
28. Missing Person	0	0	0	0
Lost Property	1	0	0	0
29. Found Persons	0	0	0	0
Found Property	1	0	0	1
TOTAL PART III CASES	2	0	0	1
PART IV				
30. Fatal Mot.Veh.Traf.Acc.	0			
31. Pers.Inj.Mot.Veh.Traf.Acc.	0			
32. Prop.Dam.Mot.Veh.Traf.Acc.	$251.00			
33. Other Traffic Accidents	2			
34. Public Accidents				
35. Home Accidents				
36. Occupational Accidents				
37. Firearms Accidents				
38. Dog Bites	0	0	0	0
39. Suicides	0	0	0	0
40. Suicide Attempts	0	0	0	0
41. Sudden Death & Bodies Fd.	0	0	0	0
42. Sick Cared For	0	0	0	0
43. Mental Cases	0	0	0	0
TOTAL PART IV CASES	2	0	0	0
COMPOSITE TOTALS PARTS I,II,III,IV CASES	70	2	51	6

Value of Property Recovered $67.00
2 of the Perpetrators involved were colored.

*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

Malicious Mischief—1 Case Perp. by 2 Juveniles, Ages 10 & 12.(Males)

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COMMUNITY PATROL DIVISION
CRIME COMPARISON REPORT
JULY, 1950

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 inhabitants:

Class.	Wash. Oregon & Calif. Six Months (Jan-June 1949)	One Month Average	Richland Six Months (Jan-June 1949)	North Richland Six Months (Jan-June 1949)	Richland June 1950	Richland July 1950	North Richland June 1950	North Richland July 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	1	0	1	0
Burglary	90.90	15.15	8	5	4	1	0	0
Larceny	254.22	42.37	181	97	32	53	5	9
Auto Theft	38.4	6.40	4	5	0	3	0	0

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Class.	State of Washington Six Months (Jan-June 1949)	One Month Average	Richland Six Months (Jan-June 1949)	North Richland Six Months (Jan-June 1949)	Richland June 1950	Richland July 1950	North Richland June 1950	North Richland July 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	1	0	1	0
Burglary	74.35	12.39	8	5	4	1	0	0
Larceny	241.60	40.26	181	97	32	53	5	9
Auto Theft	38.05	6.34	4	5	0	3	0	0

The portion of offenses committed by persons under the age of 25 years, is shown by the following figures:

Class.	National Average Six Months (Jan-June 1949)	Richland Six Months (Jan-June 1949)	North Richland Six Months (Jan-June 1949)	Richland June 1950	Richland July 1950	North Richland June 1950	North Richland July 1950
Robbery	53.4	0	0	0	0	0	0
Burglary	59.9	1	0	0	0	0	0
Larceny	45.1	25	44	3	4	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 Unifrom 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."

COMMUNITY PATROL DIVISION
RICHLAND JUSTICE COURT CASES

JULY 1950

VIOLATION	NO. OF CASES	NO. OF CONV.	NO. OF FORF.	CASES CON'T.	CASES PEND.	CASES DISM.	WARR. ISS.	SENT. JAIL	SENT. SUSP.	LIC. REV.	TOTAL FINES	TOTAL SUSP.	TOTAL BAIL
Drivor's Liconse *	13	7	1	1	4						$ 57.50	$37.50	$ 7.50
Drunken Driving	1	1								1	$ 52.50		
F.T.S. &.I.	1	1									$ 12.50		
F.T.Y.R.O.W.	3	2			1						$ 25.00		
Ill. Parking	16	11	2		2		1				$ 38.50	$38.50	$ 7.00
Lic. Plts., Inv., Etc.	1				1								
Negligent Driving	16	9	1	2	2	1	1				$207.50	$30.00	$17.50
Other **	2	2									$ 20.00		
Speeding ***	17	8	6		2		1				$ 85.00	$10.00	$80.50
Stop Sign ****	18	12	5		1						$ 67.50	$17.50	$20.50
Drunk & Disorderly	2	1			1						$ 17.50		
Forgery	2						2						
Larceny By Check	1							1	1				
Poss. of Stln. Prop.	1							1					
Public Intoxication	3	2			1						$ 25.00		
Public Nuisance	1		1										$17.50
Sex Crimes	3						1	2					
Vagrancy	1							1	1				
	102	56	16	3	15	1	6	5	2	1	$608.50	$133.50	$150.50

Cases proc., thru crt.	102
Other cases inc., with above viol.	10
Cases Pending	15
Cases orig., in prov's., mo's., and tried in July.	32
TOTALS:	159

Note: 1 Drunken Driving case, amended to Negligent Driving - Fined $37.50

1 Drunken Driving case, amended to Negligent Driving - Fined $52.50

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CASES INCLUDED WITH THIS VIOLATION:

* 1 Defective Lights case, included with this violation.
* 1 Vehicle Registration case, included with this violation.
* 1 Improper Passing case, included with this violation.
** 1 Illegal use of Driver's License case, included with this violation.
** 1 Following to Closely case, included with this violation.
*** 1 Improper Passing case, included with this violation.
*** 1 Stop Sign case, included with this violation.
**** 1 Driver's License case, included with this violation.
**** 1 No vehicle registration, case included with this violation.
1 Driver's License case, included with this violation.

DISPOSITIONS AND EXPLANATIONS OF CASES INCLUDED IN PREVIOUS MONTHS:

CONTINUED CASES THAT ORIGINATED AND WERE INCLUDED IN JUNE REPORT AND WERE TRIED IN JULY:

Driver's License	Fined $5.00 - susp
Driver's License	Fined $5.00
F.T.Y.R.O.W.	Dismissed
F.T.Y.R.O.W.	Forf: $12.50
F.T.Y.R.O.W.	Fined $5.00
Ill. Parking	Dismissed
Ill. Parking	Dismissed
Ill. Parking	Forf: $3.50
Reckless Driving	Amended to Negligent Driving - Fined $17.50
Speeding & Driver's License	Fined $15.00
Stop Sign	Holding Warrant
Stop Sign	Forf $10.00
Stop Sign	Fined $5.00 - susp.
Other	Fined $5.00
Other	Fined $12.50 - susp.
Other	Fined $12.50 - susp.

(Continued on page three)

(Continued from page two)

DISPOSITIONS AND EXPLANATIONS OF CASES INCLUDED IN PREVIOUS MONTHS;CON'T:

PENDING CASES THAT ORIGINATED AND WERE INCLUDED IN JUNE REPORT AND WERE TRIED IN JUDY:

Ill. Parking	Fined $3.50
Negligent Driving	Fined $12.50
N egligent Driving	Fined $12.50
Speeding	Fined $10.00
Speeding	Forf: $12.50
Other	Fined $5.00
Driver's License	Fined $7.50 - $5.00 - susp.
F.T.Y.R.O.W.	Fined $10.00 - susp.

