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HANFORD WORKS MONTHLY REPORT

FOR

JUNE 1951

Compiled By

Division Managers

July 20, 1951

HANFORD WORKS

RICHLAND, WASHINGTON

Hanford

Operated for the Atomic Energy Commission
by the
General Electric Company
under
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GENERAL SUMMARY

MANUFACTURING DIVISIONS

Production Divisions

A total of 64.1 tons of metal was discharged at the goal value during the month. The special request program required approximately 365 man hours for the month. Thirty-one tubes of special request material other than Chemical 68-56 were charged and discharged and 10 casks containing irradiated samples were shipped off site. An additional 250 man hours were required for routine work on Chemical 68-56.

Percent of forecast production input made was 106.4. A total of six ruptured slugs (five normal uranium and one P-10-A) required 111 hours down time for discharging. Percent of forecasted production discharged 96.4. The average time operated efficiency was 92.1 percent.

A total of 85 tons was canned at a yield of 76.5 percent. This represented 94.4 percent of forecast. The melt plant produced 24 tons at a record yield of 91.5 percent. The solid metal yield was also a new record at 95.7 percent.

A total of 97 charges plus two acid washes was started in the canyon buildings, which amounts to 102.1 percent of the scheduled production. The concentration buildings completed 104 regular runs plus two acid washes and eight master recycle runs.

A total of 106 regular runs and two acid washes was completed through the isolation building, representing 104.3 percent of forecast. The average cooling time was 44 days and the minimum was 42 days. The average purity of completed charges was 98.1 percent.

Plant Utilities and Maintenance Divisions

Construction Completion Notice, effective June 1, 1951, was issued on Project C-377-R, New Instrument Maintenance and Development Building, 300 Area.

The electric power demands for the month of June were as follows:

Process	6-11-51	(2:30 - 3:00 P.M.)	66,400 KW
Village	6- 5-51	(10:30 - 11:00 A.M.)	19,000 KW

One unscheduled interruption of production resulted from a breaker failure on one bank of four pumps at 190-H on June 12. Pile start up was delayed one hour and eighteen minutes.

Six emergency pile shutdowns, because of ruptured and stuck slugs, required Divisions' services to remove slugs and make necessary tube replacements and repairs.

A copy of the identification key for the gallery wall connectors for Building 202-S (Redox) was received. The lubrication instructions for this building are now 95 percent complete and will be issued during the month of July.

TECHNICAL DIVISIONS

Pile Technology Division

Theoretical studies were made of the use of enriched uranium to increase the plutonium output of the Hanford Piles.

An exponential pile with an eight-inch lattice spacing has been constructed and experimental measurements of buckling initiated.

Research and development studies of shielding development, xenon cross section measurement, and critical mass determinations have been continued according to plan.

Small-scale pile tests of dichromate-free cooling water were initiated.

The first reliable information on the temperature coefficient of radiation damage of graphite was obtained as a part of our continuing program of graphite research.

Heat transfer and mechanical development studies were directed particularly towards investigations of components for the C Pile during the past month.

A molten eutectic mixture of sodium and potassium carbonates is being studied for use as a liquid medium for the beta phase transformation of machined uranium slugs.

A program for examination of normally discharged, irradiated fuel and poison elements from the H-10 loading was started.

The program for establishing improved inspection standards and procedures for uranium canning is continuing. This includes studies on non-destructive testing methods, autoclaving, and thermal cycling, canning bath temperatures, and welding procedures.

During June, 214 slugs were extracted in seven runs in the tritium extraction metal line. The average product purity was 94 percent with 0.07 percent non-isotopic contamination.

About two-thirds of the total time of the P-10 group was spent in shutdown work and experimental studies which were necessary to permit the production run in the metal line which will take place the first two weeks in July.

The 2562-H channel, from which a ruptured slug was removed with difficulty, was borescoped and the graphite blocks were found to be broken from the point where the rupture occurred to the rear gunbarrel.

Separations Technology Division

The omission of extraction waste rework at T & B Plants resulted in slight improvements in decontamination factor. Miscellaneous product wastes from 234-5 Building were recycled to the B Plant Concentration Building with

satisfactory results. Three barium sulfate scavenging tests in the Concentration Building successfully reduced the radioactivity of PR cans. In the 234-5 Building, product of satisfactory purity was produced by the direct hydrofluorination of plutonium peroxide from the Isolation process. Preparations for conversion of production from the Model 110 to the Model 130 were essentially completed.

In Redox and TBP process development, Technical Manual preparation has continued to 88 percent completion of the Redox Manual and 40 percent completion of the TBP Manual. A group of 14 "S" Division supervisors and 25 operators started a 4-week training period in 321 Building. Production testing of the TBP pulse generator was completed at the Proportioncer's plant (Providence, R. I.) under the guidance of Technical personnel. The first "Run Plan" for 'cold' testing of the integrated Redox operation with uranium solutions was issued for comment. The Hot Semi-Works was carried to 11.5 percent completion.

In the research laboratory a study made of alternate organic phosphates indicated TBP to be the best selection for the extraction of uranium and plutonium. Studies of the coupling of ruthenium and zirconium removal head-end steps to the Purex process improved the decontamination factors only by the amount of removal achieved by the head-end step. Iodine entering the Redox IA Column will be rejected, to the extent of 99%, into the IAW waste stream. Laboratory studies have pointed up the feasibility of recycling 234-5 slag and crucible solutions in any proportion to the redox IIA column.

Studies of the peroxide coupling of Redox product solutions to the 234-5 process indicate that a product of adequate purity may be produced with either one or two peroxide strikes. Greater than 95% reduction yields were obtained on a small scale employing a sulfur "booster" as a replacement for iodine. The feasibility of recycling 234-5 caustic scrubber solutions to the Concentration Building for the recovery of plutonium was demonstrated in the laboratory.

Development studies directed toward the improvement of silver reactor performance for the removal of iodine have indicated that the three plant reactors operating below 99% efficienty have been at a temperature above the melting point of silver nitrate for extended periods of time. Methods for "reactivating" the silver nitrate on these reactors are being studied.

Technical Services Division

Exceptions to the May 2 acceptance of Building 222-S, the new Redox Analytical and Plant Assistance Laboratory, are being completed rapidly, and preparations are under way for the Phase II construction in this building. The Laboratory Services group is following this work while initiating the operating functions for which they are responsible. Full attention is being given to the design and fabrication of special laboratory and multicurie cell equipment for this building by the Technical design and shops groups.

Placement of the metal siding panels on the Mechanical Development Building is in progress by the Dix Steel Building Company. Meanwhile, resolution of the Phase II construction scope and cost estimates has been completed, and a supplemental proposal (C-406, Part III) is being prepared to request the $158,000 in additional funds now estimated to be required for the completion of this Works Laboratory facility.

[redacted]

The lump sum construction subcontract for the Radiochemistry Building was awarded to the Sound Construction & Engineering Company on their low bid of $3,744,213. Site grading in preparation for actual construction was under way at month end.

A.E.C. Directive HW-191, Modification 5, was received authorizing a new total of $1,760,000 for the design and construction of the Plot Plan & Utilities for the Works Laboratory Area.

A.E.C. Directive HW-182, Modification 2, was received authorizing $1,720,000 for the construction of the Radiometallurgy Building in the Works Laboratory Area. However, the call for bids covering this work is being temporarily delayed until more complete information is available on the probable cost of other major buildings in this program (notably, Pile Technology).

The Chas. T. Main Company, architect-engineer, is working on final changes in the drawings and specifications covering the Pile Technology Building. Bid assemblies will be prepared immediately upon completion of this work.

Decision was reached to proceed with the call for construction bids on the Library & Files Building, and E & C are preparing final prints and specifications for the bid assemblies.

A project proposal (C-458) covering the ultimate conversion of Building 3702, 300 Area, for use as the Laboratory Supply Building in the Works Laboratory Area was approved by the A & B Committee and forwarded to the A.E.C.

The press of service work in support of the Technical development programs and new building equipment needs made it necessary to continue the following groups on a six-day work week: Equipment Design, Technical Shops, IBM Computing Laboratory, and the Contact Engineers engaged in new Laboratory Planning.

Arrangements were completed for transfer of the Building 101 Shops craft personnel and craft supervision from Technical to the Instrument Division of Manufacturing effective July 1. Overall responsibility for these Shops, and for 101 Area service administration, continues in the Engineering Section of the Technical Services Division.

The Mathematics Section participated in a series of meetings held with visitors from Argonne National Laboratory, Brookhaven National Laboratory and the A.E.C. concerning the routine krypton calculations performed semi-monthly. The accuracy of the present calculation was discussed completely. Additional confirmatory calculations are to be made, and some changes in basis may be made.

Analytical Division

Assurance has been given that the new GE mas spectrometer on order for P-10 analyses will be shipped during the first week in July. Difficulties with the instrument experienced by the General Engineering Laboratory have been eliminated to the extent that the instrument meets purchase specifications.

Ten different samples of Isolation Building product solution (AT), representing MWD levels from 50 to 600, have been analyzed for Pu-240 by means of spontaneous fission counting. Good precision is indicated by the fact that a continuous curve is obtained from a plot of the 240 content versus the power level. The 240 contents at 300 and 600 MWD are, respectively, 10% and 7.5% lower than those calculated from pile data.

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Application of a differential method to the photometric determination of copper in bronze bath yielded a method with a relative precision of ±0.4% that requires less than 15 minutes. Triethanolamine is employed as the color development reagent.

Continued work with coulometric titration procedures has involved determinations of uranium in uranium-aluminum J slugs that are to be employed for calibration of 305 test pile measurements. A marked bias in previous results was found to result from impurities in reagents, design of the calomel reference electrodes and the interference of small amounts of stopcock grease. Elimination of these errors from the automatic titration procedure led to a set of accurate and precise results that are in close agreement with analyses obtained at Oak Ridge on the same solutions.

Work has been completed in the 234-5 Building Laboratory on the method and equipment development for recovery of roughly two large units of plutonium from analytical wastes for subsequent return to the process. Operating personnel in the laboratory have been trained and are currently processing about 25 small units of plutonium per day.

An advance in the science of alpha counting has been realized through the use of a filar microscope to measure the aperture of the vacuum chamber on the Simpson Proportional Alpha Counter. Flats on the tapers of 0.001 inch or distortions of the aperture in the amount of 0.0001 inch sensibly affect the geometry calibration of this instrument which in turn is used to calibrate all alpha counters on the plant. By using the microscope, accuracies of 0.0001 inch in the construction of the aperture can be assured. Recalibration of all counters and re-evaluation of the isotope correction are planned as a result of this work.

ENGINEERING AND CONSTRUCTION DIVISIONS

The Engineering and Construction Divisions are currently working on 122 projects; 62 of these projects have authorized funds in excess of $20,000 each. The 60 other projects have been authorized funds of from $5000 to $20,000.

Four projects, having a total estimated cost of $25,690,000, were completed this month. They were:

C-198 - 234-5 Facility - For advantages gained by this construction, see Document HM 254.

C-291 - Installtion of Security Fences - Advantages gained by this construction provide adequate security fence protection around exclusion areas, and reduction of excessive maintenance cost due to failure of the original fence which had been supported on 4 x 4 untreated posts.

C-330 - Increased Ventilation, 313 and 314 Buildings - This construction will permit operation personnel to perform their duties in the melt plant, chip recovery and rod straightening areas in an atmosphere with greatly reduced concentration of contamination and may make it possible for them to perform most, if not all, operations, without respirators; and thus, increase the efficiency of the workmen, as well as their safety. It will also permit recovery of valuable metal and oxides now escaping.

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C-337 - New Instrument Maintenance and Development Building, 300 Area - The advantage gained by this construction is in the concentration of, and providing for, adequate facilities required by the Instrument Division for the repair, calibration and general maintenance of process and analytical instruments used at Hanford Works. This will enable more economical and efficient operation, improve employees morale as well as protect the large investment in instrument equipment.

Contract negotiations were concluded June 29 with Atkinson-Jones Construction Company for the construction of the 100-C Facility and the contract was ratified by the Commission as Modification 37 to G-133. Excavation for certain facilities had been previously carried on under letter Modification #3.

A study was made to provide the A.E.C. with data for two new Reactor Areas.

Completed during June were 16 contract items (8 lump sum contracts, 7 lump sum modifications and 1 CPFF modification) totaling an increase in business of $49,347,828.00 over the preceding month. Also completed one modification decreasing a lump sum contract by $9,993.00 and three CPFF letter orders.

Reproduction of Prints, Documents and Instructions continues at a very heavy rate with 645,820 sq. ft. being processed this month. A further increase is expected due to work for new projects.

The Drafting Training School began work June 11 with thirteen (13) Student Draftsmen in attendance. Their progress has been much greater than anticipated. Undoubtedly, this is due to the proper selection of students and the modern methods of instructions, including the use of still and motion pictures. This first class will be available for assignment on September 10, 1951

An Administrative office has been set up under the direction of Mr. H. F. Scott for the purpose of maintaining adequate records.

All drafting, except on Project C-361, is on schedule. The C-361 delay will be picked up within two weeks.

Material procurement and fabrication have slowed up somewhat this month, particularly in the case of certain pipe and vessels. A strike in a fabricator's plant has held up certain vital equipment for TBP. Regarding Critical Materials Control: As a result of receipt during June of the initial allotments of controlled materials, reconciliation of allotments, forecasts and orders placed for controlled materials was made. This required some changes in the forecasts. These reconciliations indicate that additional controls are necessary to assure complete and accurate forecasts and such controls will be established. Owing to the fact that operation of the Controlled Materials Plan during the three months beginning July 1, will, of necessity, be a "Trial-run", it is anticipated that adjustments of allocations during this period may be obtained if required.

The current trend indicates a relatively normal labor supply. A few open requisitions remained for Fitters and, to a lesser degree, other classifications. According to the exit interviews held, voluntary terminations from the Principal Construction Subcontractor' operating on the plant site were primarily for the reason of, in order, to seek job improvement and personal reasons. Voluntary terminations of this subcontractor's manual employees averaged 3.55% of total manual forces.

A decrease in major injuries to construction workers is noted this month. This is accounted for by increased safety instruction and inspection. Of the five major injuries occurring this month, two were fractures of the great toe because the injured were not wearing safety shoes; another one, the injured claimed exposure to tri-chlor ethylene fumes. In this case, proper safety equipment had been provided.

Ten inspections were made by the Senior Safety Committee. Three Safety meetings were conducted for Sub-Contractors and two for Engineering and Construction Divisions personnel.

All persons in Engineering 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. 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.

HEALTH INSTRUMENT DIVISIONS

There were eight informal special hazards incident investigations. One over-exposure resulted from accumulation of I^{131} in the thyroid gland.

In general, the emission of I^{131} from the separations plants exceeded desirable levels. Vegetation contamination by I^{131} over a wide area (Walla Walla, Lewiston, Spokane) reached levels higher than those which should properly be maintained in a public area.

Surveys by the Operational Division showed no significant deviation from expected findings, again with the exception of tritium concentrations in the atmosphere.

PLANT SECURITY AND SERVICES DIVISIONS

There were no major injuries in June. The total number of major injuries for the year to date is four, with a frequency rate of 0.48.

There were ten industrial fires with a loss of $62.00.

Savings created during the month by the Procedures Analysis group amounted to $3,809. Of this amount, $3,140 is considered to be on an annual recurring basis.

On June 18, 1951, the 277-S and 277-U Buildings in the Redox Construction area were enclosed within a single fence and the area designated a "Construction Exclusion" area. "Q" clearance is now required for entrance to this area.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

The number of applicants interviewed increased from 1,274 in May to 1,599 in June. Of these applicants, 565 were individuals who applied for employment with the General Electric Company for the first time. In addition, 145 new applications were submitted through the mail. Open, nonexempt, nontechnical requisitions decreased from 562 at the beginning of the month to 491 at month end. Total plant roll increased from 8,336 to 8,674. Turnover rate increased from 1.71% in May to 2.19% in June. During June, [redacted] requests for transfers

to other type of work were received in the Employment Office, and 29 transfers were effected. Advertisements were placed in newspapers in Buffalo, New York, Philadelphia, Pennsylvania, and Cleveland, Ohio, on June 1, 2, 3 and 4 for instrument mechanics and design draftsmen with rather discouraging results. During the last week of June, advertisements were placed in newspapers in Billings, Miles City and Missoula, Montana, for I.B.M. operators, production operators, patrolmen, firemen, instrument mechanics, laboratory assistants, stenographers and estimators. Simultaneously with these advertisements a recruiter was in these cities, with the results of 101 being interviewed, 32 hired, and 23 pending. Good progress has been made on the Manpower Inventory initiated in the latter part of May at the direction of the Atomic Energy Commission, with 99% of the questionnaires completed by those employees included in the initial inventory, and the information transposed to I.B.M. cards in approximately 5,000 cases. It is expected that this inventory will be completed by August 1, 1951. During June, initial recognition was given to employees with outstanding attendance records as provided for by a Perfect Attendance Recognition Plan. Appropriate awards were given to 105 employees with 4 years of perfect attendance, 125 employees with 3 years of perfect attendance, 267 employees with 2 years of perfect attendance and 1,278 employees with one year of perfect attendance.

One employee death occurred during June, and two employees retired. One hundred and eighty-six visits were made to employees confined to Kadlec Hospital and 42 salary checks were delivered to employees confined either at home or in the hospital. At month end, participation in the Pension Plan was 94.8%, in the Insurance Plan 97.8% and in the Employee Savings and Stock Bonus Plan 34.7%. As of the end of June, there were 995 employees registered under the Selective Service Act, and 724 military reservists on the rolls. Since August 1, 1950, 147 employees have terminated to enter military service.

The News Bureau distributed 64 releases to newspapers during the month, 46 of which were sent to local newspapers and radio stations. Eleven releases were sent to daily newspapers, radio stations and wire services throughout the Northwest, and seven releases were answered to special requests for information.

Three newsmen visited the News Bureau during the month: Bill Houseman from LOOK Magazine; Larry Davies, West Coast representative of New York TIMES; and Robert Coburn, Managing Editor of BUSINESS WEEK Magazine.

Arrangements were made during the month for the Public Library and Parks and Recreation Division to release certain routine information directly to newspapers, rather than through the News Bureau.

During the month of May, 398 column inches of news stories and 14 photographs concerning Richland and Hanford Works were printed in newspapers throughout the Northwest.

An informative letter to tenants concerning the new procedure for moving from one house to another was written at the request of the Housing Divisions.

A letter was written at the request of Public Works, and mailed to every residence, asking residents to water their lawns on alternate days.

Information concerning the visit of Columbia High School journalism students to Community and Public Relations Division was forwarded to ADVENTURES AHEAD Magazine for publication.

During the latter part of the month, the Community Relations Supervisor was temporarily relieved of his responsibilities and assigned the task of planning and coordinating a civil defense public information program until this assignment is completed.

"Pattern for Survival", a motion picture, was shown to approximately 80 percent of all construction personnel on the Atkinson-Jones payroll.

A tour of the civil defense control center was arranged for a local newspaper reporter, which resulted in a feature story.

The Speakers Bureau handled three speaking engagements during the month, one of which was a HOBSO presentation. Fifteen members of Technical and Health Instrument Divisions attended the Puget Sound Regional Meeting of the ACS in Seattle, and presented papers on technical subjects, which were processed through the Bureau.

Eleven G-E produced films were obtained and scheduled.

"Survival Under Atomic Attack", a six-minute radio script written by the Community Relations Supervisor, was tape recorded and released to the three local radio stations. Public Functions also developed and released tape recordings for the Meistersingers, spot announcements for water conservation, and the community band concert.

Public Functions assisted in the following presentations: General Manager's address on his visit to Eniwietok Atoll, the attendance award dinner and program, quiz-type show for Kiwanis Club, P.M.S. graduation dinner, Treasury Department's award to AEC concerning savings bonds.

The Photo House produced 9,445 prints during the month, of which over 7,000 were identification prints for Security Division and Employee Relations.

Special Programs produced the monthly health bulletin on rabies, and revised the section of "This Way, Please..." on the uniform filing system. The Attendance Recognition Plan at Hanford Works was publicized in the Works NEWS, and by a letter to supervisors, a poster, and news releases to newspapers and radio stations.

The Works NEWS handled publicity for the following: MS degrees achieved at G-E School of Nuclear Engineering by two Hanford Works employees, Red Cross blood program, G-E pensioners, recreation, Payroll Department, safety, and sports.

The Women's Activities Feature Writer prepared five women's pages which appeared during the month in the Works NEWS. This writer also prepared 18 stories for the Parks and Recreation Division which were released by the News Bureau.

The Supervisors' 40-Hour Training Program was not held during the month of June, and will not be held during the other peak vacation months of July and August. PMS groups 13, 14, 15, and 16, having completed their conferences during the months of May and June, held special completion dinner meetings during this report period. As reported in May, approximately 300 supervisors at the Hanford Works have completed these studies in the art of persuasion. A total of 23 HOBSO meetings were presented to Security Patrol personnel during this report period, with an attendance of 348. Combining these totals with those reported

for May, we can now report a total of 167 meetings, and a total attendance of 4,124 having attended the appreciation version and discussion of HOBSO. During the month of June, 26 Supervisor's Handbooks were turned in, brought up to date, and 24 reissued, making a total issed to date 1,479.

The final meeting of the class in Effective Presentation was held on June 5. An adaptation and condensation of this program is currently being made available in the Introductory Program for Technical employees.

The 8-Hour Program was presented twice for "S" Division personnel during June. A total of 43 attended the June 1 program, and on June 30, there were 26 in attendance.

Orientation was given to a total of 513 new employees during June.

Twenty-two copies of Men and Volts were sold during June.

In accordance with the responsibilities charged to the Training and Program Development Staff by the Education Committee , a complete six-week Introductory Program for New Technical Employees was developed and started during this report period. The first week of this six-week program was devoted to a General Orientation and consisted of discussions by the several division managers on the functions of their separate divisions. The second and third weeks, which carry over into the July report period, consist of classes, five of which are technical in nature, and five non-technical or of a business administration type. All members of the Training Staff are assuming responsibilities with respect to this program and, together with the instructors of the technical courses, are presenting an over-all program which to date has been very enthusiastically received if the comments of the new technical people involved are any criterion. This program is scheduled to be completed on July 27.

Contract negotiations were held between the Company and two unions -- Hanford Guards Union, Local 21, and the HAMTC representing Richland and North Richland Firemen. The Chemical Workers Union withdrew their petition to represent Chief Operators and a new petitition was filed by the HAMTC. Appendix "A" of the HAMTC and BSEIU contracts was modified to include a $3.60 a week wage increase.

Master Agreement open by nine of fourteen Signatory Unions -- all Unions signatory to the Master Agreement contemplating petitioning the NLRB for UA elections. Boilermaker and Bricklayers demanding double time for the sixth day. Discontinuance of GE controlled uniformity policy being considered. Inland Empire Plumbing and Heating Contractors Association is objecting to a six-day workweek on the Project.

The Davis Panel has made no recommendation on the Isolation Pay question.

The Operating Engineers Arbitration hearing resulted in a ruling in favor of AJ.

Release of critical material from a strikebound plant sought by representatives of GE and the AEC.

On June 5, Plumbers refused to handle material which was fabricated off the project for the Hoffman Company job. On June 21, they agreed to handle.

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On June 29, the Plumbers refused to handle a load of pipe delivered by AJS (USW) to the Early Company job (J. P. Head, mechanical subcontractors).

Upon receipt of Wage Stabilization Board approval of the $3.60 weekly increase for nonexempt employees and reimbursement authorization from the AEC, work was begun computing and revising all wage rate records to reflect the increase. New Wage Rate Manuals were published and issued. New rates will be included in the checks on July 6 and the retroactive money in the checks of July 20.

PURCHASING AND STORES DIVISIONS

A trip to Washington, D. C., resulted in approval of items previously held up by the National Production Authority on melt schedules.

Conversion of approximately 18,000 purchase orders from the old priority system to the new Controlled Materials Plan was effected during the month.

Although the number of purchase requisitions processed during the month decreased, actual dollar value of orders placed increased by $723,487.

Sufficient funds are available on Project C-431 to complete ordering of all material. Commitments to date a plied against this project amount to $11,769.250.

Fabrication work on Project C-362 was held up approximately 30 days due to a labor strike at Vulcan Copper & Supply Company. Due to this strike it was necessary to subcontract this order to Foster Wheeler.

Fabrication of structural steel for the 105-C Building is held up because the vendor, Pacific Car & Foundry Company, has not received sufficient approved drawings.

Because of production difficulties in getting their new California plant under way, the Masonite Corporation advised us that our masonite order will be produced at Laurel, Mississippi. Masonite sheet sizes will be no larger than 48" by 192" due to limited production facilities there.

Contracts for yearly requirements of Soda Ash and Hydrofluoric Acid have been awarded.

Major production tools for the "B" block fabrication on Project C-431-B have been received by the Bremerton Naval Shipyard. We are assisting in the installation of this equipment.

Many of our vendors have been unable to obtain material to complete our orders so our Expediting Section followed up with vendors, and in many cases, supplied material from our plant stock.

Since our contract with U. S. Steel Supply Company for the Warehousing, cutting, and shipping of steel to our fabricators, expires August 1, 1951, a physical inventory was taken. Arrangements will be made to either ship remaining steel to Hanford Works or negotiate an extension to the contract.

Of the 2,262 purchase requisitions processed through screening, 1,782 items were furnished from plant sources. 113 items of stainless steel not immediately available on the open market were furnished fabricators from plant inventories.

Materials and equipment valued at $844,535.82 were disbursed from the 10.20 Account, Construction Materials held for Possible Future Use.

Materials and equipment valued at $297,455.83 were disbursed from the 10.10 Account, Excess Materials.

Thirteen lists of excess material valued at $43.305.14 were submitted to the Commission for disposition.

The Interstate Commerce Commission ordered the Chicago, Milwaukee, St. Paul and Pacific Railroad Company to waive collection from General Electric Company of undercharge amounting to $12,668 on shipment of sixteen cars of Ferric Sulphate.

As a result of proposals presented by the Traffic Manager at the Pacific Southcoast Freight Bureau Docket Meeting in San Francisco, freight rates were reduced on Sodium Sulphate, Salt, and Castings.

The Interstate Commerce Commission suspended effective date of increase in rates for switching carload express shipments via the Milwaukee, Northern Pacific or Union Pacific Railroads to Hanford.

A special plane was chartered to fly approximately 4,000 pounds of special plate glass from Pittsburgh, Pennsylvania, to Richland.

As a result of rate reductions obtained from the carriers, total savings in freight rates for June amounted to $33,967.62.

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS

The Safety Awards Banquet on June 14, 1951 was attended by approximately 150 participants in the local safety program. The Honorable Arthur B. Langlie, Governor of the State of Washington, gave the principal address. Various safety awards were presented by other out of town dignitaries.

The Housing Office began allocation ofthe "C", a two bedroom duplex type house and the "K", a four bedroom single unit type house as they were released to them as completed. In the month of June ten houses were released for allocation.

Total housing applications pending - 626.

Sears, Roebuck and Company catalog order service opened a branch office as a sublessee in "The Mart".

MEDICAL DIVISIONS

Mrs. Harrison, Chief Pharmacist, attended the Washington State Convention of the American Pharmaceutical Association at Yakima, Washington. Mr. A. M. Johnson, director and Messrs. E. Sorger and D. Jorgensen, staff members of the Washing State Department of Labor visited the plant on June 28. They inspected medical facilities in Richland, North Richland, 200-W and White Bluffs Areas.

Sickness absenteeism (weekly employees) for June decreased by .07% to 1.53% while that for monthly employees for June decreased .32% to .64%.

The program of lapel button awards for each year of continuous perfect attendance should be a good stimulant for attendance. There were seven employees with perfect attendance for four years in the Medical Divisions.

The average daily census decreased from 92.2 to 88.2 (76.7 adult, 11.5 newborn). The census was 77.1 a year ago.

A six-weeks field training course for four local school teachers was started and seems to be mutually satisfactory. This should be very valuable in carrying public health methods into the school. The course is under the general direction of the University of Washington.

Three hundred and fourteen pre-school children were examined at five elementary schools with the cooperation of the pre-school PTA and private physicians. Immunizations were given and parent-nurse conferences completed with subsequent follow-up to be done.

The net cost of operating the Medical Divisions, before assessments to other divisions was $97,669, an increase of $10,316 and $1,598 above the budget figure.

There was little change in income. Overall cost increases were due to increase in salaries and in continuity of service due to longer work month. Hospital maintenance costs increased by $3070 due largely to repairs on steam lines and air conditioning system.

GENERAL ACCOUNTING DIVISION

Revision of Cost Accounting procedures and establishment of new procedures in accordance with recommendations of the Cost Accounting Committee were reaching final stages in many respects at the month end. Schedules of special cost liquidations to other divisions were prepared and forwarded to division accountants. General Divisions' cost codes were revised and revised codes together with instructions relative to the use of the new codes were forwarded to division heads. Operating report forms were revised in order to present information as to the nature of the cost rather than the source, and to reflect revisions in cost procedures. A chart, illustrating the flow of costs from all divisions to end result, was prepared and forwarded to interested individuals.

Considerable time was spent in analyzing the balances of general ledger accounts and a number of year-end adjustments were made. Accruals were made for work performed but not yet billed and certain over and under accruals were adjusted. A close contact with other accounting divisions and AEC was maintained relative to the transfer of charges and the meeting of previously established closing dates.

Accounts Payable, which normally closes on the last day of the month, remained open through July 6, 1951 in order that vendors' invoices received through that date could be booked as June costs. Number of vouchers booked in June numbered 2,222 (amounting to $1 289 280) as compared with 1,947 in May -- an increase of 14%. During FY 1951, 24,771 accounts payable vouchers and 3,877 freight bills were booked as compared with 19,514 and 2,659 in FY 1950.

Plant Accounting personnel continued the taking of physical inventories of selected plant accounts during the month. Much time was devoted to studies concerning the allocation of depreciation expense to products in accordance with revised cost accounting procedures. An effort was made in June to expedite receipt of as many project completion reports as possible in order that project costs could be unitized and transfers could be made from Unclassified Property in Service to appropriate plant accounts. As a result of reviews of depreciation rates on Production Facilities, adjustments totaling approximately $12,000,000 were made in accumulated reserves to date.

The Internal Audit Section completed a number of audit reports and special assignments which included the following: Timekeeping study in areas where time clocks are not used, analysis of balances in certain General Ledger accounts, audit of divisional control of direct charge materials, supplies and protective clothing and equipment considered as memo sales to employees, and audit of area classification of exempt personnel. New audits begun during the month included year-end audits and studies of disposal of surplus materials.

In connection with the establishment of the Perfect Attendance Recognition Plan, approximately 450 man hours were expended by the Payroll Division to determine those employees eligible for one, two, three and four year perfect attendance awards.

Reimbursement authorization No. 157 covering the General Salary Increase announced on June 19, 1951, was issued on June 22, 1951 by the Atomic Energy Commission.

Work was started on calculation of the retroactive portion of the general salary increase which was announced on June 19, 1951. The new rates will be paid to weekly paid employees on a current basis effective with salary checks to be distributed July 6, 1951. Approximately 200 man hours were required to change addressograph plates and verify for correctness. Listings of the increased rates were prepared and were checked for accuracy by the Wage Rate Division. The retroactive portion of the increase to weekly paid employees will be included in checks to be distributed on July 20, 1951. For exempt salaried employees, the increased rates and the retroactive portion will be paid in salary checks for the month of July, 1951.

Preparation of individual insurance certificates for approximately 8,500 employees insured under the new Insurance Plan was started in June. Approximately 50% of the certificates are ready for distribution to employees.

Advances from AEC increased from $5 000 000 as of May 31, 1951 to $15 883 210 as of June 30, 1951. For the most part, this increase is reflected in Cash in Bank and represents an advance from AEC in the amount of $12 000 000. AEC advised that there was a possibility that no FY 1952 funds would be available until late in July and issued this advance in June to insure adequate funds for the month of July. Advances are accounted for as follows:

	June	May
Cash in Bank - Contract Accounts	$15 433 210	$ 4 003 389
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	-0-	496 611
Advances to Subcontractors	300 000	300 000
Travel Advance Funds	100 000	150 000
Total	$15 883 210	$ 5 000 000

Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of June 1951 as compared with May 1951 may be summarized as follows:

	June	May
Disbursements		
Material and Freight - GE	$ 2 524 942	$ 2 941 959
Payrolls - GE (Net)	2 730 180	2 182 126
Payments to Subcontractors	4 800 796	4 993 065
Payroll Tax	465 214	409 565
General & Administrative Expenses	200 000	200 000
U. S. Savings Bonds	162 098	139 392
Reimbursement of Travel & Living Expense Variation Account	33 554	-0-
Others	338 942	395 039
Total	$11 255 726	$11 261 146

	June	May
Receipts		
Rents	128 472	132 880
Refunds from vendors	5 231	1 766
Hospital	48 830	63 972
Telephone	17 684	16 294
Miscellaneous Accounts Receivable	29 922	13 514
Bus Fares	9 030	9 807
Scrap Sales	14 854	7 109
Sales to AEC Cost-type contractors	7 415	6 054
Refunds of Washington State Pension Awards	18 062	-0-
Dividend-Group Disability & Health Insurance	48 563	-0-
Other	10 873	13 139
Total	$ 338 936	$ 264 535
Net Disbursements	$10 916 790	$10 996 611

[redacted]

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
Manager, Technical, Engineering and Construction Divisions	A. B. Greninger
Manager, Engineering and Construction Divisions	J. S. McMahon
Manager, Technical Divisions	O. H. Greager
Manager, Manufacturing Divisions	C. N. Gross
Manager, Municipal, Real Estate and General Services Divisions	L. F. Huck
Manager, Health Instrument Divisions	H. M. Parker
Manager, Medical Divisions	W. D. Norwood, MD
Manager, Employee and Community Relations Divisions	H. E. Callahan
Manager, Purchasing and Stores Divisions	R. T. Cooke

	FORCE REPORT EXEMPT		NON EXEMPT		JUNE 1951 TOTAL	
	5-31-51	6-29-51	5-31-51	6-29-51	5-31-51	6-29-51
GENERAL	21	22	31	119	52	141
LAW	2	2	3	3	5	5
TECH., ENGR. & CONST. DIVS.						
Construction	0	0	27	24	27	24
Const. Acctg.	11	11	77	80	88	91
Design	246	240	251	299	497	539
No. Richland Realty	18	18	104	113	122	131
Proj. Engr.--MJ	20	20	21	24	41	44
Proj. Engr.--MD	50	49	80	90	130	139
TECHNICAL DIVS.						
Administrative	6	6	3	3	9	9
Pile Tech.	119	119	120	132	239	251
Separations Tech.	103	104	43	48	146	152
Technical Services	32	37	149	151	181	188
Analytical	98	95	213	268	311	363
MANUFACTURING DIVISIONS						
Mfg. General	15	15	5	6	20	21
Mfg. Acctg.	9	9	58	63	67	72
Ind. Engr.	10	10	7	8	17	18
Production Divs.						
"P"	76	77	296	291	372	368
"S"	162	162	519	557	681	719
Plant Utilities & Maint.						
Power	92	92	479	481	571	573
Maintenance	55	54	309	312	364	366
Electrical	56	56	254	254	310	310
Instrument	56	55	235	241	291	296
Transportation	58	58	554	542	612	600
MEDICAL	45	44	240	237	285	281
HEALTH INSTRUMENT DIVS.						
General	6	6	4	4	10	10
Operations	59	58	175	178	234	236
Development	41	39	90	92	131	131
Biology	32	33	41	45	73	78
ACCOUNTING DIVISIONS	28	28	177	185	205	213
EMPL. & COMM. RELATIONS	38	38	72	79	110	117
PLANT SEC. & SERVICES						
Patrol & Sec.	58	57	581	578	639	635
Safety & Fire	42	42	105	106	147	148
Gen. & Off. Services	26	26	253	289	279	315
PURCHASING & STORES DIVISIONS						
Purchasing	71	68	106	122	177	190
Stores	20	20	204	207	224	227
COMMUNITY DIVISIONS	207	204	462	469	669	673
TOTAL	1988	1974	6348	6700	8336	8674

PERSONNEL DISTRIBUTION - JUNE 1951

	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												
Supervisors	-	-	-	-	-	-	-	-	-	-	22	22
Clerical & other Non-Exempt	-	-	-	-	-	-	-	-	-	-	119	119
Total	-	-	-	-	-	-	-	-	-	-	141	141
LAW												
Supervisors	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	5	5
TECH. ENGR. & CONST. DIVS.												
CONSTRUCTION												
Supervisors	-	-	-	-	-	-	-	-	-	-	-	-
Clerical	-	-	-	-	-	-	-	-	-	24	-	24
Total	-	-	-	-	-	-	-	-	-	24	-	24
CONST. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	11	-	11
Clerical	-	-	-	-	-	-	-	-	-	80	-	80
Total	-	-	-	-	-	-	-	-	-	91	-	91

	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
DESIGN												
Supervisors	-	-	-	-	-	-	4	-	-	23	34	61
Other Exempt	-	-	-	-	-	-	75	-	-	28	76	179
Draftsmen & Designers	-	-	-	-	-	-	-	-	-	-	58	58
Clerical	-	-	-	-	-	-	10	-	-	54	114	178
Others	-	-	-	-	-	-	-	-	-	25	38	63
Total	-	-	-	-	-	-	89	-	-	130	320	539
NORTH RICHLAND REALTY												
Supervisors	-	-	-	-	-	-	-	-	-	18	-	18
Janitors	-	-	-	-	-	-	-	-	-	53	-	53
Clerical	-	-	-	-	-	-	-	-	-	22	-	22
Others	-	-	-	-	-	-	-	-	-	38	-	38
Total	-	-	-	-	-	-	-	-	-	131	-	131
PROJ. ENGR.												
Supervisors	-	-	-	-	-	-	-	-	-	16	-	16
Engineers	-	-	-	-	-	-	-	-	-	53	-	53
Draftsmen & Designers	-	-	-	-	-	-	-	-	-	49	-	49
Clerical	-	-	-	-	-	-	-	-	-	38	-	38
Others	-	-	-	-	-	-	-	-	-	27	-	27
Total	-	-	-	-	-	-	-	-	-	183	-	183

	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 DIVS.												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	6	6
Clerical	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	9	9
PILE TECHNOLOGY												
Supervisors	3	1	1	1	3	-	-	15	-	-	-	24
Metallurgists & Engrs.	22	3	2	3	14	-	2	25	-	-	4	75
Physicists	-	1	2	3	3	-	-	11	-	-	-	20
Tech. Grads.	20	2	-	2	12	-	-	9	-	-	-	45
Technologists	9	-	-	4	-	-	-	-	-	-	-	13
Laboratory Assts.	17	2	-	2	8	-	-	17	-	-	2	48
Clerical	6	1	-	3	3	-	-	9	-	-	-	22
Engr. Assts.	-	2	-	-	1	-	-	1	-	-	-	4
Total	77	12	5	18	44	-	2	87	-	-	6	251
SEPARATIONS TECH.												
Supervisors	-	-	-	-	-	1	4	14	-	-	-	20
Chemists & Chem. Engrs.		-	-	-	-	4	12	67	-	-	-	83
Other Exempt	-	-	-	-	-	-	-	1	-	-	-	1
Tech. Grads.	-	-	-	-	-	-	3	10	-	-	-	13
Clerical	-	-	-	-	-	-	3	8	-	-	1	12
Operators	-	-	-	-	-	-	1	7	-	-	-	8
Others	-	-	-	-	-	-	3	12	-	-	-	15
Total	-	-	-	-	-	5	26	120	-	-	1	152
TECH. SERVICES												
Supervisors	-	-	-	-	4	-	1	8	-	-	3	16
Other Exempt	-	-	-	-	7	-	1	4	-	-	9	21
Technologist & Tech. Grads	-	-	-	-	1	-	1	3	-	-	1	6
Clerical	-	-	1	-	5	-	-	36	-	-	44	86

Cont. Page # 3

	100-B Area	100-D Area	100-F Area	100-H Area	101 Area	200-F Area	200-W Area	300 Area	Plant General	3000 Area	700-1100 Area	Total
Tech. Services Div. Cont.												
Others	-	-	-	-	34	-	1	22	-	-	2	59
Total	-	-	1	-	51	-	4	73	-	-	59	188
ANALYTICAL TECH.												
Supervisors	1	-	-	-	2	5	15	15	-	-	-	38
Chemists & Engrs.	8	1	1	2	1	1	10	33	-	-	-	57
Technologists, & Tech. Grads	3	-	-	2	-	5	67	12	-	-	-	89
Laboratory Assts.	4	-	-	6	-	32	74	45	-	-	-	161
Clerical	1	-	-	1	-	2	7	7	-	-	-	18
Total	17	1	1	11	3	45	173	112	-	-	-	363
MANUFACTURING DIVS. GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Engineers	-	-	-	-	-	-	-	-	-	-	8	8
Clerical	-	-	-	-	-	-	-	-	-	-	6	6
Total	-	-	-	-	-	-	-	-	-	-	21	21
MFG. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	-	8	8
Other Exempt	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	63	63
Total	-	-	-	-	-	-	-	-	-	-	72	72
INDUSTRIAL ENGR.												
Supervisors	-	-	-	-	-	-	-	-	-	-	1	1
Engineers, Other exempt	-	-	3	-	-	-	1	5	-	-	-	9
Clerical	-	-	-	-	-	-	-	-	-	-	1	1
Others	-	-	1	-	-	-	2	2	-	-	2	7
Total	-	-	4	-	-	-	3	7	-	-	4	18

	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
PRODUCTION DIVISIONS												
"P" DIV.												
Supervisors	9	16	10	10	-	-	-	14	-	-	3	62
Supv. In Training	1	-	-	-	-	-	-	-	-	-	1	2
Engineers	2	-	1	-	-	-	-	1	-	-	9	13
Operators	32	63	33	34	-	-	-	105	-	-	-	267
Clerical	2	3	2	2	-	-	-	5	-	-	5	19
Others	1	1	-	1	-	-	-	1	-	-	1	5
Total	47	83	46	47	-	-	-	126	-	-	19	368
"S" DIV.												
Supervisors	-	-	-	-	-	17	47	15	-	-	5	84
Supv. In Training	-	-	-	-	-	1	4	4	-	-	-	9
Engineers	-	-	-	-	-	6	55	-	-	-	8	69
Operators	-	-	-	-	-	158	315	51	-	-	-	524
Clerical	-	-	-	-	-	6	21	-	-	-	4	31
Others	-	-	-	-	-	-	2	-	-	-	-	2
Total	-	-	-	-	-	188	444	70	-	-	17	719
PLANT UTILITIES & MAINT.												
POWER												
Supervisors	12	17	12	12	-	7	6	5	3	-	1	75
Engineers	-	-	-	-		-	9	-	7	-	1	17
Operators	70	109	72	69	10	22	71	10	9	-	-	442
Clerical	1	1	1	1	-	-	1	-	7	-	2	14
Coal Hldrs & Ldrs.	4	5	5	5	-	-	5	1	-	-	-	25
Total	87	132	90	87	10	29	92	16	26	-	4	573

	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
MAINTENANCE												
Supervisors	1	6	7	2	-	4	15	5	2	-	1	43
Other Exempt	-	-	3	-	-	-	3	-	-	-	5	11
Craftsmen	20	47	44	13	-	28	99	38	-	-	-	289
Clerical	-	1	2	1	-	1	5	2	1	-	2	15
Others	-	-	-	-	-	-	-	4	4	-	-	8
Total	21	54	56	16	-	33	122	49	7	-	8	366
ELECTRICAL												
Supervisors	1	2	2	3	-	1	6	2	17	-	12	46
Other Exempt	-	-	-	1	-	-	1	1	3	-	4	10
Craftsmen	14	16	13	12	2	10	28	10	53	-	28	186
Clerical	-	1	1	1	-	-	1	1	4	-	26	35
Operators	4	4	4	4	-	-	-	-	12	-	-	28
Others	-	-	-	1	-	-	1	-	2	-	1	5
Total	19	23	20	22	2	11	37	14	91	-	71	310
INSTRUMENT												
Supervisors	2	6	2	2	-	1	9	8	1	-	3	34
Engineers	-	2	-	-	-	1	1	9	1	-	7	21
Craftsmen	19	22	16	11	-	19	56	50	1	-	11	205
Clerical	1	2	1	1	-	1	4	6	3	-	4	23
Draftsmen	-	-	-	-	-	-	-	3	-	-	-	3
Others	4	-	-	-	-	-	1	4	-	-	1	10
Total	26	32	19	14	-	22	71	80	6	-	26	296

	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
TRANSPORTATION												
Supervisors	2	4	1	2	-	2	2	1	8	-	32	54
Other Exempt	-	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	-	167	167
Journeymen	3	4	3	9	-	1	4	-	9	-	62	95
Trainmen	-	-	-	-	-	-	-	-	26	-	-	26
Serviceman	1	4	-	1	-	2	3	3	17	-	16	47
Equipment Opers.	4	8	3	5	-	5	8	4	19	-	25	81
Clerical	1	1	1	1	-	1	1	1	2	-	25	34
Others	9	2	3	13	-	9	4	2	12	-	38	92
Total	20	23	11	31	-	20	22	11	93	-	369	600
MEDICAL												
Supervisors	-	-	-	-	-	-	-	-	-	1	25	26
Physicians	-	-	-	-	-	-	-	-	1	2	8	11
Other Exempt	-	-	-	-	-	-	-	-	-	-	7	7
Technicians	-	-	-	-	-	-	-	-	1	3	14	18
Nurses	2	4	4	1	-	4	9	2	-	3	59	88
Clerical	-	-	-	-	-	-	-	-	3	7	45	55
Others	-	-	-	-	-	-	-	-	-	1	75	76
Total	2	4	4	1	-	4	9	2	5	17	233	291
H. I. DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	3	3
Engrs.	-	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	10	10

	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
OPERATIONAL												
Supervisors	1	1	1	2	-	1	5	8	-	-	2	21
Other Exempt	4	4	5	6	-	5	9	4	-	-	-	37
Clerical	-	-	-	1	-	-	1	1	-	-	1	4
Others	15	17	13	11	-	21	46	42	-	8	1	174
Total	20	33	19	20	-	27	61	55	-	8	4	236
DEVELOPMENT												
Supervisors	-	-	-	-	-	2	7	4	-	-	1	14
Other Exempt	-	-	-	-	-	1	13	10	-	-	1	25
Clerical	-	-	-	-	-	1	2	2	-	-	-	5
Other Non-Exempt	-	-	-	-	-	19	41	14	-	-	13	87
Total	-	-	-	-	-	23	63	30	-	-	15	131
BIOLOGY												
Supervisors	-	-	6	-	-	-	-	-	-	-	-	6
Other Exempt	-	-	27	-	-	-	-	-	-	-	-	27
Clerical	-	-	2	-	-	-	-	-	-	-	1	3
Others	-	-	41	-	-	-	-	-	-	-	1	42
Total	-	-	76	-	-	-	-	-	-	-	2	78
ACCOUNTING DIVS.												
GEN. ACCTG. PAYROLL												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Other Exempt	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	87	87
Total	-	-	-	-	-	-	-	-	-	-	96	96
GEN. ACCTG. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	1	7	8
Other Exempt	-	-	-	-	-	-	-	-	-	1	10	11
Clerical	-	-	-	-	-	-	-	-	-	-	98	98
Total	-	-	-	-	-	-	-	-	-	2	115	117

	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
EMPLOYEE & COMM. RELATIONS												
Supervisors	-	-	-	-	-	-	-	-	-	-	25	25
Empl. Rel. Counselor	-	-	-	-	-	-	-	-	-	-	1	1
Other Exempt	-	-	-	-	-	-	-	-	-	-	12	12
Clerical	-	-	-	-	-	-	-	-	-	-	63	63
Others	-	-	-	-	-	-	-	-	-	-	16	16
Total	-	-	-	-	-	-	-	-	-	-	117	117
PLANT SEC. & SERVICES												
PATROL & SEC.												
Supervisors	5	6	6	5	-	5	7	7	9	-	4	54
Other Exempt	-	-	-	-	-	-	-	-	3	-	-	3
Patrolmen	63	48	67	42	-	66	155	83	8	-	27	559
Clerical	-	-	-	-	-	-	-	-	16	-	1	17
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	68	54	73	47	-	71	162	90	38	-	32	635
SAFETY & FIRE												
Supervisors	14	-	-	-	4	-	4	4	7	-	-	33
Engineers	1	2	-	1	-	2	-	2	-	-	1	9
Firemen	43	-	-	-	8	-	20	16	13	-	-	100
Clerical	-	1	-	1	-	1	-	1	-	-	2	6
Total	58	3	-	2	12	3	24	23	20	-	3	148
GEN. & OFF. SERVICE												
Supervisors	-	-	1	-	-	1	3	1	1	-	18	25
Supv. in Training		-	-	-	-	-	-	-	-	-	1	1
Laundry Operators	-	-	-	-	-	-	1	-	-	-	1	2
Janitors & Servicemen	7	5	7	6	3	5	21	13	-	-	45	112
Clerical	-	-	-	-	-	-	-	-	-	-	56	56
Others	-	-	-	-	-	-	39	-	-	-	80	119
Total	7	5	8	6	3	6	64	14	1	-	201	315

	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
PURCHASING & STORES DIVS.												
PURCHASING												
Supervisors	-	-	-	-	-	-	-	-	-	-	15	15
Other Exempt	-	-	-	-	-	-	-	-	26	-	27	53
Clerical	-	-	-	-	-	-	-	-	-	-	107	107
Rotational Trainees	-	-	-	-	-	-	-	-	15	-	-	15
Total	-	-	-	-	-	-	-	-	41	-	149	190
STORES												
Supervisors	2	-	-	-	-	-	-	-	-	3	15	20
Clerical	12	-	-	-	-	-	-	-	-	26	51	89
Others	25	-	2	-	-	-	1	1	-	7	82	118
Total	39	-	2	-	-	-	1	1	-	36	148	227
COMMUNITY DIVISIONS												
Supervisors	-	-	-	-	-	-	-	-	-	5	99	104
Other Exempt	-	-	-	-	-	-	-	-	-	9	34	43
Firemen	-	-	-	-	-	-	-	-	-	23	34	57
Patrolmen	-	-	-	-	-	-	-	-	-	14	22	36
Journeymen	-	-	-	-	-	-	-	-	-	-	167	167
Servicemen	-	-	-	-	-	-	-	-	-	-	62	62
Truck Drivers	-	-	-	-	-	-	-	-	-	-	31	31
Power Operators	-	-	-	-	-	-	-	-	-	-	32	32
Clerical	-	-	-	-	-	-	-	-	-	-	78	78
Others	-	-	-	-	-	-	-	-	-	-	63	63
Total	-	-	-	-	-	-	-	-	-	51	622	673
GRAND TOTAL	508	448	435	322	125	487	1469	980	328	673	2899	8674

MANUFACTURING DIVISIONS

JUNE 1951

SUMMARY

Production Divisions

A total of 64.1 tons of metal was discharged at the goal value during the month. The special request program required approximately 3[illegible] man hours for the month. Thirty-one tubes of special request material other than Chemical 68-56 were charged and discharged and 10 casks containing irradiated samples were shipped off site. An additional 250 man hours were required for routine work on Chemical 68-56.