WARRANTS ISSUED ON CASES THAT ORIGINATED AND WERE INCLUDED IN JUNE REPORT AND WERE TRIED IN JULY

Driver's License	Holding Warrant
F.T.S.&.I.	Holding Warrant
Ill. Parking	Holding Warrant
Speeding	Fined $7.50
Speeding	Holding Warrant
Stop Sign	Holding Warrant
Larceny By Check	Holding Warrant
Larceny By Check	Holding Warrant

COMMUNITY PATROL DIVISION
NORTH RICHLAND JUSTICE COURT CASES

JULY 1950

VIOLATION	NO.OF CASES	NO.OF CONV.	NO.OF FORF.	CASES CON'T.	CASES PEND.	CASES DISM.	WARR. ISS.	SENT. JAIL	SENT. SUSP.	LIC. REV.	TOTAL FINES	TOTAL SUSP.	TOTAL BAIL
Drunkon Driving	1	1								1	$52.50		
Ill. Passing	3	2			1						$10.00		
Negligent Driving	8	3	3		1	1					$52.50		$52.50
Other	1							1			$50.00		
Speeding	4		3		1								$55.00
Stop Sign *	13	8	2	1	2						$40.00	$5.00	$11.00
Drunk & Disorderly	1		1										$27.50
Public Intoxication	5	1	4								$12.50		$60.00
Public Nuisance	1			1									
Sex Crimes	1	1						1	1				
	38	16	13	2	5	1		2	1	1	$217.50	$5.00	$206.00

Cases proc., thru crt.	38
Other cases incl., with above violations	1
Cases ponding	5
Cases orig., in prev's mo's., and tried in July	
	49

CASES INCLUDED WITH THE ABOVE VIOLATIONS:

* 1 Driver's Liconso case, includod with this violation.

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DISPOSITIONS AND EXPLANATIONS OF CASES INCLUDED IN PREVIOUS MONTHS:

CONTINUED CASES THAT ORIGINATED AND WERE INCLUDED IN JUNE REPORT AND WERE TRIED IN JULY:

F.T.Y.R.O.W.	Fined $7.50
Speeding	Forf: $12.50
Other	Forf: $7.50

WARRANTS ISSUED ON CASES THAT ORIGINATED AND WERE INCLUDED IN JUNE REPORT AND WERE TRIED IN JULY:

Driver's License	Holding Warrant
Speeding	Fined $5.00

COMMUNITY DIVISIONS

COMMUNITY - ACTIVITIES DIVISION
July, 1950

ORGANIZATION AND PERSONNEL

Number of employees on roll

Beginning of month		18*
Additions	1	
Terminations	0	
End of month		19

*Summer recreation personnel - 6

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of July 31, 1950:

Administration	6
Principals & Supervisors	16
Clerical	17
Teachers	0
Health Audiometer	0
Building Custodians	47
Cooks	0
Nursery School & Ex. Day Care	11
Bus Drivers	0
Farm Manager	0
	97

CLUBS AND ORGANIZATIONS

As of July 31, 1950, organizations' personnel include:

American Legion	2
Coordinate Club	1
Youth Council	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	2
Red Cross	3
Castle Club	1
Post Office	49
Veterans Administration	2
Girl Scouts	2
Masonic Lodge	1
Justice of Peace	1
	68

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Community - Activities Division

The Richland American Legion Post #71 sponsored their annual Fourth of July celebration. In the afternoon they had a "Bike Parade" and several contests for children. In the evening the Richland Community Concert Band presented a concert followed by a free Fire Works Display. It was estimated that over 5,000 people attended this show.

Final inspection of the Masonic Temple was made on July 18, 1950. The building was accepted and plans for their new addition are now being reviewed by the Community Engineering Section.

On July 28, 1950, the Red Cross announced that Miss Elizabeth H. Case had been appointed Executive Director of the Red Cross Chapter.

The initial draft of the "Guide to Richland" for 1950-51 was given to the Community Employee and Relations Division for their processing and preparing for publishing. The Community-Activities Division obtained all of the information and compiled it for this publication.

Twenty-one Work Orders and seventeen Service Orders were issued during the month.

On July 27, the inventories with prices of all government-owned equipment assigned to the organizations indicated: American Red Cross, Youth Council, and the Richland Riders Club were forwarded to them for study and decision as to that equipment they wish to purchase. The list of equipment is to be returned to the Clubs and Organizations Section of the Activities Division within 30 days with a list of the articles they desire to purchase.

The Recreation Advisory Committee held their regular monthly meeting on July 11, 1950. No new organization applied for approval at this meeting. The minutes of the June 20, 1950, meeting were approved by the Atomic Energy Commission on July 31, 1950. These include: Dog Training Club of Richland, Pan-Hellenic Society, Daughters of the Nile, #17, Richland Safety Council, and Sword and Mask Club.

A survey was taken of the residents residing on Abbott Street, regarding the establishment of a club site area bounded on the north by Abbott Street, on the west by Goethals Drive Extended, on the east by Armistead Extended, and on the south by the By-Pass Highway. The results of this survey are as follows: Sixty-five questionnaires were distributed. Twenty-two were returned favoring the development of the site. Two opposed the construction and three questionnaires were returned "unoccupied". Eleven additional residences were contacted by telephone and all were in favor of the development. Thus, out of 62 occupied homes, 33 favored the site development, 2 opposed, and 27 did not take any action.

CHURCHES

Reverend Leo Dyson, Minister for the All Saints Episcopal Church, resigned on July 23, 1950, to accept a similar position in New York State. Reverend Dyson has been in Richland since 1945.

Community - Activities Division

Reverend Wesley Banta of the Assembly of God Church resigned effective July 30.

A complete inventory of all Government-owned equipment was sent to three churches on July 27, 1950, for their study and decision on the equipment they wish to purchase and that which they wish to return. These churches were: Redeemer Lutheran Church, Central United Protestant Church, and Christ the King Catholic Church. All equipment was priced by the Atomic Energy Commission property section. The churches are to return the list to the Organizations Section of the Activities Division within 30 days from the date of the letter.

The following is a tabulation of full-time paid church personnel, as of July 31, 1950:

	Ministers	Staff	Total
Assembly of God	1 *	0	1
Catholic	2	2	4
Central United Protestant	1	2	3
Church of Christ	1	0	1
Church of God	1	0	1
Episcopal	1 *	0	1
Free Methodist	1	0	1
Foursquare Gospel	1	0	1
Mission Baptist	1	0	1
Mo. Synod. Lutheran (Redeemer)	1	1	2
National Lutheran	2	1	3
Nazarene	1	0	1
Regular Baptist	1	0	1
United Protestant - North Richland	1	0	1
United Protestant - West Side	1	0	1
United Protestant - Southside	1	0	1
United Protestant - Northwest	1	0	1
	19	6	25

*Ministers resigned - no replacement of this date.

The church construction program status is as follows:

CHURCH	DATE STARTED	ESTIMATED % COMPLETE	OCCUPANCY DATE
Nazarene Church	April 12, 1949	100%	11/30/49
Latter Day Saints	February 5, 1949	98%	3/5/50
Latter Day Saints (Reorganized)	August 22, 1949	40%	
U. P. Southside	November 5, 1948	100%	4/10/49
Richland Baptist	November 27, 1948	100%	4/17/49
Church of Christ	December 21, 1949	99%	3/19/50
Assembly of God	May 23, 1950	3%	

COMMUNITY

Park Development

Site work in preparation for irrigation installation and grass seeding was completed at Spalding Playground on July 21, and was started at Columbia Playfield on July 6.

The baseball bleachers at Columbia Playfield are in the process of being moved work being started July 25.

The fine grading and grass seeding at the north end of the Greenway was completed July 31.

An Engineering Service Request was issued to Community Engineering on July 26, to make a study of grade problems at Townsend Playground.

A layout plan for Townsend Playground was completed on July 14.

Domestic water was extended to Talley Playground on July 3.

Light watering for the major portion of the areas in the Park System was started July 10, and has resulted in considerable improvement of the grass in these areas.

RECREATION

The number and types of organizations presently served by the Community - Activities Division include:

Business and Professional Clubs		20
Churches & Church Organizations		25
Civic Organizations		5
Fraternal Organizations		24
Music & Art Associations		8
Recreation & Hobby Groups		42
Schools & Parent Teachers Assoc.		13
Social Clubs & Organizations		11
Veteran & Military Organizations		12
Welfare		6
Youth	Boy Scouts	19
	Camp Fire Girls	36
	Girl Scouts	49
	Misc.	10
Miscellaneous		9
	Total	289

Interest in the recreational activities centered at Riverside Park and Community House continued on a high level throughout the month. The following tabulation indicated the recreation count (equivalent to participation hours) for the various activities.

Community - Activities Division

July Attendance

Daily activities (Sports & Games, Dramatics & Crafts)		16,916
Spectator Attendance		864
	TOTAL	17,780
Tournaments:		
Horseshoes		86
Tetherball		91
Hopscotch		30
	TOTAL	207
Special Events:		
Doll Show		56
Girls Scout Day Camp		601
Camp Fire Girls Day Camp		570
Bicycle Skill Contest		49
Pet Show		57
Play "The Craftsman"		30
Song Title Costume Parade		222
	TOTAL	1,585
Night Activities:		
Square Dancing (4 nights)		656
Co-Recreation (3 nights - actual count)		101
Band Concerts (3 nights)		1,950
Outdoor Public Dancing (2 nights)		2,000
	TOTAL	4,707
Swimming		18,139
Community House (Tuesday through Saturday)		4,000
Servicemen's Center (Sunday 2-6 PM, 4 days)		400
	GRAND TOTAL	46,618

The Community House game room is open Monday through Saturday each afternoon from 2:00 - 5:30 PM, and each Thursday, Tuesday, and Friday evenings from 7:00 to 10:30 PM, and on Wednesday and Saturday evenings for the Hi-Spot Club programs.

The Servicemen's Center operates each Sunday afternoon from 2:00 - 6:00 PM in the Community House game room. Assistance is rendered by the American Red Cross and by community organizations who provide refreshments.

Average daily attendance at the Swimming Pool was 605 and average hourly attendance 87, approximately 9% increase over last month's figures. High attendance was on Tuesday, July 25, with 1,050 (full capacity) and low attendance was on Saturday, July 29, with 112 swimmers.

Community - Activities Division

Two hundred two bookings were made on softball and baseball diamonds, not including Memorial Softball Field, throughout the month. Kadlec Road diamond was also used daily by "Area" leagues. Four exhibition games were played at Memorial Field and one at Bomber Bowl - all sponsored by the Richland Softball Association, Inc. Memorial Field was used all other nights of the month for league games or Little Baseball League. Also Little League baseball games were played at the Memorial Field ten afternoons.

A total of 29 bookings were made for picnics and other special group events on park properties, which included 4,535 picnickers. The high attendance this month was on Sunday, July 23, with 1,225 picnickers. Also, the new Burlin Camp area was booked 6 times and 570 persons participated in use of facilities at the site.

Triple "O" softball players requested that the program be continued through another round of play. The new schedule was prepared and routed to all teams - total of nine for the second round of play.

Two special public dances were held on July 21, and 28, at the Riverside Park tennis courts. The program was handled jointly by the Activities Division and the Hi-Spot Club. Music was furnished by the Hi-Spot orchestra.

Bomber Bowl was made available for Little League Baseball play for the remainder of the season.

Maintenance

In addition to the routine buildings and grounds maintenance including ball diamonds the following major items were undertaken:

Burlin Camp renovation and/or installation of additional facilities was 90% completed.

Folding chairs (239) and tables (26) transferred from the Recreation Hall to Activities Division were stenciled "Park" for identification.

One floodlight was installed in the area of the concession stand at Memorial Field for additional protection and to light the entrance stairway.

Permanent posts installed for court games at Riverside Park.

Memorial Softball Field scoreboard painted.

Services and Special Events

Assistance was given to the American Legion Post #71 and salvage materials and equipment made available for the July 4, program which included the Pet Parade in the afternoon and the fireworks display and band concert at Bomber Bowl in the evening.

Community - Activities Division

Parks & Recreation Division personnel attended two meetings of the Junior Chamber of Commerce and one joint Junior Chamber of Commerce - Kiwanis meeting to assist with arrangements for the Third Annual Atomic Frontier Days celebration scheduled for August 11 and 12.

Arrangements have been made to provide trucks for the parade and salvage materials for the concession area. Also for police protection, barricading and other arrangements for the parade, shows, and fireworks display as required and within the limits of Activities Division responsibilities.

Preliminary arrangements have been completed for the election to be held on September 12, 1950.

Swimming pool facilities continued to be used through the month for the American Red Cross Water Safety Program. Three hundred ten beginners participated in twenty classes for beginners, 75 in intermediate class, twenty-five in life saving classes and 65 in adult evening classes.

Swimming pool facilities were made available for the Public Works Division picnic held at Riverside Park on Thursday, July 13.

Assistance was rendered in making arrangements for the Safety Award program and the Junior and Community Band Concerts on the evening of July 26. The program was held at the Riverside Park bandstand.

Parks and Recreation Division personnel met with the Little League officials to consider the Little League's proposal to build a baseball field for exclusive use by the Little League teams.

Assistance was given to the Richland Softball Association, Inc. in programming and scheduling tournaments and league games throughout the remainder of the season.

The Softball State Tournament Committee (charged with the assignment of surplus tournament funds for projects) authorized the construction and installation of an electric scoreboard for Memorial Softball Field. The Committee will bear the expense of the scoreboard which will become a permanent part of Memorial Softball Field. The Activities Division will provide electrical service to the installation.

Picnic kits were provided for 9 groups during the month.

Riverside Park tennis courts were reserved for match play Sunday, July 30, between Richland and Pendleton tennis clubs.

MAJOR EVENTS FOR MONTH OF JULY

July	1 and 2	- Exhibition Softball - Army vs. Seattle Skyroom	Memorial Field
	4	- Community Band Concert	Bomber Bowl
	4	- American Legion Kids Parade	Community
	4	- American Legion Fireworks Display	Bomber Bowl

Community - Activities Division

July 12	- Community Band Concert	Riverside Park
16	- Fishers Ghosts - softball	Memorial Field
19	- Community Band Concert	Riverside Park
20	- King and His Court - softball	Memorial Field
22	- Timber Structures - softball	Memorial Field
26	- Community Band Concert	Riverside Park
30	- Tennis Tournament - Pendelton Club	Riverside Park

GENERAL ELECTRIC COMPANY
HANFORD WORKS
COMMUNITY ACCOUNTING DIVISION

MONTHLY REPORT FOR JULY, 1950

ORGANIZATION

Employees - Beginning of month	29	Exempt	5	Male	11
Employees added to Division	1	Non-Exempt	25	Female	19
Total - End of Month	30	Total	30	Total	30

A replacement in the telephone section was obtained in July for an employee terminating August 4, 1950.