Percent of forecast production input made was 106.4. A total of six ruptured slugs (five normal uranium and one P-10-A) required 111 hours down time for discharging. Percent of forecasted production discharged - 96.4. The average time operated efficiency was 92.1 percent.

A total of 85 tons was canned at a yield of 76.5 percent. This represented 94.4 percent of forecast. The melt plant produced 24 tons at a record yield of 91.5 percent. The solid metal yield was also a new record at 95.7 percent.

A total of 97 charges plus two acid washes was started in the canyon buildings, which amounts to 102.1 percent of the scheduled production. The concentration buildings completed 104 regular runs plus two acid washes and eight master recycle runs.

A total of 106 regular runs and two acid washes was completed through the isolation building, representing 104.3 percent of forecast. The average cooling time was 44 days and the minimum was 42 days. The average purity of completed charges was 98.1 percent.

Plant Utilities and Maintenance Divisions

Construction Completion Notice, effective June 1, 1951, was issued on Project C-377-R, New Instrument Maintenance and Development Building, 300 Area.

The electric power demands for the month of June were as follows:

Process	6-11-51	(2:30 - 3:30 P.M.)	66,400 KW
Village	6- 5-51	(10:30 - 11:00 A.M.)	19,000 KW

One unscheduled interruption of production resulted from a breaker failure on one bank of four pumps at 190-H on June 12. Pile start up was delayed one hour and eighteen minutes.

[redacted]

Manufacturing Divisions

Six emergency pile shutdowns, because of ruptured and stuck slugs, required Divisions' services to remove slugs and make necessary tube replacements and repairs.

A copy of the identification key for the gallery wall connectors for Building 202-S (Redox) was received. The lubrication instructions for this building are now 95 percent complete and will be issued during the month of July.

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

[redacted]

MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF JUNE 1951

Richland, Washington
July 10, 1951

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
R. Willing (Industrial Engineering Section)	Pick-up device (for radioactive cylinders in air) consisting of Solenoid-actuated gripper portion of conventional metal handling tongs.

C. N. GROSS, MANAGER

MANUFACTURING DIVISIONS

[redacted]

[redacted]

DECLASSIFIED
WITH DELETIONS

[redacted]

DECLASSIFIED
WITH DELETIONS

Section 10 Approved By V. D. Donihee

V. D. Donihee
Accountability Representative

MANUFACTURING ACCOUNTING
JUNE, 1951

SUMMARY

Considerable time was spent in June on completion of routines necessary for the installation of commercial-type billing and recording systems, whereby services performed by manufacturing Service divisions will bill customers on a unit price basis for electricity consumed, telephone service, bus transportation, freight on railroad cars handled and automotive and heavy equipment rental. This change is effective July 1, 1951.

Progress was made toward unit costs on Special Requests.

Current and planned work-load for the Statistics Section obliged us to place requisitions for machine operators preparatory to scheduling a regular night shift.

Analysis and Reports

New operating report forms, reflecting the change to billing by Service, were prepared for review by the Cost Accounting Committee. Standard rates for billing of telephone and railroad costs were established, and work on other standards neared completion. Expense account numbers for electrical Service, telephone, and road maintenance cost accumulation and billing were established and issued with explanatory write-ups. Work was begun on a manual of Manufacturing Accounting Procedures, which defines and explains the use of all balance sheet and cost accounts. Sample financial statements on the "Businesses" were prepared.

Redox Costs

Considerable work was done with production divisions in analyzing Redox requirements for process codes.

Inventory Control

Additional personnel acquired this month enabled us to make a start toward conversion of inventory control records to a card record system, expected to make possible more rapid analysis of inventory movement.

Project Cost Audit

Planning and discussion is underway looking toward issue of a Manufacturing Divisions Projects weekly report that would make possible a rapid audit of charges for correctness before monthly closings.

[redacted]

Bus System Cash Control

For the purpose of minimizing funds retained in the bus dispatch office and tightening control of Terminal Cashier's funds, use of the Seattle First National Bank night depository for week-end and holiday revenue was started. A single fund of $500 was assigned to terminal cashiers for use on a rotating basis. This decreases change funds outstanding by about 40%. Routines have been prepared in draft and arrangements have been made for equipment and forms necessary for installation of a tighter check system on bus revenue. Basic feature of the controls planned is enforcement of an accurate passenger count by drivers and comparison of this count with revenue received from the cashiers in their daily bank deposits. Fare box turn-in is to be assured through use of a shift to shift perpetual inventory type record. It is expected that the major portion of the new routines will be made effective in July with the cooperation of the Operations Section of the Transportation Division.

Special Request Cost Estimates

The term Special Request refers to the Hanford Special Irradiation Program, costs for which are accumulated in the Manufacturing Accounting Ledger through charges for costs incurred by Manufacturing, and billing for technical services rendered by other Hanford Divisions. As these charges are now on a direct billing basis to A.E.C. Cost-Type Contractors requesting the service (previously charged by inter-office A.E.C. transfer), they form a portion of the Contractor's budget and must be estimated upon request. The "P" Division Cost Control Office, using records furnished by accounting, have compiled an estimating guide for our use, making possible more accurate estimating of Requests and forming a basis for determining standard costs on typical types of work. Special Requests will be charged out at a standard overhead rate starting July 1.

Budget Rework

A start was made in June toward reworking the FY 1952 operating Budget into the new Operating Report form.

Statistics

Special work handled by I.B.M. in June included a salary-by-firm tabulation and a manpower survey for the Salary Administration Committee. Approximately 6,500 cards have been punched and tabulated for survey work of this type.

Volume of cards processed has increased approximately 25% in the last six months.

[redacted]

Organization and Personnel

Beginning of Month	67
Acquisitions	5
Transfers out	1
End of Month	71

Transfers out and terminations year-to-date 29

Three Cost clerks with good background and two Business Graduates were hired in June. A rotational program was started for the graduates, with the plan that a general background would be imparted in Division disbursement and bookkeeping duties, together with a thorough grounding in cost and budget work.

Space remains a major problem although temporarily relieved by the absence of employees on vacation. With full staff, room for eleven more desks will be required. All available space in the 722-A Building has been utilized

[redacted]

HW-21506 Del

DECLASSIFIED

July 10, 1951

P DIVISION

JUNE, 1951

I. GENERAL

A total increase of 34 MW over previously established maximum operating levels in the pile areas was achieved during the month of June; however, slug failures adversely affected the total production.

A gain of 9.3% in total pile production was realized over the previous month. A record daily rate of production was established in the 100 Areas and the first large scale H-10 loading was successfully discharged at H Area during the month of June.

Slug failure experience during June requiring outages for remedial action included five ruptures (one of which was a P-10 target slug), three suspect ruptures and one stuck slug. A total downtime of 110.9 hours was required to discharge these slugs.

The average time operated efficiency of 5 pile operation was 92.1%. The total number of outage hours for all piles was 284.9 hours; of this amount 76.2% was chargeable to plutonium production and 23.8% was chargeable to other irradiation and special request programs.

Operation of the 300 Area manufacturing facilities was continued on a six-day week basis during June. Record billet and solid yields of 91.5 and 95.7, respectively, were established in the Melt Plant facility.

[redacted]

P Division

Excavation for C-Pile was started on June 18.

II. ORGANIZATION AND PERSONNEL

Number of employees on payroll - June, 1951

Beginning of month	373
End of month	370
Net decrease	3

Six operators and one clerk were hired for the 300 Area and two steno-typists for the 100 Areas. Eleven operators terminated voluntarily and one steno-typist was granted a leave of absence.

At month end, a total of three rotational pool employees were assigned to the P Division. During the month, one rotational pool employee was transferred to the Separations Technology Division and one terminated to enter military service.

Two Supervisors-in-Training were placed on the P Division payroll during June: O. D. Seawell by transfer from the Reactor Division, effective June 18, and M. G. Costley as a new hire, effective June 25.

W. J. Gartin and E. F. Stell, Supervisors-in-Training, were promoted to Shift Supervisors, effective June 1.

K. T. Perkins of the Contact Engineering Group visited the Kellex Corporation in New York City on June 21 and 22 to discuss problems related to Project C-431.

III. AREA ACTIVITIES

The total pile production for June was 9.3% above that for May and was 6.4% greater than the amount forecasted for this period. The increase in production reflects the higher average pile efficiency and the reduced number of scheduled outages during the month.

Pile Production Summary	Pile B	Pile D	Pile DR	Pile H	Pile F
Unscheduled Outage Time (hours)	0	26.6	23.6	41.9	24.5
*Inlet Water Temperature (°C.)	16.5	16.4	16.0	16.2	16.0
*Outlet Water Temperature (Max. °C. 10 tubes 0.240" Zone) (10 tubes 0.285" orifice zone at H Area)	75.8	61.6	66.7	75.1	78.9
Maximum Graphite Temperature (°C)	360	370	307	399	415
Metal Discharged (tons)	0	0.88	48.17	15.09	0
Inhours Gained	29	63	-10	30	13
Inhours Poisoned	532	69	291	80	521
Inhours in Rods	165	100	155	121	131

* Month end figures.

Pile downtime during the month of June was mainly attributable to the scheduled discharge of metal and to the removal of ruptured and stuck slugs.

A tabular breakdown of outage time in hours is given below:

	B	D	DR	H	F	Total
Metal Discharge	-	-	54.6	-	-	54.6
H-10 Discharge	-	-	-	45.0	-	45.0
Ruptured Slug Removal	-	26.6	18.2	41.6*	24.5	110.9
Pile Maintenance	-	-	-	6.7	-	6.7
Production Test and Special Request (except P-13)	-	-	-	3.0	-	3.0
Special Irradiation	-	-	2.0	-	11.9	13.9
Orifice Change	-	-	-	-	10	10
Process Tube Leak Testing	-	-	-	-	8	8
Panellit Conversion	-	-	5.4	0.3	-	5.7
Power Failure Test	-	-	-	1.7	-	1.7
Instrument Division Development of Ruptured Slug Equipment	-	-	-	7.0	-	7.0
Stuck Slug Removal	-	-	18.4	-	-	18.4
	0	26.6	98.6	105.3	54.4	284.9

* Includes 6.0 hours required to effect removal of ruptured P-10 slug from tube 1584-H.

Operating Experience

Operating experience during the month was normal, except for outages required to remove ruptured and stuck slugs from D, DR, H and F Piles.

Production tests having operational significance are reported below:

105-103-P (Corrosion Rates at Elevated Temperatures, Supp. D)
At F Pile, 29 tubes are operating satisfactorily at elevated temperatures under the provisions of this test.

105-108-P (Irradiation of Beta Slugs)
Slug number R-4 was discharged with difficulty at F Pile. The cause of the difficulty was credited to wrinkling of the process tube which restricted passage of the push pole. The two tubes presently assigned for beta slug irradiation are both damaged due to this wrinkling which is caused apparently by the thermal expansion and contraction of the graphite in the pile. The two tubes have been abandoned for this work and are to be replaced and returned to normal use. The beta irradiation program is to be rescoped to eliminate the difficulties associated with employing dry tubes in high flux zones.

P Division

105-354-P (Operation of ANL-140 with Fuel Installed, Supplement C)
During the outage of June 12, all test sections were removed from the channel and at month end the equipment is operating without fuel installed to facilitate the study of water dissociation effects.

105-411-P (Exposure of Thermocouple Equipped Slug)
The thermocouple in the slug in tube 1469-F failed during the month. The slug is scheduled for discharge at a subsequent outage and no further work on this production test is contemplated until a new slug design is accepted.

105-429-P (Installation of Delayed Neutron Monitoring Equipment)
Examination of the data taken from the delayed neutron counters, that had been previously installed at the ends of crossheader #21, failed to reveal conclusively the slug failure in tube 2278-H. Evaluation of this equipment is being continued.

105-435-P (Graphite Temperature Increase of the F Pile)
Operation of the F Pile under the provisions of this test was continued throughout the month without difficulty.

105-450-P (Effects of In-Pile Condition on Dri-film Coatings Applied to Slug Surfaces)
Four tubes were charged with dri-film coated metal slugs at DR Pile during the month. The effectiveness of dri-film in reducing corrosion, film formation and increasing purge efficiency is being evaluated.

105-441-P (Neutron Chamber Testing)
The F Pile was held at the 50 MW level for 20 minutes prior to shutdown for the June 6 outage under the provisions of supplement A of this test. The life span of the chamber is now being evaluated.

105-453-P (Sodium Dichromate Elimination Tests)
During the June 26 outage at H Pile, the H-10 loading was discharged from two process tubes and dummy loadings, including several anodized solid aluminum slugs, were charged in accordance with the provisions of this test. An attempt was made to supply filtered water to the tubes using the specified equipment, but mechanical difficulties made it necessary to switch to process water before the pile operation was resumed. On June 29, filtered water flow was established to the tubes.

105-454-P (Fracture of Graphite Block at H Pile)
An H Pile graphite channel which had previously been severely damaged as a result of a ruptured and deformed slug was borescoped during June. Examination of the channel revealed that the undercut tube bearing blocks had fractured from the point at which the slug rupture occurred to the

rear of the stack. The data obtained is of importance to the design of the C Pile graphite loading. The tube was replaced and charged with the regular production loading.

The special request loading program required approximately 365 manhours of time during the month. Cask handling and decontamination work continued to consume a large portion of the time charged to this work. Thirty-one tubes of special request material, other than Chemical 68-56, were charged and discharged and 10 casks containing irradiated samples were shipped off site. In addition, 250 manhours were required for the charging, discharging and shipping of Chemical 68-56.

A total of 64.4 tons of uranium slugs was discharged during the month, of which 0.75 ton was at 85%, 0.25 ton at 26% and 63.14 tons were at 100% of nominal goal value concentration. Examination of the regular metal from six H-10 tubes discharged at concentrations of 600 and to 700 MWD per ton at H Area revealed that about half of the slugs were slightly blistered. In a few slugs, more severe blistering was observed. Additional investigation is in progress at month end.

At D Pile, an unscheduled outage of 26.6 hours duration occurred on June 28, to effect removal of a ruptured uranium slug from tube 1476-D. Details of the slug failure are described in document HW-21523.

On June 13, the DR Pile was shutdown to investigate a suspect slug rupture on crossheader 34½. The pile was reactivated after a rear face pigtail survey did not confirm a ruptured piece. An unscheduled outage of 17.7 hours duration occurred on June 19, when the pile failed to recover following a shutdown to investigate a similar indication on crossheader 34½. Although a rupture was not confirmed by readings taken at the pigtail, tube 3481-DR was suspected and, therefore, discharged. Upon examination of the slugs, three suspect pieces were found. Methods for further study of these pieces are being investigated at month end. Since this material was discharged, the crossheader indications which were persistent prior to the discharge of the subject tube have not reappeared.

During the scheduled outage on June 27, tube 1475-DR was found to contain a stuck uranium slug. Due to the inability to push the stuck slug, it was necessary to remove the process tube containing the slug. The specially designed double-barrel cask for removing the upstream slugs was used successfully. Inspection of the stuck slug was not complete at month end.

Three ruptured slug removal operations were effected at H Area during the month. Ruptured regular metal slugs were removed from tubes 3179-H and 2278-H, both of which contained the H-10 loading pattern, during the unscheduled outages on June 2 and June 13, respectively. A ruptured and deformed P-10 target slug was removed from tube 1584-H during the scheduled outage of June 26. The presence of the ruptured P-10 slug was suspected as a result of I.B.M. analysis of inlet water pressure data, and the slug was found to be stuck when attempts were made to discharge the tube. The three incidents are described in detail in documents HW-21265, HW-21404 and HW-21461.

P Division

An unscheduled outage was initiated at F Pile on June 29 to effect removal of a ruptured uranium slug from tube 4380-F. At month end, removal efforts were in progress.

There were two scheduled outages at H Pile, during which the first large scale discharges from the H-10 loading were carried out without difficulty. Procedures and equipment developed for handling this material were used with very satisfactory results; previously estimated time schedules, though considered to be rather optimistic, were found to be accurate.

Evidence of the water leak in F Pile, which was reported in May, continued throughout the month. At month end, the leak had not affected the pile reactivity. No wet spots in the graphite have appeared and no reduction in level attributable to the leak have been necessary.

Mechanical Experience

The general mechanical condition of the pile components and equipment continued good throughout the month. All horizontal and vertical safety rods are in satisfactory operating condition at month end, except the following:

a. Horizontal safety rod 8 at 100-B is out of service because of a thimble leak. The thimble is scheduled for replacement during July.

b. Horizontal safety rods 6 and 9 at 100-D bind during operation. The cause of the binding is being investigated.

During a solids purge at D Pile, while operating at a reduced level, a valve pit screen at the injection pump failed, allowing super-cel to pass into the process water. Instantaneous detection and action in terminating the purge apparently prevented serious plugging of the C and D riser crossheader screens. No operating difficulty was experienced because of this incident and the screens were removed and cleaned during the unscheduled outage which occurred on June 28.

The DR Pile was successfully purged with solids while operating at reduced levels on June 5 and June 15. A third purge, attempted while operating, was terminated when a low pressure panellit trip was experienced. A panellit gauge recalibration program combined with a very effective purge and the normal pressure drop following a metal discharge, resulted in a series of low pressure panellit trips on the startup of June 28. Recalibration of the gauges involved required 5.4 hours.

During June, repairs were made to stabilize the far side downcomer vent pipe at H Pile and the downcomer has been returned to service at month end. Subsequent inspection of the repairs to the far downcomer will be made to permit evaluation before repairs are undertaken on the near downcomer. During a June outage, an inspection of the DR Pile far side downcomer indicated evidence of vent pipe fatigue at the baffle plates. Repairs are planned during subsequent outages.

P Division

Gas Processing

The gas process facilities operated normally throughout the month.

Pile Development

In continuation of the development program for more rapid and effective detection of slug jacket failures, specialized equipment was installed during the June 12 outage at H Area. The equipment records the resultant of exit water temperature "bucked" against exit water activity for a given sample. Evaluation of this approach to the problem is in progress at month end.

Special Hazards

Removal of ruptured slugs in D, DR, H and F Piles was accomplished with no over-exposure to personnel and without spread of contamination to areas outside of established danger zones.

300 AREA METAL FABRICATION

OPERATING SUMMARY

All 300 Area facilities, except the 305 test pile, were operated on a one shift, six-day week basis throughout the month. The 305 test pile was only operated six days during this period.

Record billet and solid yields of 91.5 and 95.7, respectively, were achieved in the Melt Plant Operation.

URANIUM FABRICATION

	May	June	To Date 1951
Billets Produced (Tons)	26	24	122
Bare Pieces Machined (Tons)	86	74	534
Briquettes Produced (Tons)	14	10	74
Oxide Burned (Weight out Tons)	3	3	18
Acceptable Pieces Canned (Tons)	76	85	519
Melt Plant Billet Yield (%)	88.9	91.5	88.8
Melt Plant Solid Yield (%)	95.5	95.7	94.6
Machining Yield (%)	71.5	78.8	78.4
Chip Recovery Yield (%)	88.8	87.9	87.8
Canning Yield (%)	73.8	76.5	85.3
Autoclave Frequency (No./M)	0.0	0.09	0.12

OPERATING EXPERIENCE

Melt Plant

The record billet and solid yields attained during the month resulted chiefly from the increased amount of solid scrap processed and the complete absence of any broken stopper rods. Two crucibles cracked during the melting cycle and were the only operating difficulty of any signifi-

cance to occur during June.

Machining

An increase in machining yield during the month of June is attributed to the improved surface quality of rods machined. There was less evidence of seams, cracks, and ellipticity, which contributed to an excessive amount of solid scrap last month.

In accordance with Production Test 313-115-M, "Triple Dip Canning of Uranium Finished by Cold Drawing", a special lot of 19 alpha rolled rods, which were cold drawn to finished slug diameters, was machined. The results indicate that cold drawing offers a satisfactory means of finishing, providing the rods, as rolled, are reasonably free of surface imperfections. Turning scrap for the drawn rods amounted to 5.5%, as compared to an average of about 12.5% for machining "as rolled" rods.

Chip Recovery

On June 8, 1951, a small uranium fire occurred in the Chip Recovery pulverizer. The fire was accompanied by the spontaneous combustion of gasses entering the exhaust system. An apparent stoppage of the conveyor belt carrying uranium chips from the pulverizer to the washer caused the incident. Damage to process material and equipment was negligible. Outlets have been installed in the exhaust air duct from the pulverizer to ease cleaning and minimize effects of any more serious gaseous combustions that might occur as the result of fires.

Oxide Burning

Nine tons of raw oxide were burned in June. This figure includes 7 tons of expended graphite parts (MD-4) from the Melt Plant Operation. The decrease in the amount of oxide burned resulted mainly from lower production rates in the Machining and Chip Recovery Operations.

Canning

The canning yield increased 2.7% during the month. Of the total number of slugs processed, 8.1% were rejected for deviations from standard process, 5.2% for non-seating, 4.0% for bad welds, 2.3% for marred surfaces, and 3.9% for other miscellaneous causes.

Rejects for deviation from standard process were decreased 3% through a reduction in off cycle rejects on the canning lines. The majority of this type of reject occurs at the Al-Si canning baths where the repetitive nature of the operation and close operating tolerances make control difficult. Continued emphasis is being placed on strict adherence to standard process to further reduce rejects for this reason.

Defective caps contributed to an increased number of rejects at welding inspection. In one case, a cracked cap was the cause of an autoclave failure. The defects were not evident until after the welding, when they became apparent as fine cracks. Investigation revealed that these cracks extended vertically through the cap and appeared to have been caused by folds or faults in the bar stock from which the caps were machined. The vendor has been contacted and closer inspection standards are being imposed on the bar stock prior to cap fabrication.

To evaluate the penetration effects of maximum canning bath temperature and maximum can preheat and submerge times, 38 normal uranium slugs were processed under these conditions. At month end, these pieces were being studied by the Plant Assistance Group of the Pile Technology Division.

Inspection

There were four autoclave failures during the month. Three of the failures were complete and one was partial. Two of the failures were caused by imperfections in the side wall of the finished piece, one was caused by a cracked cap and the other was indeterminate. At month end a study is being conducted to determine the nature of the can wall imperfections which caused two of the failures.

None of the slugs tested for penetration during the month were found to be penetrated within 0.015" of the outer surface of the can wall.

305

The 305 test pile was operated six days during the month.

The following tests were run during June:

Description	No. of Tests
Billet eggs	49
Regular slugs	33
Measure induced reactivity of a sample of quartz	1
Total	83

P Division

Special Fabrication Work

Six hundred twenty-three "B" pieces were canned during the month.

Material Handling

Ninety-eight tons of normal canned slugs were shipped to the 100 Areas. Fifteen tons of solid uranium scrap were shipped to Los Alamos.

A total of 37 tons of alpha rolled rods was received from Simonds Saw and Steel Company.

In addition, approximately 45 manhours were devoted to making six off plant shipments of miscellaneous materials.

Special Hazards

No unusual conditions developed during the month.

Development

To produce uniform slug welds and reduce operator variance in slug welding, a device to position the electrode with relation to the circumference of the slug was tested. Preliminary observations indicate that a device of this type is desirable. If additional tests confirm this observation, provisions will be made to equip all welding machines with a similar device.

During the month an additional hydrofluoric acid tank was installed in the Slug Recovery Operation. This new tank has eliminated a bottle-neck in stripping the cans from reject slugs prior to recanning and permits the operation to proceed at approximately twice the previous capacity without any additional manpower. This additional capacity was made necessary by the large backlog of material to be reclaimed.

A cast iron thermocouple well coated with a "baked on" ground silicon coating was tried in the canning bath during the month. The experimental well remained in service for 23 days before failing whereas the type normally used failed in two days. The possible operational and economic advantages of this type of material have been pointed out to the Instrument Division and arrangements are being made to procure additional wells for a more thorough evaluation.

A vacuum cleaner attachment for transferring material from the oxide burning trays to shipping containers was developed and placed in service during the month. Although film studies have indicated that this new device has reduced radiation by only a small amount, its use has eliminated the manual transfer of oxide and effected a gross reduction in air contamination. Because of this improvement, the oxide transfer can be accomplished while wearing a respirator instead of an assault mask.

P Division

PROCESS ACTIVITIES

Contact Engineering Group

With the approval of the inclusion of coring in the graphite stack design, all major scope bases for the "B" section of Project C-431 have been approved.

The project proposal for Project C-431, based on approved scope, was submitted to the Atomic Energy Commission during the month.

Modification No. 6 to Directive HW-222 authorizing the expenditure of $50,000,000 for design, procurement and construction of the subject project was received during the month.

The 105-C Building design is approximately 50% complete. Detailed design of the reactor and its associated equipment is approximately 47% complete.

The installation of temporary construction facilities at the 100-C site began on June 6, 1951. Construction (excavation) began on June 18.

Engineering Control Group

The efforts of the Engineering Control Group were directed toward:

a. Scoping, design follow-up, and project proposal preparation of a number of urgent projects including "Ball 3X Facilities", "Mechanization of Slug Canning, Finishing, and Inspection Lines", "Power Calculating Instrument Revisions", "Panellit Gauge Revisions", "Crossheader Pressure Monitoring", and "Effluent Downcomer Repairs".

b. Follow-up in the field of approved projects and assistance in the design and development of new projects as well as engineering advice to the operating personnel.

c. Developing explanations for variations in the division unit costs and information and reports to assist operating supervision in control of their costs. Considerable time was devoted to preparing cost data of a non-routine nature for consideration by management.

Project Status

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

C-438 (Ball 3X Facilities for B, D, DR, H and F Piles (Engineering and Procurement of Critical Materials)
Bids for supplying 3X balls have been reviewed and a qualified vendor is being selected.

P Division

Tests have been satisfactorily completed on a VSR position sensing device which will prevent operation of the Third Safety System in the event sufficient rods have entered the unit to provide necessary control.

Fabrication of the step-plug mock-up is in progress at 100-F maintenance shop. This work will provide a means of testing the design prior to issuing final prints to prospective vendors for bids. Preliminary drawings were forwarded to the Purchasing Division June 22, 1951, to be sent out to selected vendors.

Locations have been selected in all the 105 Areas for the batteries which will supply emergency power to the solenoids controlling the Ball 3X hoppers. In B, D, and F Areas, these will be located in the valve pit; in DR, the switchgear room; and in H, it will be tied in with the Horizontal Safety Rod System emergency batteries.

C-420 (CO_2 Bulk Storage Facilities)
Progress continues to be slow on the piping at 110-D as the procurement of valves and pressure relief equipment is delayed. However, work has started on electrical service for the facility.

C-330 (Improved Ventilation - Buildings 313-314 (Engineering and Development Only)
The engineering and development work covered in this project has been completed and project physical completion notice is being prepared. A project proposal for work considered necessary as a result of the information developed in this study will be initiated in the near future.

M-713 (Vertical Safety Rod Design - B, D, and F)
Preliminary plans have been drawn for changes deemed necessary to strengthen the flexible Vertical Safety Rod design. As soon as these are approved, they will be sent to 100-F shops for fabrication. Destructive drop tests are planned for the re-designed rod during the month of July.

M-828 (Facility for Contamination Control - Shipping Casks)
The status of this project remains unchanged; work will be resumed in July when a blower, the last piece of equipment needed, has been received.

M-829 (105-D and DR Safety Circuit Interlock)
The completion of this project has been delayed pending arrival of the remaining four relays now expected on July 17. No work was accomplished at 105-D as there were no scheduled shutdowns this month and the remaining work must be done during outages. One shutdown at 105-DR was utilized in checking Beckman circuits.

P Division

M-831 (Repairs to Retention Basins, B, D, F, DR and H (Engineering Only)
A rough draft of the project proposal, including cost estimates, is expected to be received from the Project Engineering Divisions by August 7, 1951.

Process Control Group

In addition to routine activity, special investigations leading to improvement of slug quality were conducted. Recently installed I. B. M. equipment at the DR Pile was incorporated into the P Division accountability system. Preparation of the 100 Area Operating Standards Manual was completed and it is being circulated for signatures.

Process Development

A review was made of the factors pertinent to the current process water specifications with regard to possible reductions in water treatment costs. The elimination of sodium dichromate, perhaps coupled with a reduction of pH to 6.5, appears practical and desirable. The early CMX experience did not conclusively show that coagulation of water prior to filtration was necessary from film formation considerations. Economy may, therefore, be possible in this phase of water treatment.

Various aspects of slug corrosion were studied. It is apparent that improvements in slug fabrication methods to provide a thicker aluminum protective surface or in the water treatment process must be made before significant power increases can be accomplished.

A method of adjusting poison columns during pile operation has been proposed. The method employs the use of a special inlet nozzle containing a quick-opening valve and a water-lock charging tube. The method will permit addition of poison to selected tubes during pile operation, which will result in more effective pile flattening at all times. An effort will be made to utilize this charging method in recharging temporary poison columns during pile operation.

A program has been initiated to improve existing charging machines in order to eliminate charging machine abrasion of slugs. It is expected that a test-setup will be made available in the 108-D Building for work along these lines, and that it may also be suitable for developing and testing ruptured slug discharge equipment and tube and gunbarrel replacing equipment.

E. P. Lee

Superintendent
P DIVISION

EP Lee:ges

[redacted]

DECLASSIFIED

Richland, Washington
July 9, 1951

S DIVISION

JUNE, 1951

I. RESPONSIBILITY

There was no change in S Division operating responsibility during the month.

II. ACHIEVEMENT

A. Operating Experience

1. Production Statistics

a. Over-all Performance - Canyon, Concentration, and Isolation Buildings (6-1-51 through 6-30-51, inclusive)

	B Plant		T Plant		Combined	
	Normal	Acid Wash	Normal	Acid Wash	Normal	Acid Wash
Charges started in 221	33	1	64	1	97	2
Charges completed thru 224	44	1	60	1	104	2
Special chgs. thru 224	7		1		8	
Charges completed thru 231	47	1	59	1	106	2
Special Charges thru 231		-		-	8	
Avg. purity comptd. chgs.		-		-	98.1	
Avg. elapsed cooling time metal processed (days)	44		44		44	
Yield thru process	95.6		101.9		99.1	
Material Balance thru process	99.5		102.1		101.0	

[redacted]

b. Canyon and Concentration Building Performance Data for Completed Charges (6-1-51 through 6-30-51, inclusive)

	B Plant	T Plant	Combined
Percentage of starting product in waste:			
This month	2.1 (a)	2.1 (a)	2.1 (a)
Last month	1.9 (b)	1.7 (b)	1.8 (b)
Cumulative to date	3.7 (c)	3.5 (c)	3.6 (c)
Percentage of starting product recovered:			
This month	97.3	99.9	98.8
Last month	98.5	100.4	99.5
Cumulative to date	97.0	96.4	96.7
Percentage of starting product accounted for:			
This month	99.4	102.0	100.9
Last month	100.4	102.1	101.3
Cumulative to date	100.7	99.9	100.3
Gamma decontamination factor (Log.):			
This month	6.75	6.93	6.83
Last month	6.57	7.14	6.69
Cumulative to date	7.17	7.30	7.22

(a), (b), and (c): Includes waste from processing recycle. The recycle wastes are estimated as: (a) 0.053%, B Plant; 0.026%, T Plant. (b) 0.020%, B Plant; 0.020%, T Plant. (c) 0.013%, B Plant, 0.063%, T Plant.

c. Isolation Building Performance Data (6-1-51 through 6-30-51, inclusive)

	Prepared for Shipment	Recycle	Waste	Retained Material Samples	Material Balance
Average for this month	93.9	6.4	0.19	0.017	100.1
Average for last month	93.4	6.06	0.15	0.03	99.6
Average to date	94.8	5.20	0.04	0.013	100.0

d. Depleted Uranium and Waste Storage Status

200 East Area

	Gallons (10^3) in Storage					Reserve Capacity in Batches to Process				
Tank Farm	B	C	BX	BY	TOTAL	B	C	BX	BY	TOTAL
Metal Waste	1579	3374	3117	3000	11070	0	0	18	866	884
1st Cycle	2645	3170	2645	1282	9742	0	0	151	281	432
2nd Cycle	1555	0	0	0	1555	(No cribbing in June, cribbed as necessary)				
TBP Reserve				758						
Waste Evap. Reserve	530									

200 West Area

Tank Farm	Gallons (10^3) in Storage T	U	TX	Total	Reserve Capacity in Batches to Process T	U	TX	Total
Metal Waste	1579	4737	3894	10210	0	0	615	615
1st Cycle	1345	1585	5371	8301	521	0	197	718
2nd Cycle	1629	0	0	1629	Cascade to Crib.			
TBP Reserve			758					
Waste Evap. Reserve	716							

2. Production Activities

a. General

Of the total batches started in the Canyon Buildings, thirty-four percent were started in B Plant and the remaining sixty-six percent in T Plant. In addition, one acid wash was started at each plant. At the Concentration Buildings, the normal output of the Canyon Buildings was processed and an acid wash was completed at each of the respective plants. Also, a total of eight master recycle batches were processed, seven at B Plant and one at T Plant. Six of the seven batches returned to B Plant were comprised of accumulated recycle solutions from the 234-5 facility. The remaining two batches represented normal recycle material from the Isolation Building. Time cycles were not limiting and were consistent with the scheduled output.

b. Extraction

Significant data on extraction waste losses are tabulated below:

	B Plant June	B Plant May	T Plant June	T Plant May
Analysis before rework	1.55	1.77	2.08	1.94
Analysis after rework (throw-away)	1.55	1.60*	2.04**	1.76***
Average MWD/Ton	420	412	415	412

* Includes thirty-four charges not reworked
** Includes five reworked charges
*** Includes thirty-eight charges not reworked

c. Acid Washes - B & T Plants

An acid wash was started in one of the parallel lines in each of the Canyon Buildings, and the acid washes which were

started during the latter part of May were completed through a parallel line in each of the Concentration Buildings. Data are tabulated below which indicate the percentage of product recovered from the completed acid washes in terms of a standard charge:

Run	Extraction	Sect. 12 and 1st Cycle	2nd Cycle	Total 221 Bldg.	224 Bldg.	Total thru Process	Preflush B, E & F Cells
B-11-05-AW-2	6.43	21.47	6.91	34.81	12.40	47.20	21.00
T-11-05-AW-2	5.71	10.15	11.66	27.52	1.58	29.10	24.05

The initial processing of the acid wash at B Plant did not achieve adequate decontamination, and it was recycled through the Concentration Building as Run B-11-05-AW-2A. This procedure gave normal results, reducing the original radiation levels by a factor of approximately 4.

d. Cribbing of Second Decontamination Cycle Waste and Section 5 Waste Disposal

During the month, process piping alterations were completed which allowed the settled second decontamination cycle waste to overflow from the 241-B-112 tank. Also, parallel changes were completed in both the 200 East and West Areas, whereby the Section 5 waste effluents, originating in the Canyon Buildings, were combined with the second decontamination cycle waste facilities, rather than being discharged directly to underground cribs. It is anticipated that the major portion of the suspended plutonium carrying solids will settle out while the waste solution combines and cascades concurrently with the second decontamination cycle waste prior to underground cribbing by constant overflow.

e. Decontamination in Canyon Building - B Plant

During the early part of the month, the lower than normal decontamination factors, experienced last month, continued at the Canyon and Concentration Buildings. Three charges were processed in the Concentration Building on a Production test basis to scavenge the short lived (12.8 day) Barium which was determined to be the source of the high radiation levels. The decontamination was improved by a factor of 4. Further work was not required since the three charges mentioned essentially completed the specific "push" originating from the DR Pile. The material processed subsequently has given normal decontamination results.

f. First Decontamination Cycle Waste Evaporator Performance

	June	To Date
Gallons evaporated	406,568	595,614
Percent volume reduction	70.0	72.8

During the month, an estimated 30,000 pound salt heel accumulated in the evaporator tank as a result of development work in establishing optimum operating rates and conditions. Minor alterations were made on controlling and measuring devices which have resulted in considerable improvement in the regulation of operating functions. To date a total of 1,806,625 gallons of supernate have been transferred from the 241-T tank farm thus providing an equivalent amount of reserve storage space.

3. Process Control

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

The fifth silver nitrate reactor filter assembly is approximately 70% complete. During the month, the filter box was packed and completed. The fabrication of the reactor tower has been completed and at month end the tower is being packed with silver nitrate impregnated Berl Saddles. The connector fabrication remains to be done.

b. Section 5 Waste Disposal - Project C-415

This project was completed during the month with the diversion of Section 5 waste effluent from a direct cribbing operation to the existing second cycle waste settling tanks where it will flow through a cascade of three tanks in each area before overflowing to the underground cribs.

c. Additional Waste Storage Facilities, 241-TY - Project C-418

The excavation work for the 241-TY tank farm was completed on June 18, 1951. At month end, the forms for the waste line encasement within the tank farm area, were 50% complete and the pouring of the base for the 101 tank is in progress. The base forms are in place for the 102 and 103 tanks. The overall project is approximately one week ahead of schedule.

d. Additional Waste Evaporation Facilities - 200 East Area (Project C-423)

The sump sum contract was awarded to L. H. Hoffman Company at month end for $206,900, which is estimated to cover the

portion of work to be performed by the sub-contractor. It is expected that the construction work will be initiated during July.

4. Investigation and Development

a. Extraction Precipitation Bismuth Concentration and Volume Reduction (Production Test 221-B-10)

During the month, twenty runs at 3.5 g/l of Bismuth in extraction and 56% of 9-1-46 volumes in first and second cycle were processed without routine extraction rework. The average loss for these runs, corrected for americium - curium, was 0.20% higher than for the eighteen control runs at 4.5 g/l Bismuth and 56% volume which were processed without routine extraction reworks. To re-evaluate the production test without the routine extraction rework, runs are currently being processed at 2.5 g/l Bismuth in extraction and 49% volumes in first cycle and 56% volumes in second cycle.

b. Elimination of Radio Iodine from Stack Effluent (Prod. Test 221-B-9)

This test continues to be suspended. However, as the result of an investigation of factors closely related to this problem, it was determined that the efficiencies were lower than desired on both silver reactors in T Plant, and one of the two reactors in B Plant (Section 3-5R). From an analysis of the results it was concluded that the three silver nitrate towers should be replaced. The existing towers will be removed and rejuvenated after the radio-activity has decreased to permit reasonable working time limits.

c. Suppression of Radio-Iodine in Dissolver Solutions (Prod. Test 221-T-15)

A procedure was developed during the month, based upon results obtained by laboratory scale investigation, which uses a mercury salt to suppress the Radio-Iodine in the dissolver solutions. The Production Test will be started early in July.

d. Solids in AT Solution Tank - Isolation Building

The sulfuric acid addition to the P-2 Tank prior to the peroxide strike was reduced for ten runs in an effort to decrease the sulfate in the AT solution. The analysis of the samples of these special runs indicated that the sulfates

in AT solution were reduced by a factor of 60%. The recycle from the effected runs were also normal.