RENTS

House Leases Processed	July	June
Total active leases beginning of month	5708	5680
New Leases	49	122
Cancellations	85	94
Total active house leases end of month	5672	5708
Modifications	9	5
Dormitory		
Total occupancy beginning of month	941	984
New assignments	82	107
Removals	94	150
Total occupancy end of month	929	941
Rental Revenue Was As Follows:		
Equipment (1)	$ 78.07 cr	$ 24.90
House (2)	254,409.29	255,042.27
Dormitory	13,012.49	13,282.37
Facilities	45,812.84	40,131.14
	$313,156.55	$308,480.68
Unoccupied Dormitory Revenue Loss	$ 1,620.01	$ 1,350.13
Unoccupied House Revenue Loss	3,492.66	2,838.68
Total Potential Revenue	$318,269.22	$312,669.49

(1) Includes retroactive cancellation of a portion of equipment leased by Richland Motors. Six facility operators still have equipment on rental basis.

(2) Includes utilities collected as a part of rent.

Telephone

Number of work orders handled	356	322
Number of working telephones	4895	4728
Revenue including services	$19,035.45	$18,138.96

Community Accounting Division

Miscellaneous	July	June
Invoices prepared during the month	215	276
Revenue from above invoices	$1,447.96	$41,666.33

The following building permits were issued during July, 1950:

Midstate Amusement	$ 60.00
H. A. Sowell	1.30
The Mart	5.80
The Green Hut	4.80
John Gerdes	12.20
Spencer Kirkpatrick	4.80
Richland Building Service	105.10
Total	$194.00
Previously Reported	6,141.82
Total to Date	$6,335.82

General

Sixty-six collection letters were written during the month resulting in the collection of thirty-nine accounts in the amount of $639.12.

Forty-seven of the sixty telephone accounts thirty days or older as of June 30, 1950, have been paid. Five telephone accounts were written off during the month representing a net amount of $.03.

The following accounts were submitted to the Yakima Adjustment Service for collection during the month of July, 1950:

E. W. Enos - Tenant Service	$2.32
George T. Davis - Tenant Service	1.55
Cy A. White- Tenant Service	1.03
Burton Davidson - Dormitory	9.37
TOTAL	$14.27

As of July 31, 1940, a total of eleven accounts in the amount of $80.96 have been submitted to the Yakima Adjustment Service, but notification of collection of any of these accounts has not been received.

ACCOUNTS PAYABLE

Statistics	July	June
Accounts Payable vouchers processed	249	234
Freight Bills processed	13	18
Purchase Orders Received	69	76
Net Amount of Purchase Orders	$25,567.00	$21,091.00
Receiving Reports received	118	106
Total Net Amount Disbursed	$55,726.00	$57,608.00
Number of Checks Issued	188	167

Community Accounting Division

A summary of active Community Subcontracts is shown below:

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Newland Cafeteria		* 50.28	12.48	50.28	
Richland Maintenance Co.		*112,734.23	6,954.12	112,734.23	
Holaday & Edworthy	G-284	4,700.00	587.50	4,112.50	
Rcof Service, Inc.	G-291	12,416.43	361.50	12,416.43	
Bailey Plumbing & Heating	G-293	8,256.89	1,238.53	7,844.05	412.84
Associated Engineers, Inc.	G-305	89,462.05	-0-	-0-	
A.G.Patton & Cecil C. Hill	G-311	16,694.00	5,709.35	5,709.35	634.37
		$244,313.88	$14,863.48	$142,866.84	$1047.21

* Total amount of contract will be total of estimates submitted.

COST

Reports

The June, 1950 Operating Report was completed and distributed on July 21,1950. Necessary distribution of undistributed work orders and under/over liquidations was made for the fiscal year end. The net cost of operating the Community for F. Y. 1950 was $725,459.00 as compared to $2,254,029.00 for F. Y. 1949.

The Comptroller's Appropriation Report for June, together with the financial supplementary report was issued on July 23, 1950.

The June Utilities Report will be issued August 8, 1950.

Budget

Operations

The Operations Budget was detailed by quarters and submitted to each Division. For forecasting purposes, the tentative August budget amounts were sent to each Community Division for comment and revision, if the work program so required.

Construction

The submission by General Electric Company was compared to the A. E. C. Budget and a detailed, tentative budget is being formulated for use by the Community Divisions.

Appropriation Requests

There were no appropriation requests written in July.

Community Accounting Division

Service Orders showed a seasonal decline in activity. Statistics are as follows:

	Service Orders		Labor		Material		Total	
	June	July	June	July	June	July	June	July
*1	957	621	$1750.36	$1027.72	$ 690.34	$ 344.32	$2440.70	$1372.04
*2	1868	1095	2281.13	1261.98	2574.49	1324.62	4855.62	2586.60
*3	85	68	170.88	139.74	88.83	113.25	259.71	252.99
*4	54	44	212.68	194.89	97.36	97.58	310.04	292.47
*5	339	163	523.21	256.30	525.21	249.18	1048.42	505.48
*6	335	186	891.43	408.66	402.21	65.11	1293.64	473.77
*9	1	0	4.00	-0-	3.55	-0-	7.55	-0-
	3639	2177	$5833.69	$3289.29	$4381.99	$2194.06	$10215.68	$5483.35

*1 Plumbing *3 Heat & Vent *5 Lock & Key *9 Sheetmetal
*2 Electrical *4 Glazing *6 Carpentry

Work Orders

Effective July 2, 1950, the revised Community Work Order procedure was installed. Work Order statistics are as follows:

	May	June	July	Net Change
Active Routine	420	428	402	-26
Active Normal	2053	2070	2053	-17
	2473	2498	2455	-43
Received	2191	2157	2335	
Completed	2101	2132	2378	
	/ 89	/ 25	- 43	

Engineering Service Requests

Effective July 1, 1950, the costing of ESRs was placed into effect. Each ESR will be costed individually in order that the issuer of the request may know the cost of the service he requested and to provide a better over-all control of expenditures for engineering service.

General Ledger

	No.	Debit	Credit
Second Class Invoices Received	73	$491,991.03	$230,738.09
Second Class Invoices Issued	61	$148,568.93	$ 17,521.88

The amount of $725,458.31, representing FY 1950 cost was also transferred to the General Division.

*4.

DESIGN AND CONSTRUCTION DIVISIONS
July 1950

I. ORGANIZATION AND PERSONNEL

Number of employees on payroll

Beginning of month	612*
End of month	617*
Net Increase	5

Does not include the following personnel

Instrument Division (Loan)	7
Kellex Corporation (Contract)	6
Fluor Corporation (Contract)	8
Chas. T. Main, Inc. (Contract)	3
Technical Division (Loan)	1
Schenectady, N. Y. (Loan)	1
Total on Loan	26

Total beginning of month	640
Total end of month	643
Net Increase	3

II. INVENTIONS AND DISCOVERIES

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

INVENTOR	SUBJECT	(date) REPORT OF INVENTION
C.H. Robbins	Three dimensional electrical analogue using Teledeltos paper for solving heat transfer problems.	June, 1950

ACCOUNTING DIVISION

I. SUMMARY

Project C-185, Railroad Connection South of Richland, is scheduled to be transferred to Plant in Service during the month of July.

A net increase of 135 employees was reported by CPFF subcontractors as compared to 158 during the month of June. This brings the total as of July 27, to 4,028. During the four week period ended July 23, CPFF construction subcontractor payrolls totaled $1,288,487 as compared to $1,559,749 the five preceding weeks for a weekly average increase of $10,173. Average weekly earnings, exclusive of retroactive disbursements, were $84.92 as compared to $84.00 the previous period.

Total cash disbursed during the month was $3,133,785 which is approximately 11% over June disbursements.

II. STATISTICAL AND GENERAL

Total credits to Accounts Payable follows:

General Electric Purchases of Material	$ 558 939 -1)
Reimbursement Requests Atkinson-Jones	1 621 616
Reimbursement Requests Kellex & C.T. Main	419 565
Partial Payment Estimates Lump Sum Subcontractors	85 219
Vouchers for Travel (GE)	4 398
Vouchers for Freight	3 914
Miscellaneous	34 108
	$2 727 759

(1- Of this figure $553,189 was transferred to Atkinson-Jones for inclusion in their costs.

Prior to June closing, a Reserve for Bad Debts was established for Accounts Receivable items deemed uncollectible. This is in compliance with an AEC Bulletin and is in line with generally accepted commercial accounting practices. Uncollectible accounts representing indebtedness incurred prior to July 1, 1949 were charged to Unusual Expenses Prior Years: those incurred July 1, 1949 to June 30, 1950, were charged to current costs, Fiscal Year 1950. Reserves in the future will be established quarterly and a thorough review of previous reserves will be made to determine adjustments necessary in order that the reserve will be as realistic as possible.

Documents of transfer to excess have been received from the Commission relative to Kellex inventories and will be processed before July books are closed. An analysis is being made to consolidate detail of equipment furnished to Chas. T. Main and charged to D&C on Government Cost Transfer.

III. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	71
End of month	74
Net Increase	3

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CONSTRUCTION SERVICES DIVISION

I. SUMMARY

No major changes were made within the Construction Services Division during the month.

II. STATISTICAL AND GENERAL

NORTH RICHLAND CONSTRUCTION CAMP POPULATION*

Trailers		2,390
Barracks		820
Houses		675
	Total	3,885
	Net Increase	85

*Note: This does not include U.S. Army.

Barracks

During this period, no additional barracks were opened. On June 30, 1950, five one-story male barracks were released to the U.S. Army.

Steam Generating Plant

Steam generated, M lbs.	12,939.00
Oil consume, gals.	3,970.00
Coal consumed, tons	871.81
Boiler efficiency, average %	65.67

*Steam cost, per M lbs. $1.44

*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 52,624,200 gallons or an average daily consumption of 1,754,140 gallons.

Commercial Facilities

There was no change in the commercial facilities in business.

Community Activities

The Community Activities Section program in North Richland is moving along as per schedule. Softball and baseball games for the various age groups are in progress. The playgrounds are being used continuously by both civilians and Army personnel.

Construction Services Division

Statistical and General (Continued)

There were forty religious group meetings and thirty-three social meetings held in various locations throughout the month.

OFFICE SERVICES

The demand for office space in the 3000 Area is continuing to be a problem.

SECURITY

During the month, 273 meetings were held. 6,664 employees attended. Five Construction Security Bulletins were issued.

A trial evacuation of the Redox, Tank Farm and Laundry Areas was held on June 29, 1950. Results were very satisfactory. The areas were evacuated in eight minutes. On July 23, 1950, a trial evacuation was held for the 100 DR Construction area. The evacuation was satisfactory. The area was evacuated within nine minutes.

Statistical Information

Total lost badges this month	21
The number on Subcontractor and Vendor Payrolls as of July 27th	4,337
Visitors clearances requested for the month	7
Total clearances requested this month	546
Total clearances received this month	412

LABOR RELATIONS

No agreement has been reached to date in regard to the dispute concerning daylight saving time.

On July 14, 1950, General Electric was advised of a threatened work stoppage of office workers by the Atkinson-Jones Company. Negotiations are presently in progress.

III. ORGANIZATION AND PERSONNEL

Beginning of month	140
End of month	135
Net Decrease	5

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CONTRACT DIVISION

I. SUMMARY

The work load has increased due to enlarged contractural scope and work being done for other Nucleonic Divisions.

II. STATISTICAL AND GENERAL

Preliminary contract work is progressing in regard to the Waste Metal Recovery Program. All subcontract work for DR Water Works and Redox is progressing on schedule.

Contracts with Atkinson-Jones and their CPFF Subcontractors, Newbery-Neon and Urban, Smyth & Warren, covering Phases II and III of the 234-5 Program, have been completed and physical work has started.

Twenty-three contract items, involving a total contract value of $2,731,259.41, were completed during the month of July classified as follows.

Fixed Price	- $471,848.41
CPFF	- $2,235,768.00
Fees	- $23,643.00

Fifty-three contract items remained open at the end of the month.

III. ORGANIZATION AND PERSONNEL

Number of employees on payroll:

Beginning of month	28
End of month	31
Net Increase	3

ENGINEERING SERVICES DIVISION

I. SUMMARY

Steps were taken to increase the Drafting force in anticipation of an increased work-load.

The demand on the Reproduction Section showed no change from the preceding month.

A forecast of the Estimating & Standards Section's anticipated work-load was prepared and personnel are being added to meet the requirements.

The preparation of analyses of cost and progress of major projects continued and the number of charts on display in the Chart Room increased.

II. STATISTICAL AND GENERAL

Drafting Section

Drafting Distribution

Project	Man-Days
Reproduction	0.5
Hospital	107.3
Aquatic Biology Laboratory	8.0
Radiometallurgy Building	10.0
Pile Technology Building	16.0
Railroad Connection South of Richland	2.2
100-G Development	247.7
Separations Division Administration	2.5
234-5 Phase II & III	103.3
C-187-D	276.2
C-187-E	82.7
C-361 - MJ-5	67.6
C-362 - MJ-4	147.9
Loaned to Technical	44.0
Loaned from Technical	2.5
Hot Semiworks	75.9
Absences with Pay	12.6
Vacations	136.0
Holiday Pay	61.0
Overtime	14.5
Absences Without Pay	8.1
Total	1426.5

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Engineering Services Division (Continued)

DRAFTING PRODUCTION

New Drawings	205
Miscellaneous	10
Drawing Revisions	51
Drafting Efficiency - man days per drawing	6.8

Estimating and Standards Section

Estimating

Estimates Requested	18
Estimates Completed	8
Total Amount of Completed Estimates	$1,948,651
Estimates to be Completed	11

Unit Costs

Field work was initiated on studies to develop unit costs on 241-S Tank Farm

Standards

Specifications for the manufacture and control of concrete were issued. Standards tests for qualifying welders were established and are being incorporated in a standard specification for Hanford Works.