The sulfuric addition to the P-2 Tank in one operating cell will be reduced for an extended number of runs, following an N-2, AT-WT cleanout, to determine definitely if this change eliminates the formation of solids in the AT solution.

e. Production Test 234-3

Production Test 234-3, involving the transfer and processing of a product peroxide cake to the 234-5 Building were started. A total of six runs have been transferred to the 234-5 Building utilizing the plastic mitten technique. All movements were completed without incident.

B. Equipment Experience

1. Operating Continuity

There were no unscheduled interruptions in operations during the month.

2. Inspection, Maintenance and Replacements

a. Canyon Equipment Failures - B and T Plants

(1) In B Plant the hydraulic system on the Section 16 centrifuge, which failed last month, was successfully repaired and is now being held as a spare.

(2) In B Plant the Section 8 extraction precipitator to centrifuge A-jet assembly failed due to a leaky gasket in the inlet steam flange on the jet. High radiation levels preclude repair.

(3) In B Plant, the hydraulic connector to the 16-2 first decontamination cycle by-product centrifuge failed due to faulty gaskets.

(4) In B Plant, the Section 16 first decontamination cycle by-product precipitator tank specific gravity and weight factor assembly failed due to plugged dip tubes.

(5) In T Plant, the Section 17 first decontamination cycle precipitator to centrifuge B jet assembly became inoperative due to a steam leak at the inlet flange to the jet. The assembly was replaced. Radiation levels on the old assembly have precluded direct repair.

(6) In T Plant, the Section 19 second decontamination cycle product cake solution tank to Concentration Building transfer jet assembly developed a leak at the gasketed wall connector. The assembly was removed, regasketed, and replaced.

(7) In T Plant, the Section 19 second decontamination cycle product precipitator tank jacket inlet connector assembly developed a leak at the gasketed tank connector. Repair was effected by regasketing.

(8) In T Plant, the Section 6 metal solution storage tank 15 HP agitator assembly failed after only seven months' service. The assembly was replaced with a spare.

(9) In T Plant, the Section 19 second decontamination cycle product precipitator to centrifuge A jet assembly became inoperative due to a leak at the steam flange of the jet assembly. A replacement connector was installed. The defective equipment was regasketed and stored as a spare.

(10) In T Plant, the Section 13 first decontamination cycle by-product centrifuge to solution tank jet assembly became inoperative due to a leak at the process connector head. A replacement connector was installed.

b. Concentration Building Mechanical Difficulties - B & T Plants

(1) At B Plant, one of the drive pins on the F-22 centrifuge failed in service due to fatigue. After replacement of the drive pin the centrifuge has operated satisfactorily.

(2) At B Plant, after one months' service, the drive head of the E-2 centrifuge was replaced because of failure of the lower guide bearing. Inspection revealed that shifting of the bearing lock ring permitted the outer race of the Hyatt bearing to drop and tilt slightly. In this position the rollers did not contact the inner race properly and tended to slide rather than roll on the race. There is no explanation, at this time, as to how the bearing lock ring could get out of position and thereby allow the bearing to drop.

(3) At T Plant, replacement of the B Cell lanthanum fluoride product precipitation effluent tank sampler assembly was made following the discovery of a pinhole leak in the side of the sampler cup. The failure of a previous weld at this point precluded any further attempts to weld inasmuch as the unit could not be heat treated to

withstand hydrofluoric acid corrosion.

(4) The B cell precipitator 15 HP motor driven agitator assembly, which had been in service for more than three and one-half years, became inoperative when the bolts of the coupling between the shaft and gear reducer sheared. New bolts were installed and subsequent operation has been satisfactory. Inspection of other similar units revealed no irregularities, however, the installation of longer studs with bonded or pinned back-up nuts is being planned.

C. Improvements

1. Adoptions

a. At the B Plant Canyon Building, work was completed on the conversion of the normally idle Carrier units at Sections 5, 7, 15, and 17 to improve the air conditioning in the operating gallery during the summer months.

b. At B and T Plants, "Y" type jumpers were installed in the 154-B and 154-TX diversion boxes to combine the Section 5 and second cycle wastes in common lines to the respective second decontamination cycle cascade storage tanks to improve decontamination.

c. Filter Box Replacements - Cell 4 - Isolation Building

The old-style filter boxes in the "B", "C", and "D" positions of Cell 4 were replaced with the new-type boxes containing the removable filter cartridge. Cell 4 is now entirely equipped with the new-type boxes.

d. CT-1 Tank Reflux Condenser - Cell 2 - Isolation Building

A reflux condenser on the CT-1 Tank vent line in Cell 2 was installed during the month. The purpose of this condenser is to remove the moisture liberated from the heat kills in the CT-1 Tank and discharged to the 903 system. An evaluation of the condenser will be made.

2. Inventions and Discoveries

There were no inventions or discoveries of a patentable nature reported during the month.

III. PERSONNEL EXPERIENCE

A. Organization Changes

A. R. Deas, Shift Supervisor, transferred to the Lockland Plant on June 18.

The following changes from weekly roll to monthly roll, Supervisors-in-training occurred:

V. W. Smith
R. Y. Lyon
R. C. Forsman

B. Force Changes

1. Number of employees on roll:

	Monthly Roll	Weekly Roll	Total
Beginning of month	163	521	684
End of month	165	558	723
Net increase	+2	+37	+39

2. Personnel Changes

	Monthly Roll	Weekly Roll	Total
Transfers from other Div.	0	+9	+9
Transfers to other Div.	0	0	0
Reactivated	0	0	0
New Hires	0	+36	+36
Resigned	-1	-5	-6
Transferred from Weekly to Monthly	+3	-3	0
Other	0	0	0
	+2	+37	+39

3. Work Schedules

The S Division continued on a six-day work week basis during the month, except for members of the Day Supervision and Clerical forces who reverted to a five-day week on 6-11-51.

C. Safety Experience

There were no major or sub-major injuries incurred by S Division personnel during the month of June.

D. Radiation Protection

1. Radioactive Iodine Activity - T Plant

The discharge of abnormally large amounts of Radio-Iodine from the 291-T stack continued to be an acute problem during the month. Dissolver operation was controlled very carefully, particularly with respect to wind direction. This notwithstanding, general low level contamination up to 600 c/m was found on the ground in the exclusion area, and isolated spots of from 1,000 to 2,000 c/m were reported.

Further investigation of the indicated low efficiencies, perhaps as low as 90 percent, of the T Plant dissolver off-gas silver reactors has indicated a concentration of activity in the upper portion of the column approximately 100 times that indicated at the top of the highly efficient silver reactor in B Plant. After consideration of the possible methods of recharging the reactors and an economic review of the problem it has been decided that the most expedient solution will be to replace the reactor columns to permit the present columns to be set aside for decay of activity prior to rejuvenation.

Further tests are being made to determine more closely the optimum operating characteristics of these reactors.

2. 75 Ton Crane Cab Contamination - T Plant

During a period of considerable crane usage, particularly in the vicinity of the metal solution storage and extraction sections, the interior of the crane cab became contaminated up to a maximum of 30,000 c/m. Decontamination of the crane cab interior appreciably reduced these levels, and detailed analysis showed the contamination to be attributable to Radio-Iodine. Thyroid checks of personnel exposed at this time indicated up to 0.14 uc of Radio-Iodine, necessitating their temporary placement on guided work. Accordingly at month end an activated charcoal filter was being installed in series with the CWS Type 6 filter in the crane cab air supply system, to minimize the possibility of reoccurrence.

3. Fire - Head End Decontamination Station - T Plant

On 6-14-51, a fire broke out in the Head End Decontamination Zone, which was being used temporarily by the Analytical Services Division. The fire has been attributed to spontaneous combustion in a carton containing used paper towels into which nitric acid soaked paper towels were discarded. Laboratory personnel

extinguished the fire immediately after notifying the Fire Department. In all, five people entered the region without complete protective equipment. However, surveys revealed no personnel contamination and an air sample, taken while the fire was smoldering, was not at a level to require respiratory protection.

4. Alpha Activity - Concentration Building Roof Vents - T Plant

Air sampling of the Concentration Building roof fan vents has indicated an appreciable increase over the past three months with a maximum discharge of nearly 300 ug Pu per day per cell. A detailed investigation of this problem has indicated the agitated process tanks as a most likely source. Accordingly, the application of G. E. Cocoon to seal the top openings of such tanks was resumed late in the month. Insufficient progress has been made at month end to permit a conclusive evaluation of any improvement.

5. Personnel Contamination - B Plant Concentration Building

a. An employee received superficial contaminated acid burns while engaged in unplugging the E-4 tank sampler dip pipe. Contamination of 1000 d/m to his face was reduced to less than 500 d/m.

b. Contamination of from 50,000 to 100,000 d/m was reported in E Cell following unplugging operations on the E-4 sampling lines. During the E cell work, air-borne contamination was encountered and one man received low level hand contamination from his assault mask. The contamination was readily removed.

6. Canyon Decontamination - B Plant

As a result of extensive canyon decontamination and housekeeping the extended SWP's for sampling and canyon decontamination were reinstated early in the month. No cases of personnel contamination or over-exposure were encountered during this work.

7. Equipment Burial - B Plant

On 6-16-51 twenty-nine pieces of faulty equipment were removed from various cells and placed in a burial box for disposal. There was a minimum of exposure and spread of contamination during the removal of equipment and burial of the box.

8. Air Activity - Isolation Building

Samples of the 903 system during the month disclosed an activity of 7.3×10^{-1} ug Pu/cc being discharged to the atmosphere. A

study is being made as to the possible location of additional filters for the VR-1 and AR-1 Tanks. The additional filters should reduce the amount of contamination being discharged to the atmosphere.

IV. EXPANSION SECTION

A. TBP Project (C-362)

1. General

a. Project Status

The project status at month end was as follows:

(1) Of 2641 drawings required, 2,663, or 93.7 percent, have been approved.

(2) All requisitions representing material required for beneficial occupancy of the TBP Plant have been placed on purchase orders. A complete inventory of all stainless supplies at the various Hanford and contractor storage points was undertaken this month to determine stocks and to ascertain if outstanding orders may be cancelled or deferred. This has been necessary since third quarter stainless steel allocations have been sharply reduced by CMP.

(3) At month end the construction of C-362 Project is 29.6 percent complete on a labor and materials basis, or 33.4 percent complete on a labor basis only. This progress is behind the scheduled 50.4 percent completion on a labor and materials basis, due mainly to delays in receiving materials.

(4) The C-362 Part II Project Proposal was approved by the Appropriations and Budget Committee and sent to the Atomic Energy Commission on June 13, 1951. This proposal requests the expenditure of an additional $6,086,000 above the original estimated cost. The added cost is due mainly to the effect of the six day work week, labor escalation, premium payments and bulk material handling.

2. Procurement

a. Vulcan Company - Evaporators

The Vulcan Company, vendor for Project C-362 evaporator, was forced to shut down their plant for the greater portion of the month due to a labor strike. During the month the Purchasing and Design Divisions were successful in obtaining a

new vendor, the Foster-Wheeler Corporation, to fabricate these units. Difficulties in transferring the materials stored in the strike-bound Vulcan Plant were eased at month end by obtaining the necessary authority to move this material. It is expected that Foster-Wheeler will begin fabrication in the first half of July. The delivery of the evaporator units, however, may be the main delaying factor in the completion of the TBP Plant.

b. Agitator Inspection and Run-in

At month end J. B. Hughes of the Maintenance Division is at the Eastern Industries Plant in Norwalk, Connecticut for the Expansion Section to observe quality, assembly, case testings, and run-in of the first 50, 20, 10 and 7½ hp agitator units for Project C-362. During the visit the adequacy of motor sizes in relation to the agitator loads and the type lubricant required for the gear assembly will be thoroughly investigated.

3. Design

a. Phase I Metal Removal, One Cascade: Phase II, Metal Removal, Remaining Cascades

(1) Current Metal Waste Handling Facilities in TBP

Revision Request 362-12 was approved by the Scope Committee on June 14, 1951. It provides for minor revisions in the WR Vault and the East Area Blend Tank Vaults which will make it possible to introduce Bismuth Phosphate metal wastes directly into the TBP system. Present TBP design is based on processing metal waste at least two years old, but due to the large savings which could be realized, the possibility of processing current metal waste, will continue to be investigated by the Technical Division. If a satisfactory process is developed, the revision will simplify at a later date the conversion for handling current waste.

(2) Magnetic Welds in Blend Tanks 244-UR 002 and 003

Magnetic checks on the welds of the stainless steel blend tanks for the 244-UR Blend Vault, using an electronic probe, gave abnormally high readings (6 to 8) in comparison to readings (2 to 3) for standard test welds. The magnetic test alone is not conclusive, but it is thought that highly magnetic properties can be taken as an indication of poor corrosion resistance. Considering the future inaccessibility of these tanks

for repairs or replacement, it was decided to cut test coupons of the welded areas from one of the tank tops and send them to the Metallurgical Laboratory for appropriate corrosion testing. These coupons will be obtained at the convenience of the construction forces and after the concrete for the vault roofing is poured.

(3) First Waste Removal System (241-U) Change in Completion Date

The required completion date for 241-U waste removal system has been postponed from June 1, 1951 to August 1, 1951 by Work Authority C-362-(7), release No. 13, dated May 23, 1951. The postponement was caused by the late delivery of tanks required for 244-UR Blend Tank portion of this facility.

b. Phase III - Underground Transfer System

(1) Vent and Vacuum Breaker Station

Revision Request Number 362-33 was approved by the Scope Committee on June 27, 1951. It provided for the installation of a combined vent and vacuum breaker station at the high point of the east-west pipe line. The vents will insure the accomplishment of complete drainage of lines before maintenance work is undertaken in the diversion boxes at the lower portions of the system.

c. Phase IV - Reactivation and Conversion of 200-U Area

(1) Mock-up Procedure - Specification 4610

Due to known delays in delivery of canyon equipment, mock-up procedures were discussed this month to anticipate the scheduling problems bound to occur when equipment is received in volume during the latter months of the construction program. Certain concessions and changes to the Mock-up Specifications were granted to the construction forces in order to expedite this phase of construction work; in general these changes duplicated those previously granted for the Redox Project. Two major items on which agreement was reached are as follows:

(a) It has been decided, based on Redox experience, to clean all vessels prior to mock-up and check them again for cleanliness prior to canyon installation. This, it is felt, should eliminate problems similar to those encountered in Redox mock-up where pumps were damaged due to debris in the tanks.

(b) Only one typical tank of each type will be mocked-up. All jumpers will be mocked-up to the appropriate typical tank. Jumpers will be checked for inter-

changeability in their final location and any change necessary to make them fit will be recorded "As Built".

(2) Johnston Pump Tests

There are approximately 22 pumps, including spares, specified for use in pumping concentrated, neutralized RAW solution in the TBP Facility. These pumps are being fabricated by the Johnston Pump Company, and it is specified that they are to be equipped with Graphitar 41 bearings. In order to evaluate the effect of this process solution on Graphitar 41 bearings, two Johnston four stage, deep-well turbine pumps were received by the Chemical Development Section of the Separations Technology Division and operated for a total of 27 days. Dismantling of the pumps at the end of this period revealed the bearing wear to be excessive, the bearing clearance increasing over a range of 8 to 28 mils.

In a meeting, in which the interested groups were represented, the following were agreed upon:

(a) Based on the limited test data, Graphitar 41 is unsatisfactory for service in RAW solution.

(b) To assure delivery of the production pumps on the required dates, no change from Graphitar 41 bearing material will be specified.

(c) The more critical bearings of the operational spare pumps will be fabricated from boron carbide rather than Graphitar 41, realizing this change may cause a delay in delivery of spare pumps.

(d) Dependent on the delivery dates of the boron carbide bearings, the Graphitar 41 bearings will either be replaced by boron carbide in the production units prior to their use in hot solutions or additional spare pumps with boron carbide bearings will be ordered.

d. Phase VI - Increased Power Facilities for the 200-West Area

(1) Additional Boiler in West Area Power Plant

It has been definitely determined that one additional boiler is needed to meet the 200-West Area steam requirements when the current area expansion program is

completed. A separate Project Proposal for the additional boiler is being prepared. To facilitate future tie-ins of this boiler the design of the new steam header system is being altered to provide blanked tees in place of elbows at various strategic locations.

4. Construction

Month end construction data on the various phases of this project are as follows:

a. Phase I

Completion status of this phase is 53.9 percent compared to a scheduled completion of 81.4 percent. The greatest delay is taking place in Minor Construction groups working under SWP conditions. The present schedule for "U" farm is: Cascade 1 to be completed August 1, Cascade 2 to be completed September 15, and Cascade 3 to be completed November 1. This represents a schedule delay of three months.

Setting of male connectors in the pits and the installation of the six inch process pipe in the first cascade are under way. In the 244-UR Blend Vault forms are being set and concrete is being poured for the walls of the pump pits over tanks 002 and 003. The 291-UR fans have been installed. Fabrication of 241-WR Diversion Vault tanks continues at White Bluffs where four tanks are being fabricated.

The flushing and hydrostatic testing of the encased pipe for the 101-U cascade system is currently underway.

b. Phase II

This phase is 11.6 percent complete against a scheduled 31.6 percent completion. The entire lag in this phase is noted in Minor Construction portions. The main Atkinson-Jones crews are slightly ahead of schedule.

The fabrication of 244-CR-001 and 011 continues at White Bluffs. Concrete pouring for the CR master diversion box is continuing. Work continues in the B tank farm area on concrete pouring for cascade diversion boxes and tank pits.

c. Phase III

Phase III progress is 86.8 percent complete at month end. Scheduled completion at this time is 87.7 percent.

The six-line portion of the encasement has been tested from the high point of the line to the 154-UX diversion box, and this portion of the line is being covered and backfilled at this time.

d. Phase IV

Phase IV, scheduled to be 45 percent complete, is 24.3 percent complete. This lag is due primarily to inability to obtain delivery on pipe and fabricated vessels. Arrival of pipe for canyon trench installation this month has increased progress somewhat in this period.

Installation of steam, electrical, water and instrument lines in the 221-U galleries was continued this month. Jumpers are being fabricated and the canyon cells are being painted. Puget Sound Sheet Metal Company is in the field and currently fabricating the 203-U 1 and 2 tanks. Water lines are being installed in the 211-AU area and the concrete bases for 211-AW tanks have been poured and are being finished at month end. Cover slabs for the 291-U sand filter have been placed and are being water-proofed.

e. Phase VI

Progress on this phase improved during the month and is 36.1 percent complete. The scheduled completion for this time is 47.5 percent. Concrete pouring continues on 273-W filter plant. The superheat tubes in the second boiler have been tested and accepted. Work continues on the installation of the 14" steam line.

B. UO_3 Project

1. Month End Project Status

	Part A	Part B Segregation	Overall
Scope	100%	99.5%	99.9%
Detailed Design	100	40	92
Construction	34	0	30.6

Part II of the Project Proposal was approved by the Appropriations and Budget Committee and was submitted to the Atomic Energy Commission on June 15, 1951. This proposal requested new funds amounting to $350,000, the increase being chiefly due to the six day work week and to an increase in the estimated equipment cost over the study report estimates for segregation.

2. Design

a. Pot Alarm System

A high liquid level alarm has been incorporated in the decomposition pot design. It will serve to prevent overfilling of the pots and will give warning in case of a liquid level build up in the pot due to a faulty valve in the fill line.

b. Cast Decomposition Pots

On the basis of test work performed and x-ray data obtained by the Principal Metallurgist of the Engineering and Construction Division and the vendor, it was agreed that type 18-12 stainless steel gives greater strength and definite improvement in corrosion resistance over previously accepted type 309 S cb (25-12) steel for the UO_3 conversion service. Therefore, the specifications for the material of construction have been changed accordingly for the remaining 18 pots. Four of the pots have already been cast from type 309 S cb steel.

3. Procurement

By use of premium payments for shop overtime and express shipments, an improvement has been made for the shipping schedules of the critical engineered items for this Project.

A supply of 30 gallon drums and pallets for the UO_3 powder shipment was received on the plant at month end.

4. Construction

The 2714-W warehouse has been accepted by the Manufacturing Division with a few minor exceptions.

Roof exhaust fans have been installed for the 224-U Building and foundations are being made for the three supply fan-cooler units. Duct installation is about 80% completed.

Shop fabrication of stainless steel process piping is progressing slowly, due principally to the late delivery of 4" and 6" 309sCB pipe.

Installation of "C" cell equipment was delayed about a month because of unforeseen structural work found to be required for reinforcement of foundations and access ways for C-362 equipment to be placed in "B" and "D" cells. The existing C-2 tank is in place; tank C-1 has been set; and tank C-3 is on-site for testing after field modification.

[redacted]

Storage bin X-7 and screw feeder X-8 are in place and partially connected. Roller convevor E-20 and the loading room scales are being installed. Cyclone X-5, hammer mill X-6, and vacuum cleaner E-21 are on site. The ventilation bag filters, X-11, are in place, and the structural work is about 75% completed.

C. Redox (Project C-187-D)

1. General

a. Based on revised cost figures presented by the Analytical Laboratories representatives, a decision has been made to adopt for use in the Redox sampling operation the plastic "One-trip" trombones recently developed in the present operating buildings. The cost of the mold for the plastic units will be split between the Redox and the TBP Projects, and the respective projects will also purchase the initial three months' supply of the trombones.

b. A series of meetings were held within the Manufacturing Division and between representatives of the Manufacturing and E & C Divisions to establish the minimum conditions for beneficial occupancy of the Redox facilities. These conditions indicate basically that at least one cell unit complete with auxiliary service will be available to the Manufacturing Division at the time of beneficial occupancy with the remaining cell units to become available within a specified time. Other agreements concerning equipment maintenance during the change-over period, equipment alterations, etc., are also included in the beneficial occupancy requirements. It was originally considered that the date of 7-2-51 would be established for beneficial occupancy; however, the status of completion of Cells E and F now indicate that a date of 7-15-51 is probably more realistic. To avoid loss of time in initiating calibration work in the first cell units turned over to the Manufacturing Divisions, calibration crews and equipment are now being assembled and will be established on a 3-shift, 7-day week basis as soon as the first cell unit is available. Calibration of small 211-S tankage is already underway.

c. Notification has been received from the Redox Design Section that no more construction purchase requisitions for the project will be processed and that any further using division requirements must be handled between the Purchasing Division and the originating using division.

d. The initial delivery of nitric acid was made to the 211-S Area during the month and three additional cars of acid are now available on the Plant for transfer to storage. At month end the 276-S underground solvent storage facilities were nearly complete and two tank cars of solvent were available on the plant for the initial unloading. Following concerted effort by the construction sub-contractor and the sponsoring vendor of the Tygon lining for the ANN storage tanks, the first lined storage tank was considered satisfactory at month end, and available for ANN storage. Completion of the initial tank of this facility was roughly one month behind the originally scheduled date and a corresponding delay was necessary in the salt shipments from the vendor's plant.

e. A series of meetings have been held with the Separations Technology Division in an attempt to establish a tentative schedule of testing, calibration, cold-runs, and final hot runs for the building. The schedule has not been firmly established due in part to the questionable completion date for the facilities and the undetermined amount of equipment difficulties which will be encountered during the final run-in, and calibration and testing periods.

2. Construction

a. 202-S Building

Work on the 202-S Building progressed rapidly during the last month with the building structure now completed. The installation of cold process piping, panel boards, and Class II pumps, vessels and agitators is essentially complete with the remaining major work in the building being associated with the placement of cell equipment and jumpers, demonstration of their remote maintenance characteristics, and the final run-in of cell rotating equipment. The installation of process equipment and piping in Cells E and F was continued and is nearing completion at month end. Process equipment and jumper installation in Cells D and G were started during the month. Structural work in the silo shaft has been completed and the shaft cleared of scaffolding in preparation for reactor installation. At month end the first of the packed towers had been moved from the mock-up building and placed in the silo "U" frames. The remaining towers are completed awaiting installation or in progress through mock-up operations and are scheduled for installation during the first part of July.

[redacted]

Re-work of the Class I pumps and agitators is nearing completion; however, no rotating cell equipment has received the final 24-hour trouble-free run-in in the cells as outlined in the construction specifications. Preparations for this run-in are now being made as lubrication jumpers are purged and shaft seal water supply systems completed.

Viewing window assembly progressed rapidly during the past month with every indication that the optical properties of the assembled windows will be very good. Actual installation of the assembled windows in the silo wall was started at month end and will be completed in mid July.

The final report of the Test Steering Committee in charge of the investigations of weld quality in the building was issued during the past month. The report recognized the inconclusive nature of some of the tests employed but recommended that, on the basis of the evidence gathered and the corrective steps that were taken, the welds in the building be considered suitable for service. The report has not yet been officially accepted by the Manufacturing Division.

Construction progress statistics as of June 30 for the Redox facilities are as follows:

Improvements to Land	70%
Temporary Construction	96
202-S Building	95.4
211-S Building	91
240-S Building	100
276-S Building	90
277-S Building	99
282-W Building	100
284-W Building	98
291-S Building	98
2702-S Building	100
2726-S Building	100
Waste Facilities	100
Electrical Distribution	98
Water Distribution	100
Steam Distribution	100
Railroads	100
Total Weighted percent	95.7

b. 241-S Waste Farm & Associated Facilities (F.J. Early Contract)

Lump sum construction work in the 241-S tank farm was estimated to be 87.4% complete at month end compared with a

scheduled completion 100%. A revised construction schedule presented during the past month establishes construction completion date for the facility as July 31 compared with the originally scheduled date of June 13. This delay will not cause a corresponding delay in plant start-up schedule, since initial processing of radio-active materials through the Redox Facilities will not take place for some time.

D. Training and Procedures

1. Training

The fourth training cycle started on June 11 and will be completed on July 8. Twelve helpers, nine trainees, four operators and 14 supervisors are in training during this period, and to date 82 operators and 42 supervisors have completed this phase of their training.

2. Procedures

a. Redox

Procedure	% Completion	Remarks
Flushing	98	
Calibration	95	Tank calibration procedures complete. Rough draft of instrument calibration procedures complete.
Special Hazards	100	
Safety Rules	98	
Emergency	90	
Operability & Capacity Tests	85	
Essential Materials Control	91	
Operating	65	First cold multicycle cold run plan received from Technical for review by the S Division. Several other procedures being reviewed.
Manual of Std. Practices	60	
Accountability	40	
Dispatcher Control	85	
Job Descriptions	25	
Communications	100	
Lubrication	90	
Equipment & Spec. Manuals	60	

[redacted]

b. TBP and UO_3

Rough drafts of the operating procedures and personnel procedures, as defined in the Manuals of Standard Practices for 221, 224, and the 241 Areas, were prepared and submitted for comment. Civil defence procedures for 221 224, and 241 were prepared. Also, the proposed write-ups for extended Special Work Permits were written.

A letter from C. F. Faulk to P. M. Murphy dated June 13, 1951 entitled "Miscellaneous Operating Equipment - Projects C-361 and C-362" listed the miscellaneous signs and safety equipment required which should be supplied by the projects.

A meeting was held with the Technical and Instrument Divisions for the purpose of defining and establishing the responsibilities in the calibration of instruments installed in the plants. The minutes of this meeting have been written and distributed.

The operability tests on the "B" cascade operability tests for pumps, vessel calibration procedures and chemical make-up procedures for 221-U have been submitted to the Chemical Development Section for their comments.

W. O. Goslin 200 Area Safety Engineer, was contacted in regard to the safety procedures for the plants and the proposed Safety Section for the 224-U Manual was submitted to him for his comments.

The distribution of the operability tests to the D & C Division and the AEC for comment is pending the design revision on the product concentrator in the 224 Building.

Stencils were cut for approximately 35 procedures, in preparation for the final assembly of the Manuals of Standard Practices.

Superintendent
S DIVISION

RS Bell:pc

INSTRUMENT DIVISION

MONTHLY REPORT

JUNE, 1951

I. SUMMARY

Detection of an early indication of ruptured slugs during pile operation is getting priority consideration in the 100 Areas. Equipment is being set up for experimental work.

Installation of Panellit pressure monitor gauges as a result of process water pressure increases is proceeding as fast as the manufacturer can supply them.

Calibration of instrument equipment in the Redox plant is progressing satisfactorily. Construction progress as it concerns instrumentation for the Tri-Butyl Phosphate plant is lagging due to material procurement and lack of construction personnel.

Design work on Project C-431, 100-C Area instrumentation is progressing as fast as personnel limitations will permit. Approximately 18% of the total drawings to be completed at Hanford Works have been approved.

Project C-377-R for construction of the New Instrument Maintenance and Development Shop was closed out effective June 1, 1951, with construction completed.

II. STATISTICAL AND GENERAL - JOB EXPERIENCE

100 AREAS

100-B Area

Two beta chambers for monitoring water activity were converted from shimstock type to polythene tubing. Performance during the past two weeks has been satisfactory.

Most work on the P-10 metal extraction line through June 15, 1951 has been initial calibration and experimental process tests. During the shut-down period, necessary revisions and clean-up work was accomplished.

100-D Area

Faulty ionization chamber was removed from "D" hole. It was found to be wet and showed signs of corrosion. New chamber was installed after tube was dried out.

100-D Area (Contd)

Trip point of over-pressure regulators on process water pumps was increased 25 psi to accommodate an anticipated increase in operating pressure in the near future.

100-DR

Recalibration of 1000 pressure gauges for the process water pressure monitor to allow installation of .285" orifices during the July 16 shutdown is progressing normally.

100-F Area

Increase of process water flow rate due to the pressure increase necessitated change of range of power level recorders. As all of the calibrating range had been previously used, a temporary correction was made pending future action on replacement of these recorders.

During fore part of month, moisture collection from the pile atmosphere appeared normal. Following an increase in process water pressure, a sharp increase in moisture content was experienced. Decrease of water pressure did not decrease moisture content. Dew cells have been put in operation for a systematic traverse of pile atmosphere for study of this condition.

Fifty of the 100 psi range Bourdon tubes for the Panellit pressure monitor were received from the factory and installed to replace differential type gauges that have been used to meet operating requirements.

100-H Area

An ionization chamber was installed on the far downcomer to correspond with the installation on the near downcomer which has been in use during operation of this pile. For purpose of monitoring downcomer activity, the Beckman may now be switched to either that may be in use.

Shutdown Experience

100-B Area - None due to instrument failure.

100-D Area - Unit shut down manually May 21, 1951 at 1:28 P.M. due to increased activity indications on the water monitor and at the inlet of the retention basin. A ruptured slug was located in tube No. 1174.

On June 28, 1951 at 10:38 P.M. the unit was shut down because of high indications on the water activity monitor and at the retention basin inlet. There was no change in pressure or temperature indication. A ruptured slug was located in tube No. 1476.

100-DR - Unit was shut down on June 13, 1951 at 3:29 P.M. because of high peak indications on the water activity monitor. No further indications of a ruptured slug was found and the unit started back to power at 3:45 P.M.

Unit shut down June 18, 1951 at 5:04 P.M. due to a low reading on process tube pressure gauge No. 0981. Investigation revealed a leak in the Bourdon tube which was replaced and the unit was back up to power at 5:40 P.M.

Unit shut down again on June 19, 1951 at 6:39 P.M. due to high peak indications on the water activity monitor. No indication of a ruptured slug was found but unit could not start up for 18 hours. Startup occurred June 20, 1951 at 1:00 P.M.

Unit shut down on June 24, 1951 at 1:52 P.M. due to a faulty jumper on the pressure monitor alarm circuit. Rods were pulled at 1:57 P.M. and the unit was back to power at 2:38 P.M.

Pressure monitor gauge No. 3186 gave a low pressure alarm during a power purge on June 26. The unit shut down at 4:53 P.M. and remained down for scheduled outage.

100-F Area - None due to instrument failure.

100-H Area - Unit was shut down on June 2, 1951 at 11:08 A.M. due to a rise in temperature and pressure indications on tube No. 3179 starting at 11:00 A.M. A ruptured slug was located in that tube.

Shortly after start up following the June 11 scheduled outage, high activity was discovered by H. I. Division in water samples obtained from #21 header. Unit was shut down and a ruptured slug discovered in tube No. 2278. Water activity, pressure and temperature monitors had given no abnormal indication.

Unit was shut down on June 28, 1951 at 12:15 A.M. due to a low pressure indication on pressure monitor gauge No. 2160. A slow leak was found on gauge connection.

200 AREAS (Reference: HW-21537)

T & B Plant Production Instruments

Sensing line openings in the waste evaporator tanks, building 242-T, became obstructed frequently due to the aeration of the liquid from purge air causing crystallization of salts around the end of the line. To improve this condition, the purge air is being humidified to near-saturation.

[redacted]

Z Plant Production Instruments

Ratosight flow indicators for cooling coils in Hood 14 of Building 234-5 were disassembled and cleaned due to difficulty in getting sufficient quantities of cooling water. Rust and scale were found to be partially obstructing the indicators and water lines.

300 AREA

MANUFACTURING SECTION

Project C-398 - Experimental Coating Hood, 234-5 Building

Fabrication of the Miller amplifier was completed and the unit delivered on 6-22-51.

Project C-412 - P-10-X Extraction Facilities

Seven Beckman safety controllers have been completed and are ready for delivery. Completion of the eighth is delayed pending receipt of material.

Project C-424 - Water Quality Experimental Program.

One Beckman safety controller has been completed and tested; the remaining three are again being held up pending receipt of material.

Hanford Fluorimeter for Savannah River Works

Machine shop work has been completed and electronic fabrication is 50% complete. All brass parts are being oxidized to insure total absorption of extraneous light. Following completion, a one week testing period is required before shipment.

DEVELOPMENT SECTION

Process Tube Temperature Mapping

Authorization has been received to proceed with the design and fabrication of the oscilloscopic temperature mapping device for Project C-431. Modification of demonstration unit design is under way for the full scale unit.

100 Area Effluent Water Monitor

Equipment has been assembled in 100-H Area to test the feasibility of bucking signals caused by beta activity against temperature signals for determination of slug rupture. The delayed neutron counter equipment, auxiliary to the proposed beta system, is now under test.

GENERAL (300 Area)

Project C-377-R, construction of new Instrument Maintenance and Development Shop, Building 3717-B, was completed effective June 1, 1951

ENGINEERING AND CONSTRUCTION GROUP - 760 BUILDING

Project C-431 - 100-C Area

Considerable investigation has been under way to determine the merit of eliminating automatic flow balancing of 190 Building pump controls and controlling pumps directly from a master pressure control. To date there is insufficient data to recommend the above system. It was recommended that provision of both pressure and flow control be specified, arranged in such manner that pressure control only can be investigated if desired.

An order has been placed with Panellit Inc., in the amount of $171,000 for the process water pressure monitor system and associated spare gauges.

Quotations have been reviewed from three vendors on the pile power calculating system and recommendation was made that the order be awarded to the low bidder of $30,679, the Foxboro Company.

A requisition has been issued for the purchase of a temperature monitor system equivalent to the system now in use in 105-H.

Project C-187 - Redox Process and Facilities

The instrument shop of 202-S Building has been occupied by operational personnel. Instrument calibration is nearing completion, with very few cases of revision being necessary.

Preliminary survey indicates no critical procurement items for the Redox Laboratory addition to the 222-S Building.

Project C-362 - Tri-Butyl Phosphate Process and Facilities

Major activity for the month was expediting delivery of the graphic panel equipment and associated components for the Foxboro Company. After considerable effort was expended in bettering delivery dates of suppliers of the Foxboro Company it appears that four panels will be shipped on August 1, 1951.

Project C-413 - RMB Line, 234-5 Building

As specification HW 4666 could not be met in construction of a carbon monoxide analyzer, these specifications have been revised around the present status of the art. Mine Safety Appliances Company indicate

they can deliver such equipment in 14 to 16 weeks with the original bid price of $10,870 being firm. The Hopcalite type CO detector has been received and is being set up for modification and installation temporarily on the RMA Line.

III. ORGANIZATION AND PERSONNEL

There were nine new hires and seven terminations and transfers to other divisions, for a total force gain of two during the month.

	Monthly	Weekly	Total
Beginning of Month	56	235	291
End of Month	56	237	293
Net Increase	0	2	2

Since the gain during June did not offset the loss of personnel during May and manpower requirements for operation of new facilities are increasing, there appears to be no immediate relief from the six day work week for the Division.

[redacted]

HW- 21506-Del

MAINTENANCE DIVISION

June, 1951

GENERAL:

The divisions backlog as of June 30 stands at 29.4 days for the present work force. This is an increase of two days over last months backlog.

Backlog Status

Mandays Work	May 31	June 30
Unusual Maintenance	2673	2535
Maintenance work	3618	2742
New work	1008	1162
Routine work	504	1704
TOTAL	7803	8143
Total crew	286	277
Crew days work	27.3	29.4

Approximately 45% of the Maintenance work force was working a six day week during the month.

100 AREAS

Seven items of machine shop equipment including a twenty inch engine lathe and a radial drill were made available to the Minor Construction Division of T.E. & C. for use in their machine shop.

The maintenance shops in 105-D and 105-B Buildings were relocated to provide space for lunch room facilities in these buildings.

Fabrication was completed on a duplex shielding cask to be used when it is necessary to transfer "hot" metal pieces from one tube to another on the front face of a pile. This cask will reduce transfering time of metal pieces.

During the removal of a ruptured metal at the rear face of a pile there is a possibility of contaminated particles dropping on the lower nozzles and pigtails, and reducing the allowable exposure time. This spread of contamination has been eliminated by the use of sheet plastic aprons attached to the rear face below the tube being worked on. A new type of pile rear face nozzle cap has been fabricated to be used to carry contaminated water directly from tubes with ruptured metal to outside underground storage.

There were six occasions during the month when defective slugs had to be removed from the piles by the Maintenance Division. Three of these at "H", one at "DR" and one at "D", were removed in a normal manner. The removal of the defective material at "F" pile which started on June 29, has not been completed at this time.

[redacted]FIED

1200708

The far side downcomer on the "H" pile, which has never been used, was reinforced to prevent the mechanical failure which has occurred to the eight inch vent pipes in the near side downcomer.

The water flow was increased through the process water tubes by installing seventy-one larger orifices in the front face water system on the "DR" pile and one hundred in the "F" pile.

Reverse oil flow piping was installed on all the steam driven fan gear boxes in 105-D, 115-D, 105-F, and 115-F. This will eliminate the possibility of bearing failures caused by lack of lubrication if these fans are inadvertantly run opposite to the normal rotation, due to building air pressure.

C-340 - Critical Mass Program - P-11 - Part III

The vertical blade drive and pinion were assembled and the Spheres have been received and will be installed. Several revisions will have to be made to existing equipment when test runs are completed.

C-438 - Ball 3X Facilities for 105-B, D,DR, F and H

The fabrication and testing of the magnet rod section is finished. The ball 3X hopper and step plug are 40% complete. Work has started on the test stands.

200 AREAS

Metal Fabrication

The fifteen pound process air supply was removed from the fresh air system and connected to the normal building air service system. This was done to eliminate the possibility of contaminating the fresh air system through the process air system.

A reactor tube for #1 furnace in Hood #8 was fabricated with Hastelloy metal as a trial. The original Monel reactor tube in this furnace failed because of corrosion.

The vacuum piping on #14 hood was revised and an additional vacuum pump installed so that each furnace can be operated separately once they are roughed down. Previously both furnaces were exhausted through the same pumps which, at times, caused an operating delay.

200 West Area

The EM-1 exhaust fan in the 291-Z stack ventilation was removed from service because of excessive vibration due to improperly fitted ball bearings. This is the third of these units to be repaired by building the shaft up with metal and then machining it to proper size without removing the fan from the housing.

A fresh air mask station was installed in the 241-Z Waste Storage which will eliminate the necessity for using Chemox masks in the tank pits.

[redacted]

An automatic water mixing valve was installed in the water supply lines to the showers in the new laundry. Prior to this installation, several people were burned while taking showers when the cold water pressure was reduced through usage at a nearby location.

A new concrete floor and loading dock were built in the Chemical Storage Room in the Purification Building to replace the old wooden floor and dock which were deteriorated due to chemical action.

200 East Area

Repairs were made to sixteen wooden poles which support acid and steam lines by installing stubs and banding them to the original poles and then encasing them with concrete at the ground level. This method of repair saved the cost of new poles and should also prevent deterioration of the poles at the ground level.

The neoprene cups on the piston which operates the skimmer system on the 16-2 centrifuge in the Separations Building were replaced under SWP conditions.

C-337 - Dissolver Off-Gas Filtration for Buildings 221-T&B

The filter was fabricated during the month and will be delivered to 200 East for installation in the mock-up cell.

C-378 - Iodine Removal Facilities for Dissolver Off-Gas

All shop fabrication has been completed. The mock-up work will continue during the month of July.

C-398 - Experimental Coating Hood, Building 231

Shop fabrication of units was continued during the month with expected completion of shop work by August 1. Field installation will start during July.

300 AREA

A new lead lined steel tank was fabricated and installed in Slug Recovery to meet the demand for increased production in this process.

An air sparger was developed to cool the crucibles in the canning furnaces which reduces the furnace downtime by two hours.

Room #41 in the 3706 Technical Laboratory has been converted to a quartz shop by the installation of hoods, shelving, and a work bench for burning equipment.

C-330 - Additional Ventilation Facilities, 313-314 Buildings

The final inspection and acceptance has been made on this project.

M-806 - Slug Canning Transformation Timing Equipment

This project has been completed and accepted.

ELECTRICAL DIVISION

JUNE, 1951

GENERAL

The scheduled work backlog at month end was 6,932 mandays, or 27.4 mandays per non-exempt employee. This increase of approximately 10 percent was distributed among all sections of the Division. Because of the extreme scarcity of replacements for terminated line craft personnel, and the gradual growth of their work backlog, a six day week has been established for line crews.

The power demands for the month were:

	Date	June KW Demand	Comparative May Demand
Process Load	6-11-51 (2:30 to 3:00 p.m.)	66,400	66,650
Village Load	6-5-51 (10:30 to 11:00 a.m.)	19,000	19,150

The demands are approaching a seasonal low; however, in the Village of Richland, the demand is substantially greater than a year ago.

The principal co-ordinating activity with design groups was a complete review of drawings pertaining to Project C-385 (Radio Metallurgy Building), and Project C-394 (Retention and Neutralization Building), both inside electrical installation and outside lines. Several recommendations were made.

Mr. E. E. Weyerts, Assistant Superintendent, attended the General Electric Plant Engineers' Lighting Conference, Nela Park, Cleveland, Ohio, June 4, 5 and 6.

AREA ACTIVITIES

In order to accommodate several additional fire alarm boxes and to increase reliability, the fire alarm system in the 100-B Area was converted from a 48 volt to a 72 volt system.

During an electrical storm on June 6 at approximately 5:44 p.m., a 13.8 KV oil circuit breaker in Substation 151-D tripped, interrupting power on one feeder to Building 181-D. The breaker was immediately reclosed and an inspection made on the equipment in Building 181-D. Both incoming line breakers in 181-D were found open but no damage was found to lines or equipment.

Start-up in the 100-H Area was delayed approximately one hour on June 12 when the pump motors connected to bus No. 2A in Building 190-H would not start. The trouble was traced to the cover of the undervoltage relay which was binding sufficiently to prevent the relay reclosing after it had tripped on a simulated power failure test made during the area shut-down. Since these relay covers are not necessary, they have been removed.

Considerable difficulty has been experienced with equipment in the 2724-W Laundry Building due to excessive moisture. A washer motor and a brake solenoid burned out on June 4. Trouble was also encountered with the timer mechanism and contactor

on Troy washer due to corrosion and moisture. The operating group is attempting to reduce the excessive steam in the atmosphere, and some of the control equipment will be removed to drier locations.

Testing and inspection of new equipment, energization of new circuits, and preparation for start-up has substantially increased activity in the 200 Areas, particularly as relates to 222-S Laboratory, 202-S, 284-W, and the "U" Area.

A defective resistor in the thymotrol control of No. 2 inert gas welder in the 313 Building caused a four hour production welding operation delay.

TRANSMISSION AND DISTRIBUTION

A temporary meter testing shop with facilities for testing eight meters simultaneously has been established in Hutment 1133-7. The first meter shipment has been received; and installation of metering equipment for churches and non-profit institutions has been completed.

The new DeLaval oil purifier equipment procured on Project M-805 was placed in service for the first time, filtering the oil for oil circuit breaker A-386 in Substation A-8.

A periodic survey of street lighting in Richland has been completed. Thirteen new lights will be added, and two will be replaced with the mercury-vapor type.

Approval has been received and work released to bond all 230 KV tangent structures (M-847) as a measure to eliminate pole top fires.

In Richland, the new Kuhn Street feeder was completed and energized; service for the new Jason Lee Junior High School was completed.

Primary metering was installed for Kadlec Hospital and auxiliary buildings.

TELEPHONE SECTION

A 404 pair underground cable was installed between manholes No. 8 and No. 9, and the necessary rearrangements were made to provide service for the Civil Defense Control Center, the proposed new wing of Building 703 and the Fourth Housing Addition apartments.