Reproduction Section

Arrangements were made to establish an Audit and Inventory Group for the accountability of classified material held and issued by the Reproduction Section.

The conversion of the Print Reference File from a two to one print filing system is about fifty percent complete.

Production of Prints:

Total Originals Handled	14,842
Total Prints Produced	128,334
Total Square Feet of Prints	402,521
Square Feet Produced Per Production Employee	28,751

Personnel, Records and Histories Section

D&C Payroll Additions, Terminations and Transfers:

Additions	25
Terminations	12
Transfers Within D&C Divisions	11
Transfers Out of D&C Divisions	4

Engineering Services Division (Continued)

Project Cost & Progress Analysis Section

Forecasts Issued:

Total Subcontractor Personnel Thru Calendar Year 1951.
D&C Personnel Thru Year 1956, To Support Housing Requirements

Reports Issued:

1. Monthly Progress Report to AEC
2. D&C Monthly Narrative Report
3. Monthly Report of Contract Employment to AEC
4. Construction Force on Payroll
5. Summary of Project Costs

Charts Prepared:

C-361	Metal Sweetening and Conversion Facilities, Funds
C-385	Radiometallurgy Building, Funds
C-364-R	Aquatic Biology Laboratory, Funds
C-187-D	Redox Production Plant, Construction Schedule
C-187-E	Analytical and Plant Assistance Laboratory
	1. Direct Labor Versus Plant Completion
	2. Indirect Charges
C-381	Radiochemistry Building, Funds

III. ORGANIZATION AND PERSONNEL

Number of Employees on payroll:

Beginning of month		151
End of month		151
	Net Increase	0

[redacted]

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PRINCIPAL ENGINEERS

I. SUMMARY

A review of eleven major projects was conducted.

Minor consulting services were rendered for seventeen items.

All studies and reviews were resolved on a current basis.

No extraordinary problems were presented.

The work load remained constant for the month.

No inventions or discoveries were reported.

PRINCIPAL CIVIL ENGINEER

I. STATISTICAL AND GENERAL

1. PROJECT C-353 - RICHLAND WATER STUDY

Alvord, Burdick and Howson's July 17, 1950 letter proposal was reviewed and opinion rendered. It was recommended that a subcontract be negotiated for PART I work. Upon receipt of management decisions based upon PART I, either a supplemental agreement or a new subcontract can then be negotiated on a firm basis for the PART II work.

2. SITE SELECTION FOR "G" AREA

Existing incomplete topography maps as well as the survey notes for areas not platted in the vicinity of Coyote Rapids were reviewed. The status of the existing topography maps and unplatted notes appears to justify the completion of topographic maps for all areas surveyed for tentative location of "G" Area facilities if the Coyote Rapids Site is to be seriously considered. At the request of P. E. Lowe, Manager, Reactor Division, comparative cost study for construction of "G" Reactor at Coyote Rapids Site and within the "F" Area was made in conjunction with Principal Mechanical and Electrical Engineers and submitted to Mr. Lowe. No decision as to location for "G" reactor has been received.

3. PROJECT C-381 - RADIOCHEMISTRY BUILDING

Scope drawings and design criteria for the Radiochemistry Building were reviewed. The opinion was rendered that the design criteria is considered a minimum guide for preparation of preliminary plans and outline specifications.

4. PROJECT C-361 - METAL CONVERSION FACILITIES

Design Instruction Letters and Plot Plan were reviewed. Recommendations for revision and expansion of the information contained therein were furnished for the Project Engineer's consideration. The Project Proposal was reviewed and recommendations made relative to content and form of presentation.

5. SUGGESTION NO. 5004

Suggestion No. 5004 recommending the use of canvas as a form lining material for elimination of defects by air and water bubbles on concrete surfaces, was considered. It was considered that the data contained in the Suggestion would not warrant the use of canvas for a form lining material without performing certain research and development work.

Principal Civil Engineer (Continued)

II. ORGANIZATION AND PERSONNEL

Number of Employees on payroll

Beginning of Month	2
End of month	2
Net increase	0

PRINCIPAL ELECTRICAL ENGINEERS

I. STATISTICAL AND GENERAL

1. Design criteria, instruction letters, outline drawings, and project proposals covering parts of the Waste Metal Removal and Recovery Plant and the Metal Conversion Facilities were reviewed and criticized. Similar documents covering building units in the Laboratory Area were treated in like manner.

2. Work was continued on the coordination of electric utilities, the principal objectives being to readjust 300 Area plans in view of the elimination of the Rolling Mill, and to clear the way for early procurement of the unit substation to serve the 221-U and 224-U buildings.

3. The critical study of the 105-H Reactor Building was continued.

4. An analysis was made of the construction stages in the expansion of the 251 primary substation, Project C-295, to show the influence that Hanford Works Critical Power Procedures will have on the execution of the work, and hence on the type of contract under which the work will best be accomplished.

[redacted]

PRINCIPAL MECHANICAL ENGINEER

I. STATISTICAL AND GENERAL

1. The 219-S waste disposal system from the Recox Plant Assistance Laboratory as proposed was reviewed and recommendation developed for another site offering better soil for percolation and reduced construction cost

2. Investigated work being done by Technical Division of laboratory hood design and supported development of the by-pass type of hood to simplify control problem and increase air volume available for dilution in the hood.

3. Assistance to Engineering Services Division on estimating, unit cost, and specification work was completed. C. F. Quackenbush who has been assisting in this office is transferred to other work.

4. C-361 - Metal Conversion Drawings submitted by the Project Group were reviewed for design adequacy.

5. Scoping of water and steam line for the Expansion Program in 200-E continued with quantities firmed for major projects. Cost advantage of sizing lines for full program have been pointed out. The water line proposal was submitted in final form at month end. A detailed scope proposal for steam will be issued shortly. A recommendation for single line to Redox was made.

6. Discussions were held with other operating department persons to develop improved design specs. for cold weather operation of air supply systems.

7. An estimate for G-Unit construction cost was prepared.

8. Work of this office is being coordinated with Mr. Seckendorff.

POWER AND MECHANICAL DIVISION

I. SUMMARY

The work load in the Design Sections increased considerably during the month, resulting in some overtime work being done. This increased tempo was brought about by the formalizing of some contingent projects.

The Construction Sections work load has remained static; some projects have increased while others have decreased.

The Concrete Control and Welder's Qualification Section activities increased slightly during the month, due to the opening of a new gravel pit and erection of a production and stockpiling plant. No overtime work was done.

Procurement of Engineered items of Material and Equipment is on schedule and satisfactory, with a few exceptions. Provisions to secure on a loan basis on plant site have been made for some necessary items required to meet schedules.

In general, satisfactory progress is being made at a very economical cost. Design and Construction schedules are being met, in some cases progress exceeds schedules.

No inventions or discoveries were made.

II. STATISTICAL AND GENERAL

C-185, Railroad Connection South of Richland: All work on this project has been completed including "as-built" drawings, property unitization, with completion notice issued. This project will be dropped from the report next month.

C-199, Expansion of 300 Area Sanitary Sewer Disposal System: A check of the flow quantity of sewage through the existing system has been made and will be used for the preparation of a supplemental project proposal.