A Subcontractor's power shovel operating south of Building 703 struck and severely damaged a 909 pair underground cable on June 18. A total of 212 man hours was required by the cable splicing crew to make the necessary repairs. An improper excavation permit had been issued.

The 100 line inter-communication dial exchange installed in the 202-S Building was cleaned, tested and prepared for service.

A Project Proposal was prepared to provide for lashing the area trunk cables to the supporting messengers in order to eliminate the present suspension rings which have caused ring cuts in the cable sheath.

The following is a summary of current telephone service rendered by the Project Telephone System:

	Lines in Service	Stations in Service	Extensions in Service	Vacant Lines
Richland	3854	6202	1049	146
Project Total	5345	7849	1943	805

Two-hundred (200) lines previously reserved at the 300 Area Exchange for the Hanford Works Laboratory Project have been added to the vacant line total.

[redacted]

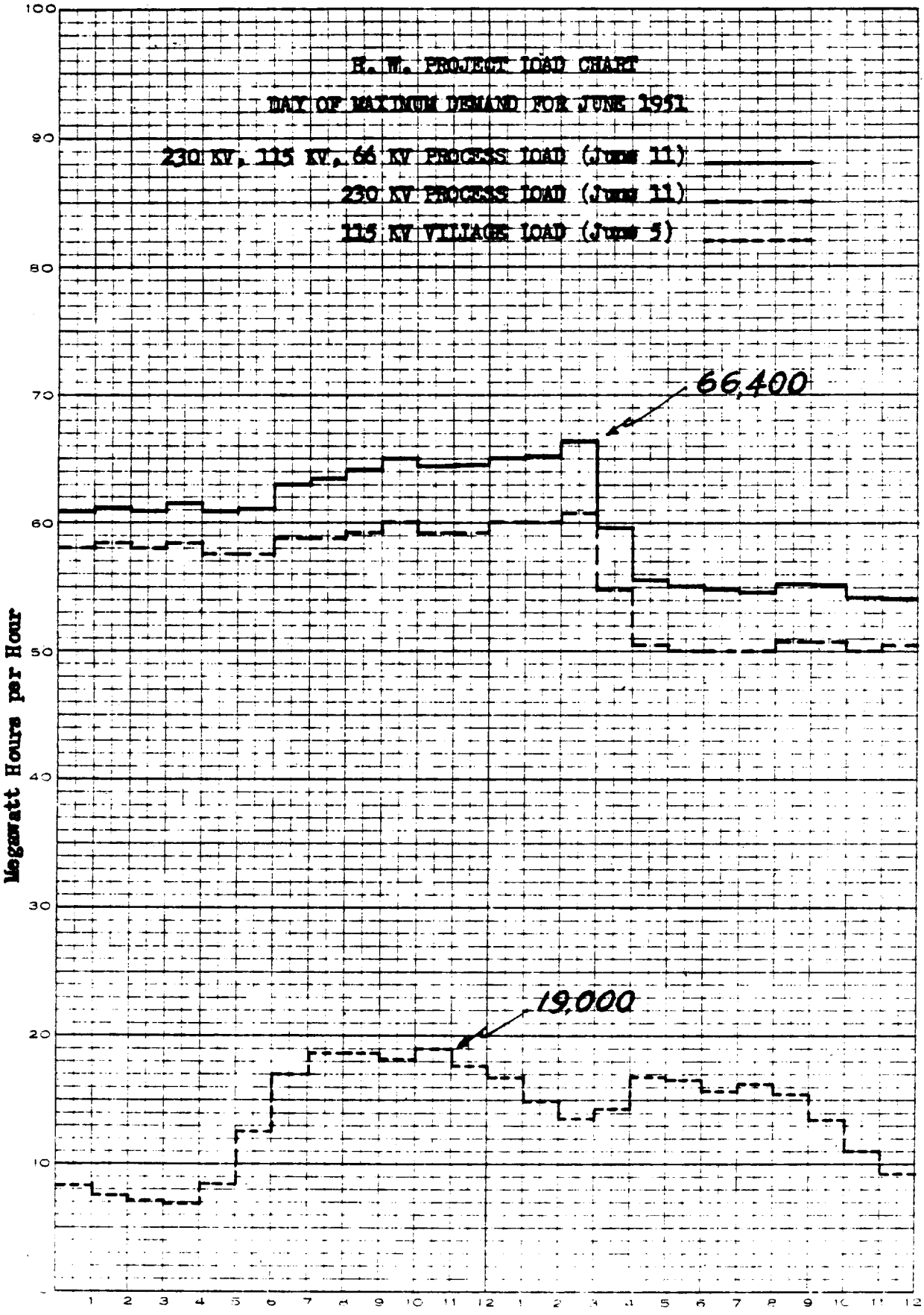
POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING JUNE 30, 1951

ITEM	ENERGY - MW HRS. May	ENERGY - MW HRS. June	MAX. DEMAND - KW May	MAX. DEMAND - KW June	LOAD FACTOR - % May	LOAD FACTOR - % June
230 KV SYSTEM						
A-2 Out (100-B)	6,500	7,540	11,200	11,100	78.0	94.3
A-4 Out (100-D)	13,160	12,630	20,600	19,600	85.9	89.5
A-5 Out (100-H)	7,704	8,676	13,800	20,100	75.0	60.0
A-6 Out (100-F)	6,590	6,770	10,600	10,300	83.6	91.3
A-8 Out (200 Areas)	4,140	3,924	6,840	6,840	81.3	79.7
TOTAL OUT	38,094	39,540	63,040**	67,940**	81.2	80.8
MIDWAY IN	39,010	40,290	61,200*	61,200*	85.7	91.4
Transm. Loss	916	750				
Percent Loss	2.3	1.9				
115 KV SYSTEM						
B1-S4 Out (N.Richland)	1,867	1,843	3,456	3,398	72.6	75.3
BB1-S1 Out (Richland)	4,084	3,264	9,540	9,360	57.5	48.4
BB1-S2 Out "	3,944	3,194	10,260	11,250	51.7	39.4
BB3-S4 Out (300 Area)	768	760	1,760	1,760	58.6	59.9
TOTAL OUT	10,663	9,061	21,560**	25,768	66.5	48.8
Benton In	800	1,740	32,000*	***	3.4	***
S.Richland In	10,030	7,510	22,800*	22,200*	59.1	47.0
TOTAL IN	10,830	9,250	54,800**	***	26.6	***
Transm. Loss	167	189				
Percent Loss	1.5	2.0				
66 KV SYSTEM						
B7-S10 Out (W.Bluffs)	459	474	1,237	1,283	49.9	51.3
Hanford Out	363	337	600	600	81.3	78.0
TOTAL OUT	822	811	1,837**	1,883**	60.2	59.8
HANFORD IN	815	796	2,000*	1,800*	54.7	61.4
Transm. Loss	+7	+15				
Percent Loss	+1.0	+ 1.9				
PROJECT TOTAL						
230 KV Out	38,094	39,540	63,040**	67,940**	81.2	80.8
115 KV Out	10,663	9,061	21,560**	25,768**	66.5	48.8
66 KV Out	822	811	1,837**	1,883**	60.2	59.8
TOTAL OUT	49,579	49,412	86,437**	95,591**	77.1	
230 KV In	39,010	40,290	61,200*	61,200*	85.7	91.4
115 KV In	10,830	9,250	54,800**	***	26.6	***
66 KV In	815	796	2,000**	1,800**	54.7	61.4
TOTAL IN	50,655	50,336				
Transm. Loss	1,076	924				
Percent Loss	2.1	1.8				

* Coincidental Demand
** Non-Coincidental Demand
*** Not available. Demand chart off scale because of energy transfer for B.P.A.

Average Power Factor - 230 KV System--94.0
Average Power Factor - 115 KV System--89.1
Average Power Factor - 66 KV System--84.3

4


H. W. PROJECT LOAD CHART
DAY OF MAXIMUM DEMAND FOR JUNE 1951
230 KV, 115 KV, 66 KV PROCESS LOAD (June 11)
230 KV PROCESS LOAD (June 11)
115 KV VILLAGE LOAD (June 5)
66,400
19,000
Megawatt Hours per Hour
100
90
80
70
60
50
40
30
20
10
1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

HW-21506-Del

TRANSPORTATION DIVISION
MONTHLY REPORT
JUNE 1951

GENERAL

Transportation Division personnel forces decreased from 614 to 597 employees during the month by 8 new hires, 2 transfers in, 7 transfers out, and 20 terminations.

RAILROAD ACTIVITIES

Commercial cars handled during June decreased 2.5% over May.

Process movements during June decreased 26% over May. Decline was due to curtailment of production at the B Plant which is expected to return to normal in August.

Cars handled in June including process movements totaled 2,266 compared to 2,443 in May; 2,078 in April; 1,984 in March; 1,793 in February and 2,625 in January.

The following recapitulation indicates the number of commercial cars handled:

Carload Movements -	Loads In	Empties In	Loads Out	Empties Out
General Electric Company	804	11	11	783
Subcontractors and others:				
Atkinson & Jones Co.	30	-	-	33
L. E. Baldwin & Associates	12	-	-	11
E. J. Bartell	1	-	-	1
Dix Steel Co.	3	-	-	3
F. J. Early	22	-	-	22
J. P. Head	1	-	-	1
Industrial Electric Co.	1	-	-	1
McPhail Eng. Co.	2	-	-	2
Montgomery Electric Co.	1	-	-	1
Richland School District No. 400	1	-	-	1
Royal Co.	3	-	-	3
Sound Construction Co.	5	-	-	4
Valley Roofing Co.	1	-	-	1
M. G. Wagner Co.	1	-	-	-
U. S. Army	6	-	-	6

120-ton Diesel electric locomotive 39-3729 was returned to service on June 13 after being out of operation since April 22. Extensive tests and checks made at the direction of factory representatives to determine the cause of excessive engine vibration disclosed faulty fan assembly by the Manufacturer.

[redacted]

1200716

[redacted]

Transportation Division

Railroad track maintenances forces were placed on a six day work week schedule effective June 9 to perform rehabilitation work in the exclusion areas which can best be accomplished on Saturdays when trackage is not under traffic. Replacement of the original untreated ties in this trackage was deemed necessary for the continued safe operation of production trains. Surfacing and related work was in progress at 108-B, 151-B, 200-East coal track, 100-F coal track, "B" line, and Section V requiring 2,967 man-hours. Replaced 220 ties in 151-B track; 88 ties in 183-B track, 402 ties in 108-B track; 100 ties in 110-B track; 73 ties in passing track on main lead, 200-East Area; 285 ties in 200-East tank farm track; 2 sets of #8 switch ties and 365 cross ties in the 221-B tunnel track; and 364 ties in Salvage Yard track requiring 2,636 man-hours. Distribution of new ties, removal of salvage materials and cleanup required 1,047 man-hours.

AUTOMOTIVE ACTIVITIES

The Area Bus System transported 2.7% fewer passengers in June than in May. The following tabulation indicates the May passenger volume by shifts and the total revenue received.

No. 1 outbound and No. 3 inbound	25,823
No. 2 outbound and No. 1 inbound	56,307
No. 3 outbound and No. 2 inbound	54,675
Total	136,805
Revenue	$ 6,840.25

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

Passenger busses - 100-B	11
Passenger busses - 100-D	13
Passenger busses - 100-F	10
Passenger busses - 100-H	9
Passenger busses - Hanford	4
Passenger busses - 200-West	22
Passenger busses - 200-East	12
Passenger busses - 300 Area	4
Passenger busses - Riverland	3
Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	4
Passenger busses - North Richland	3
700-300 Area Shuttle Service	23
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

Special bus service was rendered to the Technical Divisions for a tour of the Areas on June 19.

Effective June 11, bus service was established between Richland and North Richland to serve the 8:00 a.m. to 4:45 p.m. (DST) shift in North Richland six days per week.

Transportation Division

The Richland Local Bus System transported 15.8% fewer passengers in June than in May. This decrease was apparently due to the completion of the public school term and favorable weather. Volume of service rendered is indicated in the following statistics:

Total passengers including transfers	33,598
Total bus trips	3,513
Total bus miles	19,322
Total revenue	$ 2,49[illegible].30

Off-Plant automobile trips (Company business and/or official visitors) totaled 187.

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

Applicants:	Male	137	Number retested	0
	Female	13	Number rejected	0
		150	Number tests given	150

Permits issued:	Limited to driving with glasses	46
	Unlimited	104
		150
Permits reissued	48	

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	323	500,036
1B	Busses	158	202,414
1C	Pickup Trucks	468	268,173
1D	Panel,Carryall,Sta.Wagon	113	115,150
1E	Armored Cars	12	471
1G	Jeeps	2	481
68 Series	Trucks	296	72,535
		1,372	1,159,260

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

	Gasoline	Diesel Fuel	50 Cetane	Kerosene	White Gas
Stock at start of month	50,573	20,706	19,643	1,700	197
Received during month	101,349	24,035	23,456	3,460	0
Total	151,922	44,741	43,099	5,160	197
Delivered to Areas	105,863	33,222	24,401	1,732	3
Stock at end of month	46,059	11,519	18,698	3,428	194

1200718

Transportation Division

The following tabulation indicates the volume of inspection and maintenance service rendered to Hanford Works automotive and heavy equipment by the Equipment Maintenance Section: 37 motor overhauls; 157 Class A Inspections and Repairs; 1,478 Class B Inspections and Lubrications; 1,636 other routine maintenance repairs and service calls; 705 tire repairs and 321 wash jobs.

LABOR ACTIVITIES

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	0	0	0
Received during month	0	18,924	0	9,388
Dispensed during month	0	10,354	0	4,597
Stock at end of month	0	8,570	0	4,791

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	117	179	106	64	100	16	0	582
Cars other material	3	4	2	4	0	5	2	20
Cars loaded out	0	2	0	0	0	0	0	2

Seal coating of roads in 100-DR required 100 man-hours. Maintenance of primary roads required 666 man-hours; secondary roads 56 man-hours; and patrol trails 16 man-hours.

No crushed rock was made during this period as the crusher was undergoing repairs.

Vegetation control throughout the Plant required approximately 1,450 man-hours.

Handling of miscellaneous materials for the Stores Division at White Bluffs required 1,090 man-hours and excess material 214 man-hours.

Handling of materials for the Stores Division in the 700, 1100 and 3000 Areas required 561 man-hours.

Handling of Area deliveries required 1,162 man-hours: Stores deliveries 253 man-hours and office furniture 1,467 man-hours.

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DECLASSIFIED

Transportation Division

Handling and loading 2 carloads of equipment, 6 carloads of material, 71 truckloads of equipment, and 67 truckloads of material required 1,913 man-hours.

Routine Area maintenance and labor services were rendered in all Manufacturing Areas.

Labor and transportation equipment were furnished for Projects: M-769, M-770, M-772, M-805, M-843, P-172, P-291, P-300, P-326, P-337, P-377, P-378, P-382, P-402 P-410, P-411, P-412, P-415, P-422, P-423 and R-485.

Classification ~~Cancelled or~~ Changed to RESTRICTED

By Authority of ~~HANFORD OPERATIONS~~ [redacted] NON-TECHNICAL DOCUMENT REVIEW BOARD. ~~H. J. Newton~~, Chairman

Date: 12-18-57

[redacted]

POWER DIVISION
JUNE 1951

GENERAL

The inspection of one boiler in each of seven Power areas was completed by a Travelers' Insurance Company certified boiler inspector during the period June 7 and 8.

Construction work on Project C-431 was started on June 11 in 100-B Area with the erection of a fence to separate the construction and operations areas.

PERSONNEL

Number of employees on payroll - June	
Beginning of Month	573
End of Month	573
Net Change	0

The personnel turnover during the month consisted of the hiring of five new employees and the transfer of one from another Division, while six employees left the Division. Those leaving the Division included one transfer, four terminations, and one retirement.

100 AREAS

Water treatment and chemical feeds followed a normal pattern for June, and were entirely satisfactory.

Power service to the 181 River Pump House in the 100-D Area was interrupted for 15 minutes on June 6 during an electrical storm. Power service was restored without difficulty.

In the 100-H Area, 190 Process Pump House, the four motor driven pumps in one group failed to start following a request for normal water pressure by the "P" Division after a planned shutdown. The trouble was determined to be in a relay on the electric power supply. Although normal water pressure was requested at 11:00 p.m. on June 12, it was 12:18 a.m. on June 13 before the trouble was corrected and normal pressure obtained.

The work of sealing the roads in the 100-DR Area was completed during the month. This completes all the 100-DR construction work for which work orders were written.

Power Division

200 AREAS

On June 8, the installation of three additional superheater elements was completed in the No. 1 boiler at the 200 West Area, 284 Power House by construction forces. The hydrostatic test was witnessed by the Travelers' Insurance Company inspector. The installation of additional superheater tubes is being made on all four boilers to reduce pressure loss through the superheater at high capacity operation.

On June 19, a similar installation of three additional superheater elements was made in the No. 4 boiler. The boiler was hydrostatically tested on June 21. This test was checked by the Travelers' Insurance Company inspector, who also gave the boiler its regular annual inspection at this time.

The EM-1 Exhaust Fan at the 200 West Area, 291-Z Stack Fan House was out of service from June 7 until 23 for replacement of rough bearings. The shaft was built up and the bearing lubrication system converted from grease to oil as measures to improve bearing performance.

300 AREA

A power surge on June 21 tripped out the 384 Power House air compressor resulting in a 65 psi drop in compressed air service to the area. No serious curtailments were reported as a result of this outage.

GENERAL PLANT AREAS

Operations continued on a normal basis, without incident, throughout the month.

POWER ENGINEERING SECTION

The scoping of work and preparation of cost estimates to cover installation of one additional boiler in the 200 West Area Power House is progressing.

The Atomic Energy Commission has requested a re-study of a proposal to modify existing boiler units in the 200 West Area, 284 Power House, in order to increase the capacity to meet future steam load estimates. The Manufacturing Divisions has initiated a study to evaluate the cost, and the use of critical materials involved in the installation of an additional boiler unit as compared to the modification of existing boilers.

A study of the cost and time involved in providing additional process water flow and pressure for the 105 Pile Buildings was concluded, and a documented report issued.

Power Division

A special flow test was made on one pump at the 181 River Pump House in the 100-F Area on June 7 for the purpose of obtaining pump performance data for new construction purposes.

The experimental glass filters in the 100-DR Area were shut down until next spring as filtration conditions had stabilized and no further useful data was being obtained. A report of the glass filter tests is in process of preparation.

Laboratory experiments have been initiated to study the efficiency of various acid materials in "activating" sodium silicate for use as a coagulant aid with alum and ferric sulfate.

The filter flow test at 100-B Area is still continuing at a rate of about 3450 gpm per filter basin unit.

H. F. Measley

[redacted]

POWER DIVISION STATISTICS

From June 1, 1951

Through June 30, 1951

		AREAS				
		100-B	100-D	100-DR	100-F	100-H
RIVER PUMP HOUSE (Bldg. 181)						
River Elevation (msl ft.)	(max)	405.3	394.3		381.3	386.5
	(min)	401.7	391.0		377.6	383.0
	(avg)	403.7	392.9		379.6	384.8
River Temperature	avg. °F.	54.5	54.3		55.0	54.5
Water to Reservoir	gpm avg. rate	40,740	52,371		37,303	52,465
Water to 183 DR	gpm avg. rate		29,613			
RESERVOIR (Bldg. 182)						
Flow to Filter Plant	gpm avg.rate	37,134	45,844		34,345	43,081
Flow to Cond. System	gpm avg.rate	3,606	3,122		2,958	4,352
Flow to Cond. System (DR)	gpm avg. rate		3,405			
Flow to Export System	gpm avg.rate	0	0		0	5,032
Flow to Export System	gpm nor.rate	0	0		0	5,032
Chlorine, Added(#1 Inlet	Pounds	24,500	28,600		26,300	26,800
FILTERED WATER (Bldg. 183)						
Flow to Power House	gpm avg.rate	265	451		224	222
Flow to Process (190)	gpm avg.rate	34,065	33,535	34,454	32,087	38,925
Flow to DR	gpm avg.rate		5,637			
Flow to Fire & Sanitary	gpm avg.rate	319	234	--	233	132
WATER TREATMENT (Bldg. 183)						
Chlorine - Consumed	pounds	6,500	4,400	12,400	4,250	5,800
	ppm avg.	2.16	1.79	1.17	2.30	1.80
Lime - Consumed	pounds	83,200	92,000	60,920	68,000	94,800
	ppm avg.	6.2	5.6	5.7	5.5	6.1
Coag - Consumed	pounds	163,000	181,000	120,860	134,600	188,000
	ppm avg.	12.2	11.0	11.4	10.9	12.1
Raw Water pH	ppm avg.	7.87	7.78	8.00	7.65	7.90
Finished Water pH	ppm avg.	7.74	7.72	7.70	7.65	7.80
Alkalinity, M.O. - Raw	ppm avg.	57	55	56	54	61
Finished	ppm avg.	56	52	53	55	59
Residual Chl. - Settled	ppm avg.	--	--	--	--	--
Finished	ppm avg.	.14	.08	.16	.15	.20
Iron - Raw	ppm avg.	.23	.24	.33	.22	.29
North Clearwell	ppm avg.	.013	.016	.023	.016	.015
South Clearwell	ppm avg.	.013	.018	.020	.015	.016
Hardness - Finished	ppm avg.	73	65	70	73	77
Turbidity - Raw	ppm avg.	16	12	13	12	12
Filtered	ppm avg.	0	0	0	0	0

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HW-21506 Del

Power Division Statistics

From June 1, 1951

Through June 30, 1951

		100-B	100-D	100-DR	100-F	100-H
POWER HOUSE (Bldg. 184)						
Maximum Steam Generated	lbs/hr.	136,000	248,000		144,000	149,000
Total Steam Generated	M lbs.	89,319	163,217		79,834	80,350
Steam Load - Avg. Rate	lbs/hr	124,227	227,005		111,035	111,752
225 psi Steam to Plant(est)	M lbs.	75,467	138,132		67,423	67,861
15 psi Steam to Plant(est)	M lbs.	276	276		276	276
Coal Consumed	Tons	5,446	10,032		5,200	5,088
Coal in Storage (est)	Tons	42,270	40,658		41,117	35,551
TANKS (Bldg. 190)						
Flow to 190	gpm avg.rate	33,815	33,285	34,454	31,837	38,675
Dichromate-Consumed	pounds	22,150	22,600	23,500	22,500	27,000
Chemical Analysis:						
pH	pH avg.	7.62	7.65	7.70	7.62	7.68
Dichromate	ppm avg.	1.8	1.9	1.9	1.8	1.8
PROCESS PUMP ROOM (Bldg. 190)						
Flow to 105	gpm avg.rate	33,640	33,110	33,650	31,662	38,500
	gpm nor.rate	33,640	34,610	36,780	33,000	42,500
Water Temperature	Avg. °F	57.4	57.4	56.7	57.2	57.4
VALVE PIT (Bldg. 105)						
Solids Consumed	pounds	0	5,800	4,200	1,700	4,350
Chemical analysis:						
A, B, C, & D Headers						
Standard limits						
pH 7.5 - 7.8	pH (max)	7.70	7.70	7.75	7.65	7.70
	(min)	7.60	7.60	7.60	7.60	7.60
	(avg)	7.63	7.65	7.70	7.62	7.63
$Na_2Cr_2O_7$ 1.8 - 2.2	ppm (max)	1.9	2.0	2.1	1.9	1.9
	(min)	1.8	1.7	1.7	1.8	1.7
	(avg)	1.9	1.9	1.9	1.8	1.8
Iron	ppm (max)	.020	.020	.030	.015	.060
	(min)	.010	.010	.015	.010	.015
	(avg)	.015	.016	.019	.012	.020
Chlorides	ppm (avg)	1.8	1.7	1.4	1.9	1.8

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Power Division Statistics

From June 1, 1951

Through June 30, 1951

		200 Areas 200-E	200-W
RESERVOIR (Bldg. 282)			
Raw Water Pumped	gpm avg.rate	1,974	3,058
FILTER PLANT (Bldg. 283)			
Filtered Water Pumped	gpm avg. rate	346	779
Chlorine Consumed	lb.	260	350
Alum Consumed	lb.	2,000	3,900
Chlorine Residual - Sanitary Water	ppm	.50	.50
POWER HOUSE (Bldg. 284)			
Maximum Steam Generated	lbs./hr.	23,500	64,900
Steam Generated - Total	M lb.	13,343	42,271
Steam Generated - Ave. Rate	lb./hr.	18,558	58,792
Coal Consumed (Est)	Tons	820	2,476
Coal in Storage (Est.)	Tons	9,969	24,920

		300 Area
POWER HOUSE (Bldg. 384)		
Maximum Steam Generated	lbs./hr.	16,200
Steam Generated - Total	M lb.	9,774
Steam Generated - Avg. Rate	lb./hr.	13,594
Coal Consumed - Total (est.)	Tons	620
Coal in Storage (Est.)	Tons	2,018
SANITARY AND FIRE SYSTEM (300)		
Sanitary Water from 3000 Area	gal.	31,787,755
Well Water Pumped - Total	gal.	23,211,360
Total Water Per Day	gal/day	1,833,303
Total Water	gpm avg. rate	1,273
Chlorine Residual	ppm	.42

		MISCELLANEOUS AREAS
WHITE BLUFFS		
Ice Manufactured	lbs.	1,137,600
101 SHOPS		
Coal Consumed	tons	350

[redacted]

MANUFACTURING DIVISIONS
INDUSTRIAL ENGINEERING SECTION
JUNE 1951

I. Responsibility

No change.

II. Personnel

One rotational trainee was added to the roll and assigned to Transportation awaiting clearance.

III. Achievements

General

Arrangements were made for cooperative efforts between Industrial Engineering and Manufacturing Costs in establishment of a Standard Cost System. A study of the various forms and procedures required to operate such a cost control program is being completed.

100 Areas

Based on a broad range cost analysis, it was decided that Industrial Engineering efforts in the 100 Areas will be directed toward reduction of labor costs.

A survey indicated that no major reductions in pile outage times can be achieved by methods improvement.

200 Areas

Industrial Engineering Report HW-21284 covering proposed manpower and equipment requirements for operation of the 234-5 R. G. Line under the anticipated July conditions was completed.

Determination of standard crew requirements for operating the 221 and 224-T plants at varying production rates is in progress.

Study work on the 234-5 R. M. A. Line was initiated.

300 Area

The design and fabrication of an experimental automatic canning unit is continuing. The testing of various components under simulated operating conditions was begun.

Assistance is being provided the 313 Building Mechanization Scope Committee in preparation of a design project proposal.

A brief study was made of the welding operation to determine the nature of the factors affecting production rates. Design work on an experimental automatic welding unit was suspended for higher priority studies.

[redacted] UNCLASSIFIED

TECHNICAL DIVISIONS

JUNE 1951 7/11/51

SUMMARY

Pile Technology Division

Theoretical studies were made of the use of enriched uranium to increase the plutonium output of the Hanford Pile.

An exponential pile with an eight-inch lattice spacing has been constructed and experimental measurements of buckling initiated.

Research and development studies of shielding development, xenon cross section measurement, and critical mass determinations have been continued according to plan.

Small-scale pile tests of dichromate-free cooling water were initiated.

The first reliable information on the temperature coefficient of radiation damage of graphite was obtained as a part of our continuing program of graphite research.

Heat transfer and mechanical development studies were directed particularly towards investigations of components for the C Pile during the past month.

A program for examination of normally discharged, irradiated fuel and poison elements from the H-10 loading was started.

The program for establishing improved inspection standards and procedures for uranium canning is continuing. This includes studies on non-destructive testing methods, autoclaving, and thermal cycling, canning bath temperatures, and welding procedures.

During June, 214 slugs were extracted in seven runs in the tritium extraction metal line. The average product purity was 94 per cent with 0.07 per cent non-isotopic contamination.

About two-thirds of the total time of the P-10 group was spent in shutdown work and experimental studies which were necessary to permit the production run in the metal line which will take place the first two weeks in July.

The 2562-H channel, from which a ruptured slug was removed with difficulty, was borescoped and the graphite blocks were found to be broken from the point where the rupture occurred to the rear gunbarrel.

Separations Technology Division

The omission of extraction waste rework at T and B Plants resulted in slight improvements in decontamination factor. Miscellaneous product wastes from 234-5 Building were recycled to the B Plant Concentration Building with satisfactory results. Three barium sulfate scavenging tests in the Concentration Building successfully reduced the radioactivity of PR cans. In the 234-5 Building, product of satisfactory purity was produced by the direct hydrofluorination of plutonium peroxide from the Isolation process. Preparations for conversion of production from the Model 110 to the Model 130 were essentially completed.

In Redox and TBP process development, Technical Manual preparation has continued to 88 per cent completion of the Redox Manual and 40 per cent completion of the TBP Manual. A group of 14 "S" Division supervisors and 25 operators started a 4-week training period in 321 Building. Production testing of the TBP pulse generator was completed at the Proportioneer's plant (Providence, R.I.) under the guidance of Technical personnel. The first "Run Plan" for 'cold' testing of the integrated Redox operation with uranium solutions was issued for comment. The Hot Semi-Works was carried to 11.5 per cent completion.

In the research laboratory a study made of alternate organic phosphates indicated TBP to be the best selection for the extraction of uranium and plutonium. Studies of the coupling of ruthenium and zirconium removal head-end steps to the Purex process improved the decontamination factors only by the amount of removal achieved by the head-end step. Iodine entering the Redox IA Column will be rejected, to the extent of 99%, into the IAW waste stream. Laboratory studies have pointed up the feasibility of recycling 234-5 slag and crucible solutions in any proportion to the Redox IIA Column.

Studies of the peroxide coupling of Redox product solutions to the 234-5 process indicate that a product of adequate purity may be produced with either one or two peroxide strikes. Greater than 95% reduction yields were obtained on a small scale employing a sulfur "booster" as a replacement for iodine. The feasibility of recycling 234-5 caustic scrubber solutions to the Concentration Building for the recovery of plutonium was demonstrated in the laboratory.

Development studies directed toward the improvement of silver reactor performance for the removal of iodine have indicated that the three plant reactors operating below 99% efficiency have been at a temperature above the melting point of silver nitrate for extended periods of time. Methods for "reactivating" the silver nitrate on these reactors are being studied.

Technical Services Division

Exceptions to the May 2 acceptance of Building 222-S, the new Redox Analytical and Plant Assistance Laboratory, are being completed rapidly, and preparations are underway for the Phase II construction in this building. The Laboratory Services group is following this work while initiating the operating functions for which they are responsible. Full attention is being given to the design and fabrication of special laboratory and multicurie cell equipment for this building by the Technical design and shops groups.

Placement of the metal siding panels on the Mechanical Development Bldg. is in progress by the Dix Steel Bldg. Co. Meanwhile, resolution of the Phase II construction scope and cost estimates has been completed, and a supplemental proposal (C-406, Part III) is being prepared to request the $158,000 in additional funds now estimated to be required for the completion of this Works Laboratory facility.

The lump sum construction subcontract for the Radiochemistry Bldg. was awarded to the Sound Construction & Engineering Co. on their low bid of $3,744,213. Site grading in preparation for actual construction was underway at month end.

A.E.C. Directive HW-191, Modification 5, was received authorizing a new total of $1,760,000 for the design and construction of the Plot Plan & Utilities for the Works Laboratory Area.

A.E.C. Directive HW-182, Modification 2, was received authorizing $1,720,000 for the construction of the Radiometallurgy Bldg. in the Works Laboratory Area. However, the call for bids covering this work is being temporarily delayed until more complete information is available on the probable cost of other major buildings in this program (notably, Pile Technology).

The Chas. T. Main Co., architect-engineer, is working on final changes in the drawings and specifications covering the Pile Technology Bldg. Bid assemblies will be prepared immediately upon completion of this work.

Decision was reached to proceed with the call for construction bids on the Library & Files Building, and E & C are preparing final prints and specifications for the bid assemblies.

A project proposal (C-458) covering the ultimate conversion of Bldg. 3702, 300 Area, for use as the Laboratory Supply Bldg. in the Works Laboratory Area was approved by the A & B Committee and forwarded to the A.E.C.

The press of service work in support of the Technical development programs and new building equipment needs made it necessary to continue the following groups on a six-day work week: Equipment Design, Technical Shops, IBM Computing Laboratory, and the Contact Engineers engaged in new Laboratory Planning.

Arrangements were completed for transfer of the Bldg. 101 Shops craft personnel and craft supervision from Technical to the Instrument Division of Manufacturing, effective July 1. Overall responsibility for these Shops, and for 101 Area service administration, continues in the Engineering Section of the Technical Services Division.

The Mathematics Section participated in a series of meetings held with visitors from Argonne National Laboratory, Brookhaven National Laboratory and the A.E.C. concerning the routine krypton calculations performed semi-monthly. The accuracy of the present calculation was discussed completely. Additional confirmatory calculations are to be made, and some changes in basis may be made.

Analytical Division

Assurance has been given that the new GE mass spectrometer on order for P-10 analyses will be shipped during the first week in July. Difficulties with the instrument experienced by the General Engineering Laboratory have been eliminated to the extent that the instrument meets purchase specifications.

Ten different samples of Isolation Building product solution (AT), representing MWD levels from 50 to 600, have been analyzed for Pu-240 by means of spontaneous fission counting. Good precision is indicated by the fact that a continuous curve is obtained from a plot of the 240 content versus the power level. The 240 contents at 300 and 600 MWD are, respectively, 10% and 7.5% lower than those calculated from pile data.

Application of a differential method to the photometric determination of copper in bronze bath yielded a method with a relative precision of ±0.4% that requires less than 15 minutes. Triethanolamine is employed as the color development reagent.

Continued work with coulometric titration procedures has involved determinations of uranium in uranium-aluminum J slugs that are to be employed for calibration of 305 test pile measurements. A marked bias in previous results was found to result from impurities in reagents, design of the calomel reference electrodes and the interference of small amounts of stopcock grease. Elimination of these errors from the automatic titration procedure led to a set of accurate and precise results that are in close agreement with analyses obtained at Oak Ridge on the same solutions.

Work has been completed in the 234-5 Building Laboratory on the method and equipment development for recovery of roughly two large units of plutonium from analytical wastes for subsequent return to the process. Operating personnel in the laboratory have been trained and are currently processing about 25 small units of plutonium per day.

An advance in the science of alpha counting has been realized through the use of a filar microscope to measure the aperture of the vacuum chamber on the Simpson Proportional Alpha Counter. Flats on the tapers of 0.001 inch or distortions of the aperture in the amount of 0.0001 inch sensibly affect the geometry calibration of this instrument which in turn is used to calibrate all alpha counters on the plant. By using the microscope, accuracies of 0.0001 inch in the construction of the aperture can be assured. Recalibration of all counters and re-evaluation of the isotope correction are planned as a result of this work.

OHG/jw

C. H. Gregg

July 9, 1951

PILE TECHNOLOGY DIVISION

JUNE, 1951

VISITORS AND BUSINESS TRIPS

Visitor	Address	Date	Purpose
C. H. Secoy	Oak Ridge Nat'l. Lab.	6-14-51	Experimental radiations in H Pile
N. E. Ballou	Univ. of So. Calif. Radiation Laboratory	6-12-51 6-19-51	Special irradiation experiments
P. S. Flint	Knolls Atomic Power Lab.	6-18-51 6-20-51	P-10 Consultation

Business Trips of Pile Technology Division Personnel during June were as follows:

Name	Place Visited	Date	Purpose
J. W. Goffard	Pemberthy Glass Co., Hollidie Machine Co., Seattle, Washington	6-19-51	Make on-site survey of equipment.
W. A. Clark	Telecomputing Co., Benson-Lehner, Los Angeles, Calif.	6-28-51 6-30-51	Discuss thermocouple monitoring equipment.
J. A. Berberet	Vancouver, B.C.	6-25-51 6-28-51	Attend Physical Society Meeting
L. P. Bupp	North American Aviation, Downey, California	6-11-51 6-15-51	Technical discussion on graphite.
M. W. Carbon	Air Reduction Sales Co., New York City, N.Y.	6-12-51	Discussion on gases.
	Knolls Atomic Power Lab.	6-13-51 6-14-51	Hanford Assistance Program
	Linde Air Products Co.	6-15-51	Discussion on gases.
D. E. Davenport	Argonne Nat'l. Lab.	6-25-51 6-28-51	Calibrating radium-beryllium source.
J. O. Erkman	Argonne Nat'l. Lab.	6-19-51 6-21-51	Discussion on scintillation counters.
J. B. Lambert	Toronto, Ontario, B.C.	6-25-51 6-29-51	American Institute of Electrical Engineers Meeting.
G. E. McCullough	Lamp Dept., G.E. Cleveland, Ohio	6-11-51 6-12-51	Discussion on gases.
	Knolls Atomic Power Lab.	6-13-51 6-14-51	Hanford Assistance Program
	Mound Laboratory	6-15-51	Discussion regarding special irradiation.
J. F. Music	Air Reduction	6-12-51	Discussion on Gases.
	Knolls Atomic Power Lab.	6-13-51 6-14-51	Hanford Assistance Program
	Linde Air Products Co.	6-15-51	Discussion on gases.
	Massachusetts Institute of Technology	6-18-51	Self-x-ray spectroscopy.

Name	Place Visited	Date	Purpose
W. J. Ozeroff	Vancouver, B.C.	6-25-51 6-29-51	Attend American Physical Society Meeting.

ORGANIZATION AND PERSONNEL

	May	June
Physics Section	32	31
Engineering Section	50	56
Metallurgy Section	37	38
Pile Applications Section	49	52
P-10 Section	64	68
Administrative	9	10
	241	255

Two laboratory assistants and one technical graduate were hired for the Physics Section. A technical graduate transferred from the Physics Section to the Engineering Section. One laboratory assistant took a leave of absence to return to school, and two physicists terminated from the Physics Section.

In the Engineering Section, one laboratory assistant, two technical graduates, a mechanical engineer, and a physicist were hired. A chemist transferred from Technical Staff. A technical graduate transferred from the Physics Section to the Engineering Section, and one technical graduate transferred to Separations Technology.

A steno-typist transferred from Plant Security and Services to the Metallurgy Section.

Three technical graduates and two laboratory assistants were hired for the Pile Applications Section. An engineer transferred from the Pile Applications Section to the Administrative Section, and a laboratory assistant transferred from the Administrative Section to the Pile Applications Section. One engineer terminated and a technical graduate was de-activated because of illness.

In the P-10 Section, three technical graduates were hired, a laboratory assistant transferred from the Administrative Section to the P-10 Section, and one technical graduate transferred from Purchasing to P-10. One laboratory assistant terminated.

An engineer transferred to the Administrative Section from the Pile Applications Section, and two laboratory assistants transferred from the Administrative Section to the Pile Applications and P-10 Sections. A laboratory assistant was hired and will be in the Administrative Section until he receives a "Q" clearance and is placed with another section. One steno-typist transferred from Plant Security and Services to the Administrative Section.

PHYSICS

Use of Enriched Uranium

The use of enriched uranium to increase the production of Hanford Piles has been studied. The enriched material is most effective when added to piles having a low excess reactivity, for example C Pile with an enlarged water annulus, and the effectiveness decreases in those piles which already have considerable excess. The material would be used in such a way as to increase the flattened zone in the pile and thereby increase the number of tubes which can operate at the maximum permissible power output. About one-third of a kilogram of enriched uranium in the form of a U^{235}-aluminum alloy, containing three and one-half percent U^{235}, has been requested from the Atomic Energy Commission for experimental purposes.

In support of this work a method has been devised for calculating the neutron distribution in an array of a small number of highly reactive tubes imbedded in graphite.

Exponential Experiments

Work was begun during the month on the determination of the properties of a lattice consisting of standard Hanford slugs and tubes spaced on eight-inch centers. The initial measurements were made to determine the thermal neutron diffusion length in such a lattice when loaded with lithium-aluminum alloy slugs. This experiment is similar to the one reported last month in the standard Hanford lattice. The results obtained on the new lattice are 15.2 cm with cooling water present and 14.6 cm when the tubes were dry. It should be noted at this point that the values of the thermal neutron diffusion length reported last month for a similar arrangement in the standard Hanford lattice were in error. The results should have been 16.0 cm with cooling water in the tubes and 15.0 cm when the tubes were dry. All of these values, as mentioned last month, are in disagreement with theoretical calculations based upon the nuclear cross sections and present methods for calculating pile quantities.

The values for the buckling in the new lattice, both with and without cooling water, have been investigated. The experimental data have been obtained and analysis of the results was in progress at month end. Preliminary results in the case with no cooling water in the new lattice indicate a buckling which is not significantly different from that obtained with a standard Hanford lattice.

Measurements made of the thermal neutron flux distribution within the graphite of a single lattice cell were found to be in disagreement with pile theory. The reason for this disagreement is being investigated further.

An experiment was carried out in the Test Pile to determine the feasibility of measuring the flux distribution within the uranium slug by using aluminum foils to catch the fission fragments. The experiment indicated that the use of small foils would be feasible.

One of the half-gram radium beryllium sources used in the exponential and standard piles was taken to the Argonne National Laboratory to be calibrated against the standard sources maintained at that laboratory. This calibration will enable absolute neutron flux measurements to be made at Hanford.

Shielding

Gold foils were irradiated in various locations in the shielding plugs in the DR Pile shield test facility. These plugs were the ones originally fabricated to fill the test facility and do not furnish a wide choice of locations for neutron flux determinations. The activated foils are being counted at month end. After the original plugs were removed and the foils extracted the plugs were replaced with a new type consisting of iron-masonite slabs filling the entire cross section of the hole. Foils were inserted in a large number of locations in the slab structure for the purpose of mapping more fully the neutron distribution in this test facility. The object of the work is, of course, to determine whether this facility will be suitable for bulk test of new type shielding materials.

Data were also obtained on the distribution of thermal neutrons and of neutrons with energy greater than one million electron volts in the pile reflector. These data are being analyzed at month end.

Equipment for determining the stability of Brookhaven concrete samples when exposed to pile radiations has been completed. One sample has been exposed and additional samples are now undergoing exposure. Equipment has been assembled to determine changes in compressive strength and in dimensions induced by pile exposure. Equipment to measure changes in thermal conductivity has been designed and fabrication of this is nearly complete. Techniques for collecting gases liberated during exposure have also been developed, equipment fabricated, and the liberated gases have been collected during the one exposure made to date. Analysis of this gas sample is in progress.

Xenon Cross Section Measurement

Further improvements have been made in the design of the methods and equipment for separating fission product xenon from the krypton and iodine fission products which will be evolved along with it.

The position of the neutron spectrometer has been altered to allow a greater swing of the detector arm about the axis of the instrument. It has been bolted down and grouted in the new position. Preparations are being made to measure the attenuation of the neutron beam and the accompanying gamma rays in a tank of water to obtain data for an optimum design of the permanent beam catcher. The project for construction of this beam catcher and for some improvements in the instrumentation of the spectrometer has been approved by the Atomic Energy Commission.

Critical Mass of Plutonium

The experimental program for the determination of the critical masses of water tamped plutonium solutions was resumed at mid-month upon completion of the modifications to the experimental equipment. Experiments are now in progress to determine the effects of lithium nitrate additions on the critical mass of plutonium solutions.

Instrument Development

A cesium^{137} source has been prepared and calibration of the magnetic spectrometer is in progress. The beta spectrum of the cesium source has been plotted. The resolution of the instrument is indicated to be better than one percent.

ENGINEERING

Graphite Studies

The first discharge of graphite samples exposed at controlled temperatures in the temperature range of 110° to 215°C, for 193 MD/CT of equivalent test hole exposure, gave the first reliable data on the temperature coefficient of damage. Although the exposure is insufficient to give reliable results on physical or crystal expansion, the plot of the thermal conductivity ratio is a smooth function of temperature which falls off rapidly with increasing temperature. These preliminary data tend to confirm the semi-empirical temperature-damage data compiled by the Design Group of the Reactor Division. Tests are being continued to longer exposures to obtain physical length changes directly.

An extensive sampling of process tube graphite by mining and coring operations in three-tube block channels at the H Pile has given valuable information on the extent of the graphite damage in the fringe tube blocks of the pile. Crystal expansion data show that the damage is greatest in the tube channel five tube rows in from the edge. These data also permit a qualitative separation of the effects of temperature and neutron flux.

Laboratory analyses of the carbon monoxide gas used in the burnout experiment at the F Pile indicate significant amounts of oxygen are present, although a purification train containing white phosphorous was used for its removal. This is the probable explanation for the graphite burnout results previously reported in the carbon monoxide gas train. The experiment will be repeated with a pure source of carbon monoxide.

Preliminary tests indicate that no detrimental effects resulted from the rapid heating of graphite samples saturated with water. The appearance and compressive strength of these samples were not altered significantly by heating the saturated specimen to 500°C in ten minutes in an induction furnace. This test indicates that a flooded pile may be brought to normal operating temperature more rapidly than has been done in the past.

No detectable changes in the physical characteristic such as lattice spacing, physical length, or electrical resistivity of damaged graphite samples were observed after one hour exposure in an ultrasonic beam. Frequencies of 400 and 1,000 KC were used for these exposures in the generator at Washington State College.