C-204-B, Additions and Alterations to Kadlec Hospital & Medical Arts Building: Bids for the construction work in connection with the Medical Arts Building and the outside utilities were received July 20, 1950. With AEC approval forthcoming, it is anticipated that the contract for this work will be awarded in the near future. The detail design plans and specifications for the construction additions to the Kadlec Hospital are approximately 65% complete.

C-276 (Part II), Over-all plant telephone system: Construction work proceeding normally and is 90% complete.

Power and Mechanical Divisions (Continued)

C-257, Health Instrument Control Laboratory: Plans and Specifications will be submitted to bidders this month. Bids are tentatively scheduled for opening October 10, 1950. Construction subcontract for this work, we hope, will be signed the latter part of October.

C-289, Additional Laundry Facilities, 200-West: Structural steel work and exterior masonry walls are complete. Interior carpentry work started on July 3, and is approximately 25% complete. The 2" wood decking started July 22, and is about complete and ready for insulation. Heating and ventilating work started July 25th. The subcontractor has approximately 25 men working on the job.

C-295, Enlarging 251 Substation: Project proposal C-295, Part II, revised, was transmitted to the Manufacturing Divisions and A & B Committee, July 6, 1950.

C-342 DR Water Works: Design work on this project is complete with the exception of "as-built" drawings which are 25% complete. Construction work is slightly ahead of schedule, with an indicated 71% physical completion as against a scheduled 69%. The October 1st beneficial use date barring unforeseen delay on four critical items will be accomplished. Progress by building items:

183-DR: Robertson siding and roof decking is 94% complete, installation of equipment 70% complete, filter media started July 11, 1950, and will be complete next month. Clear-well tanks are 65% complete with one tank of the four ready for inside painting.

190-DR: The siding and decking are complete and all pump sets are installed or on the site except two now enroute via truck. It is planned to start run-in on 190 pump August 15.

115-D and 105-DR: All work will be completed on schedule except the blower units which have been delayed through a strike of Ingersoll-Rand Company. A spare unit is available on plant site which can be used if necessary.

184-D: The smoke stack is complete. The masonry walls of the addition are practically complete. The new boiler is 45% complete.

Concrete: Approximately 1300 cu. yds. of concrete were poured during July, bringing the total to 47,700 cu. yds.

C-353, Richland Water Supply: Alvord, Burdick & Howson have submitted scope of work and proposed fee ($9,000) for the Richland Water Supply study. Approval has been requested of the AEC for this study.

Power and Mechanical (Continued)

C-364, Aquatic Biology Laboratory: The AEC directive authorizing design of this project has been received. The design criteria for the Architectural Engineer will be completed in early August. Brochures of various Architect Engineers under consideration for the design are being reviewed.

C-381, Radiochemistry Building: The contract with Leland S. Rosener was approved by the Commission and notice to proceed was sent to him on June 27, 1950. Preliminary designs are in progress and are scheduled to be submitted to GE for review and approval September 1, 1950.

C-385, Radiometallurgy Building: This project was approved and funds authorized for complete design through AEC directive dated June 5, 1950. A letter from W.E. Johnson to the AEC dated June 10, 1950, proposed that a lump sum subcontract be negotiated with Rosener for the design of this building as a supplemental agreement to subcontract G-304 covering the design. This proposal was approved by the AEC July 21, 1950. Scope drawings and design criteria are in process, scheduled for review on August 3, 1950.

C-394 (GET-16), Plot Plan and Outside Utilities - Hanford Works Laboratory: The design project proposal was approved by the A & B Committee on July 20, 1950, and we are now awaiting AEC approval. A preliminary survey has been made of the Technical Center to establish relocation of boundry fence, temporary access roads and extension of railroad spur, provision for water and electric power for construction subcontractor usage, preliminary grading, etc. Funds for the TC work will be requested to carry on the work concurrent with the HI Laboratory construction.

GET-17, Pile Technology Building: Preliminary scope plans have been re-submitted to the Technical Divisions July 19, 1950 for review. Comments have not been received to date.

III. ORGANIZATION AND PERSONNEL

Personnel on payroll	
Beginning of month	71
End of month	71
Net Increase	0

REACTOR DIVISION

I. SUMMARY

The most significant developments during the month were:

1. Shielding

   It was decided that primary effort would be applied to Brookhaven shielding concrete and that Magnesium Oxychloride concrete would follow with a lower priority so that we could learn as much as possible about its properties. The reasons for this decision are that there is so much experience and information available from the construction of the Brookhaven pile, and also it appears that MO concrete loses structural strength with time.

   Pour tests of Brookhaven concrete are well underway in the 189-D Building. Four steel crates, of the type proposed for the "G" shield, were completed with encouraging results.

2. Water System Design

   A scope of work (HDC-1821) was prepared and submitted to the Industrial Engineering Divisions at Schenectady. It is hoped that they will undertake an evaluation of various Water Plant configurations and evaluate basic types of equipment for the Water Plant. Included in this scope is a curve which establishes the water pressure as a function of time following a power outage.

3. Ball Third Safety System

   The analysis of the test data indicates that the Ball System provides as much control as a complete control rod in 1.6 seconds after the system is energized. This is based upon results obtained in the White Bluffs Test Tower and this very rapid control satisfies the original requirements. The amount of graphite errosion being experienced using 3/8" steel balls appears to be insignificant.

4. Control Rod Cooling

   A three dimensional analogue will be completed on August 1, and will be used for solving the problems associated with cooling the control rods with gas instead of water used in present reactors.

5. Heavy Water Studies

   A preliminary investigation was made of the use of heavy water as a coolant in the "G" pile. It appears that a gain of approximately 1,000 inhours will be realized and will necessitate a change of lattice spacing below that now contemplated. The results of the study will be documented in a report.

Reactor Division (cont.)

6. Process Tube Heat Transfer

The construction and assembly work in the 189-D Building is 80% complete and is on schedule. However, the Cutler-Hammer control will not be shipped on schedule and will delay the test start-up by at least three weeks. The water system of the full scale test has already been leak tested.

A detailed report containing the current statistical and background information on 100-G heat transfer tests and related subjects is contained in Design Staff Monthly Report for July, 1950 (HDC-1839).

II. STATISTICAL AND GENERAL

1. Recirculation Water Test

This program is experiencing delays due to faulty manufacture by a vendor of the stainless steel piping and also because of a strike at the pump vendor's factory. The test cannot be rescheduled at this time.

2. Reactor Division Development Laboratory (189-D Building)

This laboratory is now 80% complete and work is progressing on schedule. Approximately 95% of the tools and shop equipment have been procured. An acceleration of the test program, combined with an increase of a scope of the test activities necessitates the removal of another refrigeration unit, which is now underway.

3. Taper Bore Gun Barrel

A report of the results of the test were finally received from the Technical Divisions. The design appears to be satisfactory although confirming data with more accurate instrumentation will have to be obtained from a second test.

4. Rod Drive

The rod drive assembly is scheduled to be completed by Bremerton by August 14, and will be thoroughly tested in the 189-D Building before it is installed in the Test Tower.

5. Graphite to Graphite Heat Transfer

Tests are now underway in the development laboratory to establish the heat transfer coefficient between graphite blocks as the load is varied. The principle effort to date has been in establishing a satisfactory testing technique.

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Reactor Divisions (continued)

6. Concrete Irradiation Tests

The Production Test Request has been approved. These tests will be run to establish the effect of irradiation exposure on the concrete proposed for the shield.

7. Graphite CO_2 Reaction Under Irradiation

These tests will investigate the reaction of CO_2 and graphite at elevated temperature under irradiation conditions. These tests will be delayed approximately four months unless an "A" test hole can be made available at an early date.

8. Inventions and Discoveries

All persons in the Reactor Division 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.

INVENTOR	SUBJECT	(date) REPORT OF INVENTION
C.H. Robbins	Three dimensional electrical analogue using Teledeltos paper for solving heat transfer problems.	June, 1950

III. ORGANIZATION AND PERSONNEL

During the month the following changes in personnel took place:

1. R.J. Schier, Design Staff Metallurgist, was transferred from the Reactor Division to Separations Division.

2. P. Forester, Rotational Engineer, transferred from the Reactor Divisinn to the Project Engineering Divisions.

3. R.K. Anderson, Rotational Engineer, was assigned to the Reactor Division Control Section.

4. J.R. Carell, Engineer on loan from Schenectady, was assigned to the Reactor Division test Section.

Number on Payroll:

Beginning of month	42
End of month	42
Net Change	0

SEPARATIONS DIVISION

I. SUMMARY

A Project Proposal (HDC-1837) on Metal Conversion Facilities (C-361) was issued to the Manufacturing Divisions on July 28, 1950. It is indicated that detailed design of this facility will be accomplished by General Electric Forces.

The conrtact modification for completion of Phases II and III of the 234-5 Building Program was approved and the construction Subcontractor (Atkinson-Jones) started work on July 26, 1950.

A contract modification covering the Waste Disposal System for the Redox Laboratory was submitted to the AEC for approval on July 28.

Active projects in the field progressed as scheduled. The Redox Production Plant attained 11% completion and the Redox Plant Assistance and Analytical Laboratory reached the 20% complete mark.

Considerable effort was spent in determining possible means of shortening the schedule for completion of the TBP Project. Design consideration were discussed with Kellex personnel and procedures for expediting procurement discussed with the AEC.

The scope of Phase IV of TBP was completed, with the exception of instrumentation, and forwarded to Kellex.

II. STATISTICAL AND GENERAL

A. Project C-187-D - Redox Production Plant

Kellex design work is approximately 73% complete compared to the scheduled 76%. As of July 29, of a total of 1997 drawings to be made, 1562 had been started, 1359 had been completed, 1370 were scheduled to be approved by General Electric, 1123 had been received for approval, and 1107 (55.5%) had been approved and forwarded to the field.

Design work by the Power and Mechanical Division, D&C Divisions, is approximatley 66% complete compared to 84% scheduled. Of a total of 345 drawings to be made, 192 (54%) had been approved and forwarded to the field by July 29th.

The review of the M&E list started in June was completed during the month. It appears that the equipment for cells D,E, and F, which are intended to be assembled first will cause a delay in the completion of construction. Although all these items are being expedited, it is felt that unusual methods will have to be used to meet the "required for construction" dates.

Separations Divisions

Statistical and General (Continued)

CONSTRUCTION PROGRESS STATISTICS

Facility	Completion
202-S Building	8.9%
277-S Building Mock-Up	34.8
2702-S Badge House	26
CPFF Waste Facilities	7.8
Water Distribution	22.5
Steam Distribution	26.3
Railroads	45

Overall Project completion (A&J Work) is estimated to be 11.3% compared to the scheduled 9.6%.

B. Project C-187-E - Redox Analytical and Plant Assistance Laboratory

Design of the Laboratory Waste Disposal System is estimated to be 28% complete. This percentage is based on a revised drawing list prepared during July. The revised drawing list is composed of 61 drawings, as compared to the previous estimate of 30 drawings.

Construction of the Laboratory is approximately 20% complete. The major portion of the construction effort during July was devoted to structural steel erection, forming and pouring of the second floor, and miscellaneous electrical, piping, heating and ventilating work. Work is proceeding approximately as scheduled.

C. Project C-198 - 234-5 Building Program

Information from Schenectady indicates that Task I will be shipped during August - about two months ahead of schedule.

Progress statistics for July are as follows:

	Basic Detail Design	% Complete Overall Design Effort	Constr.
Phase II	80.1%	52.15%	5%
Phase III (Richland)	30.0	20.0	0
432 Project (Schenectady)	--	--	85

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Separations Divisions
Statistical and General (Continued)

D. Project C-361 - Metal Conversion

A project proposal for this facility (HDC-1837) was submitted to the Manufacturing Division on July 28, 1950 as scheduled. Design of this facility has been discussed with the Power and Mechanical Division and an estimate of design costs received. Preliminary discussions indicate detailed design will be carried out here.

E. Project C-362- Waste Metal Removal and Recovery

Progress statistics for the month are as follows:

	Phase I	Phase II	Phase III	Phase IV	Phase V
Scope	95	10	100	99	95
Design	12	0	1	1	95
Procurement	0	0	0	0	0
Construction	0	0	0	0	0

III. ORGANIZATION AND PERSONNEL

Personnel as of June 30	102*
Personnel as of July 31	98*
Decrease	4

*Includes four Fluor Corporation Personnel.

[redacted]

PROJECT & RELATED PERSONNEL JULY 1950

	6-30-50		7-31-50	
GOVERNMENT EMPLOYEES				
Civilian Personnel - ATOMIC ENERGY COMM.	347		346	
Civilian Personnel - G. A. O.	8		8	
Total		355		354
RICHLAND VILLAGE PERSONNEL				
Comm. Facilities (Includes No.Richland)	1099		1109	
Organizations, Clubs, Etc.	66		68	
Schools	378		97	
Churches	25		25	
Total		1568		1299
CONSTRUCTION SUB-CONTRACTORS				
Atkinson & Jones	3080		3141	
Newberry Neon	263		291	
Urbun, Smyth, Warren Co.	383		386	
Hanley & Company	177		208	
Kellex Corp.	440		456	
J. A. Terteling & Son	13		-	
Charles T. Main, Inc.	58		36	
No. Electric Mfg. Co.	3		5	
J. Gordon Turnbull	11		7	
McCorkle Const. Co.	8		-	
Consolidated Western Steel	6		-	
Flour Corp.	17		11	
Booz, Allen & Hamilton	2		2	
Chicago Bridge & Iron Co.	54		42	
Rust Engr. Co.	15		11	
Edmond P. Erwin	50		38	
Creamer Electric	1		3	
J. P. Head	2		8	
Royal Company, Inc.	-		12	
Combustion Eng'r. Superheater,Inc.	1		1	
P. S. Lord	11		16	
Fred J. Early, Jr.	23		32	
Gilmore Fabricators, Inc.	1		3	
Lewis & Queen	17		39	
Bergman & Lampson	7		2	
H. G. Shotwell	-		14	
Graybar Electric Co.	-		2	
V. S. Jenkins	-		8	
Total		4643		4774
General Electric Personnel		7778		7813
GRAND TOTAL		14344		14240