Work is continuing on stored energy, the mechanical properties of graphite, annealing experiments, temperature dependency of thermal conductivity, surface area studies, and the pile gas problem.

Heat Transfer Studies

Flow Measurements

An extensive study of process tube water flow as a function of the pressure drop across the orifice, for various types of inlet nozzles and fittings now in use, has indicated that a variation of ten percent in the flow can exist for any given pressure drop. This is attributed to variations in the fittings and the connections to the cross header, and to differences in location of the panellit taps. The wide variations in flow will require greater precautions in the setting of the boiling consideration limits.

Full Scale Heat Transfer Tests

Operations of the full scale heat transfer equipment in the 189-D Building has consisted largely of modifications to the variable-walled heater tube constructed at the General Engineering Laboratory. This heater tube contained thermocouples of faulty design and it will probably be necessary to disassemble sections of the tube, replace the thermocouples with an improved design, and rebraze the sections.

C Pile Process Tube

Calculations of the slug temperature profile for the proposed large annulus for the C Pile has indicated that the designed rib height is too low from a heat transfer viewpoint. The designed rib height of 0.096 inches would have resulted in excessively large temperature gradients around the slug surface. It is estimated that the top of the slug would have been approximately 28°C cooler than the bottom, in the center of a tube operating with a power output of 550 KW. The calculated optimum temperature distribution can be obtained with a rib height of 0.102 inches.

Water Studies

Material procurement for 105-D Water Quality Laboratory has slowed construction to the point where it is doubtful if this facility will be completed before September 30. Operational procedures and experimental layouts are being completed so that the program will not be delayed beyond the construction date.

Preliminary investigations are in progress to determine the possibility of increasing the capacity of existing filters by the use of aluminum sulphate and activated silica for coagulation. While it appears that considerable gain could be made in filter capacity, the effect of this type treatment on film formation will require careful investigation.

Modifications are being made to part of the equipment in the 100-F Flow Laboratory to provide for investigation of the possibility of erosion of slug and process tube surfaces at velocities in the range of those proposed for the C Pile. A two-tube mock-up has been installed in the 185-D Corrosion Laboratory for studying potential relationships of various dummies and configurations. A project proposal has been submitted covering a front tube mock-up for corrosion studies consisting of 50-tube front sections.

The water recirculation system at the H Pile has been modified to provide two process tubes with dichromate free water. This system is currently operating satisfactorily with solid aluminum dummies in tubes 2275 and 2376 under Production Test 105-453-P. The system will be checked thoroughly during one operating period; the dummies will then be replaced with regular metal to determine the feasibility of eliminating sodium dichromate from the process water.

Four process tubes at the DR Pile have been loaded with standard metal slugs coated with "Dri-film" under Production Test 105-450-P to determine the radiation stability and corrosion and film formation effects of such coatings. Corrosion tests are also being conducted with "Dri-film" coated aluminum coupons in 55°C and 80°C process water.

Mechanical Development

Ball Third Safety System

The corrosion testing of the nickel plated boron-steel and boron-stainless steel balls in a carbon dioxide atmosphere, saturated with water vapor at 50°C, is being continued. This will simulate conditions which could exist in a pile following a serious water leak.

Physical tests are being run on various carbonaceous cements in a VSR hole mock-up. It is hoped that one of these cements can be used to fill gaps in the graphite blocks around the VSR holes prior to the installation of the ball third safety system.

Additional drop-time tests have been run on vertical safety rods at the H Pile. The results of these tests are in close agreement with those reported last month for the D Pile. It has been determined that where a sphincter seal is used around the rods, the rod must be maintained in a well lubricated condition to prevent the seal from retarding the rods when scrammed. The experimental seal now being used on the No. 20 rod at the D Pile continued to operate satisfactorily.

Air Weighing of Slugs

Installation of the equipment for air weighing of irradiated uranium slugs has been completed at the DR Area viewing basin along with equipment for chemically cleaning the slugs prior to weighing. The equipment is performing satisfactorily although the time required for weighing the slugs is quite long. If initial results indicate the need for weighing large numbers of irradiated slugs, a more rapid method will be developed.

Ruptured Slug Removal Equipment

The special equipment designed for transferring slugs from a tube containing a ruptured slug to an adjacent tube was used satisfactorily at the DR Pile this month. Work will be continued on this type of equipment to reduce the required time and the hazards encountered in handling such cases.

C Pile Tests

Assembly of equipment for testing the horizontal rod gland seal will be started immediately. The rod replica has been fabricated, the testing equipment is completed, and the prototype gland seal is scheduled to arrive from the fabricator very shortly. Work is progressing satisfactorily on the full scale horizontal rod mock-up. The enlargement of the 189 Laboratory is approximately 95 percent completed at this time. The design of the simulated graphite stack and rod guide assembly has been completed and machining of the graphite has been scheduled. Drawings for the graphite bowing apparatus are nearly completed. A Project Proposal has been submitted under which the Plant Engineering Division will complete the layout designs and handle the construction of the full scale mock-up. Component parts have been ordered and it is expected that construction of the mock-up will be started within the month.

Testing is continuing at White Bluffs Test Tower on the vertical rod and Ball 3-X System for the C Pile. These tests are being run to re-evaluate the operating characteristics of the C Pile Ball 3-X System, which is slightly different from the design to be used for the C Pile. Measurements on ball dropping rates have shown that the first balls reached the bottom of the graphite 1.62 seconds after tripping, and the slot is completely filled after 6.1 seconds. With the rod fully inserted into the slot, these times are increased to 1.76 seconds and 14.7 seconds respectively. These times are approximately the same as for the ball 3-X installations which are to be made on the present piles.

Testing of the pressurized "C" and "D" machines is continuing in the 189 Testing Laboratory; it has been demonstrated that slugs can be pushed into the process tube without severe galling or scratching of the cans provided no attempt is made to back-seat the charge from the rear end. In case the slugs are pushed back from the discharge end, severe galling results apparently because of the distortion of the process tube which is bowed to simulate graphite growth. A method of applying oil during charging and discharging is being developed to determine if this will prevent galling.

Tests have been successfully completed on the flapper nozzle using rejected uranium slugs with a water flow of 48.4 gpm and an inlet header pressure of 400 psig.

Design, fabrication, and procurement of material for the cored graphite tests are practically complete. Restacking of the 305-A nine-tube mock-up is scheduled for the first week in July. The objectives of this test will be to evaluate the effects of coring on the removal of stuck slugs, the development of special tools and techniques for such work, and development of removable gun barrels.

METALLURGY

Uranium Billet Casting and Rod Fabrication

As a consequence of finding of a test stringer of Hanford cast sample eggs with above-normal TDS values, arrangements have been made to obtain eggs from billets more frequently in order to determine whether there is a downward trend in billet quality.

Uranium Canning

As a part of the program for establishing improved inspection standards and procedures, 160 bare slugs having various types of physical defects were canned and autoclaved with ten thermal cycles. Measurements of 22 slugs before canning and after stripping showed no unusual dimensional changes resulting from this treatment; however, there was evidence that certain types of slug defects may contribute to the formation of voids in the braze and bonding layer. Continued studies have demonstrated that for potential failures, thermal cycling increases the severity of the autoclave test. Tests are now being run to determine whether sound slugs are deleteriously affected by the cycling treatment.

The experimental phases of the welding procedure re-evaluation program have been completed. A production trial of the arc-positioning quadrant mechanism was favorable, and arrangements are being made to equip all production welding machines with similar devices. This installation will not be made, however, until 100,000 slugs, produced under existing conditions have been loaded into higher power regions of the piles.

A non-destructive method of testing for Al-Si penetration of aluminum can walls is being investigated. This technique depends on the height of a given x-ray diffraction peak of the silicon pattern; the thicker the can wall the lower the diffraction peak will be. Experiments to date have given reproducible results on a sample covered with eight mils of aluminum.

Uranium Metallurgy

Production Test 313-115-M covering the processing of alpha rolled uranium rods cold drawn to final size is now in progress. About one percent of the 693 slugs cut to length from the 19 rods were rejected at machining inspection due to cracks or surface flaws. This frequency compares with the normal rejection rate at this station of about four percent for slugs machined from rolled rod. Preliminary data indicate that total machining and pickling rejects are about the same for the cold drawn rod and for normal rolled rod.

Warp, length, and diameter measurements have been completed on slugs processed for Production Test 313-113-M which is concerned with uranium rod rolled at temperatures between 300-600°C. These data will be given to the Pile Engineering Section prior to preparation of the 100 Area Production Test of this material.

Dilatometry

A re-evaluation of physical methods for measuring the degree of transformation of canned uranium slugs on the basis of the volume transformed, shows dilatometry to be more reliable than sonic or Metals Comparator methods.

A correlation of test results between the production dilatometer in the 313 Building and the laboratory dilatometer in the 3706 Building shows that a real systematic difference exists in the expansions indicated by the two pieces of equipment.

Considerable development work on the 234-5 interferometer has been completed. Adaptation of a 35 mm. camera for photographing patterns from this instrument is proceeding satisfactorily.

Radiometallurgy

Four irradiated uranium slugs ruptured in the pile units during the month. The slug which ruptured in tube 3179-H on 6-2-51 was classed as a side failure; the slug was canned on 4-12-50. A side rupture about 1-1/4 inches long and adjacent to the cap, occurred on 6-13-51 to a slug canned on 5-17-50 and located in tube 2278-H. A slug with a cap failure, canned 8-1-50 and charged in September was pushed from tube 1476-D with no difficulty after being discovered June 29. Examination showed a patched weld. These three pieces were canned and shipped to the 111-B Laboratory for more detailed examination. The fourth defective slug, found in 1475-DR on June 27, had not been removed from the process tube at the month's end.

The ruptured slug from tube 1368-DR was removed from the process tubing in the 105-H basin. This slug, obviously a side failure, had been exposed in the pile for quite a few hours before shutdown and, when examined, consisted of three large and numerous small pieces; however, the total uranium loss could not have been greater than 20 percent. All pieces were canned and shipped to the S Division for dissolution.

An irradiated "B" metal slug was also segregated because air bubbles were noticed coming from the slug, but cursory examination did not reveal the location of the break.

A start was made in the program of examining normally discharged irradiated fuel and poison elements from the H-10 loading for corrosion, dimensional changes, and other effects of exposure in the piles.

Modification of the 111-B Building is 75 percent complete. Installation of the dry storage unit, health monitoring system, and air exhaust system is to be completed the first week in July.

The architect engineer's specifications and series of prints for the permanent radiometallurgy building were reviewed to assure that the building would be satisfactory in every respect. Comments on the design were prepared jointly by the Contact Engineer and representatives of the Instrument Section of E & C and the Metallurgy Section for presentation to the architect by the engineer assigned to the project.

P-10 Alloy

The third and fourth ruptured P-10 slugs swelled to such an extent that removal from the process tube was impossible until the tubes were pushed from the pile. It was found that the outer can walls were mechanically bonded to the process tubes. Upon attempting to dislodge the pieces from the tubes the caps fell off, indicating that the caps had been forced from the cans. The white oxide found inside the cans had the same appearance and characteristics as observed in the two previous ruptures. The slugs and cans were mutilated when maintenance personnel removed them from the tubes, consequently, very little information could be gained from visual examination. The cap from the fourth ruptured slug (1886-H) has been set aside and will be examined when facilities become available.

Radiometallurgy

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The fifth P-10 rupture, discovered on June 26, 1951, in tube 1584-H, was successfully pushed from the tube. Preliminary reports state that this piece has a milk bottle shape similar to that of the second ruptured piece.

The metallurgical investigation of unirradiated P-10 alloys is being concluded with a series of gas analyses on a group of experimental heats. The samples are being analyzed without fusion in a tube degassing furnace. The surface fraction is being removed at 350°C and the dissolved fraction at 550°C.

The equipment necessary to study the penetration of stainless steel by uranium in an environment of hydrogen has been assembled, and exploratory tests are in progress.

Corrosion

Preliminary corrosion tests of two weeks duration in process water indicate that weight losses of half hard 52S aluminum, Al + 0.33 percent Zr, and Al + 0.22 Mg alloys compare favorably with half hard 2S aluminum alloy.

Corrosion tests of three heats of Esco 40-T (18-12 Cr-Ni low carbon) stainless steel were conducted in boiling UNH solution at the request of the E & C Division. Corrosion resistance was found to be superior to that of T-309 SCb stainless steel.

Corrosion tests on Silver Graphalloy bearing material exposed to concentrated-neutralized RAW solution have been completed. This material was found to be dimensionally stable and resistant to corrosion in this environment.

Special Requests

Under the Special Request Program, 128 process tube slugs, three receptacle slugs, five test hole pieces, and 14 thermocouple slugs were processed, inspected, and/or identified.

Miscellaneous

The correlation of magnetic reluctance readings with corrosion data has shown that the reluctance test is capable of differentiating between good and bad stainless steel welds in the Redox plant. The establishment of an accurate acceptance limit for this test is dependent on the development of highly sensitive probes which are capable of measuring accurately rather low magnetic reluctances.

In conjunction with the Redox plant weld test program, an electrolytic surface etch test has been developed and used in the field. In this test the stainless steel becomes bright while the stainless steel diluted with carbon steel becomes dark grey to black.

The determinations of the coefficient of thermal expansion of 1/4 inch Kovar "A" tubing and 705 hard glass have been completed. It was found that a satisfactory butt-type seal should be obtainable if the same annealing conditions of the specimens tested are reproduced in the larger lots used by the glass shop.

The Metallurgy Section has begun work to determine the nature and composition of a triangular piece of material emitting very high energy beta radiation with an accompanying gamma radiation of lower intensity. This material was discovered in the can opening room of 108-B.

A study of the cold welding of aluminum and copper tubing has shown that increasing the pressure to a maximum value, cleaning the interior of the tube, and increasing the roll diameter result in a longer bonded section. Annealing of half hard aluminum tubing seems to have the beneficial effect of increasing the minimum wall thickness adjacent to the bond.

PILE APPLICATIONS SECTION

Area Physics Work

Significant gains in operating level were made at B and F Piles this month as the result of concentrated attention on the monitoring of temperature trend and the selection of optimum control rod configurations. A document entitled, "Rod Control Techniques for Adjusting Temperature Distribution" was issued as an aid in conveying the "feel" of control rod effects to the operating personnel.

Studies made from IBM data at DR Pile indicate that the distorting effects of the recent water leak have virtually disappeared, and the operating level has returned to normal.

No unusual reactivity effects were noted during the month except at H Area, where displacement of considerable numbers of high exposure H-10 charges by regular metal has resulted in a fifty inhour increase in pile reactivity.

Pile tests of the GEL neutron chamber have been carried out for flux densities corresponding to several power levels. The results obtained indicate that the chamber has good performance characteristics as well as adequate structural stability.

Assembly of the uranium injection equipment for the test of the delayed neutron rupture detection installation has been completed with delivery of the flow-meter. Adequate chamber background data have been accumulated, so that the check of the sensitivity of the installation may be made as soon as pile operating considerations appear favorable.

An investigation has been made of available equipment which can be adapted for use in IBM temperature traverse installations, with the expectation of improving accuracy, shortening traverse times, and eliminating data card handling in the operating areas. Consideration is being given to the best available installation for C Pile as well as the most practical revision of equipment possible for the present piles.

Test Pile

The test pile was in operation for seven days during June. Most of this time was used for routine P Division testing. Part of Special Work Request 200 was completed. This request was to determine the effect of surface impurities on the uranium egg tests and to evaluate the sensitivity of the test stringer spacing. As a result, changes will be made in the method of preparing the billet egg samples for testing. They should be machined to consistent dimensions rather than cleaned and tested in the crude cast shape as at present. In addition, it is expected that a spacing of 8-1/2 inches from center to center will be used rather than the 4-1/4 inch center as used at present.

Functional testing of thorium slugs for pile flattening purposes has been started.

Pile Reactivity Status

A summary of the reactivity status of each operating pile near the end of this report period is given in the following table:

Pile	B	D	DR	F	H	Totals at end of Report Period
Control Rods	165	170	155	131	121	
Xenon	635	626	676	629	682	
Dummy Columns	0	20	11	28	25	
Hot Reactivity	1332	1302	1122	1289	883	
C_o Allowance	-308	-376	-206	-426	-179	
Cold, clean	1024	926	916	863	704	

Reactivity gains at B, D, and F Piles are the result of the increase in average exposure of the metal in these piles during the month. Two large metal pushes account for the loss in reactivity observed at DR Pile. The gain at H Pile is the result of replacing a considerable number of high exposure H-10 tubes by regular metal. This return to normal loading may also be the cause of the observed increase in the overall coefficient allowance.

Area Engineering Work

Tube Temperature Rise Limitations

Continued annealing of central graphite damage permitted the tube temperature rise limit in the center of the 0.240 zone at B Pile to reach vapor binding limitations at 350 psi riser pressure. However, the pile level is limited by lower graphite temperature rise limits in the surrounding zones. The F Pile under P.T.-105-435-P, under which graphite temperatures up to 420°C are

now authorized, is already operating on vapor binding limits in the central zone. Inlet riser pressure at F was increased to 365 psi during the month, but had to be reduced when a small, but persistent leak became more severe. The increased temperature rise limit at 365 psi resulted in a gain of eight MW. At month's end, the pile was down with a ruptured slug in tube 4380. This is the first fringe zone rupture in the 1950-51 series of ruptures.

Purge During Operation

The procedure of purging in operation which is now routine at DR was successfully performed for the first time at the D Pile this month. No unfavorable effects were noted, although some partial plugging of cross header screens on C and D risers was suspected. This did not impose operational restrictions on the pile.

Corrosion Studies

Two tubes were discharged from the DR Pile under P.T.-105-362-P at a concentration of 650 MWD/T. Corrosion data based on water weighing for these two tubes showed apparent corrosion rates 20 percent and 40 percent higher than rates observed at F Pile under P.T.-105-103-P.

Air weighing data were obtained on several slugs before the film was removed. Preliminary indications are that weight loss measured in air is greater than when measured from water weighings. No significant air weighing data were obtained from cleaned slugs, because of difficulties with the slug cleaning equipment. A galvanic couple between the stainless steel container and the aluminum slugs caused the slugs to turn black and lose weight. An insulated container is being provided.

Ruptured Slugs

There were five ruptured slugs this month. These are tabulated below:

Tube No.	Date of Failure	Time in Pile-Days	Power Slug-KW	Local Water Temp.-°C	Position in Tube From Front
3179-H	6-2-51	347	3.9	65	50
2278-H	6-13-51	338	6.6	57	49
1584-H	6-26-51	363	P-10 Slug	51	45
1476-D	6-28-51	298	6.9	48	35
4380-F	6-30-51	402	2.9	40	33

An examination was made to determine whether the tube bearing blocks in the 2562-H channel were broken during the difficult removal of the ruptured slug from this tube. This channel was borescoped on June 26, 1951, and the blocks were found to be broken from the point where the rupture occurred to the rear gunbarrel. A keystone shaped segment of the graphite was broken out of the top of the blocks and this in turn was broken into many smaller pieces. A few of these had fallen into the channel and have been pushed out. The stubby blocks were also found to be fractured.

Special Irradiations

Monthly Status

The monthly statistics on the Special Request Program are tabulated below:

Special Request samples charged	9
Special Request samples discharged	28
Samples on hand awaiting charging	896
Samples now being irradiated	347
Samples awaiting shipment	70
Samples shipped during June	15

Material Testing Program

Creep Test of Pins (KAPL-M-105, P.T.-105-400-P)

The object of this test is to determine the creep rate of small diameter pins under high internal pressure.

Although reasonably good creep data had been obtained from slug No. 2 for the first week after charging on May 12, continued deterioration of lead wire and insulation was indicated by decreasing resistance to ground, and on June 12, the heater failed. A third slug is being designed at KAPL for insertion in a water-cooled tube. This change from the dry tube is expected to improve the dependability of the equipment.

Creep of Zirconium (Weight Load) (ANL-159 Proposed)

Fabrication is continuing on the water-cooled W through-hole mock-up. This facility will serve to test the cooling arrangements and to check the test equipment when received.

LVDT Calibration (WAPD-M-103, P.T.-105-379-P)

The electrical resistivity of the zirconium specimen has continued to increase, but at a lower rate than during the previous test. No growth of this zirconium specimen has been observed.

Creep of Zirconium (Pneumatic Loading) (WAPD-M-106, P.T.-105-430-P)

Slug #W-106-1

This slug was discharged during the May shutdown after no satisfactory creep data had been obtained. At the time, it was thought that fractional drag in the test slug prevented free creep of the specimen. Recently obtained information on the behavior of zirconium now indicate that strain hardening had occurred, reducing the creep rate and giving the impression of binding.

Slug #W-106-2

This slug is now being stressed outside of the pile so that a satisfactory creep rate will be established by July 11, the charging date.

Thermal Conductivity of U-Zr Alloys (ANLM-172, P.T.-105-432-P)

An experimental assembly will be inserted into a process tube to determine the effect of irradiation on the thermal conductivity of U-Zr alloys and to monitor the neutron flux at the slug location. The equipment has been received and is being prepared for charging during the July 16 shutdown.

KAPL Fuel Element Tests (Beta Experiment, SR-79, P.T.-105-180-P)

The influence of pile irradiation on fuels and fuel assemblies in contact with liquid metal coolant is being determined.

On June 5, slug #R-5 was discharged as scheduled from tube 0865-F. The charging of the next slug was cancelled when it was discovered that the front end of the dry process tube had receded into the gunbarrel about ten inches, and severe wrinkling had taken place in the middle section of the tube. This tube had been assembled without a front Van Stone flange to make provision for thermal expansion during pile operating conditions. Apparently at the high pile temperatures, the mechanical strength of the tube was insufficient to overcome friction in the gunbarrel and continued heating and expansion caused wrinkling. On cooling, the tube regained strength and contracted. This process has been repeated about 75 times since installation of the tube in August, 1948.

No further irradiations of Beta slugs in uncooled hot zone tubes will be attempted.

Controlled Gas Atmosphere Experiment - Project C-410

This equipment is designed to permit accurately controlled temperature conditions for the studying of the C - CO_2 - CO reaction under pile conditions.

The fabrication of the test hole facility has been delayed by shop priority and is now scheduled for August 1 at Schenectady. Calculations on the expected temperatures in the heated section show that alundum rather than diatomaceous earth should be used as the insulation between the heater and the cooling jacket and that there is sufficient power capacity of supply a 33 to 65 percent overload at full operating temperature.

The gas system mock-up in the 100-D Area Maintenance Shop is 80 percent complete.

Measurement of Uranium Slug Temperatures (P.T.-105-411-P)

The data obtained on the thermocouple slug #411-1 before failure indicated a central uranium temperature of 202 to 239°C at a power level of 80,300 Chu/hr/sq. ft. of radial surface or 257 KW per tube. Uncertainties of actual central uranium temperature result from incomplete knowledge of whether the thermocouple reads the temperature of the side wall of the internal well or the temperature of the bottom of the well. An improved slug has been designed to correct this uncertainty.

Upon examination of the thermocouple junction box during the shutdown of June 5, the thermocouple conduit from the slug was found to be flooded with water. Since there was no way to correct the leak and dry the lead wires, the test was discontinued.

P-10 PROJECT

Production-Glass Lines

A new method of drying slugs suggested by P Division personnel was investigated this month. One supply cask was "dry" loaded with ten slugs outside the 105-B Building basin and carried over to the 108-B Building Can Opening Room for inspection. The inspection revealed that nine slugs were dry and the tenth slug had only one small spot of water remaining. The "dry" loading was accomplished by removing the slugs from the basin, shaking off the water droplets, dipping the slugs in alcohol, shaking again, and then loading the slugs into the cask. The cask was then placed on a drying manifold for approximately thirty minutes. Drying by this method may permit cancellation of the slug dryer fabrication which is planned by Project C-412 for installation in the Can Opening Room.

A program to reduce or eliminate leakage from the Gast compressors used in the recycle system is under way at the General Engineering Laboratory and Hanford.

Liaison with the General Engineering Laboratory indicates that design of all components of the stripper addendum to the Metal Line has been completed. Procurement delays have been encountered which will probably delay fabrication, testing, and shipment by approximately six weeks.

Hazard Control

No P-10 Section or related personnel exceeded the working limit for internal tritium concentration during the month.

Excessive tritium air contamination was experienced in the Metal Line cell room, process hood, and furnace hoods during a construction outage. The main exhaust fan above the metal line cell room was out of service and the ventilation exhaust duct was blanked off. Although all known sources of tritium contamination had been removed from the cell prior to the outage, excessive tritium air contamination was present in the metal line cell room, process hood and furnace hood. This condition was remedied but the source of the contamination remains undetermined. This situation is being investigated to determine whether the contamination was due to some operating error or if it is some inherent fault of the metal line.

Excessive beta and gamma radiation was experienced in the vicinity of the Can Opening Room on June 7, 1951. Further investigation disclosed that a small pie shaped chip of metal, approximately 0.01 cubic inches in volume, was present near the roller can opener and had an extremely high radiation level. Filings have been removed from the chip and are stored inside a lead cave pending further investigation by the Metallurgy Section.

The product from one glass line extraction was inadvertently pumped to the stack when a stopcock between the by-product ion gage and the by-product sampling manifold was left open from a previous operation.

A job procedure system with an individual radiation exposure card was placed in effect in the 108-B Exclusion Area during June for all General Electric Company personnel who enter radiation zones. This system replaces extended Special Work Permits and composite time sheets. If the new system is successful on a six months trial basis, it will be adopted as procedure.

Development

Production Tests

Eighteen Production Tests have been completed during June. These tests included studies on stepped extractions, canned slug extraction, magnesium aluminum additions, and evaluation of alternative stainless steels.

Mg-Al Additive to Extractions

Sufficient tests were made to complete the existing data on extractions using Mg-Al to liquify the Li-Al slugs and evolve the product at a low enough temperature to avoid diffusion losses. Results of these extractions show yields approaching those achieved by the stepped extraction technique but the product fraction is of low purity as hydrogen is introduced by the Mg-Al slugs. The stepped extraction technique will be used in production for capacity reasons as well as product purity reasons since each Mg-Al slug charged to the furnace reduces the Li-Al charge by one slug. Such a technique would reduce production approximately 50 percent.

Evaluation of Alternative Stainless Steels for Furnace Tubes

A study was undertaken to determine if it is possible to substitute type 304 stainless steel for 347 stainless steel in fabrication of furnace tubes and pots. This consisted of a determination of the hydrogen diffusion and sorption losses occurring under controlled conditions in both materials. Inconclusive results were obtained since it was difficult to obtain vessels of the two steels fabricated and treated in identical fashion. Although the tests indicated that 304 stainless steel vessels will probably be satisfactory, final adoption should await a review of additional tests now under way.

Glass Line Revisions

Flow diagrams are complete and final drawings have been started for the glass line which will process air contaminated product obtained from glass equipment. Proposed stainless steel vessels for the palladium used in product sorption and the magnesium used in oxide decomposition were completed and testing has begun.

The metal transfer system to be installed on one of the glass lines to permit use of metal shipping containers is being assembled for complete testing in laboratory space available in the basement of the 108-B Building.

Metal Line Plant Assistance

A comparison of seven Metal Line production runs to seven glass line production runs is indicated in the following table:

From these data, the Metal Line can be compared favorably in all respects to the glass lines with the possible exception of product purity which is lower probably as the result of non-uniform slug heating and consequent inadequate slug outgassing. It is pertinent that this effect is not characteristic of the metal equipment but is that of an appendage. The Metal Line data show greater variance from run to run probably since Bourdon type pressure gages of high variance are used for all but the final product volume measurement, which uses a manometer, while the glass lines use precise manometers for all measurements.

Detailed curves of Metal Line run data indicate that significant amounts of energy above that required to melt the slugs are absorbed at certain critical points during gas evolution. Also, product purity is affected by the time taken to outgas, presumably an exchange of tritium and hydrogen occurring. Special Production Tests are being activated in the glass lines to develop these observations further.

Considerable effort is being expended to evaluate the problem of temperature gradients among the slugs in the Metal Line furnace pot during the outgas and product evolution steps. Two gradient problems are of prime concern: (1) the fact that slugs on the outer periphery of the pot are cooler than those in the center; and (2) the fact that the tops of all the slugs are cooler than the bottoms which are immersed in lead. These problems stem from the fact that the furnace pot is heated from the bottom by radiation from Glo-bars and accordingly the pot walls are cooler. Experimentation showed that elimination of the air sweep from the room past the top of the pot increased the temperature of the top of the pot from 160°C to 248°C and the sides from 265°C to 298°C when the controller was set at 350°C for outgassing.

Cold welds by pinch-off techniques are used for every other sample removed from the Metal Line to permit comparison with glass ampule sampling. No significant difference can be found between the analyses obtained using glass and metal samples. The proposed design of the continuous sampling manifold between the Metal Line and the mass spectrometer has been completed and fabrication started.

Process Development

Two specialized glass lines in the Instrument Development Room were completed and tested this month. One line incorporates a quartz spring micro-balance capable of detecting approximately 8-20 micrograms change in weight to study the sorption of hydrogen, tritium and other gases on solids of importance to tritium processing. Routine testing with this line will begin as soon as building vibration and other factors are fully evaluated. The second line utilizes gas sorption principles to determine the effective area of adsorption bed materials such as are used in air contaminated product and stripper lines. The effective areas are calculated from experimental data according to the theories developed by Brunauer, Emmett, and Teller and hence the technique is known as the B.E.T. method. Initial surface area measurements of palladium black made with this equipment indicate areas of the order of twelve square meters per gram, and further that heat treatment materially reduces this area.

The original components of the first Instrument Development Room line are being evaluated further, particularly the thermal-conductivity equipment which shows promise for specialized "on line" experimentation.

The first phase of cold stripper line studies has been completed with favorable results. The tests consisted of stripping hydrogen from helium in an intermittent manner at increasing bed saturations as will occur in production practice. A second cold line has been completed and data have been taken of static hydrogen

The magnesium filled reaction vessel for decomposition of water, which will be used on the revised glass line handling air contaminated product, has been obtained, experimental apparatus has been assembled, and testing has started.

Liaison with Project Engineering

Liaison with the Design Division of Project Engineering indicates that 30 percent of the detailed design of the metallurgical facilities has been completed and that 90 percent of all other detailed designs of Project C-412 has been completed.

The Consolidate-Nier mass spectrometer was moved from the third floor of 108-B Building into the new second floor laboratory without incident. The Analytical Division has occupied the laboratory on the second floor, thus releasing the space on the third floor for the proposed Health Instrument survey station and office.

Production and development activities were curtailed from June 25, 1951, through June 30, 1951, for the purpose of moving the mass spectrometer and also installing a new 50 hp. ventilation exhaust motor in place of the present 30 hp. motor. The exhaust capacity of the ventilation system will be increased from 40,000 cfm to 58,000 cfm; at months end, balancing of the ventilation system remains to be done.

Bids on the Product Storage Building, a 14 ft. - 6 in. x 27 ft. x 6 ft. - 9 in. building with twelve inch reinforced concrete walls and concrete slab roof, will be opened on July 17, 1951.

Revised construction schedules for Project C-412 have been received. These schedules indicate completion of Project C-412 prior to December 31, 1951, with two or three additional major production outages required.

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 _____
G. E. McCullough
Division Head

GEMcC:jr

July 9, 1951

SEPARATIONS TECHNOLOGY DIVISION

MONTHLY REPORT
JUNE, 1951

VISITORS AND BUSINESS TRIPS

C. H. Secoi, Oak Ridge National Laboratory visited this site June 14 for plutonium handling equipment discussions.

M. R. Fenske, Consultant from Pennsylvania State College visited Hanford June 15-16 for Redox consultations.

C. R. Johnson of DuPont visited here June 19-21 for 234-5 consultations.

N. E. Bellou of the Radiation Laboratory, Berkeley, California, visited Hanford Works June 12-19 to discuss fission product chemistry.

W. W. Carter, Los Alamos Scientific Laboratory visited here June 19-20 for consultations on neutron and alpha counting.

S. G. English, AEC, Washington, W. D. Urry, United States Air Force, D. L. Northrup, F. T. Hageman, Argonne National Laboratory and G. M. Kavanaugh of Brookhaven National Laboratory visited Hanford Works to discuss methods of calculation of data.

J. T. Stringer visited the General Engineering Laboratory, Schenectady, June 4-12 for Long Range Bearing Program consultations.

A. R. Maguire visited Proportioneers, Providence, Rhode Island, to inspect and follow testing of prototype pulse generator for the TBP Plant from June 7-20.

Separations Technology Division

B. Weidenbaum attended an AEC Meeting on Air Filtration at Harvard University June 12-15.

R. F. Manese, C. Groot, D. P. Granquist, C. H. Holm and K. M. Harmon, O.F. Hill, W. E. Roake and R. E. Burns attended an ACS meeting in Seattle June 8-9.

J. B. Work attended an AEC Waste Processing meeting at Mound Laboratory June 27-29.

R. L. Moore visited Knolls Atomic Power Laboratory, Oak Ridge National Laboratory and Argonne National Laboratory to consult on progress of various separations processes from June 22 through 29.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	May	June
Administration	2	2
Special Assignment	3	3
Research Section	35	37
Development Section	75	80
Process Section	31	31
	146	153

Development Section: Four Tech. Grads, one Chemical Engineer and one Chemist were added as new hires. One Steno-Typist C was terminated.

Process Section: One Tech. Grad transferred from Pile Technology Division and one Chemical Engineer was terminated.

Research Section: One Tech. Grad. transferred from Technical Services, one Chemist, one Lab. Assistant D and one General Clerk B were added as new hires. One Lab. Assistant D was terminated.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Twenty runs were processed at B Plant under Production Test 221-B-10, Process Volume Reduction, with 3.5 grams of bismuth per liter in extraction and with decontamination volumes at 56% of the September 1946 standard. The total Canyon Building loss corrected for americium and curium was 1.59%. The loss for eighteen runs made in accordance with the September 1946 standard was 1.39%. Extraction waste rework was omitted in the foregoing series of runs and will also be omitted in the current runs being processed with 2.5 grams of bismuth per liter in extraction and with first and second decontamination cycles volumes at 49% and 56% respectively. A series of 73 runs at T Plant

wherein extraction waste rework was omitted showed an increase in dF from 5.10 to 5.27 between the first ten runs of the series and the last ten runs. A similar study at B Plant involving 53 runs showed an increase in dF of 4.98 to 5.11.

Recycling the extraction waste effluent to the precipitation tank following centrifugation for seven runs at B Plant resulted in an average extraction loss of 1.69%. The average loss for eighteen runs processed without recycling was 1.39%. These values are uncorrected for americium and curium.

The frequency of runs requiring additional acid to complete solution of product cakes was lowered approximately 20% at T Plant by revising procedures to obtain (1) improved sequence of jet operation, (2) improved tank temperature control, (3) more stringent observation to assure emptying of the precipitation tanks, and (4) reduction of the product centrifuge water flush following cake removal to 50 pounds.

Concentration Buildings

Product in miscellaneous wastes from the Purification and Metal Fabrication Buildings (234-5) was recovered in seven runs at B Plant. Of these the first three were composed of permanganate flushes and B-1-S (nitric pickling solution), C-0-S (coating stripping solution), and B-2-S (sulfuric pickling solution) respectively. The total losses were 0.36%, 0.51%, 0.50% of an average run. Two runs of the caustic scrubber solution were processed beginning with the lanthanum fluoride product precipitation. Total losses were 0.39% and 0.23%. The lower loss of the latter run was obtained after the lanthanum fluoride product precipitation was reworked from 0.53% to 0.17%. The remaining two runs were composed of oxalate contaminated material held in the Isolation Building since May 1950 and additional permanganate flushes. Total losses for these runs were 0.47% and 0.65%. A recovery run, of Isolation Building recycle and cleanout material, was processed at T Plant with a total loss of 0.55%.

Two runs were processed at T Plant with the added recycle composed of a blend of normal Isolation Building recycle material and Purification Building supernatant solution concentrates (SN-3) which had been treated with hydrogen peroxide to lower the concentrations of iodine and oxalic acid (Production Test 234-1). Total waste losses beyond the point of recycling (lanthanum fluoride by-product) were 0.17% and 0.19% respectively. The average for recent stand runs is 0.25%.

Three runs were processed with barium sulfate precipitations (0.26 g/l Ba, 0.05 M SO_4) made in combination with the lanthanum fluoride by-product precipitation in an attempt to lower the radioactivity associated with PR Cans. PR Can readings for the three runs were 36, 28 and 32 mr/hr. The average of the preceding and following five standard cans were 125 mr/hr and 60 mr/hr. The lanthanum fluoride by-product precipitation losses were 0.067%, 0.04% and 0.05% respectively, lanthanum fluoride product precipitation losses were 0.16%, 0.18% and 0.24% respectively, and metathesis losses were 0.03%, 0.05% and 0.04% respectively. Although the procedure was effective in reducing

the radioactivity level in the PR can, no further utilization of this procedure is planned because of complications which developed in the Isolation process. Average losses for standard runs are 0.07%, 0.24% and 0.03% respectively. Decontamination has improved in general at B Plant with PR Can readings averaging 50 mr/hr for the last five runs processed. This may be the effect of elimination of the extraction rework and/or the effect of lower bismuth concentration in extraction. Decontamination was essentially unchanged at T Plant where the average PR Can reading was 57 mr/hr.

Isolation Building

Three runs have been processed under Production Test 234-3 to provide plutonium peroxide for direct hydrofluorination in the 234-5 Building. Filtration of the second cycle peroxide precipitate through a Filtros "E" block, similar to those used in the N-2 filter, was found to be satisfactory for filtering the peroxide precipitates. Filtrates contained 0.4% of a run in two cases. In the third run, the seal between the filtros block and the lucite bucket failed and allowed approximately 20% of a run to pass. Some difficulty has been observed in obtaining quantitative transfer of product solution to P-2 (second cycle precipitator tank) in the attempt to maintain the product concentration at 40 g/l (standard is 20 g/l). Transfer of the second peroxide precipitate as a slurry has resulted in some deposition in the sight glass of the existing transfer line from P-2 tank to the filter unit.

Oxalate contaminated product received from the 234 Building in May 1950 was placed in storage after initial attempts at recovery led to some difficulties. This material was recovered by destroying the oxalate with potassium permanganate in 231 Building CT-1 tank and recycling the oxidized solution to the Concentration Building.

Runs received from the B Plant Concentration Building where barium sulfate precipitations were made in conjunction with the lanthanum fluoride by-product precipitations resulted in barium sulfate precipitation upon the addition of sulfate prior to the first cycle peroxide precipitation. It was possible to clean the tanks by treating the precipitate with 20% potassium hydroxide followed by dissolution in 25% nitric acid. Since the final product solution from these runs contained less than 50 parts of barium per million parts of product the material was released for further processing.

Waste Evaporator

The first cycle waste evaporator was operated at maximum rates during the month. The average evaporation rate for twenty-four batches varied from 500 to 650 gallons per hour at volume reductions (based on evaporator data) of 71 to 78%. Condensate analyses ranged between 0 and 23 beta counts per minute. A sample of the condensate in the scrubber (run W-26) analyzed 0 beta counts per minute per ml. No foaming difficulties were experienced. Underground storage tank inventories showed evaporation reduction ranging as high as 85% indicating possible accumulation of solids in the evaporator. Visual

inspection revealed a deep layer of solids on the bottom of the tank. This was dissolved successfully in hot water and hot 0.5% citric acid solution. Operating data with the clean unit were not available at month end.

Purification and Fabrication Building Plant Assistance

It was necessary to use the agitator equipment in Hood No. 3 to effect solution of the material in eighteen sample cans which had been dried for off-site shipment. Batches X-11-6-109, and 110 of this group exhibited abnormal behavior during the transfer of the contents of the sample can to the reactor. A yellow precipitate similar in appearance to plutonium(III) oxalate formed in this purification vessel. Supernatant losses and hydrofluorination losses were normal and the button analyses did not reveal any irregularities in purity.

Production Test 234-3

Four batches of plutonium peroxide cake have been processed through a hydrofluorination cycle in Hood 8 in accordance with Production Test 234-3. All fluorides produced to date have been lumpy and have been manually crushed prior to reduction in Hood 10. In several cases a combination of the water which accumulates on top of the material and gas evolution during the drying or hydrofluorination cycle has resulted in water overflowing the boats into the scow and in some cases into the furnace tubes. Preliminary results indicate lower than normal production plant yields (83 to 96 per cent) on reduction and acceptable button purities.

RMA Shakedown

Sixty stand-in runs have been processed in Task I of the RMA Line at months end. The original runbook used for the beginning of these stand-in runs is now ready for virtually a complete revision. It was necessary to discontinue the use of lanthanum as a stand-in material for the test runs on Task I equipment. Alpha emitters believed to be actinium and thorium have been found to be present as impurities in the lanthanum salt which was used. Counts on some samples indicate that disintegrations were occurring at the rate of 1000/min. per gram of salt in some cases. A concentrated nitric acid flush of equipment removed the lanthanum salt and all traces of the alpha active material.

Production Test 234-1

Six runs have been processed under Production Test 234-1 supplement A. The amount of hydrogen peroxide has been progressively decreased from 115% to 110% of the stoichiometrical requirement. In each of the runs, both the iodine and oxalate have been removed almost completely, all oxalates being reported as less than .05 g/l and iodate reported as .51 and .95 g/l on the first two runs.

Separations Technology Division

Dry Chemistry

The direct hydrofluorination of oxalate precipitates was continued in Hood 8 during the month of June. During this report period 4.6% of the runs processed required rehydrofluorination. Of those rehydrofluorinated 28% gained one or more units in weight indicating an increase in conversion. Button yields during the month of June averaged 98.1%. This compares to 98.1 and 98.0 per cent for May and April respectively.

Inclusions similar to the magnesium oxides used for packing between the crucible and bomb were noted in the button produced for Run Y-11-6-34. This button was held until the analysis was returned and this showed the magnesium content to be 1000 and 2000 ppm on the two samples taken. A recommendation was made to the "S" Division to use this button with a casting which was being remelted and preferably with a casting containing less than 100 ppm magnesium. It is expected that the magnesium content of the material produced in this manner would be in the neighborhood of 200 ppm if the same degree of magnesium purification occurs in Hood 14 that occurs in the normal material.

Separations Technology Division

REDOX AND METAL WASTE RECOVERY DEVELOPMENT

Technical Manuals

On June 25 the preparation of the Redox Technical Manual was approximately 88% complete. Two additional chapters were completed during the month, bringing the total number of chapters completed to date (except for reproduction) to twenty-three out of a total of twenty-five.

The writing of the Uranium Recovery Technical Manual was continued. On June 25 the preparation of this manual was about 40% complete.

Process Studies

The pilot-plant work on the caustic dissolution of U-Al-alloy slugs conducted by the Chemical Development Section in 1950 was discussed June 7 with A.E.C. representatives from Hanford Works and Arco, Idaho. The visitors from ARCO were interested in possible adaptation of the caustic dissolution technique for the 25-Process separations plant at Arco.

Surveys of data on the calcination of UNH to UO_3 and on solvent-extraction processes for the recovery of plutonium from 234-5 process solutions were prepared for use in consultations with Professor M. R. Fenske, of Pennsylvania State College. These consultations were concerned with exploring in a preliminary way the possibilities of:

(a) the use of fluidized-solid bed techniques in continuous UNH-UO_3 conversion; and

(b) the use of a "Fenske Stacked Extractor" in a solvent-extraction process to recover Pu from 234-5 slag and crucibles.

Redox Solvent-Extraction Studies

The Demonstration Unit columns and auxiliaries were operated during the month for training "S" Division personnel for Redox Plant operation. The 321 Building A and B cell feed preparation equipment was operated to test the effectiveness of a baffle installed in the B-2 (centrifuge) bowl in removal of MnO_2 fines from IAF feed. The baffle is designed to prevent MnO_2 solid particles from "skating" across the surface of the liquid and thereby effectively by-passing the centrifuge. Clarities of feeds centrifuged at 1790 rev./min. (1150 x G) with approximately 30-minute bowl holdup time did not change significantly from comparable values obtained when no baffle was used. An inspection of the interior piping and centrifuge auxiliaries (plow and skimmer) is planned to determine if the cause for the lack of expected improvement in centrifuge effectiveness is due to misalignment.

TBP Solvent-Extraction Studies

During the month, 34 solvent-extraction studies were carried out in 5-in., 8-in., and 16-in. diameter pulse columns under O.R.N.L. #1 Purex Flowsheet conditions for the IA, IB, and IC Columns. These studies were carried out with the dual objectives of training "S" Division personnel in the operation of the TBP Process pulse columns, and of rounding out Purex plant pulse-column specifications, as requested by Oak Ridge National Laboratories. The latter objective is essentially completed for first and second uranium cycle columns, and additional studies using 10 vol.% TBP in hydrocarbon diluent (and uranium as a stand-in for plutonium) are scheduled to evaluate extraction performance and capacity of the second plutonium cycle (2A and 2B) columns.

Purex IA extraction section studies carried out in an 8-in. diam. pulse column (1/8-in. holes, 23% free area, 2.0-in. plate spacing, 8.5-ft. "packed" height) gave H.T.U.'s from 0.7 to 1.1 ft. with corresponding waste losses of 0.07% of the feed uranium, or less, over a range of 500 to 1500 gal./(hr.)(sq.ft.), sum of both phases. Operation was conducted at an amplitude of 1 inch and a pulse frequency of 70 cycles per minute. These studies confirm the absence of a scale-up factor between 5-in. and 8-in. diam. columns, and, with studies reported previously (HW-21361), indicate that a plant-size IA (or 2D) Column extraction section may employ either 1/8-in. or 3/16-in. holes if a pulse generator is provided to give a 1-in. pulse amplitude (in the extraction section) over a frequency range of 40 to 100 cycles/min.

321 Building Construction and Maintenance

A 26-in. centrifuge bowl in which a new horizontal baffle had been added was installed in B-2 (centrifuge), tested for balance, and put into service. Orifices were installed in the Demonstration Unit inert gas blanketing system supply lines to limit the amount of gas introduced into the system. Operation of the IAW continuous concentrator was improved by the addition of a shield, consisting of a piece of 3-in. pipe open at the bottom, placed over the overflow stand-pipe. The instrument lines from the IAW concentrator were sloped to a low point and filter catch pots were installed at this point to trap any condensate formed in the lines. A new line connecting the RCU and RAW lines in the Scale-Up Unit added to the flexibility of the equipment. A check valve was installed in the RCW line to prevent back-up of the process solutions into the 8-in. column.

321 Building Operations

Training runs for "S" Division personnel were continued in the Demonstration Unit equipment during the entire period. The last week of the third training cycle was utilized in the two-fold operation of servicing all the recycled Redox IAW being used as IAS, and giving the trainees a chance to operate the solvent-extraction equipment during a sustained run.

Separations Technology Division

During the month it was necessary to discontinue Purex solvent-extraction runs in the Scale-Up equipment for approximately one week and treat the feed solutions to remove the monobutylphosphate present. This decomposition product of tributylphosphate was present in both the aqueous and organic feed solutions and caused excessive emulsification during IB and IC operation. Removal of this impurity from the aqueous solution was accomplished by heating in the presence of high nitric acid concentration while a sodium carbonate wash conditioned the organic feed. The Scale-Up Unit equipment was thoroughly flushed during this feed solution cleanup.

321 Building Operations Training

The third cycle of "S" Division trainees (25 operators and 14 monthly roll trainees) completed their training on June 10, 1951. The fourth cycle consisting of the same number of personnel as the third cycle began their training on June 11, 1951 and will complete their scheduled training on July 8, 1951. The present schedule calls for one more cycle of trainees beyond the present group, with the training program terminating on August 5.

Redox Plant Assistance

Three additional men were added to the group during the month, making a total of seven men reporting in the field. Work was completed on the initial Redox cold run plan procedure (Step III). The run plan is being issued as Document HW-21352 entitled "Redox Plant; First 'Cold' Multicycle Run Plan - Comment Issue". Editing and review is now being given to the "How Book" procedures. It is planned to withhold these procedures until comments have been received from the "S" Division on the Step III run plan procedures. Redox head-end procedures are now in rough draft form with issuance expected approximately July 15. A new head-end treatment flowsheet is being prepared for formal issuance. Calibration procedures are being revised in the light of current start-up plans and field liaison developments.

Hot Semi-Works

Construction of the Hot Semi-Works is 11-1/2 per cent complete as estimated by the field engineer. The second pour for the Hot Process Building is now scheduled for June 28.

Equipment Development

Hot Semi-Works Centrifuge Feed Pump. Preliminary layout drawings and a bill of material have been prepared for this pump which will be designed and built by the Technical Divisions. Based upon an initial study, it appears that all materials for construction are available at Hanford except the boron carbide shaft seal.

Submerged Pump No. 2, a submerged regenerative turbine pump which is a prototype of the Hot Semi-Works pump, has been in operation for 21 days at 3450 rev/min in clear dissolver solution (no solids). The pump, equipped

with a process lubricated boron carbide sleeve bearing operating against a Stellite #6 journal, has operated smoothly and uneventfully at a discharge flow rate of 2 gal/min and a discharge pressure of 20 lb/sq.in.ga.

Sluicing Pump, Waste Metal Recovery Process. The sluicing pumps specified for the TBP process are fabricated of carbon steel and will operate in a neutralized underground metal waste. Cast iron has tentatively been specified for a bearing material, carbon steel or Type 416 stainless steel for shafting. A Peerless 4" LA deepwell turbine pump has been employed to evaluate both cast iron and rubber as bearing materials operating against an SAE 1020 carbon steel shaft in simulated underground metal waste (Pu and F.P. free). The pump has operated 34 days at 1750 rev/min with unrestricted discharge flow rate (approx. 50 gal/min). Based upon the test results, cast iron appears to be a satisfactory bearing material for the sluicing pumps provided that galvanic corrosion does not occur between the dissimilar metals of the bushing and shaft. The extent to which galvanic corrosion may occur is being investigated in a test stand which employs laboratory motors to drive 3/4-in. stub shafts of SS 416 and SAE 1020 carbon steel at 1750 rev/min in cast iron bearings totally submerged in simulated underground metal waste.

Canyon Pump Handling Concentrated Neutralized RAW, TBP Process. Two identical Johnston Pump Company, 4 stage, deepwell turbine pumps equipped with graphitar 41 bearings and type 304 SS shafting have been operated for 27 days at 1750 rev/min in concentrated neutralized RAW to evaluate the extent of bearing wear which might be expected to occur in the TBP Plant. Based upon the results of the tests, boron carbide will be specified for the foot bearings, column bearings, and liquid throttle bushing in the pumps handling concentrated neutralized RAW.

Pump and Agitator Acceptance Tests - Redox. Eleven Redox "hot service" pumps have been put through the mock up shop and accepted. Six pumps remain to be accepted. Of the six remaining pumps, three were scheduled for service in the off-gas scrubbers (which will not be used). These three pumps may not be put through the mock up shop.

Nineteen agitators have been put through the mock up shop and accepted. Three agitators remain to be accepted.

Pulse Generator. The first pulse generator, built by Proportioneers, Inc., was completed and tested during the month at the vendor's plant in Providence, Rhode Island. The unit was operated in a simulated column assembly. Three test solutions were employed: water plus soluble oil, aqueous sodium nitrate, and hydrocarbon solvent. Leakage of pulsed solution past the piston was less than 0.25 gal/min at all frequencies from 25 to 90 cycles/min for all solutions. At maximum frequency (90 cycles/min), less than 3 horsepower was required to drive the unit for all solutions. Following 3 days operation in water and oil, 1 day in aqueous sodium nitrate, and 7 days in hydrocarbon, the unit was dismantled for measurement of wear of all rubbing surfaces. Wear of the graphitar piston rings and stainless steel cylinder was negligible. Wear of the sliding and contacting parts of the oil lubricated worm gear, scotch yoke, and slide block could not be detected.

Separations Technology Division

Process Chemistry

As a result of the emulsification and flooding difficulty encountered in the 321 Building Purex studies, considerable time was devoted during the month to the study and identification of the agent responsible. It has been fairly conclusively identified as the uranium-monobutyl phosphate complex, and laboratory studies have shown that it can be destroyed by acid hydrolysis. In the presence of ca. 2 M UNH and 5 M HNO_3, the emulsion forming characteristics were eliminated in approximately 24 hours of refluxing at 117°C. Complete details of this work have been presented in a series of memoranda ("Purex Emulsification Studies" (I), (II) and (III)).

The installation of hoods in 222-S Building is complete, but ventilation balancing is still in progress.

SEPARATIONS PROCESS RESEARCH

Solvent Research

The extraction behavior and physical properties of diethyl-n-butyl phosphate, diethylamyl phosphate, butyloctylphenyl phosphate, butyl diphenyl phosphate, tetrabutyl pyrophosphate and 2-methyl tetrahydrofuran were measured and compared to those for TBP. The aliphatic ortho phosphates give uranium and plutonium extraction and stripping distribution coefficients which are very similar to those for TBP; the physical properties are also similar in this series, the biggest difference being in the molar volume and in the solubility in water.

The ortho phosphate containing one or two phenyl groups were found to have much lower complexing constants for uranium than the aliphatic compounds. The viscosity of these aromatic phosphates was appreciably higher and the density about 1.41. Solubility in water, however, was very low.

Tetrabutyl pyrophosphate extracts uranium readily, but could be tested only with 5 M sodium nitrate as salting agent, since considerable solvent decomposition took place in the presence of either 0.8 M $Al(NO_3)_3$ or 3 M HNO_3 to yield DBP. The distribution coefficient of $UO_2(NO_3)_2$ between 0.8 M $Al(NO_3)_3$ and 2-methyl-tetrahydrofuran is 23, compared to 0.8 for hexone under the same conditions. The stability of this solvent toward nitric acid is poor, and work is to be extended to include other alpha-substituted compounds, as well as alpha, alpha'-disubstituted tetrahydrofurans, for greater acid stability and lower water solubility.

Metal Recovery Research

The beneficial effects of operating the metal recovery extraction columns at elevated temperatures are probably due largely to the lowering in viscosity which permits better stirring, faster diffusion and more rapid coalescence of drops. The viscosity of both aqueous and organic phases for

the TBP Metal Recovery extraction and stripping columns was measured at 0, 25, 40, 60 and 75°C. The change in temperature from 25 to 60°C. reduces the viscosity of both the organic and the aqueous phases by 45-50%.

Extraction Column Mechanism

The study of the extraction behavior of uranyl nitrate during drop formation, drop fall (or rise) and drop coalescence is continuing. Recent studies have involved the rate of transfer after the drop has been formed. It is to be anticipated that the drop has two films, one organic and one aqueous, both of which may offer resistance to transfer of uranium. These films will vary with the degree of agitation. The overall mass transfer coefficient was measured for different diameter water drops stripping uranyl nitrate from a 12 1/2%-TBP-hydrocarbon solution. The data obtained in these studies have been compared with that obtained using solid spheres obtained from a 3% agar-agar solution, conditions which should allow unhindered molecular diffusion in the drop, but no mechanical stirring. By applying the known diffusion coefficient of uranyl nitrate in the agar drop to the spherical diffusion equation, one can obtain k_o, the mass transfer coefficient in the organic film which is a measure of the stirring in the continuous phase. For 4 mm diameter agar drops k_o was found to be 8.3×10^{-4} cm/sec. The organic film transfer coefficient for a liquid water drop of the same size was found to be 31×10^{-4} cm/sec. The values of k_o would be expected to be the same for both the agar drop and the liquid water drop. The difference found cannot be explained at the present time though future work may allow an interpretation.

The individual film coefficients for both the organic and aqueous phases were calculated for all the drop sizes used in the experiments. In all cases k_o and k_a were of the same magnitude leading to the conclusion that both phases contribute appreciably to the resistance to transfer.

The gross transfer of uranium expressed as g UNH/ml dispersed phase per cm. of drop fall was found to pass through a maximum rate at a drop diameter of 2-3 mm. The rate of transfer at larger drop sizes decreases rapidly probably due to the decrease in surface to volume ratio and shorter time of contact which overbalances the increase in rate of extraction per unit area of drop surface. For the smaller drop sizes the decrease in rate of extraction per unit area of drop surface exceeds the increase in surface to volume ratio and longer contact time and thus leads to a decrease in the gross transfer. The latter decrease is less pronounced than the decrease at drop sizes greater than 3 mm diameter.

Purex Decontamination Studies

Extraction and scrub studies designed to compare the behavior of extractants prepared from vacuum distilled TBP diluted with AMSCO 125 and tank car TBP diluted with Shell Spray Base revealed no significant differences in the decontamination obtained with the two extractants.

Separations Technology Division

Batch countercurrent extraction and scrub studies involving 30% TBP-Shell Spray Base as extractant with non-head-end treated and head-end treated feeds having Cr^{+++} and Mn^{++} kills have shown (1) a chromic kill is apparently unsatisfactory for Purex feeds due to solvent attack by the resulting dichromate; (2) the improvement in over-all decontamination through solvent extraction steps which results from head-end treatment is approximately equal to the gross gamma decontamination achieved in the head-end treatment; and (3) ruthenium is apparently the fission product activity limiting decontamination in both treated and untreated feeds.

Iodine in the Redox Process

Batch extraction and scrub studies simulating columns IA, IB and IC indicated that, of the iodine remaining in the feed solution following head-end treatment, about 99% will appear in the IAW. That which does extract into the IAP stream is not readily scrubbed out. In fact, most of it remains with the organic stream even after the uranium is removed in the IC column. Contacting the ICW stream with two per cent Na_2CO_3 was only partially effective in removing the iodine.

Iodine in Dissolver Solution

Since a plant production test for removal of iodine by sparging failed to yield reproducible results and since a projected production test on the use of mercury salts to hold iodine in solution subsequent to dissolution is as yet untried, further work is being undertaken to render the iodine more readily spargable, e.g., by the addition of sodium nitrite to solution in the dissolver. Cold work on a macro scale, pending completion of new equipment for work with active iodine indicates (1) addition of sodium nitrite to dissolver solution in contact with metallic uranium will not result in appreciable reaction between the nitrite, nitric acid and uranium metal; (2) iodine, initially as iodide, is rapidly removed by sparging when nitrite is added but tends to collect in a water-cooled condenser in the effluent spargant stream; and (3) iodine, initially as iodate, is evolved only slowly by sparging when nitrite is added if metallic uranium is present - even more slowly in the absence of the uranium.

Recovery of Plutonium from Slag and Crucible

1. Recycle to Redox

An eight stage extractor consisting of four extraction and four scrub stages was used to carry out batch countercurrent runs to determine the feasibility of recycling slag and crucible solution to the Redox IIA column. Dilution of the IIAF Redox stream with 0.00, 1.0, 10.0 and 100% by volume slag and crucible solution (approximate composition: 4.2 M Mg^{++}, 0.3 M Ca^{++}, 0.2 M Al^{+3}, 0.26 M HF, 2.4 M H^+ and 0.9 g Pu/l) resulted in plutonium losses of 0.03, 0.03, 0.06 and 0.08%, respectively. No emulsions were found in any of the runs and clean phase separation was rapidly attained. It is concluded that the recycle of slag and crucible solution in any proportion to the Redox IIA column is quite feasible.

Separations Technology Division

2. Batch Countercurrent Extraction with TBP

A batch countercurrent extraction system consisting of four extraction and one scrub stage and employing 30% TBP in AMSCO 125-90W was tested for the recovery of plutonium from slag and crucible solution obtained by the Los Alamos type dissolution (aluminum nitrate present during nitric acid dissolution). Flow ratios employed were S:F:X::1:10:1. Distilled water was used as the scrub stream. In two runs the plutonium losses were 1.4% and 1.1%. Greater plutonium extraction will be attempted by either increasing the solvent to feed ratio or by increasing the aluminum nitrate concentration in the extraction stages. A precipitate which is presumed to be silica appeared in the scrub stage. This difficulty may be eliminated, at least partially, by improved filtering techniques to remove insoluble materials from slag and crucible solution.

Redox Coupling Studies: Plutonium(III) Oxalate

Previous experiments performed with 0.1 M $Al(NO_3)_3$ at the reduction step yielded plutonium(III) oxalate cakes of sufficient purity for metal reduction. Further studies have been carried out in the presence of 0.5 M $Al(NO_3)_3$ and 1.0 M $Al(NO_3)_3$ (before reduction) to determine the aluminum concentration beyond which only impure oxalate cakes are obtained. At 0.5 M $Al(NO_3)_3$ the reduction by hydriodic acid and the precipitation by oxalic acid proceeds smoothly although plutonium losses in the precipitation step were ca. 1%. Spectrochemical analysis showed that the oxalate cake contained 1000 ppm of aluminum which is not satisfactory for metal reduction purposes. At 1.0 M $Al(NO_3)_3$ the reduction of the plutonium to the +3 oxidation state by hydriodic acid was incomplete and solid iodine was formed. Presumably, the rapid oxidation of iodide or triiodide to iodine at room temperature is caused by the high nitrate concentration (ca. 4 M). Thus, ca. 0.1 M $Al(NO_3)_3$ is about the upper limit for aluminum nitrate at the reduction step.

Centrifugation of Manganese Dioxide Slurries

Centrifugation experiments with manganese dioxide slurries in a 5" solid bowl centrifuge fitted with a perforated baffle plate intercepting the liquid surface have shown that the agglomeration which occurs with digestion after kill-off is destroyed when the slurries are jetted to the centrifuge. The manganese dioxide content of the effluent streams from the centrifuge contain ca. 0.1% of the manganese dioxide slurry concentration in the feed whether the feed has or has not been previously digested after kill-off with chromic ion. It is, therefore, recommended that the digestion of manganese dioxide slurries be omitted in the operations of the Redox Plant.

234-5 PROCESS DEVELOPMENT

Redox Coupling

The results of a series of three peroxide precipitation studies employing simulated Redox 2BP streams (produced in 321 Building) indicate that the

impurity of major concern via any of the processing schemes is aluminum which was present in the range of 300 to 600 parts per 10^6 parts Pu in the peroxide precipitate and a consistent 300 PPM in the metallic button. The other impurities present in significant amounts in both the cake and the button are Fe and Cr.

Oxalate Process

Laboratory studies of ways of lowering the oxalic acid, iodine compounds and plutonium in Oxalate Process waste solutions were continued. It was demonstrated on 1/100 plant scale using plant AT solution, that lowering the hydriodic acid used for reduction from 6.0 mols per plant run to 3.75 mols per plant run resulted in a 32% reduction of plutonium losses to waste solutions.

Sulfur dioxide appeared to reduce the plutonium in diluted plant AT solution to the tripositive valence at a temperature below 10°C, but the oxalate precipitated from solution so reduced was very bulky and settled very slowly.

Reduction Process

Four reduction runs were made on a five-gram scale in which sulfur was used as the "booster" material. The optimum mole ratio of S to Pu in this size charge was found to be 0.5. A yield of 95.7% based on fluoride weight was obtained with this amount of sulfur when 0.4 of the total sulfur with the equivalent calcium were placed on top of the charge and the remainder mixed with the charge. An overall 25% excess of calcium was used.

Skull Recovery

A series of one-hour refluxing treatments of skull material in sulfuric acid showed that optimum plutonium and sulfate concentrations for a subsequent peroxide recovery process could be obtained by using 0.5 M H_2SO_4 and a molar ratio of SO_4/Pu of about two. Sulfuric acid dissolved massive skull material or plutonium metal quite readily, but badly oxidized skulls dissolve much more readily in boiling 16 M HNO_3 -0.04 M HF than in boiling 1 N H_2SO_4.

Recovery of Purification Building Waste Solutions

The feasibility of recycling 234-5 caustic scrubber solutions to the 224 Concentration Building for recovery of plutonium was demonstrated in the laboratory by making two lanthanum fluoride product strikes and a caustic metathesis under conditions approximating as closely as practicable the 224 process A 0.43% loss was realized after two fluoride strikes and a 0.36% loss after metathesis. The losses were not seriously above normal plant losses and directly attributable to poor separation due to lack of centrifuging equipment and the use of Pyrex glass equipment.

Separations Technology Division

First Cycle Waste Solution Evaporation

To facilitate the evaporation of the first decontamination cycle waste solutions, information was desired on the boiling point, density, saturation point, viscosity, and pH of the solution as functions of the volume reduction. It was found in the laboratory that the aged solution could be evaporated to one-fifth (1:5 boil-down ratio) of its original volume, and the current waste to a 1:4.5 reduction, before a cake formed in the evaporator. The experimental results show that either the boiling point or the density may be used for the determination of the volume reduction in the evaporator.

STACK GAS DISPOSAL

Silver Reactor Performance

An investigation of the operating histories of the dissolver cell silver reactors has revealed a significant variation in the temperature differentials across the reactor columns. The normal temperature drop (excluding metal dissolution) across the 4 5L unit at B Plant is 135 to 160°F. and the minimum differential (about 2 hours after dissolution reaction) is in the order of 85 to 100°F. and 35 to 50°F. The discrepancy is due to a variation in the normal in-leakage rates to the dissolver systems (25 to 30 cfm for the 4-5L B Plant assembly and approximately 90 cfm for the other units). In the case of the three reactors which are operating at a lowered efficiency, the data indicate that during the dissolving period the entire reactor column can be at a temperature above the melting point of silver nitrate. An experimental program is in progress to determine whether this condition could have caused a gradual run-off of the material and thus reduce the efficiency.

Separations Technology Division

In a series of 9 runs conducted with a 2-inch diameter unit packed with a 2-inch depth of silver nitrate coated saddles it was determined that the I^{131} removal efficiency of an experimental silver nitrate reactor was not affected by short time operation at temperatures ranging from 375°F. to 900°F. The unit was held at particular temperatures within this range for one-half hour periods and the efficiency then checked. All the efficiency values were in the order of 99.9%.

The 3-5R B Plant reactor was overheated for a period of approximately 4 hours on June 17, 1951. The overheating (to a temperature of approximately 550°F. at the top of the column) was caused by the inadvertent removal of the platinum thermohm from the circuit controlling the current delivery to the heater elements. Caustic scrubber monitoring of the stack gases during the metal dissolution following this occurence indicated that there was no directly evident change in the performance of the unit (22 curies of I^{131} were emitted from the stack as compared to 1400 curies in the metal dissolved.

Fiberglas Filter Installations

During the month the following steps were taken in the preparation of Fiberglas filters for various plant installations:

1. The fifth dissolver cell filter for the present Separations Plants was packed.

2. The placing of the Fiberglas media in the filters to be incorporated into the condenser hatchway of the underground metal storage tanks was continued.

3. A Fiberglas formulation and filter arrangement was recommended for the tank vent filter in the 222-S Laboratory.

4. Preparations have been made for the packing of the Redox dissolver and vessel vent filters.

INVENTIONS

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

R. B. Richards
Separations Technology Division

7/1/51

ANALYTICAL DIVISION

JUNE 1951

VISITORS AND BUSINESS TRIPS

C. F. Metz and J. Reinschreiber of the Los Alamos Scientific Laboratory spent June 5-7 discussing the chemical analysis of plutonium.

A. M. Howard and G. O'Connor of E. I. duPont & Co., Wilmington Delaware, spent June 26-28 discussing the analytical control of the 300 Area Canning Process.

C. G. Gieszl of Applied Research Laboratories, Glendale, California, spent June 27-29 servicing ARL instruments in the 200 West and 300 Areas.

Business trips of Analytical Division personnel were as follows:

M. Lewis A. H Bushey J. W. Handshuh, J. P. Fichten, H. W. Miller and Mary H. Aldrich spent June 8-9 attending the American Chemical Society Meeting in Seattle, Washington.

J. K. Figenshau spent June 8 at Reed College, Portland, Oregon discussing equipment and facilities needed by the College to execute a development subcontract to be let by the General Electric Company.

W. W. Mills spent June 14-16 attending a symposium in Washington, D. C., sponsored by the American Chemical Society.

M. B. Leboeuf spent June 21 at the Radiation Laboratory, University of California, Berkeley, inspecting various counting instruments.

R. E. Ewing spent June 27-28 at the Institute for Nuclear Research, Ames, Iowa, consulting on analytical methods.

ORGANIZATION AND PERSONNEL

Personnel totals in the subdivisions are summarized as follows:

	May 31	June 30
Analytical Service Section	267	325
Analytical Research Section	36	34
Administrative	3	3
Division Totals	306	362

Analytical Division

ANALYTICAL SERVICE

Work Volume Statistics

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

	May		June	
	Samples	Determinations	Samples	Determinations
Process Control - 200	4,977	11,058	4,702	10,824
Process Control - 300	596	1,036	685	1,337
Water Control - 100, 700	791	3,357	791	3,282
Research & Dev. Programs	3,149	4,513	2,133	4,297
P-10 Control	441	4,410	450	4,500
Process Reagents	2,126	2,397	2,081	2,298
Essential Materials	2,782	3,337	2,352	2,871
Special Samples	782	7,111	843	7,950
Totals	15,644	37,219	13,407	37,359

100 Areas Water Control

Daily analysis of pile atmosphere at 105-F Building was started this month at the request of the Pile Technology Division, to furnish data for a study of graphite burnout. A precision, unitized, Fisher Gas Analyzer was installed in the inner instrument room at 105-F Building. The accuracy and the sensitivity of this instrument were improved by diluting the samples with purified nitrogen gas after absorption of the chief constituent, carbon dioxide, and before analyzing for the minor gases. The previously used Orsat equipment was regarded as too inaccurate and unsensitive for this test. The additional work load is being dovetailed into the area chemist's work schedule and additional personnel are not needed.

The corrosion tests, to determine metallic pickup by steam condensate when in contact with various steel samples, begun in November 1950 at the request of the Reactor Division in connection with the C 300 Recirculation Test System, were discontinued with the completion of this month's run. This was by direction of the Water Group of the Pile Technology Division who recently assumed the responsibility for this test. Daily conductivity measurements of pile effluent and influent water and pH measurements of pile effluent water were started this

month at 100-H Area to provide data for this same group in their study of wat treatment. The additional work load caused by this program and by scheduled vacations was carried by the group with the assistance of temporary employees awaiting "Q" clearances.

200 Areas Control

The First Cycle Waste Evaporator (Bldg. 242-T), which was removed from service on May 7 due to attack of the Admiralty Metal condenser tubes by ammonia fumes, has been repaired and operations were resumed on May 25. Since this second start-up the number of feed tank (FT) samples has been reduced and the gamma analyses on the catch tank (CT) samples eliminated which, in effect, brought the work load to the predicted range for normal operation, ca. 20 hours/month.

Analytical service was provided for the investigation of sludge formation in the final solution tanks (AT and WT) at the 231 Building. The AT samples from five normally processed runs were analyzed for sulfate by Method SV-1a (reduction, distillation and titration of the sulfide). Results obtained were in the range of 59.5 g/l to 73.5 g/l with an average of 64.4 g/l. The sulfate concentration in the P-2 (second peroxide precipitator) tank was then reduced from 0.35 M to 0.15 M and a second series of five runs analyzed for sulfate with results in the range of 38.9 g/l to 72.2 g/l and an average of 48.1 g/l. The 72.2 g/l result is of questionable value since it was obtained on a sample taken from a cell which had not been cleaned out prior to processing of the reduced sulfate concentration run. The other four results were in the range of 38.9 g/l to 47.7 g/l with an average of 42.1 g/l. The Separations Technology Division is analyzing the data.

In an effort to destroy any polymers which might conceivably be contributing to recent high waste losses at the 231 Building, the starting solution (P-1) was heated to 80°C and held for one hour for a series of three runs. To control the acid concentration, samples were taken before and after the heat treatment and analyzed for hydrogen ion. No significant difference was detected in the acid concentrations of the samples nor was any appreciable reduction noted in the recycle values.

The possibility of precipitates being present in the final (AT) solution from the 231 Building is being investigated with samples taken, in a series of ten runs, from the AT tank and the shipping container (SC). The samples from eight of the ten runs are being analyzed before and after centrifugation and any precipitates obtained turned over to the Analytical Research Section for identification. Assays of the two tanks will also be compared to see if any biases develop which would cause the Hanford-Los Alamos product differences. All data will be tabulated and issued in a separate report.

Production Test #234-1, which involves the destruction of hydriodic acid and oxalic acid in the SN-2 (combined oxalate supernates) and the SN-3 fractions (concentrated oxalate supernates) with hydrogen peroxide, was initiated during the month. Fourteen supernate samples from this production test have been received with analyses requested for silicon, titanium, iodide, iodate, and oxalate. Procedure MI-1a for iodide, a general turbidimetric procedure which

involves spectrophotometric measurement of silver iodide, gave some trouble due to silver oxalate interference. This was circumvented in the preparation of the calibration curves and by advising the Plant Assistance Group that the values reported were maximal.

Standard samples, submitted by the Analytical Research Section and containing Am-Cm, were analyzed in the 222-B and -T Laboratories with the following results:

Bldg.	Std. Conc.	Ave. Result	No. Tests	Precision (±%) Between Chemist	Precision (±%) Within Chemist
222-B	2387 c/m/ml	2315 ± 53 c/m/ml	16	9.10	5.28
222-T	2387 c/m/ml	2260 ± 114 c/m/ml	20	23.51	5.69

These results are considered satisfactory for the method, but previous results have been much better.

Work was resumed during the month on the installation of furniture in Room 144 and a decontamination sink in Room 133 of the 234-5 Building Laboratory. Work on these facilities was discontinued during building construction when funds ran out. They are needed now to meet expanding production schedules.

300 Area Control and Special Services

A considerable amount of extra work was performed in assistance to several groups studying the problem of steel weld composition in the piping of the Redox and TBP Plants. Approximately 250 nitric acid leache solutions were analyzed for iron content, the results of which will be compared to experimental leaches of welds of known composition. Spectrographic analyses for Cr, Ni and Cb on roughly 50 samples of stainless pipe welds were also made. Data from these tests can be considered only corroborative rather than conclusive due to the many factors involved.

To help locate the source of the cobalt found in the nickel plate on the boron steel balls submitted by the Pile Technology Division last month, samples of a nickel anode, nickel chloride, nickel sulfate and nickel plated steel nuts were analyzed for cobalt. The nickel plate on the steel nuts was found to contain 0.15% cobalt while the other substances contained 0.08% or less. The nickel anode was 0.08% cobalt.

A sample of an emulsion which formed at the interface of an extraction column was submitted by the Process Chemistry Group, Separations Technology Division. Analyses were requested for U, Si, C, $CO_3^{=}$ and organic $PO_4^{\equiv}$. The only component detected which was not expected in the streams was silicon at 0.12%.

The North Richland Medical Staff submitted a sample of Stoddard's Solvent for the analysis of possible irritants as a result of a severe case of dermatitis on the hands of a mechanic in the garage who had used this solvent. All tests for cresal, creosote, phenol, aldehydes, etc., were negative. However, a more volatile component than normally present was indicated by a flash point of 85°F. According to the literature the flash point of this solvent should not be less

than 100°F. The low flash point was substantiated by distillation range data. No further identification was made after discussing the item with the Medical staff.

Seven samples of corrosion film, scraped from exposed aluminum dummy slugs, were sent in by the Pile Technology Division, Water Group. Analyses for Cr, Fe, Al, Pb, and Si were requested to help evaluate the surface corrosion of slugs in pile operation. No difficulty was experienced with any of these except the Pb. Though the samples had been checked spectrographically and Pb was reported as moderate (0.01-1%) none was detectable by the wet methods used.

During the past several months extensive additions and corrections have been made to the Essential Material Specifications Manual. The manual has now been printed and issued as Document HW-19156. Tentative procedures have been written for all Redox and TBP Process essential materials excepting sulfamic acid. These procedures have been incorporated in a manual and are ready for use.

The 300 Area Safety Engineer has been making a survey of certain laboratories for possible mercury hazards. Room 28A, 3706 Building, was found to have twenty times the tolerance (0.1 ppm) concentration of mercury vapor in the air. Steps have been taken to scrub down the walls of the room and to thoroughly clean the floor by vacuum and scrubbing. A new floor will be laid of a seamless material and coved edges to prevent the build up of mercury particles such as are now found in the crevices and at the edges of the present tile floor. The Medical Division has been contacted and examinations arranged for personnel who have worked in the room.

In investigation by the Chemical Research Section of the carrying of aluminum and uranium on plutonium peroxide, eight plutonium peroxide precipitations were made from solutions containing various amounts of uranium and aluminum--of such a range as to include any conditions that might ever be expected in plant operation. Each cake was washed six times and samples of the washes and dissolved cakes were submitted for plutonium, uranium, and aluminum analyses (no aluminum analyses requested on the dissolved cakes). The washes contained 0.01 g. Pu/l and the dissolved cakes about 50 g. Pu/l. It was found that sodium nitrite was satisfactory for peroxide destruction so that the hematoxylin method for aluminum could be employed. The uranium determinations are being made with the fluorimeter.

A modified AT Panel Board for the chemical titration of plutonium was set up at the request of the Chemical Research Section. New features of the panel board include magnetic stirring instead of pulsing and an Emil Greiner 1000 lambda buret instead of the normal Misco buret. An iron standard and a standard plutonium nitrate solution have been used to test the equipment. The precision has been very good (ten plutonium determinations varied less than 1% between extremes) but the average was about 1% high, a situation calling for further investigation.

For the past month methane flow through the ASP counters has not been interrupted; however, over-night and on weekends the flow has been reduced to about one small bubble every five minutes. Although methane consumption has increased slightly, two advantages have become apparent with continuous flows. First,

nearly one hour can be saved each day since the machines do not require flushing or "warming up" each morning. Second, the machines are considerably more stable. For example, with continuous methane flow, only one recheck was required in 75 geometry determinations. When the methane flow was discontinued at the end of each working day about one recheck was required for every three geometry determinations.

Chemical Development Service Laboratory

Operations in this laboratory continued on a routine basis. Twelve of the 21 personnel now assigned to this group are in training for startup of the 222-S Building Laboratory and plans are being made to set up a regular training program for the large influx of Technical Graduates and Laboratory Assistants expected in the next few months.

A standard IAU sample submitted by the Analytical Research Section was analyzed 30 times with the following results:

Constituent	Method	Std. Conc.	Ave. Result
UNH	X-Ray Absorption	238.5 g/l	232.9 ± 6.0 g/l
Sp. G	Pycnometer	---	0.9682 ± 0.0011

The results for UNH by X-ray photometry were lower than expected, judging from previous analytical results, but the precision was good. The X-ray absorption calibration curve was accordingly re-determined by the Analytical Research Section using independently prepared standards. The calibration was found to be in error. The photometer response is expected to drift gradually, and standards will be run frequently.

P-10 Control

The hollow needle type opener has been installed on the Mass Spectrometer vacuum manifold and samples in metal ampules were accepted for analysis on June 7.

Representatives from the P-10 Operations Group and the Health Instrument Division have agreed that the discarding of excess sample after analysis may be continued until a second Mass Spectrometer is installed for control analysis. Due to the large number of samples being presently submitted it was felt that the number of results obtained is more important than the product which could be recovered, since approximately 30% of the Mass Spectrometer time would be lost during product recovery.

A series of duplicate samples taken from a P-10 Production run have been shipped to National Bureau of Standards, KAPL and Los Alamos for comparison studies of Mass Spectrometer analysis. To date no results have been obtained from any of the sites.

It is anticipated that the P-10 Control Laboratory will continue on a six-day schedule during July in order to support P-10 operation and developmental activities.

The Mass Spectrometer was shut down and disassembled on June 23 and moved without incident to the new analytical laboratory on the second floor of the 108-B Building. The move coincided with a complete building shut down during the week of June 25 through June 30. Assurance has been given that construction work in the laboratory will be completed in the immediate future.

Methods Control Group

The analyses of the standard plutonium solution by the 231 Building Laboratory personnel has given the following results to date:

		Volumetric Assay	Radiochemical Assay
% Average Recovery		99.5	97.8
Error Source	No. of Observations	% Precision (99% Confidence Level)	
Analysts	21	± (0.67)	
Titrations	42	± 1.59	
Dilutions and Analysts	21		± 1.88
Disc Preparation	84		± 1.44
Counting			± 0.26
Total		± 1.73	± 2.38

Estimated precision of CA/RA ratio due to analytical precision ± 2.94%.

Whether the low recovery on radiochemical assay is due to the standardization of the solution or to the assay of the solution in the 231 Building Laboratory has not, as yet, been definitely established. The relationship of the new ASVP instruments to the present ASP instruments has not been established due to difficulties with the new ASVP instruments. This has necessitated calibrating the solution using the reference ASP instruments in the 3706 Building. Discs counted in the 3706 Building were also counted in the 231 Building to examine the possibility of bias in counting instruments. A bias of -0.25% was noted for the 231 Building instruments; however, this bias was within the limits of the test, and is too small to account for the low recoveries. Since the solution was originally standardized without using lanthanum, the standardization was repeated using the same amount of lanthanum (125 ug) as normally used by the 231 Building in the analysis of samples. Using the absorption factor of 1.014, this standardization gave results 0.4% higher, indicating the use of lanthanum by the personnel of the 231 Building is not responsible for the low recoveries. One of the chemists who originally standardized the solution in Bldg. 3706 prepared eight discs in the 231 Building Laboratory and obtained a recovery of 98.2%, based on counting the discs in the 3706 Building instruments to eliminate any possible instrument bias. This test indicated that the low recoveries might be due to the surface condition of the platinum discs used in the 231 Building, and this possibility is being further investigated.

New or Revised Methods

The revised specification for plutonium in the Metal Fabrication Process requires a highly accurate and precise plutonium assay, ca. ± 0.2%. In an attempt to

meet this requirement the present volumetric method has been modified as follows: An 0.5 gram sample is weighed and dissolved in 6 N sulfuric acid in a tared 25 ml volumetric flask. After dissolution the $SO_3^=$ and the S^- that may be formed are removed by heating. The solution is made up to ca. 20 ml and 3 N in sulfuric acid, stirred with a magnetic stirrer and aliquoted by weight, approximately 20 mg of the original metal being used for each aliquot. Four aliquots are taken, and each one placed in a glass cup. The titration assembly consists of a one ml Emil Greiner buret (modified to include a reservoir, stopcock, platinum electrode, and fluorolube instead of mercury), a small lucite plate fitted with a platinum electrode, nitrogen inlet, waste removal line, and a clamp to hold the titration vessel so that the lucite plate serves as a cover. The Emil Greiner buret tip and a 1 ml Kock buret tip (used for adding the reductant) also fit through the cover into the titration vessel. The dissolution of the metal in 6 N sulfuric acid has been tested and provides complete dissolution in 15 minutes, with considerably less frothing than HCl dissolution. The accuracy and precision of the method will be tested as soon as all the equipment is installed in the 234-5 Building Laboratory.

Preparations for Analytical Service to the Redox and TBP Processes

The "Analytical Flow Sheets" designed to route the original samples and aliquots through the laboratory with minimum transfers of heavy sampling equipment and highly radioactive solutions have been completed for all the radioactive Redox samples. These flow sheets have been added to the rough draft Redox-TBP Analytical Manual together with a diagram of the laboratory gloved box and work station assignments. To maintain an "Official Use Only" classification of the manual, the other data required for use with the manual was issued as a secret letter, HW-21336.

The status of the design of some of the bay pieces of apparatus for the 222-S Building is given below. While it shows the need for increased effort and freezing of design, it does not show the large amount of work already completed. A detailed status report covering the individual gloved boxes and work stations will be issued shortly.

Equipment	Design	% Completed Drafting	Construction
Four Model 2 1/2 Gloved Boxes for Caves with entrance port in bottom	100%	75%	
Two Sample Containers Lift Mechanism for Caves	100%	100%	
Two Buret Samplers for Falling Drop Apparatus (Revised)	5%		
Two Falling Drop Units (Revised)	10%		
Two Carriages for Transporting Dilutions Through Cave	50%		
Eight Special Interlock Ports	100%		
Three Remote Titrators (Emil Greiner Type)	100%		One model built
One Induction Heater for Gloved Box	100%	100%	85% complete (awaiting parts)

[redacted]

Analytical Division

Counting and Chemical Standards

Three new low geometry attachments for the ASVP instruments were constructed by the Instrument Division based on the Berkeley design. These attachments did not exhibit satisfactory agreement in the determination of the dissintegrations from plutonium samples mounted on platinum discs. An analysis of variance testing the effect of attachment barrel, mica window, and aperture revealed the apertures were the major source of the variation. In cooperation with the Optical Section of the Instrument Division, microscopic examination of the stainless steel apertures revealed the presence of a flat portion on some of the aperture tapers (which has the effect of decreasing the geometry) and that some of the apertures were not true but were out of round (causing an error in the measurement of the diameter of some of the apertures). The improved method of measuring aperture diameter by means of a filar microscope combined with microscopic examination of the aperture surface has made possible the construction of apertures with less than ± 0.0001 error in the diameter. The testing of these improved apertures in the counting of plutonium samples has not been completed as yet; however, preliminary data indicates an agreement within ± 0.15%. As soon as this agreement is firmly established the geometry of the ASP instruments will be recalibrated with the new low geometry attachments for the reference ASVP instruments and the isotope correction factor re-evaluated.

Recovery of 234-5 Building Laboratory Wastes

Recovery of the wastes from the determination of silica by photometric analysis and from the low level wastes from the determination of 70-58 by the oxine method is completed. Seven grams of plutonium were recovered from the silica wastes and 11.5 grams from the oxine (low level) wastes. As a test of the process equipment, a check of the operating conditions, and a means of determining the optimum amount of plutonium per batch, two bottles of high level wastes were processed. From the processing of wastes from the determination of fluoride, 67 grams of plutonium were recovered, and from processing the waste from the high level 70-58 determination wastes. 51 grams were recovered. In view of the successful operation of the process so far, personnel of the 234-5 Laboratory are being trained in the operation of the equipment.

Special Hazards Control

A standard procedure for relamping in regulated zones in the 222-B and -T Laboratory Buildings has been written, approved by the Electrical, Health Instrument and Analytical Divisions, and placed into effect on June 7. This procedure alleviates the necessity for a separate Special Work Permit when relamping in the buildings.

Work by the Minor Construction Division under suspense Code Y-440 (Replacement of the Dry Waste Disposal Crib at the 222-T Building) was completed and the unit placed in service June 21.

Project M-772, Installation of Decontamination Canopy, Buildings 222-T and -B, was completed during the month. It is hoped that these facilities will eliminate the problem of air-borne contamination in the buildings in addition to permitting more efficient decontamination operations.

[redacted]

The Acid Dispensing System for the 222-B and -T Building Laboratories has been completed. Commercial grade nitric and sulfuric acids for decontamination will now be obtained from the "S" Division via acid lines from the 271 Buildings, thus eliminating the necessity of using CP acids and effecting economies of $9,410 per year.

Investigation of possible causes of the above-tolerance levels of plutonium in the air in the 222-T Building continued during the month. The exhausts from the hoods in Room 6 have been cleaned and considerable improvement in the air flow noted. The H. I. Division is seriously considering several outside agencies as the source of air contamination. Unusual wind and weather conditions have been blowing stack gas down over the laboratory recently. High plutonium concentrations have been detected in air samples obtained from a sampler atop the 224-T Building; it is believed that the contamination source will be found to be the exhaust vents from the 224-T Building. Cocooning of the agitator shafts and motors in the operating cells by the "S" Division is proceeding as rapidly as possible in an effort to reduce the amount of plutonium released from the cells to the atmosphere.

ANALYTICAL RESEARCH

Radiochemical Methods (RDA #TC-1)

Previously reported determinations of U-237 in 60-day cooled material has shown that the beta emission from this isotope is approximately 20 times the maximum fission product beta allowable in recovered uranium oxide. Two possible courses appear to be available for avoiding this interference in the conduct of the fission product determination. The first involves introduction of absorbers to essentially eliminate the weak betas emanating from the U-237; this procedure holds promise of success although it does result in the indeterminate attenuation of weaker betas from the fission product elements. A second approach receiving attention is that of effecting the separation of fission products from uranium. Experiments are underway employing approximately 0.5 g. of paper pulp as an adsorbing column for the removal of fission products. The uranium holdup and the fission product loss will be evaluated to determine the feasibility of the procedure.

Ten different samples of Isolation Bldg. solution (AT) ranging in MWD levels from 50 to 600 have been analyzed for Pu-240 by means of the spontaneous fission counter. A plot of the observed 240 content versus the power level yields a continuous curve and indicates good analytical precision. The 240 contents at 300 and 600 MWD are, respectively, 10% and 7.5% lower than those calculated from pile data.

Analyses of Bismuth Phosphate product and waste solutions have been continued in an effort to determine the distribution of combined americium-curium throughout the process. Two complete sets of analyses have been completed and are summarized as follows:

Distribution of Am-Cm in Process
Basis Am-Cm in 6-3-MS = 100%

	Run 1	Run 2
6-3-MS	100%	100%
7-4-P	23.7	28.6
7-3-WS-2	75.8	53.5
14-4-P	3.4	12.9
18-4-BP	0.6	--
19-4-P	1.3	11.3

An excellent material balance was obtained in the first case but not in the second.

In conjunction with the investigation and possible use of a solvent extraction process for recovery of plutonium from Metal Fabrication Process slag and crucible wastes, a series of analytical procedures for the determination of plutonium has been devised or tested. Currently available methods are suitable for determination of higher concentrations of plutonium in aqueous salt solutions and in organic solvents. Carrying techniques have not proven applicable for trace quantities of plutonium in aqueous salt solutions, and experiments are underway using TTA extraction techniques. No attempt will be made to separate americium as previously considered.

Spectrochemical Methods (RDA #TC-2)

Information has been received from a Hanford representative in the Schenectady office to the effect that the mass spectrometer on order from the General Engineering Laboratory will be shipped during the first week of July. Difficulties encountered by G.E.L. with the instrument have apparently been eliminated to the point where the instrument meets purchase specifications. The new instrument will be located in the new 108-B analytical laboratory and will complement the present instrument for P-10 service and development work.

Examination of P-10 mass spectrometric analyses has revealed an abnormal peak at the mass/charge ratio of 4. This resulted from the hold-up of hydrogen isotopes by surface adsorption. About 1% hydrogen was noted in the analysis of pure deuterium after the instrument had been flushed with hydrogen although it was noted that the 1% error was essentially eliminated upon a repeat deuterium analysis. The adsorption is limited almost entirely to hydrogen isotopes, and desorption occurs through contact with hydrogen isotopes but not with helium or air gases. Tests made with leaks of different surface area showed no difference and thus located the adsorption in the spectrometer head. Although this effect had not been evaluated previously, it had been anticipated to the extent that it introduced no errors in P-10 analyses because of the system of sample scheduling and the use of adequate pumping and flushing times.

Investigations showed that the needle valve leak for isolating discrete P-10 samples from the process line caused a fractionation of the molecules according to mass. As a consequence, a substitute system involving a capillary tube with pinch-off and an open-close valve is being tested for the purpose. Confirmation

was obtained that the long leak attached to the spectrometer head for the study of in-line sampling techniques prolonged the time required for stabilization after introduction of the sample. To avoid possible interference in routine analyses, a stopcock was introduced into the long sampling line to isolate it from the system during routine analyses. In conjunction with the proposed mass spectrometer automatic magnetic scanning device operated by a G.E. magnet power supply, design has been completed on an auxiliary unit that will automatically adjust the spectrometer sensitivity while the lines are being scanned.

X-ray photometric methods for the determination of UNH in aqueous, hexone, TBP, and Purex solutions and for assay of UO_3 product have been developed or revised and are being drawn up in standard form for routine use. The methods have a precision (99% level) of ± 3% and ± 1% at the 10 g/l and 1000 g/l levels, respectively. The X-ray photometer received for use in the Redox control laboratory has been modified to include twelve separate improvements that have been developed during the course of research work at Hanford. Several of these improvements include elimination of the heavy current load on the interlock system to stabilize the power to the X-ray tube, modification of the amplifier circuit to stabilize the readings, modification of the attenuator disc to allow better calibrations, and introduction of a bias control by means of an X-ray absorber in the beam to allow correction for instrument changes without determining a completely new calibration curve. Increased utility of the instrument is promised from further work which shows that small constant volume cells, 1 to 3 ml, may be employed to yield a precision equal to that currently obtained with the 100 ml cells. Plastic cells obtained for test purposes proved to be non-uniform, but several varieties of glass cells have proven suitable. With these small cells it is possible to use a differential technique whereby a control solution of uranium is introduced in the reference beam; errors due to temperature fluctuations and power fluctuations are thereby eliminated. Further improvement in the precision may result from experimental work designed to develop a more uniform fluorescent screen for pickup of the beam transmitted by the 1 ml cells.

Application of the differential method to the photometric method for determination of copper in bronze bath has yielded a method with an absolute precision of ± 0.4% that will allow five determinations per hour thereby effecting an annual saving of about $600. Although a relatively small amount of operator time is saved, the elapsed time for the determination is shortened considerably. The method employs triethanolamine as the color developing reagent and requires analysis of one standard reference solution with each group of analyses.

Apparatuses for both preparing standard CO_2-CO mixtures and handling such gases in preparation for infrared analyses have been completed and are thus available to support in-pile studies of the reactions between graphite, CO_2 and CO that will employ in-line infrared analyses.

The basis for spectrographic determinations of Ca, Mg, and Al to support studies of plutonium recovery from slag and crucible waster has been established by the selection of sample size, excitation conditions, photographic emulsions, analysis lines, and a suitable internal standard. The method holds promise of yielding a precision of about ± 10%.

Electrochemical Methods (RDA #TC-3)

Continued work with coulometric titration procedures has centered on the determination of uranium in uranium-aluminum J slugs that are to be employed for calibration of 305 Test Pile measurements. Previous experience has shown that the automatic titrations are highly precise but that they introduce a bias in the determination. Modifications previously reported decreased the bias but did not eliminate it. It has now been found that impurities in certain lots of hydrobromic acid was the offending factor and that selection of a suitable reagent decreases the blank five-fold to a negligible minimum. Spectrographic and chemical analysis failed to identify the impurity, however. A final set of analyses of the standard and J slug solutions yielded accurate and precise results that are in remarkably close agreement with Oak Ridge analyses of the same solutions.

Conventional Chemical Methods (RDA #TC-4)

A test device used for determination of the freezing point of Metal Recovery Process RAW solutions includes a small test tube for holding 0.5 to 1 ml of sample in a temperature-controlled bath. A time-temperature plot obtained while slowly cooling the sample yields a plateau at the freezing point, although it is noted that no definite plateau results during heating past the melting point. Consideration is now being given to methods for eliminating a serious interference resulting from super-cooling phenomena.

The standard sample program maintained by the Section continued routinely. Results are given in the report of the Analytical Service Section.

INVENTIONS

All Analytical 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 June 1951. 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: F. W. Albaugh
F. W. Albaugh, Division Head

FWA:ltc

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TECHNICAL SERVICES DIVISION

JUNE 1951

VISITORS & BUSINESS TRIPS

There were no specific visits of off-site personnel to this Division in June. However, several off-site visitors to the local A.E.C. and other Divisions consulted also with this Division, and these cases are covered in the body of this report.

Business trips of Technical Services Division personnel were as follows:

C. G. Stevenson attended the meeting of the Technical Information Panel at the University of California Radiation Laboratory at Berkeley on June 6-8.

E.F. Gates spent June 11 at the Litton Lathe Company, San Carlos, Calif., reviewing the glassworking equipment available from that Company.

B. B. Lane attended the meeting of the Special Librarians' Association in St. Paul, Minnesota, on June 18-21.

ORGANIZATION AND PERSONNEL

Effective June 18, L. C. Clossey was transferred from the Analytical Division to become the Assistant Laboratory Services Supervisor in the Redox Laboratory, Bldg. 222-S.

Personnel totals in the several subdivisions are summarized as follows:

	May 31	June 30
Engineering Section	78	79
Technical Information Section	79	79
Mathematics Section	22	24
Administrative	3	3
Division Totals	182	185

ENGINEERING SERVICES

Mechanical Shops (Bldgs. 101 and 3706)

Work volume statistics for the Mechanical Shops are as follows:

	Customer Division or Program	May No. of Jobs	May Man-Hours	June No. of Jobs	June Man-Hours
Work Done on Jobs Completed	P-10	28	514	21	463
	Pile Tech. (Incl. P-12) (a)	81	1,091	46	530
	Separations Tech.	30	272	43	761
	Analytical	36	448	21	491
	Tech. Services	14	588	13	303
	Other Divisions	4	76	2	81
	Sub-Total	193	2,989	146	2,629
Work Done on Jobs Not Completed	P-10	7	356	2	810
	Pile Tech. (Incl. P-12)	12	194	12	252
	Separations Tech.	8	51	8	56
	Analytical	5	12	4	54
	Technical Services	4	36	2	8
	Other Divisions	1	8	1	0
	Sub-Total	37	657	28	1,180
Total Work Done			3,646		3,809
Work Backlog:					Man-Hours To Complete
Jobs Started	P-10	7	1,215	2	307
	Pile Tech. (Incl. P-12)	12	4,154	12	1,497
	Separations Tech.	8	15	8	100
	Analytical	5	77	4	119
	Technical Services	4	67	2	48
	Other Divisions	1	60	1	2
	Sub-Total	37	5,588	28	2,073 (b)
Jobs Not Yet Started	P-10	2	18	3	62
	Pile Tech. (Incl. P-12)	6	89	4	132
	Separations Tech.	4	65	5	130
	Analytical	2	59	5	134
	Technical Services	5	661	5	624
	Other Divisions	0	0	2	634
	Sub-Total	19	892	25	1,716
Total Backlog			6,480 (c)		3,789 (d) & (e)

(a) P-12 designates the Exponential Pile Project.

(b) The large reduction of man-hours necessary to complete jobs started is mainly due to a cancellation of 2709 man-hours of graphite work for the P-12 group of the Pile Tech. Division. The cancellation was made because the graphite to be remachined, and for which the 2,709 man-hours were to be used, is currently in use and will continue in

use as long as our shop forces are located in the 101 Shops. This leaves 1000 man-hours of graphite work for the P-12 group on our backlog. This amount is required by them previous to Sept. 1.

(c) Does not include 486 man-hours transferred to Instrument nor 1107 man-hours transferred to Maintenance during May.

(d) Does not include 4 man-hours transferred to Instrument nor 496 man-hours transferred to Maintenance during June.

(e) Breakdown of total backlog work is as follows:

Graphite fabrication shop work	- 1,616 man-hours
Machine shop work	- 2,173 man-hours
Total Backlog	3,789 man-hours

The Bldg. 101 Shops continued on a planned six-day work week in support of the various technical programs requiring this extra service. In addition, Instrument and Maintenance Divisions' machining craftsmen worked the same overtime schedule on jobs cross-ordered from Technical.

Work continued on the four metal transfer assemblies and an all stainless steel ion chamber for the P-10 program of Pile Technology. Fabrication work on an experimental diffusion pump with special piping arrangement was completed for P-10. Shop work on a slug puncturing device was completed, and work was started on the fabrication of components for a metal sampling system.

Work continued on the second air hoist for the multicurie cell, as requested by the Equipment Design Group; part of this work has been farmed-out to the Maintenance Division, but the completed components will be installed in the mock-up by Technical Shops personnel. Continuing work on the "Hanford-slave manipulator" required one machinist full time.

Work on the 15-stage batch extractor for the Chemical Development Section is approximately 40% complete.

Work was completed on a double crystal spectrometer for the X-ray diffraction machine for the Metallurgy Section. This trial mock-up model is designed so that a sample may be held in place, rotated or turned, and is adjustable to any angle.

A pinch-off tool with changeable dies to accommodate various sizes of tubing was fabricated for Metallurgy.

A number of graphite samples were successfully turned to a diameter of .010" and length of approximately 1/4" for the Pile Technology Division. An expanding mandrel was fabricated at the request of Pile Technology. This mandrel was designed to expend a process tube to simulate pile conditions. A graphite mock-up is also being made for this experiment. Work was started on the Ball 3-X graphite mock-up and on a graphite horizontal mock-up at the request of the Pile Engineering Section of Pile Technology.

Fabrication of a remote titrating machine for the Analytical Service Section was completed. This is the second machine of this general type completed. Shop changes in design and fabrication resulted in a saving of $300 on fabrication of the second model.

Seven waste cans were completed and delivered to the Chemical Research Section. Two pulse mechanisms for column gloved boxes were completed for the Equipment Design Group.

Glass Shop

Work volume statistics for the Glass Shop (exclusive of P-10 service) are as follows:

	May	June
Jobs Completed		
New	36	67
Revisions	10	19
Repairs	0	9
Total	56	95
Job Backlog	20	13

All glass workers (except the one who continued on assignment to H.I. at 108-F) worked a planned six-day schedule through June 23 in support of the P-10 program. Field assistance to P-10 is continuing on a six-day basis at Bldg. 108-B. Three glassblowers are assigned there on shift work, and two are lending assistance in development work on glass line installations on days. No cases of personnel exposure above working limits were reported during the month.

A gas purification train was completed for the Analytical Research Section. Two quartz traps were fabricated for the P-10 project. These articles consisted of 2" and 1" quartz, respectively. A lathe has been ordered to enable the Glass Shop to work quartz of larger sizes.

Equipment Design

Work volume statistics for the Equipment Design Group, expressed in man-hours, are summarized as follows:

	May		June	
	Engineering	Drafting & Misc.	Engineering	Drafting & Misc.
Pile Technology				
P-10	10	67	—	—
Physics Section	4	17	—	—
Engineering Section	36½	156	34	366
Metallurgy Section	128	225	54	75
Separations Technology				
Chemical Development Section	36	50	8	—
Chemical Research Section	77½	212	66	68

Technical Services Division [redacted]

Analytical Division				
Service Section	473	601	298	529
Research Section	20	—	30	12
Technical Services Division				
Technical Shops	—	—	—	5
Laboratory Equipment Development (RDA #TC-5)	233	213	334	199
Totals	1,018	1,541	824	1,254

High work load factors in connection with the completion of designs for the multicurie cells and other special equipment for Bldg. 222-S, as well as for Pile Engineering programs, resulted in continuation of the planned six-day work schedule for a number of the engineers and for all designers and draftsmen in this group.

The following work was done for the various sections, as indicated:

Pile Engineering

Drawings were made of the process tube pulling winch, water pigtail, Beta front nozzle, perforated dummy, piping manifold, slug sweep, "tip off" for Beta tube rear nozzle, "W" cooler flange, bullet nose for "W" hole, "W" cooler nozzles, graphite support frame, graphite mock-up and various graphs.

Metallurgy

Continuing assistance was given the shop in assembly of the "slice and dice" box. Drawings were made of the Sugar Loaf cask details, an X-ray sample holder and a sign.

Chemical Development

Assistance was given in the shop fabrication of the KAPL miniature extractor, and the 15-stage counter current batch extractor. A pipetter drawing was revised.

Chemical Research

Preliminary scoping was completed for the tall column gloved box assembly. Experimental revisions of a commercial gear pump were carried out with shop assistance in an effort to avoid leaks, corrosion and pump jamming. Drawings were made of a tank farm layout, and drawing revisions were made of a pulse pump and a laboratory hood.

Analytical Service

Numerous conferences were held and design studies made on the Redox Laboratory remote handling equipment. Considerable attention was devoted to sample handling problems and flow of analytical samples. The final

plan called for an interconnected five-position analytical "line" which is being designed to reduce the amount of sample handling required. Drawings were made of a shielded forceps, a balance cover, a syringe support, a cone carrier, a "trombone" sampler, a pig carrier, a Junior Cave alteration, and a gloved box booklet.

Analytical Research

A gloved box was revised and outfitted.

Technical Shops

A job-chart was drawn.

Laboratory Equipment Development (RDA #TC-5)

Development of multicurie cell equipment continued. A toggle operated automatic release hook was designed for use on the in-cell remote air hoist, and was being fabricated in the shops. A tray-entry dolly, and an in-cell assembly-hanger were being designed. A service panel design was completed.

Revisions and improvements in the "Hanford Slave Manipulator" continued. This manipulator appears to have wide application in various types of cells, since no operating headroom is required and the remote-distance can readily be altered over a range of several feet without affecting the manipulator operation.

Development of the all-welded metal bellows type sealed stirrer was completed. Development of the vapor ionization detector-recorder system continued. Preliminary designs were completed for the balanced twin-channel amplifier and the integrator-recorder.

In collaboration with H. I. personnel, efficiency tests were in progress on a fiberglass air filter installed in a laboratory hood in Bldg. 3706.

New Laboratory Planning

The three contact engineers engaged in this work continued on a planned six-day work week, as required to expedite the final design stages of the Works Laboratory Area program.

Redox Analytical and Plant Assistance Laboratory, Proj. C-187-E

Exceptions to the acceptance of Bldg. 222-S, the Redox Analytical and Plant Assistance Laboratory, are being completed as rapidly as possible. Installation of all fume hoods, slurping hoods, sink hoods and junior cave filter canopies is now complete, and preparations for ventilation system balancing operations are under way. Door locks have been installed and installation of the exhaust fans has been completed.

Preliminary work is under way preparatory to the start of Phase II construction work in this new building as authorized by A.E.C. Directive HW-125, Modification No. 4. Basically, this work will provide radiochemical

laboratories in a section of the building originally reserved for future additional multicurie cells.

The 103 Tank for the Waste Disposal facility (Bldg. 219-S) has been received in sections and is being welded together in the construction shops. Redesign of the bottom of this tank has been necessary because of difficulties in forming the inverted saucer bottom. The new bottom will be a flat, braced design.

Mechanical Development Bldg., Proj. C-406

Placement of the metal siding panels on the Mechanical Development Bldg. is in progress by the Dix Steel Bldg. Co. Meanwhile, resolution of the Phase II construction scope and cost estimates has been completed, and a supplemental proposal (C-406, Part III) is being prepared to request the $158,000 in additional funds now estimated to be required for the completion of this Works Laboratory facility.

The detailed specifications for all of the G. E.-purchased equipment for this new building have been prepared, and are being relayed to the E & C Divisions.

Radiochemistry Bldg., Proj. C-381

The lump sum construction subcontract for the Radiochemistry Bldg. was awarded to the Sound Construction & Engineering Co. on their low bid of $3,744,213. Site grading in preparation for actual construction was under way at month end.

Equipment lists for the machine tools, the custom designed tools, and the uninstalled equipment for this building have been compiled and submitted to E & C. The final design of the downdraft hoods for this building has been completed by the Design Group. The E & C Divisions have started design of the concreting facilities for waste disposal which are to be incorporated in this building.

Plot Plan & Utilities, Proj. C-394

A.E.C. Directive No. HW-191, Modification No. 5, was received authorizing a new total of $1,760,000 for the design and construction of the Plot Plan & Utilities for the Works Laboratory Area.

Radiometallurgy Bldg., Proj. C-385

A.E.C. Directive No. HW-182, Modification No. 2, was received authorizing $1,720,000 for the construction of the Radiometallurgy Bldg. in the Works Laboratory Area. However, the call for bids covering this work is being temporarily delayed until more complete information is available on the probable cost of other major buildings in this program (notably, Pile Technology).

A review of the final drawings for this building by all of the interested parties was completed, and their comments have been transmitted to the

[redacted]

to the E & C Divisions.

Pile Technology Bldg., Proj. C-414

The Chas. T. Main Co., architect-engineer, is working on final changes in the drawings and specifications covering the Pile Technology Bldg. Major items being corrected by Main include extensive redesign of the ventilation system to provide conditioning of the administrative section of the building separately from the process or laboratory section, inclusion of escape hatches, increase of the basement lift capacity to 8,000 lbs., and enlargement of the lift platform to 8 ft. by 8 ft. Bid assemblies will be prepared by E & C immediately upon completion of this work.

Library and Files Bldg., Proj. C-421

Decision was reached to proceed with the call for construction bids on the Library & Files Building, and E & C are preparing final prints and specifications for the bid assemblies.

Laboratory Supply Bldg., Proj. C-458

A project proposal covering the ultimate conversion of Bldg. 3702, 300 Area, to a Laboratory Supply Bldg. for the Works Laboratory Area was approved by the A & B Committee and forwarded to the A.E.C.

Laboratory Services

Building 3706

Normal Bldg. 3706 services continued routinely. Material control, stockroom and work order activity is summarized as follows:

	May	June
Purchase Requisitions		
Total number processed	59	34
Number requiring special expediting	13	9
Number requiring emergency handling	3	1
Stores Stock Requests Processed	0	0
Store Orders		
Total number processed	1,123	856
Number requiring emergency pick-ups and deliveries	13	13
Work Orders Processed	63	24

One exempt and two non-exempt personnel in this group were scheduled on a six-day work week to serve laboratory personnel working a six-day schedule.

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Technical Services Division [redacted]

Work on the remodeling of offices 94 and 94-A, Bldg. 3706, was completed for the Analytical Division.

Work was started on setting up a complete Kardex file on all purchase requisitions that have been processed through the Material Control Group. When this work is complete, the time required to answer an inquiry regarding the purchase of material will be reduced by 75%.

A survey was started to try to determine the cause of the rubber glove and tourniquet deterioration in Bldg. 3706.

Plans were concluded for converting a portion of the locker room space in the Bldg. 3707-C Change House to provide a permanent location for the IBM Computing Laboratory. The Informal Approval Request for $9,000 to cover this work was approved by the A & B Committee on June 26 and forwarded to the A.E.C. Minor Construction C.P.F.F. Services Forces will start the actual construction as soon as Commission approval is received.

Building 222-S

Acceptance testing of the equipment installed in this new laboratory building was followed closely. Two of the three slurping hood trays were found to be out of specification, making them unsatisfactory for use. These trays do not project over the sides of the "dolly tray" used in operation of the unit, as is necessary to minimize the potential hazard of contamination due to a spill in the slurping operation. These units are among the exceptions listed in the inspection of May 1, and will not be accepted until they have been corrected satisfactorily.

Installation of cylinder locks on all doors of Bldg. 222-S, was completed on June 26. Keys are now available for building occupants through the 200-W Area Patrol, as authorized by the Laboratory Services Group.

Work orders have been issued for six approved type laundry bag holders for use in the locker rooms, and for the removal of a section of shelving in the stockroom. Removed shelving units are to be used in the locker rooms for storage of clean linen. This work will be done by operations Maintenance personnel, so will be delayed until construction forces are through in the building. Completion of the hood installation has resulted in the reassignment of a majority of the construction personnel, and 200-W Maintenance is scheduling the requested work. A routine work order for relamping of the building has been issued to 200-W Electrical Division.

A booklet entitled "Your New Lab," prepared by the New Laboratory Planning Group to describe Bldg. 222-S, is being made available to all personnel assigned to this new building.

A manual of general operating rules for Bldg. 222-S is being prepared by the Laboratory Services Group. Copies of this manual will be provided to operating supervision for their use with the air conditioning and ventilation control facilities, waste disposal facilities, etc.

MATHEMATICAL SERVICES

Statistical Services

300 Area

Statistical analysis of data compiled according to discussions at the February 27 meeting on the Uranium Sample Exchange Program, held at the Mallinckrodt Chemical Works, revealed (1) no significant difference in analysis of nitrogen in standard uranium samples due to different cleansing methods used at the New Brunswick Laboratory and the Mallinckrodt Chemical Works, and (2) no significant difference in the results reported by the New Brunswick Laboratory and the Hanford Works in the analysis of carbon and iron in a standard uranium sample. The comparative analytical results for twenty-three additional samples in the uranium sample exchange program between Hanford Works and Mallinckrodt Chemical Works were analyzed statistically (Doc. HW-21424). A total of one hundred twenty-three samples have been exchanged to date.

At the request of the Metallurgy Section, a statistical study of data obtained from sixty-nine pairs of uranium slugs processed through the 300 Area canning operation was undertaken to establish the optimum canning bath temperature range for minimizing non-seat rejects and excessive penetration of can wall by the aluminum-silicon bonding alloy. A table also was calculated to aid in determining the number of slugs required to test the effect of thicker end caps on the number of poor bond and bad weld rejects.

For the P Division, a special study of uranium solid scrap was made, the study of canned slug autoclave failures was continued, and statistical controls were reported on operational results from Machining, Pickling, Canning and Autoclave, Test Pile, and Melt Plant.

100 Areas

A statistical study was begun at the request of the Pile Engineering Section to determine the effect of length of exposure, inlet and outlet water temperature, local water temperature, heat generation, slug surface temperature, and slug position in the pile on the corrosion rate of exposed slugs. Further analysis of Panellit pressure readings for the H-10 loading was continued.

At the request of the P Division, a cost analysis was begun of the monthly charges assessed to the P Division in the 100-B Area. The current level of production and past unit cost experience are two of the factors being utilized in the establishment of control charts on unit costs.

Plots of calculated heater output against time were made for the Pile Applications Section in the case of certain special irradiations, and a hyperbolic distribution curve was fitted to the data. Plots were also made of daily resistance values for a period of two weeks.

Computations involving the solution of fourth order determinants on the

problem of pile shielding, and computations of average temperatures from a 105-DR temperature map, were completed for the Theoretical Physics Group. Various computations were performed for other units of the Pile Technology Division.

200 Areas

For the Separations Technology and Analytical Divisions, a study of fluorimeter data was undertaken (1) to obtain a proper calibration curve, (2) to obtain the best uranium values for samples submitted by the Chemical Research Section, based on this calibration, and (3) to investigate the reproducibility of the fluorimeter analysis. For the Analytical Division, the precisions of Am-Cm determinations made in the T and B Plant laboratories on a synthetic 6-1MS sample were estimated. The precision of the ratio of the spontaneous fission rate of Pu^{240} to the induced fission rate of Pu^{239} was obtained in connection with the fission counter determination of Pu^{240}. In view of excessive reruns of the AT assay due to failure to check the value calculated from specific gravity, a review of the relationship between specific gravity and Pu in AT solution has been undertaken. For the Chemical Development Section, statistical control limits were determined for Building 321 weekly material balances.

The regular semi-monthly reports of certain Kr-85 calculations for the A.E.C. were completed and forwarded. In addition, certain of the fundamental data procurement and calculation steps have been formalized and assigned as routine. Several meetings were held with A.E.C.-sponsored visitors from Argonne National Laboratory, Brookhaven National Laboratory and the Washington, D.C., A.E.C. office concerning the semi-monthly krypton calculations. The accuracy of the present calculation was discussed completely. Additional confirmatory calculations are to be made, and some changes in basis may be incorporated.

General

For the Botany Group of the Health Instrument Divisions, the study of yttrium uptake data was completed. Further data relating to possible damage to plants by radioactivity of phosphorus in nutrient medium were examined. Equations were obtained relating the physical properties of various C_{40} polymers to the number of conjugated double bonds and side methyl groups. Study of blood chemistry and hemotology data for the Zoology Group was continued. A study was begun for the H. I. Operational Division of the relationship between natural radioactivity present in air samples and the available meteorological data. A study of the relationship of activity of the water in the 100-D retention basin to various water treatment variables was concluded.

Computing Services

For the P-12 Project, diffusion length calculations were completed for two sets of data, least square cosine fits were made for seventy-six cases, and thermal utilization was calculated for thirteen cases.

The difference between the maximum power possible in B pile, as determined by temperature limits and the actual power developed, was computed for three cases. The tabulator was used to plot tube temperature rise vs. pile radius for three sets of data. The average of each successive sets of 10 tubes was also plotted. The ratio $\Delta T/\Sigma \Delta T$ was determined for each tube for twelve cases. The sum $\Sigma \Delta T^2$ of tubes adjacent to safety rods was computed for seventeen cases. Boiling disease calculations were made for five cases. Programming was completed for slug surface temperatures and slug corrosion calculations. Slug corrosion was calculated for 28 tubes. A special listing of graphite temperature and the ratio Q_g/Δ tg was made for each graphite thermocouple in each pile. A listing of Q_g, t_g, and K for each graphite thermocouple in DR was made for all data processed to date.

A listing of H-10 tubes showing exposures as of June 1 and July 1 was completed. Routine calculations were made on uranium metal quality, aquatic biology, sheep thyroid data, H-10 Pennelit pressure data, and graphite temperatures for all piles.

Programming was completed and calculations begun on the series $\sum_{n=1}^{\infty} \frac{1}{n} = e^{nx}$ where x assumes values from 10^{-1} to 10^{-5}. A conversion calendar has been prepared for relating the day number since start-up to the conventional calendar date. The calendar extends from day I (when pile operation first began) through calendar year 1961.

A table look-up facility has been added to the Card Programmed Calculator general purpose control panel. A table may be scanned at the rate of 1500 lines per minute. As it will still be quicker to calculate the values of most functions, the table look-up feature will be used chiefly for empirical data or unusual functions that are difficult to calculate.

The first serious machine trouble was encountered this month, with approximately ten days of computing time being lost before the difficulties were completely eliminated. Personnel were engaged in programming, board wiring, and key punching during machine shutdown time.

TECHNICAL INFORMATION SERVICES

Plant Library

Library work volume and book statistics were as follows:

	May	June
Number of books on order received	306	329
Number of books fully cataloged	297	188
Number of bound periodicals processed but not fully cataloged	265	0
Pamphlets added to the pamphlet file	289	12
Miscellaneous material received, processed and routed (Including maps, photostats, patents, etc.)	57	110
Books and periodicals circulated	3,933	3,896
Unclassified reports processed	173	130

	May	June
Unclassified reports circulated	288	333
Reference services rendered	2,018	1,732

	Main Library	W-10 Library	108-F Branch	Total
Number of books	7,517	3,176	356	11,049
Number of bound periodicals	4,532	0	593	5,125

Activities in the Library proceeded routinely, with the work volume approximately equal to that of the previous month. A sampling of typical reference questions is given below:

Vapor pressures of some of the cheaper desiccants.
Physical properties of carbon-black, average particle size, etc.
Decode the following terms appearing in a declassified document:
TA-7, LF-9 and SC-5.
Efficiency of activated charcoal adsorption of I_2 vapor.
Contents of "Material and Methods" manuals #6 and #9.
Composition of Tego.
Hazards of handling mercuric salts.
Solubility of $AgNO_3$ from 0° to 100° C.
Market prices for Cu, Pb, Zn, Al, Mg, Mn, Mo, W, Co, and Ni.
Is Lucite soluble in alcohols of low molecular weight?
Information on solutions for hydroponics.
Theory of electrical conductivity in glass.
A general, elementary theory of diffusion of gases.
Possibility of using liquid soaps for heavy lubricant duty.
Exact definition of a "gross yard."

An important run of the Proceedings of the Royal Society, Series A, covering the years 1905-1936 was received during the month which will add appreciably to the Library's periodical reference files. With previous holdings of this title, this will complete a highly useful file of this valuable scientific record.

Copies of a pamphlet, "The Technical Information Services of the U. S. Atomic Energy Commission" were distributed to Plant personnel, and additional copies were distributed to the Technical Graduates attending orientation classes at Carmichael Junior High. This booklet is an excellent summary of the centralized technical information services provided by the Commission in support of the research and development effort of the National atomic energy program. It points out that high quality technical information services involve close cooperation between the related contractor units and these centralized activities of the Commission.

The Library opened and staffed a temporary branch at Carmichael Junior High School to provide reference and classroom material for new-hire Technical Graduates undergoing orientation and training there. The books selected have been correlated closely with the teaching program and are being actively used.

A continuing effort is being made to develop a standard procedure for the

disposal of surplus technical journals, which routinely accumulate because only one copy of a title is bound for permanent reference, although it may be necessary to take a number of subscriptions for current use. The Chief Librarian of the A.E.C. has called attention to Section 9 of Personal Property Management Regulation No. 6, General Services Administration, which may apply. The need is for an uncomplicated procedure that will dispose of the material in bulk, without detailed listing and involved clerical handling.

Miss Marion Chase, an A.E.C. visitor from the University of Washington, was assisted in her study of the unclassified reports index on June 14. The Technical Librarian attended the meeting of the Special Libraries Association in St. Paul, Minnesota. These meetings are always particularly valuable since the Association limits its concern to industrial libraries. Such papers as "Technical Publications of Industrial Concerns," "Source of Electrical Technical Information," and "Subject Indexing in Chemical Libraries" are typical of those presented. An opportunity was also available to discuss with other A.E.C. librarians problems on exchange of periodicals, periodical circulation, indexing, etc. A number of applicants were also interviewed for the long-vacant position as library cataloger, but it appeared unlikely that any suitable candidate was located.

Classified Files

Work volume statistics for the Classified Files were as follows:

	May	June
Documents routed	15,066	11,738
Documents issued	6,564	6,188
Reference services rendered	4,325	4,400
Registered packages prepared for offsite	370	224
Inter-area mail sent via transmittal	34,523	35,005
Holders of Classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	12	14
(b) Because of transfer of work assignment	7	7
(c) Because of termination	3	4
Inventory reductions:		
Copies of documents destroyed	2,196	8,222
Copies of documents downgraded	0	211
Copies of documents declassified	30	49
Classified documents located which were unaccounted for in previous inventory	47	15
Standard storage cartons of material retired to the Records Center:		
Unclassified and Official Use Only		25
Classified		88

Attention is called to the added captions of Files activities reported, and to the substantial increase in the number of classified documents downgraded. These reflect the activities of the Records Analyst in reduction of classified documents inventory and retirement of Files holdings to the Records

Center. This position, discussed in last month's report, was filled June 18 by upgrading from within the Classified Files.

Work on the inventory of classified documents in the Central Files is proceeding satisfactorily. The inventory of the E & C Classified Files was completed and the summary made. A total of 32,599 documents were inventoried of which 90 have not been located. The check of the 300 Area Classified Files is approximately 75% complete and that of the 700 Area Classified Files approximately 60% complete. A tentative target date for completion of the inventory and preparation of the required summary has been set for November 1, 1951.

In connection with the completion of the inventory a number of other matters were discharged. G. W. Watt, Hanford consultant, has been asked to inventory the classified documents charged to him from the Hanford Files. Accountability of documents charged to B. R. Prentice, R. J. Schier, and E. S. Baker was transferred to the Nucleonics Office in Schenectady in accordance with a procedure reported in the Monthly Report of March 1951. A list of missing Research and Development Reports was transmitted to the Technical Information Services at Oak Ridge for circulation through other A.E.C. installations. Similar lists are routinely received and checked here, and it is hoped that through this procedure missing documents may be located.

Regarding another aspect of the total document inventory program, Files experience to date with the quarterly personal document inventory requirement (H. W. Instructions Letter #135, Section VI) has been somewhat unsatisfactory. The program has involved considerable clerical load on the Classified Files, has located only one "missing" document, and the requirement has produced considerable resistance from Plant personnel. It is difficult to arrive at a decisive answer regarding its effect on reduction of personal document holdings, because the trend in personal document holdings has been downward since the inception of the audit and inventory program in January 1950.

On June 24 a meeting was held with representatives of the Reproduction Section, the Security Division, E & C Classified Files and Office Methods Section to draft a "Certificate of Destruction" form for Plant-wide use. It is planned to use serially numbered snap-out carbon forms which will be available through the Stores Division. The serial numbering of the forms will greatly simplify problems of filing and posting.

W. A. Strausser of the A.E.C. Office of Declassification, Oak Ridge Extension, who visited Hanford in connection with the activities of the recently-formed G. E. Non-Technical Document Review Board, spent some time with the Classified Files and reviewed a sampling of technical documents. It appears that relatively few Hanford-originated documents in the technical field will be declassifiable, since the majority of those scrutinized contained classified information.

A use study indicates that it may be advantageous to eliminate the presently required 300 Area and 700 Area file copy coverage on UNCLASSIFIED and OFFICIAL USE ONLY material, since the infrequent reference use made of this material can adequately be met by the Pink File or through reference

to material retired to the Records Center. Plans to solicit the comments of the Division Head on this proposal were under review at month end.

A difficult administrative problem in the Technical Information Section is the abnormally high turnover of female employees, and the necessity of constantly training new people in complex clerical procedures. It is also particularly desirable, since this Section deals with both classified and open literature, that all employees have a good working knowledge of the total program. To meet this need it has been found necessary to assign someone to the development of manuals of procedure, and the correlation of these with a job training program. A job description covering this assignment was developed and is being reviewed by the Wage Rates Division.

The Section Chief was appointed Chairman of the Committee on Library and Document Control of the Technical Information Panel. The Panel now plans to operate with four basic committees, as follow: Publication, classification, dissemination, and library and document control. The area of activities for the Library and Document Control Committee were developed for inclusion in the official minutes of the meeting.

Personnel from the Technical Information Section, and from the local A.E.C. met with Dr. D. J. Pflaum, Chief, Materials and Information Branch, Division of Research, A.E.C., Washington, D. C., to discuss the Standard Distribution List (M-3679). It was reported that the present distribution for the Health and Biology category, which had previously been reported as unsatisfactory by Hanford, was to be changed shortly since experience had indicated that the Hanford doubts were justified. The Standard Distribution List was discussed in detail, with general agreement that the new category definitions were working out much more satisfactorily than the previous ones.

In connection with report distribution problems, approval was requested from and granted by the local A.E.C. for a new special offsite distribution list for the "Progress Report - Chemical Development Section" to include the American Cyanamid Company, Idaho Falls, Idaho. Since there have been a number of changes in the offsite distributions originally authorized for a number of Hanford Progress Reports, the opportunity was taken to review all special distributions, and a memo issued giving their current status.

To determine the practice elsewhere with respect to use of the two classifications, CONFIDENTIAL and SECRET, form letters were sent to all members of the Technical Information Panel requesting their local ground rules in this matter. Results indicated that the CONFIDENTIAL classification is little used, since CONFIDENTIAL documents containing "Restricted Data" are inventoried and controlled in the same manner as those classified SECRET. There appeared to be a real need for further definition of the types of information for which this classification might be used without the necessity of controlling the documents. The general procedure elsewhere is to control the CONFIDENTIAL documents in exactly the same manner as those classified SECRET, since the volume of material which might be uncontrolled by liberal interpretation of GM-37 is small and the savings involved are inappreciable.

Technical Services Division

Central Reporting Service

Work volume statistics for this Unit were as follows:

	May	June
Ditto masters run	657	696
Mimeograph stencils run	477	850
Ditto copies prepared	24,425	28,884
Mimeograph copies prepared	88,110	77,034
Formal Research and Development Reports issued	12	7
Formal Reports in Process	11	10
Reports abstracted	0	308
Volume of unclassified mail handled by the 300 Area Mail Room	39,803	27,837

Work in the Report Preparation Unit continued routinely, although it was necessary to work overtime a number of Saturdays to handle the work volume. In addition to the routine Research and Development Reports, the Unit has been responsible for final typing substantially all of the new Redox Technical Manual. To date 12 have been completed and 2 more are in process of a total of 25 chapters. Two additional IBM proportional spacing typewriters with special keyboards designed for our needs were received during the month.

Section A of the Technical Manual has been completed and Section B is under way. It appears that use of the new Xerox process is going to assist materially in the duplication of Section C, which includes a large number of mimeographed standard operating forms.

The Abstracting Unit issued two reports during the month: Document HW-21166, "Corrosion of Aluminum - A Bibliography," and Document HW-21199, "Slug Failures Occurring in Hanford Production Reactors." Three additional reports ("Water Requirements for the Cooling System of the Hanford Reactors," "Summary of 105-Production Tests," and "Zirconium and its Alloys") are in process.

A request from the Plant Security and Services Division that the 300 Area Duplicating and Mail Service be transferred from the Technical Information Section to their Office Services Section was studied. It was agreed that transfer of the messengers handling regular mail was in order, but that the pick up and delivery of classified mail should continue to be a function of the Classified Files. In regard to the 300 Area Duplicating Unit, it was felt that action should be postponed for at least three to six months.

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 June 1951 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

HW-21506 Del

Technical Services Division [redacted]

for possible inventions or discoveries.

Inventor(s)	Title
J. F. Gifford R. E. Field	Hanford Slave Manipulator

Signed _____
T. W. Hauff, Division Head

TWH:mcs

MEDICAL DIVISIONS

JUNE 1951

General

Personnel Changes

The roll decreased from 285 to 281.

Visits

Mrs. Harrison, chief pharmacist, attended the Washington State Convention of the American Pharmaceutical Association at Yakima, Washington.

Mr. A. M. Johnson, director and Messrs. E. Sorger and D. Jorgensen, staff members of the Washington State Dept. of Labor visited the plant on June 28th. They inspected medical facilities in Richland, North Richland, 200 W and White Bluffs areas.

Miss C. Vavre, Ass't Prof. in Public Health Education, University of Washington visited the Public Health Division, to help plan for the six weeks field experience course for 4 Richland school teachers, given by our Public Health Division.

Industrial

Employee physical examinations remained about the same at 2539.

Dispensary treatments in the 14 stations totaled 10,210 as compared to 10,522 for May.

Two major and 15 sub-major injuries were treated as compared with 6 major and 13 sub-majors for May. No major and only one sub-major injury was sustained by G. E. employees.

The monthly health topic emphasized "Rabies" since there was an outbreak of this serious condition among dogs and other animals in the state.

Sickness absenteeism (weekly employees) for June decreased by .07% to 1.53% while that for monthly employees for June decreased .32% to .64%.

The program of lapel button awards for each year of continuous perfect attendance should be a good stimulant for attendance. There were seven employees with perfect attendance for four years in the Medical Divisions.

Kadlec Hospital

The average daily census decreased from 92.2 to 88.2 (76.7 adult, 11.5 newborn). The census was 77.1 a year ago.

The occupancy rate for mixed services (all services except obstetrics) was 76.7%.

Nursing hours per patient day were 3.68 for the mixed services and 4.23 for obstetrics.

The ratio of inpatient hospital employees to patients (excluding newborn) for May was 1.95.

Public Health

A 6 weeks field training course for four local school teachers was started and seems to be mutually satisfactory. This should be very valuable in carrying public health methods into the school. The course is under the general direction of the University of Washington.

Three hundred and fourteen pre-school children were examined at five elementary schools with the cooperation of the pre-school PTA and private physicians. Immunizations were given and parent-nurse conferences completed with subsequent follow-up to be done. The social service counselors participated in the pre-school roundup to find those children who give indication of problems which might interfere with their adjustment in Kindergarten.

General (Continued)

Costs (May)

Medical Divisions operating costs, before assessments to other divisions, were as follows:

	April	May	May Budget
Industrial Medicine (Oper. Div.)	$ 39,246	$ 41,383	$ 40,500
Public Health	10,974	10,707	12,207
Kadlec Hospital (Net)	22,355	27,713	26,833
Hospital assessments to other divisions and workmen's compensation	4,855	3,067	3,167
Subtotal - Operations - Medical Divisions	77,430	82,870	82,707
Construction Medical (Industrial & Public Health)	9,923	14,799	13,364
Total Operations and Construction	$ 87,353	$ 97,669	$ 96,071

The net cost of operating the Medical Divisions, before assessments to other divisions was $97,669, an increase of $10,316 and $1,598 above the budget figure.

There was little change in income. Overall cost increases were due to increase in salaries and in continuity of service due to longer work month. Hospital maintenance costs increased by $3070 due largely to repairs on steam lines and air conditioning system.

MEDICAL DIVISIONS

JUNE 1951

Industrial Medical Division

General

Physical examinations remained about the same as the previous month, 2,539 as compared to 2,517. General Electric employees sustained one sub-major injury. Sub-contractor employees sustained 2 major injuries and 14 sub-major injuries.

Two industrial physicians, Dr. W. J. Grippe and Dr. H. O. Pope, terminated their employment during the month. This necessitated temporary suspension of annual examinations and some modification of the area interval examination schedule.

A total of 10,210 treatments were rendered during the month to both operating and construction employees in 14 First Aid stations. This was approximately the same number of treatments as were rendered in May. The First Aid facilities in the 200 E construction area have not yet been completed and operation of this additional station awaits completion of the physical facilities.

Dr. Norwood attended the AEC General Information meeting of the Division of Biology & Medicine in Chicago during May. He reviewed the papers presented there at the Industrial Physicians staff meeting.

The Chemical Hazards Committee met on June 8th. Hazards of the stainless steel cutting operation at White Bluffs, and the present solvent usage and degreasing operations were the chief problems discussed. A formal report on the Health Hazards of Pesticides was completed for the Transportation Division which uses these materials.

The Health Activities Committee met on June 21st. The health topic on "Rabies" was presented. Material on this subject was prepared for distribution to all employees. New members representing each division were present. Absenteeism (weekly employees) due to all causes decreased by .14% to 2.37%, while absenteeism due to sickness decreased by .07% to 1.53%. Absenteeism (monthly employees) due to all causes decreased by .24% to 1.19%, while absenteeism due to sickness decreased by .32% to .64%.

The Director of the Washington State Dept. of Labor, Mr. A. M. Johnson and members of his staff, E. Sorger and D. Jorgensen, visited the plant on June 28th. They inspected medical facilities at Richland, North Richland, the 200 W and White Bluffs areas. Dr. Hardy of the AEC Division of Biology and Medicine was also a visitor on June 27th.

The net cost of operations increased $2,305 as compared with the previous month. This was chiefly due to increased cost in salaries due to longer work month and an increase in supplies.

Industrial Medical Costs:

	Increase or (Decrease) over Previous Month	May	April	May Budget
Administration	$ 289	$ 8,296	$ 8,007	$ 8,937
Household & Property	(86)	1,509	1,595	1,300
Professional Services	1,566	26,651	25,085	26,250
Total Direct Expense	1,769	36,456	34,687	36,487
Accrual for Public Liability Claims	0	150	150	0
Transferred Charges from Other Divisions	82	5,395	5,313	5,070
Less: Revenue	(286)	618	904	1,057
Workmen's Compensation	(168)	509	677	700
Net Cost of Operations	$2,305	$40,874	$38,569	$39,800

Industrial Medical Division (Continued)

Physical Examinations	May	June	Year to Date
Operations			
Pre-employment	308	493	1845
Rehire	54	53	340
Annual	330	49	1838
Interval	311	348	1718
Visitor	0	2	4
A. E. C.	54	23	136
Re-examination and rechecks	128	150	901
Termination	137	210	960
Sub-total	1322	1328	7742
Sub-contractors			
Pre-employment	206	312	1959
Rehire	232	308	1934
Recheck	94	72	536
Termination & Transfer	663	519	3582
Sub-total	1195	1211	8011
Total Physical Examinations	2517	2539	15753
Laboratory Examinations			
Clinical Laboratory			
Government	210	119	576
Pre-employment, termination, transfer	5072	7814	38951
Annual	1702	336	9614
Recheck (Area)	1631	1803	8930
First Aid	24	18	100
Clinic	924	807	12906
Hospital	4290	4142	26764
Public Health	23	11	154
Total	13876	15050	97995
X-Ray			
Government	36	11	83
Pre-employment, termination, transfer	796	1197	6260
Annual	336	55	1822
First Aid	193	231	1134
Clinic	297	320	1670
Hospital	368	294	1740
Public Health	2	4	40
Total	2028	2112	12749
Electrocardiographs			
Industrial	15	6	132
Clinic	4	4	27
Hospital	35	36	200
Total	54	46	359
Allergy			
Skin Tests	1	2	17

Industrial Medical Division (Continued)

First Aid Treatments	May	June	Year to Date
Operations			
New Occupational Cases	349	374	1936
Occupational Case Retreatments	1278	1202	6340
Non-occupational Treatments	2634	2742	17081
Sub-total	4261	4318	25357
Construction			
New Occupational Cases	1197	876	5209
Occupational Case Retreatments	3945	3872	18948
Non-occupational Treatments	1063	1104	6253
Sub-total	6205	5852	30410
Facility Operators	56	40	214
Total First Aid Treatments	10522	10210	55981
Major Injuries			
General Electric	1	0	3
Sub-contractors	5	2	22
Total	6	2	25
Sub-major Injuries			
General Electric	3	1	11
Sub-contractors	10	14	62
Total	13	15	73
Absenteeism Investigation			
Total No. calls requested	9	12	74
Total No. calls made	9	12	74
No. absent due to illness in family	0	0	0
No. not at home when call was made	0	3	15

HANFORD WORKS

ABSENTEEISM REPORT

June 1951

ABSENTEEISM ALL CAUSES BY DIVISION

WEEKLY	%
Municipal, Real Estate & General Services	2.31
Manufacturing	2.32
Employee & Community Relations	2.37
Plant Security & Services	2.46
General Accounting	2.48
Health Instrument	2.53
Technical, Engineering & Construction	2.56
Medical	2.74
Purchasing & Stores	2.95

MONTHLY	%
Employee & Community Relations	.13
General Administrative	.20
General Accounting	.34
Municipal, Real Estate & General Services	.68
Health Instrument	.81
Manufacturing	1.27
Technical, Engineering & Construction	1.29
Plant Security & Services	1.55
Medical	1.70
Purchasing & Stores	1.74

	ALL CAUSES					SICKNESS ONLY					AVERAGE DAYS LOST BY EACH EMPLOYEE		
	Male	Female	Total	%	Inc (Dec)	Male	Female	Total	%	Inc (Dec)	Male	Female	Total
WEEKLY ROLL 6-4 to 7-2-51	2066	1072	3138	2.37%	(.14%)	1273	752	2025	1.53%	(.07%)	.26	.43	.31
MONTHLY ROLL June 1951	452	19	471	1.19%	(.24%)	251	4	255	.64	(.32%)	.13	.07	.13

Comparison of present year to date total absenteeism figure with the 1950 figure shows an increase of .61% (Weekly)

Combined total weekly and monthly 2.07%.

MEDICAL DIVISIONS

JUNE 1951

Hospital Division

General

The average daily adult census decreased from 81.1 to 76.7, as compared to 65.7 a year ago. This represents an occupancy percentage of 74.5% broken down as follows: Mixed Service (Medical, Surgical, Pediatrics) - 76.7%; Obstetrical Service - 65%. The minimum and maximum daily census during the month ranged as follows:

	Minimum	Maximum
Mixed Service	53	77
Obstetrical Service	7	19
Total Adult	63	90

The average daily newborn census increased from 11.1 to 11.5, as compared to 11.4 a year ago.

Nursing hours per patient per day:

Medical, Surgical, Pediatrics . .	3.68
Obstetrical	4.23

The ratio of inpatient hospital employees to patients (excluding newborn) for the month of May was 1.95. When newborn infants are included, the ratio is 1.71.

The net expense of the Richland community medical program for May 1951 was $27,713, as compared to $22,355 for April. Summary is as follows:

Kadlec Hospital net expense $27,713

This is an increase of approximately $5350 over April. The additional expense is due primarily to a longer month which increased direct expenses (about $1050); increased maintenance charges resulting from steam line and air conditioning repairs (approximately $3050); and a decrease in assessments to other divisions as a result of fewer hospitalized industrial cases (about $1900). To partially offset these additional expenses, revenue increased approximately $550 and deductions for Workmen's Compensation costs increased about $100.

The exterior painting of Kadlec Hospital was completed this month.

Due to the termination of our half-time Physical Therapist on June 29, our summer program for handicapped children has been curtailed during July and August. It is anticipated that a full-time Physical Therapist will be available for employment in September.

MEDICAL DIVISIONS

JUNE 1951

Hospital Division (Continued)

Kadlec Hospital

	May	June	Year to Date
Average Daily Adult Census	81.1	76.7	86.0
Medical	27.3	22.8	26.5
Surgical	29.3	28.3	31.6
Pediatrics	13.8	12.6	15.8
Obstetrical	10.7	13.0	12.1
Average Daily Newborn Census	11.1	11.5	11.7
Maximum Daily Census:			
Mixed Services	84	77	
Obstetrical Service	18	19	
Total Adult Census	94	90	
Minimum Daily Census:			
Mixed Services	61	53	
Obstetrical Service	6	7	
Total Adult Census	63	63	
Admissions: Adults	521	495	3191
Discharges: Adults	513	511	3196
Newborn	63	74	419
Patient Days: Adult	2515	2302	15570
Newborn	343	344	2126
Total	2858	2646	17696
Average Length of Stay: Adults	4.9	4.5	4.9
Newborn	5.4	4.6	5.1
Occupancy Percentage: Adults	78.7	74.5	83.5
Newborn	79.3	81.4	83.6
(Occupancy Percentage based on 103 adult beds and 14 bassinets.)			
Avg. Nursing Hours per Patient Day:			
Medical, Surgical, Pediatrics	3.64	3.68	
Obstetrics	5.27	4.23	
Avg. No. Employees per Patient (excluding newborn)	1.95		
Operations: Major	81	72	492
Minor	89	88	529
E.E.N.T.	67	79	471
Dental	6	2	22
Births: Live	73	67	411
Still	0	1	2
Deaths	3	5	27
Hospital Net Death Rate	.17%	.51%	.30%
Net Autopsy Rate	33.3	20.0	29.6
Discharged against advice	0	3	7
One-day Cases	108	131	656
Admission Sources:			
Richland	73.7	77.0	75.4
North Richland	11.5	10.1	11.5
Other	14.8	12.9	13.1

Kadlec Hospital (Continued)	May	June	Year to Date
Admissions by Employment:			
General Electric	69.3	72.1	72.7
Government	3.5	2.8	2.6
Facility	5.2	4.6	4.6
Sub-contractors	17.7	16.5	14.8
Schools	1.5	1.2	1.5
Military	.5	1.2	2.1
Others	2.3	1.4	1.5
Hospital Outpatients Treated	427	431	2686
Physical Therapy Treatments			
Clinic	99	99	898
Hospital	99	59	466
Industrial: Plant	112	130	861
Personal	19	8	114
Total	329	296	2339
Pharmacy			
No. of Prescriptions Filled	3108	2905	19063
No. of Store Orders Filled	710	571	4241
Patient Meals			
Regulars	4132	3667	24300
Specials	1256	1088	7473
Lights	51	11	103
Softs	1424	1167	8989
Tonsils & Adenoids	141	162	1044
Liquids	166	200	1232
Surgical Liquids	75	76	488
Total	7245	6371	43629
Cafeteria Meals			
Noon	1682	1433	8508
Night	240	242	1356
Total	1922	1675	9864

Public Health Division

General

Home nursing visits showed a marked decrease due to the subsiding of communicable diseases, particularly measles. Weekend bedside nursing service coverage was subsequently discontinued. Maternal, infant, and pre-school nursing visits will again be emphasized.

The annual pre-school conferences were conducted at the five Richland elementary schools with the cooperation of the pre-school PTA and the private physicians. Three hundred and fourteen children were examined, immunizations given and parent-nurse conferences completed, with subsequent follow-up to be done.

Fifteen children were examined at the quarterly orthopedic clinic held in Pasco. A chest clinic was held in Pasco also, with Dr. A. R. Allan, as Consultant. Six patients were seen and seven x-rays read.

Another expectant mothers' course was completed.

Four Richland teachers enrolled at the University of Washington in connection with the six weeks field experience course, conducted in the local health department. An in-service program was planned to show the correlation between the various public health services and the schools in the community.

Miss Catherine Vavre, Assistant Professor in Public Health Education from the University of Washington, visited the department regarding the public health training program. A number of newer health films were left in the department for preview. The four teachers and staff evaluated them for education purposes in the schools.

The social service counselors participated in the pre-school roundup with the purpose of picking up those youngsters who give indication of problems which might interfere with their adjustment in kindergarten. Several such children were discovered and counseling service has been started with them and their parents.

The majority of other situations coming to social service involved problems of personality adjustments and of physical illness.

Raw milk samples from 110 producers was taken this month. Two producers were degraded because of high bacteria counts. Temperatures on some indicate better cooling methods are necessary.

Restaurants in the vicinity were inspected. The problem which seems to be most prevalent is proper food handling which results from the rapid turnover of help occurring in the industry. We hope to have a food handler's training school for restaurant employees this fall.

Water samples were taken weekly from the wading and swimming pool. Bacteriological results, pH, and chlorine residual were all satisfactory.

Public Health Division (Continued)

General (Continued)

Soft ice cream samples were taken from machines in the Richland area. It was evident that a large percentage of operators were not cleaning and sterilizing the machines as directed by the sanitation section.

Mosquito control operations consisted of spraying infested areas every 7 - 10 days, spraying park weekly, and fogging of residential areas in the evenings. Considerable difficulty was experienced with farmers over-watering their pasture land. Means have been taken whereby they may have their permit cancelled if the practice of over-watering continues. Over-watering in residential areas has greatly hampered the mosquito control program; however, alternate days for watering is alleviating the situation.

MEDICAL DIVISIONS

JUNE 1951

Public Health Division (Continued)	May	June	Year to Date
Education			
Pamphlets distributed	10000	10000	60591
News Releases	0	0	0
Staff Meetings	4	1	10
Classes	1	3	9
Attendance	20	121	208
Lectures & Talks	1	1	35
Attendance	12	25	890
Films Shown	1	3	22
Attendance	60	121	1109
Community Conferences	5	14	186
Radio Broadcasts	0	0	0
Immunizations			
Diphtheria	7	2	102
Diptheria Booster	4	181	265
Tetanus	9	4	590
Tetanus Booster	0	188	409
Pertussis	0	2	18
Pertussis Booster	0	179	238
Rocky Mountain Spotted Fever	6	2	8
Rocky Mountain Spotted Fever Booster	2	0	2
Typhoid	3	1	17
Typhoid Booster	0	0	0
Smallpox	2	31	47
Smallpox Revaccination	1	205	233
Tuberculin Test	0	3	24
Social Service			
Cases carried over	78	86	497
Cases admitted	16	23	109
Cases closed	18	15	95
Remaining case load	77	94	512
Activities:			
Home Visits	36	8	152
Office Interviews	239	206	1353
Conferences	51	84	451
Meetings	24	14	95
Sanitation			
Inspections made	131	113	798
Conferences held	0	14	63
Bacteriological Laboratory			
Treated water samples	205	214	1133
Milk samples (inc. cream & ice cream)	15	21	76
Other bacteriological tests	216	222	1548
Total	436	457	2757

Public Health Division (Continued)

Communicable Diseases	May	June	Year to Date
Amoebic Dysentery	0	0	1
Chickenpox	9	7	373
Erysipelas	0	0	7
German Measles	9	12	66
Histoplasmosis	0	0	1
Impetigo	1	0	3
Influenza (Upper Respiratory Infection)	1	0	3092
Measles	675	189	1101
Meningitis	0	0	2
Mumps	3	1	7
Salmonellosis	0	0	2
Pinkeye	5	0	13
Rheumatic Fever	2	0	2
Ringworm	4	0	14
Roseola	0	1	14
Scabies	0	1	3
Scarlet Fever	7	2	48
Syphilis	17	0	20
Tuberculosis	1	0	7
Whooping Cough	1	0	4
Total	735	213	4780
Total No. Nursing Field Visits	1351	732	5357
Total No. Nursing Office Visits	159	107	822

HEALTH INSTRUMENT DIVISIONS

JUNE 1951

Summary

There were eight informal special hazards incident investigations. One overexposure resulted from accumulation of I^{131} in the thyroid gland.

In general, the emission of I^{131} from the separations plants exceeded desirable levels. Vegetation contamination by I^{131} over a wide area (Walla Walla, Lewiston, Spokane) reached levels higher than those which should properly be maintained in a public area.

Surveys by the Operational Division showed no significant deviation from expected findings, again with the exception of tritium concentrations in the atmosphere.

[redacted]

Health Instrument Divisions

HEALTH INSTRUMENT DIVISIONS

JUNE 1951

Organization

The composition and distribution of the force as of 6/30/51 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	1	1	7	2	3	12	12	6	-	44
Engineers *	4	4	32	6	6	22	13	4	-	91
Clerical	-	-	2	1	1	3	3	6	-	16
Others	15	17	55	11	40	84	54	15	8	299
Total	20	22	96	20	50	121	82	31	8	450

* includes chemists, biologists, etc.

Number of employees on Payroll	June 1951
Beginning of month	445
End of month	450
Net increase	5

Added to the roll were 5 technical graduates, 5 inspectors, 4 laboratory assistants, 4 personnel meters clerks, a stenotypist, and a general clerk. A senior aquatic biologist returned from completion of Ph.D. studies.

Removed from the roll were a section chief, 3 engineers, a technical graduate, 4 inspectors, a technologist, 3 laboratory assistants, a personnel meters clerk, a badge worker, and a reproduction and photograph assistant.

General

There were eight informal investigations of minor special hazards incidents. All were concerned with management of contamination. No formal investigation was conducted, although one is to be recorded, arising from the deposition of more than the permissible amount of I^{131} in the thyroid gland of one employee.

This illustrated one phase of the widespread iodine problem. Whereas the silver reactors and other technological improvements were expected to eliminate the radioiodine emission problem, the situation is currently at its worst state since the beginning of General Electric operations. The average concentration of I^{131} in the separations plant areas for June was not many times lower than the limit that gives 300 mrep per week to the thyroid gland. In the worst

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zones, the concentration was such as to yield the maximum permissible dose with a daily exposure of only 15 minutes. Such levels are too high in regions accessible to military personnel and subcontractor forces, who cannot readily be checked by thyroid counts.

Deposition of I^{131} on the ground and other surfaces throughout the separations plants led to some alarm from frequent hand contamination, and potentially obscured more dangerous forms of contamination.

Deposition on vegetation ranged between 10^{-5} and 10^{-4} μc/gm in an area extending from the reservation to Walla Walla, Lewiston, and Spokane. The Hanford-established permissible limit is 10^{-5} μc/gm. Although the animal farm project has shown that the limit is unnecessarily low, other factors may intervene to reduce the limit. The national recommendations on protection do not quote limits for vegetation contamination. They do, however, set a daily intake limit of 6×10^{-2} μc I^{131}. Thus, for contaminated vegetation at 6×10^{-5} μc I^{131}/gm, the daily permissible food intake would be 1 kg. The Commission has indicated a desire to keep the public limits at 3% of the accepted national limits for radiation workers. Under the above premises, the daily food intake would be 30 gm. Such intakes appear to be feasible throughout the affected area. While, in local opinion, the 3% limit is unduly restrictive for I^{131}, since it is based on genetic considerations, the conventional limit of 10% of the national limit would be reasonable. This corresponds to the quite feasible intake of 100 gm fresh garden produce per day. Clearly, the radioiodine emission needs to be sharply dropped, by increase of cooling time, if more economical methods fail.

Other problems that currently appear to require firmer treatment than they have received include the repeated intake of uranium by metal fabrication plant operators, and the introduction of significant quantities of plutonium to the inferior 300 Area waste disposal system.

The atmospheric dilution of tritium from the 300 foot stack in the 100-B Area showed slightly more respect for Sutton's equations in the subject period, especially at remote points. In the 100-B Area itself, ground level concentration of tritium oxides continued in the range 10^{-7} to 10^{-6} μc/cc against a calculated average on the order of 2×10^{-9} μc/cc.

The following trips were reported:

F.E. Adley	- Air cleaning Seminar - Harvard University
P.L. Eisenacher	- G.E. Radiation Instrument Committee - Schenectady
R.F. Foster	- UCLA
G.R. Hilst	- Am. Meteor. Society, Los Angeles
J.W. Porter	- Am. Society Plant Physiologists, Los Angeles
W.C. Roesch and E.C. Watson	- Am. Physical Society, Vancouver, B.C.

Health Instrument Divisions

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

Inventor	Title
none	none

Health Instrument Divisions

OPERATIONAL DIVISION

General Statistics

100 Areas	May B	May D	May F	May H	May Total	June B	June D	June F	June H	June Total	1951 to Date
General Statistics	697	976	662	593	2928	545	936	524	719	2724	18,581
Routine & Spec.Surveys	697	783	615	553	2648	522	725	572	616	2435	14,413
Retention Basin	119	349	134	385	987	127	334	100	118	679	3,575
Air Monitoring Samples	169	119	164	98	550	126	88	182	58	454	3,224

Retention Basin Effluent

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

	100-B	100-D	100-DR	100-F	100-H
Power Level (MW)	428	435	463	410-452	510
Average beta dosage-rate (mrep/hr)	2.0	2.1	2.8	1.9	2.2
Average gamma dosage-rate (mr/hr)	4.5	4.5	7.3	4.6	5.2
Average total dosage-rate (mrep/hr)	6.5	6.6	10.1	6.5	7.4
Average integrated dose in 24 hrs.(mrep)	156	158	242	156	178
Maximum integrated dose in 24 hrs.(mrep)	248	185	331	209	230
Maximum integrated dose in 24 hrs.(mrep) (1951)	248	214	331	226	230

100-B Area

Pile and Associated Buildings

Air samples taken over the condensate pot in the gas drier rooms gave a maximum result of 5.9×10^{-3} μc tritium oxide/cc of air; and an average concentration of 2.3×10^{-5} μc tritium oxide/cc of air. The high value was compatible with the activity density expected from saturated air standing over the active water in the pot.

P-10 Operations - 108 Building

All urine samples analyzed gave results less than 20 μc tritium oxide/liter.

During this period, 102 air samples were taken in the 100-B Area and Riverland. Average results for sample locations were as follows:

Location	μc tritium oxide/cc of air
108-B glass line operating gallery	2.1×10^{-6}
108-B metal line operating gallery	4.8×10^{-7}
108-B glass line hood room	1.3×10^{-4}
108-B metal line hood room	2.7×10^{-6}
108-B metal line #2 furnace hood	6.8×10^{-7}
108-B Exhaust stack	4.2×10^{-5}
108-B crib vent	3.4×10^{-7}
614-B NE Corner	1.1×10^{-6}
Riverland (614 Building)	4.3×10^{-7}

[redacted]

Health Instrument Divisions

The permissible concentration (24 hr. per day basis) is currently written as 2×10^{-5} μc/cc.

Metallurgical Laboratory - 111 Building

A maximum exposure-rate of 1.5 rep/hr was received during the disposal of an irradiated thermocouple.

100-D Area

105-D Pile and Associated Buildings

Underwater equipment used for canning ruptured pieces was found contaminated up to 2.7 rep/hr, including 120 mr/hr at 2 inches. Decontamination efforts reduced this to 160 mrep/hr, including 10 mr/hr at 2 inches.

105-DR Pile and Associated Buildings

Ground contamination up to 16 rep/hr including 400 mr/hr was found in the 105 crib danger zone. Decontamination of this area is in progress.

100-F Area

Pile and Associated Buildings

Contamination on the rear elevator as a result of an incident reported last month has been effectively reduced.

Biology Facilities

A solution of I^{131} was spilled during pipetting. During cleanup, a maximum exposure-rate of 1 rep/hr to the hand was encountered.

P-11 Operations

Eight of the 62 air samples taken were above 10^{-11} μg Pu/cc. The maximum sample of 9.5×10^{-11} μg Pu/cc was taken inside the reactor room during the connection of the old filling line to the new system.

100-H Area

Pile and Associated Buildings

There were 2 instances of ruptured pieces leading to potential exposure-rates of 2 to 4 rep/hr.

During a scheduled outage, exposure-rates up to 6.4 rep/hr were encountered in the discharge area as a result of contamination on process nozzles. This was reduced by hosing down this equipment.

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Health Instrument Divisions

200 Areas - T and B Plants

General Statistics

	May					June					1951 to Date
	T	B	231	234-235	Total	T	B	231	234-235	Total	
Special Work Permits	525	271	50	258	1104	601	304	22	197	1124	6,793
Routine & Special Surveys	580	420	523	313	1836	529	472	296	402	1699	11,307
Air Monitoring Samples	691	572	435	1103	2801	931	479	323	1041	2774	17,913
Thyroid Checks	165	28	--	--	193	201	37	--	--	238	792

Air Sample Results

In the T Plant, 545 of 931 air samples showed results above 10^{-12} µg Pu/cc, with a maximum of 8.2×10^{-9} µg Pu/cc taken at the C cell roof vent of the concentration building. Two hundred thirty-eight samples were above 10^{-10} µc f.p./cc, with a maximum of 4.3×10^{-8} µc f.p./cc in the canyon during cell inspection.

In the B Plant, 124 of 479 air samples were above 10^{-12} µg Pu/cc, with a maximum of 1.9×10^{-9} µg Pu/cc taken on the roof vent of E cell. One hundred twenty-four samples were above 10^{-10} µc f.p./cc, with a maximum of 2.9×10^{-10} uc f.p./cc obtained while working in 241 BY.

Canyon Buildings

Canyon deck decontamination kept abreast of the canyon work in both T and B plants. Airborne activity identified as I^{131} continued to give high air concentrations in the crane cab. Additional filtration of the air through activated charcoal is being contemplated.

Concentration Buildings

An expanded air sampling program outside the building in the T plant revealed numerous air samples above 10^{-11} µg Pu/cc, with a maximum of 8×10^{-11} µg Pu/cc detected at ground level; and 3×10^{-10} µg Pu/cc detected on the roof. Corrective action needs to be taken in this matter.

Cell roof vents indicated the following average discharge rates:

Cell vent	µg Pu/24 hours 224-T	224-B
A	--	--
B	38	63
C	574	--
D	475	78

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Health Instrument Divisions

Waste Areas

Contamination of skin, clothing, and truck bed occurred in the B Plant when an electrode was removed from the 302 BX catch tank. The incident was investigated.

Construction Areas

No unusual situation was encountered.

Plant Laundry

Thirty of the 72 air samples showed positive results, with a maximum of 1.5×10^{-11} µg Pu/cc while processing 200 Area clothing.

General

All routine thyroid checks were below the warning level.

Contamination of the ground, buildings, and air in the vicinity of the 200 Areas due to I^{131} continued as a result of dissolving during unfavorable conditions.

Six positive thyroid counts were reported on patrolmen in the 200-West gatehouse, with a maximum of 0.11 µc indicated. If maintained, this would be above the maximum permissible deposition.

Decontamination of the regulated 1201 Linn Crane was completed, and conditional release effected.

Isolation Building

One hundred eighty-three of 323 air samples taken were above 10^{-12} µg Pu/cc, with a maximum of 2×10^{-10} µg Pu/cc obtained in the 903 duct system. Fifty-one unregulated items, and 3 floor locations, were found contaminated. The maximum levels of gamma radiation encountered were 190 mr/hr on PR containers, 31 mr/hr at process hoods, and 11 mr/hr on SC cans.

Purification Building

Air Sample Results

Three hundred and eleven of 1,041 air samples taken were above 10^{-12} µg Pu/cc, with a maximum of 9.3×10^{-9} µg Pu/cc obtained in the "greenhouse" of room 228.

Operating Section

Decontamination efforts were effective in rooms 222 and 228.

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Health Instrument Divisions

200 Area Control Laboratories

	T	B	231	234-235
Items contaminated-not regulated	156	82	179	209
Skin contamination - alpha	2	2	6	1
Skin contamination - beta	0	0	--	--
Contaminated floor locations	16	30	45	75

In the T plant, work was resumed in room 6 with continued high air samples up to 2×10^{-10} µg Pu/cc reported.

In the Purification building, 4 instances of contamination in room 157 resulted from lack of careful surveying at work locations.

Particulate contamination in particles per 1000 cubic meters was as follows:

Location	May	June
222-T Outside	110	89
Hallway	86	100
Room 7	340	270
222-B Outside	160	30
Hallway	36	120
Room 7	> 1000 #	940

#Particle density on one filter was too high for reliable counting.

300 Area

General Statistics

	May	June	1951 To Date
Special Work Permits	123	139	735
Routine & Special Surveys	304	371	1864
Air Samples	241	206	1310

Metal Fabrication Plant

Twenty of 59 air samples taken were above 5×10^{-5} µg U/cc, with a maximum of 0.13 µg U/cc during unloading of oxide from the outgasing furnace.

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Health Instrument Divisions

Technical Building

Eleven items, not regulated with respect to handling, were found contaminated on routine surveys of laboratories. Eighty-eight regulated items were found contaminated above acceptable limits.

Hand Score Summary

There were 40,721 alpha, and 51,326 beta, scores reported. About 0.1% of the alpha, and about 0.07% of the beta scores were high. Decontamination was succesaful in all cases reported.

PERSONNEL METERS

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W Const.* 200-W	300	Total	1951 To Date
Pencils Read:	17,934	16,171	13,751	9,162	28,562	38,113 13,059*	27,639	164,391	966,420
Single Readings (100 to 280 mr):	18	25	11	6	51	60 22*	27	220	1,274
Paired Readings (100 to 280 mr):	0	1	1	0	0	0	1	3	28
Single Readings (Over 280 mr):	29	40	43	19	76	90 43*	53	393	1,579
Paired Readings (Over 280 mr):	0	0	1	1	0	0	0	2	26
Lost Readings:	0	0	2	0	0	1* 1	0	4	34

Of the five significant pencil readings reported, only one was confirmed by badge results. This was not an overexposure.

Investigation of lost readings indicated no possibility of an overexposure.#

[redacted]

The expression "no possibility of an overexposure" means that in the opinion of qualified examiners, the probability of an overexposure was vanishingly small. An absolute statement of "no possibility of overexposure" can rarely, if ever, be substantiated.

Health Instrument Divisions

Badges

	100-B	100-D	P-11 101-P 100-F	100-H	200-E	R.R.T. 200-N	200-W	300	Total	1951 To Date
Badges Processed:	3,334	2,432	2,510	1,937	2,379	538	4,351	8,374	25,855	152,706
Number Readings (100 to 300 mrep)	15	22	30	78	65	0	143	93	446	2,417
Number Readings (300 to 500 mrep)	1*	0	2*	7*	2*	0	3*	0	15	169
Number Readings (500 to 1000 mrep)	0	1*	0	3*	2*	0	0	0	6	60
Number Readings (Over 1000 mrep)	0	0	0	0	0	0	0	0	0	9
Lost Readings:	1	4	0	0	1	0	1	2	9	52

*(None over 300 mr gamma)

Lost readings were accounted for as follows:

Stuck film	2
Badge lost in area	2
Recovered lost badge	1
Badge dropped in liquid	1
Damaged film	1
Damaged packet	1
Contaminated badge	1
Total	9

Investigation of the above lost readings indicated no possibility of an over-exposure.

Badge Resume, Construction Areas

	200-W Const.	200-E Const.	Total	1951 To Date
Badges Processed:	4,428	3,161	7,589	40,010
Number Readings (100 to 300 mrep)	9	7	16	134
Number Readings (300 to 500 mrep)	0	0	0	24
Number Readings (500 to 1000 mrep)	0	0	0	11
Number Readings (Over 1000 mrep)	0	0	0	1
Lost Readings:	0	2	2	14

Total badges processed 1951:

Operation	152,706
Construction	40,010
Total	192,716

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Health Instrument Divisions

In addition to the badge program, a total of 1,508 items of a non-routine nature was processed during the month.

Slow Neutron Pencil Summary

	100-B	100-D	100-DR	100-F	100-H	Total	1951 to Date
Number of pairs issued	36	50	114	73	63	336	3,049
Number of significant readings	0	2	30	0	6	38	186
Number of significant readings (above 50 mrem)	0	0	1*	0	0	1	2

Neutron Film

Badges Processed	100-B	100-D	100-F	100-H	200-W	Total	1951 To Date
Personnel	25	95	43	121	48	332	1,993
Special	0	0	2	0	20	22	146

[redacted]

* One of these pencils read 60 mrem; the other was off-scale. Both were found to be defective, and the reading was almost certainly spurious.

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Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

CONTROL GROUPS

Site Survey

Radiochemical analyses for the activity density of alpha emitters in drinking water indicated detectable quantities of this activity in the supplies of Richland and Benton City. The average activity density from alpha emitters in Richland wells was on the order of 12 dis/min/liter, and in Benton City wells 20 dis/min/liter; this order of magnitude was comparable to previous measurements. The only drinking water supply which showed the activity density from gross beta emitters to exceed 5×10^{-8} μc/cc was Pasco, where the monthly average was 7×10^{-8} μc/cc including a maximum measurement of 9×10^{-8} μc/cc. Samples of backwash material at the filter plant showed accumulation of activity in the filter bed; the liquid portion of the backwash sample showed an average of 1.2×10^{-7} μc/cc, and the solid material averaged 1.4×10^{-3} μc/gram. Maximum measurements in the solid material from the backwash process showed an activity density of 2.0×10^{-3} μc/gram.

Significant decreases approaching a factor of 2 were noted in the average activity density of gross beta emitters in the Columbia River at locations above Hanford. Smaller decreases were observed at downstream locations but were not significant. These decreases were associated with the higher mean flow-rate of the Columbia River during this period; peak flow on May 29 was 3,173,000 gallons/second, after which time a flow-rate of greater than 2,500,000 gallons/second was maintained throughout the balance of the month. The maximum activity density of beta emitters was observed along the south bank at Hanford, where the monthly average of 1.4×10^{-6} μc/cc included a maximum measurement of 2.5×10^{-6} μc/cc. No significant quantity of alpha emitters was detected in the river during the month of June.

Monitoring at the 200-West Area stack indicated that an average of 182 curies of I^{131} was emitted daily; maximum daily emission during the month was 396 curies. An average of 13.2% of the dissolved I^{131} was emitted from the stack throughout the month; under maximum conditions, 35.7% was emitted. Comparison of previous data to the percentage figure shows that they closely parallel the values obtained during May, when an average of 13.2% was emitted.

Dosage-rates as measured by detachable chambers remained at the high levels noted last month. Increases were observed at random locations in the immediate environs of the 200 Areas, while average dosage-rates remained essentially the same at most outlying locations. Chambers were completely discharged in many instances, and did not allow valid evaluation of the mean dosage-rates for several 2-day periods during the month. Based on actual readings, maximum dosage-rates were observed at the 200-East Area military encampment where the average was 5.4 mrep/day. Dosage-rates were on the order of 2 mrep/day at all locations within a 5-mile radius of the 200-East Area, and

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were on the order of 1 mrep/day beyond 5 miles but within 10 miles.

Fixed scrubber monitoring showed maximum concentrations at the 200-West Area gatehouse where the average activity density of I^{131} in the atmosphere was 5.6×10^{-10} μc/cc; the maximum 1-week measurement was 8.1×10^{-10} μc/cc. In the 200-East Area, the maximum average activity density of I^{131} was found in the southeast corner of the area where the monthly average was 2.4×10^{-10} μc/cc. Results from 46 portable and scrubber samples which were obtained during periods of dissolving when peak concentrations were observed near ground level showed the average activity density of I^{131} to be 3.7×10^{-8} μc/cc. Maximum measurements were on the order of 2.1×10^{-7} μc/cc at locations approximately 1,000 feet downwind from the 200-West Area stack.

The average activity density of I^{131} on vegetation increased at nearly all locations during June. Outside the 200-West Area gatehouse in the region where higher activity had previously been noted, the current average of 1.5×10^{-2} μc/gram represented a 3-fold increase over the previous month. Along nearby Route 3, where the average activity was 1.2×10^{-3} μc/gram during May, the June average increased to 9.5×10^{-3} μc/gram. This general increase was not as pronounced in the residential areas; however, the mean activity density of I^{131} on vegetation from Richland increased 2-fold, to 1.0×10^{-4} μc/gram. Off-area sampling indicated detectable quantities of I^{131} at all points in the region bounded by Walla Walla, Lewiston, and Spokane. Maximum measurements on the order of 9×10^{-5} μc/gram were observed at Wallula and Connell; remote locations such as Colfax and Spokane indicated the activity density to be on the order of 3 to 5×10^{-5} μc/gram. All these values were above that currently described as the maximum permissible deposition. Apparently, the "iodine problem" is far from being solved.

Samples of the Bing cherry crop in this region indicated maximum activity of I^{131} in the Richland area to be 3.3×10^{-5} μc/gram. The mean activity density on cherries was on the order of 1.5×10^{-5} μc/gram. The magnitude of activity on cherries was considerably less than that deposited on ground vegetation. Such differences may be due in part to the purely physical difference of surface-to-mass ratio in the approximately spherical fruit compared with typical leaves.

Particle monitoring indicated that a possible increase in number of particles in the atmosphere may be occurring at the 200-East Area; average concentrations of particles in the atmosphere approached 3×10^{-2} particles/meter^3 at several 200-East Area locations. No significant change was indicated when reviewing the results of this program in respect to the remaining project locations. A definite increase in number of particles in the atmosphere was observed at nearly all off-project monitoring locations during the weeks ending May 10 and June 1. These increases may be attributed to sources other than the Hanford Works as the same magnitude of increase was not observed at locations on the project perimeter. The average particle concentration at several stations in Idaho and Oregon exceeded 10^{-2} particles/meter^3 during the month.

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Health Instrument Divisions

The results obtained from the analyses of over 100 small air filters from random locations throughout the environs for the activity density of alpha emitters indicated negligible activity from this source.

The results of monitoring for radioactive contamination in the 100,200, and 300 Area waste systems, were within the expected levels. In one isolated case, the activity density of gross beta emitters in the 107-F effluent was 2.9×10^{-3} μc/cc. This measurement represented one of the highest values noted during 1951. The average activity density of beta emitters in the effluent basins was nearly identical to that measured during May (7×10^{-4} μc/cc to 1×10^{-3} μc/cc). Four samples from the 300 Area waste line showed amounts of plutonium on the order of 20 to 40 dis/min/liter.

The results obtained from counting over 100 smears of seats, hand-rails, foot rests, ashtrays, etc., in the Hanford Works buses, during the month of June indicated that maximum activity prevails on the seats of the buses, particularly those located near the rear of the vehicles. Maximum beta measurements were on the order of 70 c/m, and values on the order of 20 to 30 c/m/smear were not uncommon when reviewing the positive measurements. Alpha measurements on these same smears indicated negligible activity.

Bioassay

Five hundred and seventeen urine samples were analyzed for plutonium, with 78 spiked and blank urine samples as controls. Alpha activity measured in the urine samples by the present T.T.A. procedure averaged 0.04 dis/min. There was one urine sample showing alpha activity of 0.33 dis/min. The employee is being resampled for confirmation of this result. There was no sample discarded due to low control spike yield. The average recovery yield of the plutonium-spiked controls for the month was 93%. The excretion of plutonium in the urine of 2 employees known by previous history to be positive cases has fallen below the detection limit of the present method of analysis. Consequently, their samples are now being analyzed by the electrodeposition procedure and will be evaluated in the succeeding report.

Ninety-eight urine samples and 52 control spikes and blanks were analyzed for plutonium by nuclear track film. Alpha activity measured in the urine samples averaged 0.05 dis/min, with the blanks showing alpha activity of 0.04 dis/min.

Five hundred and sixteen urine samples were analyzed for fission product isotopes; 78 samples were processed as controls. None of the above samples indicated beta activity exceeding the resample limit of 10 counts/minute.

Two hundred and thirty-one urine samples were analyzed for uranium by the fluorophotometric procedure. Samples were submitted after 4-days exposure

to possible uranium contamination, and again after 1-day of nonexposure. A tabulation of the results by job classification follows:

Job Description	END 4TH DAY OF EXPOSURE µg/liter Maximum	µg/liter Average	END ONE DAY, NO EXPOSURE µg/liter Maximum	µg/liter Average	TOTAL NUMBER SAMPLES
Canning	23	5	15	4	64
Machining	29	7	20	5	48
Melt Plant	22	14	42*	14	12
Material Handling	9	5	15	7	19
Inspection	10	5	8	5	18
305 Building	3	2	1	1	7
Clerical	4	3	7	5	6
Random	1	0.6	-	-	21
	Completion of Work µg/liter		Before Work µg/liter		
Car Unloading	91	13	19.2	3	38

A total of 902 urine samples was analyzed for tritium oxide. All activity concentrations were below 2×10^{-2} µc/cc. A breakdown of concentration ranges is given below:

	TRITIUM OXIDE IN URINE µc/liter			
Concentration Group	< 5	5-10	10-20	> 20
Number of Samples	893	8	1	0
Number of individuals		3	1	0

Ninety-seven air samples were also analyzed; 183 samples were run as controls; and 29 were processed as re-runs to confirm previous values.

[redacted]

* Employee submitted this sample while still wearing coveralls after one hour's work indicating possible sample contamination.

Health Instrument Divisions

Analytical Control Laboratory

Beta counter operation improved during the month. Average lost-time was 2.6 operating hours/day/set. A second PC-2A was installed at the end of the month to increase alpha counter capacity.

A summary of the analyses carried out during the month and for the year follows:

Laboratory

Type Sample	June 1951	1951 To Date
Vegetation	1666	8772
Water	2205	11562
Solids	327	1660
Fluorophotometer	594	3699
Special Survey Analyses	25	177
Air Sample Analyses	241	1166
Total	5058	27036

Counting Room

Beta measurements (recounts included)	5615	28801
Alpha measurements (recounts included)	3637	21387
Control points (beta and alpha)	2367	13445
Decay curve points	2202	13422
Absorption curve points	221	1471
Total	14042	78526

Further investigation of the long half-life beta activity in pile effluent water revealed very low concentrations of a strontium isotope, believed to be Sr^{89}. The maximum activity concentration found in 5 samples from 3 areas was 1×10^{-7} μc Sr^{89}/cc of effluent, while the average value was 4×10^{-8} μc/cc. Trace amounts of Ba^{140} averaged 3×10^{-7} μc/cc of effluent, with the maximum activity density being 1×10^{-6} μc/cc.

Radiochemical analyses were made of pile effluent during a purge with reactor power off. The principal activity was due to Cu^{64} at 6.8×10^{-3} μc/cc. Other predominant radioisotopes were Na^{24}, Mn^{56}, and As^{76}, in that order. All these values were corrected to a time 4 hours after transit through the reactor, to simulate discharge time to the river. P^{32}, a prominent isotope in the aquatic biological studies was only fifth in abundance (1.6×10^{-4} μc/cc) under these conditions.

Health Instrument Divisions

Calibrations

Radium Calibrations:	Number of Routine Calibrations May	June	1951 To Date
Fixed Instruments			
Gamma	229	251	1,578
Portable Instruments			
Alpha	335	255	1,792
Beta	651	554	3,686
Gamma (radium)	1,280	1,098	7,095
X-ray	2	7	21
Neutron	3	2	14
Total	2,271	1,916	12,608
Personnel Meters			
Beta	889	664	4,735
Gamma (radium)	8,263	5,107	41,853
X-ray	6,083	4,907	22,805
Neutron	42	28	188
Total	15,277	10,706	69,581
Grand total	17,777	12,873	83,767

Synoptic Meteorology

Forecasts	June 1951 Number made	Percent Reliability
Production	90	83.5
24-hour	60	85.6
Special	30	83.3

The weather was featured by the rainfall of the 4th, 5th, 6th, and 7th. This storm - nearly continuous for a period of about 80 hours - accounted for all the monthly total of 1.38 inches, 2-1/2 times the normal amount for June.

In Richland, the storm was culminated by a very intense shower and thunderstorm on the afternoon of the 7th, a storm which missed the 200-West Meteorology Station. Rainfall was estimated to have exceeded 0.30 inch in about 15 minutes.

Daily maximum and minimum temperatures averaged 69.4° - normal for June. The highest was 97° on the 13th; the lowest was 41° on the 1st.

Health Instrument Divisions

Windspeeds at 50 feet averaged 9.2 miles per hour - near normal for June. There was no high wind, the peak gust being one of 42 mph from the NNE on the 23rd. Dust restricted visibility briefly on this date.

DEVELOPMENT GROUPS

Experimental Meteorology

Installation of 6 of the meteorological field stations was completed.

Field tests were conducted in order to test photographic techniques and to observe, visually and photographically, the properties of the smokes produced by various generation devices located at the surface as well as on the meteorology tower.

Industrial Hygiene

Initial tests on the laboratory apparatus for studying the efficiencies of filter papers indicated that the sample holders were unsatisfactory, and that the electrostatic precipitator power supply needed to be rebuilt to supply a higher potential.

Studies were made of ammonia exposures at the 242-T building in the 200-West Area, and methyl alcohol exposures of various Ditto operations in the 703, 760, 101 and 3704-E buildings.

Geology

Contamination of the ground water beneath the 200 Areas remained at normal levels for the month.

Alpha activity in the vicinity of the 300 Area reached its greatest westward penetration as a result of the rise of the Columbia River. Contamination reached a point about 2,000 feet west of the 300 Area which is about 500 feet further than in 1950. Well 300-13, the artesian well to basalt, showed a slow rise of the water table of about 0.2 feet. This may indicate an indirect connection with the Yakima or Columbia Rivers, rather than a direct connection through a specific aquifer.

Soil Science

Since it may become necessary to crib a soluble oil (Ucon)--water emulsion in the 100-C Area, a study was made to obtain some information regarding the possibility of this oil-water emulsion "building-up" on the sand particles

until drainage became seriously impeded. Ten runs through columns containing sand and gravel particles of various sizes using 250 ml portions of a 1:1 Ucon-water mixture gave no indication of an oil film buildup on the sand particles. Neither was there a significant decrease in the percolation rate from one run to the next. However, the percolation rate was found to increase rapidly with increasing particle size and with increasing ratio of water to oil. A slight increase in the percolation rate was also observed with increasing temperature of the solution.

Equilibrium experiments using Ru^{106} solutions in contact with soil indicated that there is a definite relationship between the retention of the ruthenium activity by soils and the pH of the solution. Virtually no retention of activity was found to occur below pH 1.0. At pH 2.6 approximately 11% of the activity was removed from solution by the soil and at pH 4.7 the retention had increased to 84%. A maximum of 97.5% activity removed was reached at pH 6.6, and at pH 8.5 this had dropped to about 93%. Between pH 8.5 and 10.5, only 65% of the activity was removed from solution by the soil, but there was an increase to 80-90% between pH 10.5 and 14.

At present 3 soil columns are in operation. Plutonium solutions in 250 ml portions having an activity of approximately 17,400 c/m/ml are being introduced into the columns at pH 4, 10, and 13, respectively. To date, approximately 700 µg of plutonium have been introduced into each column in a total volume of 3,750 ml. Effluent from the column receiving pH 10 solution has activities on the order of 50 to 100 c/m/ml. Effluents from the columns receiving pH 4 and pH 13 solutions still have activities which are less than 1 c/m/ml.

Results obtained from dialysis experiments using plutonium solutions at different pH values indicated that the rate of diffusion of the plutonium ions through the dialyzing membrane at a given pH is directly related to the rate of movement of the ions through the soil. For example, at pH 10 the rate of diffusion through the membrane was about 8 times faster than at pH 4. This suggests that the plutonium isotope, even before it comes into contact with the soil, possibly forms a different ionic or molecular species at different pH values which are adsorbed by the soil particles to a different degree.

Methods Development

The development tests of the electrodeposition nuclear film technique for plutonium analysis have been concluded at the Bioassay laboratory, and the process will be called routine in July. Yields on spiked samples continued high with somewhat improved deviation. Blanks were also high at about 0.04 d/m for this period, with no apparent cause. Tests on smaller plating areas indicated that 25 mm^2 gives good yields while 20 mm^2 gives yields on the order of 60%.

Low yields by a factor of about two on the calibration of tritium spikes by use

of an alcohol-argon internal counter were obtained, with reasonable consistency, this month. Tests using $C^{14}O_2$ calibrated on the mica window counters gave the same factor, indicating an unknown error in technique. Further checks are in process.

A total of 17 runs was made this month on the I^{131} content of the effluent gases from the T Plant using a continuous scrubber with the exit solution passing through a coil wrapped around an ion chamber. Technical difficulties in this type of sampling were only partially solved.

The second series of surveys in the Columbia River was completed during high water. The results are now being analyzed for comparison with the first survey.

Testing of the thorium analysis procedure for soils, water, etc. indicated low yields, presumably due to the destruction of the colorimetric reagent by hydroxylamine-hydrochloride. Procedures for eliminating this interference are being devised. The group analysis procedure has been tested using mixtures of a large number of elements as the starting solution in order to investigate possible interferences. The results indicate reasonable separations of Ca, Co, Sr, and Y, although between 1% and 10% of the activity added occasionally appeared in other groups.

Physics

The effects of scattering on the calibration of moderated BF_3 counters appeared to be rather considerable, and have not been eliminated even by use of the large south room of the Calibrations building. Preliminary results indicated a sensitivity considerably less (about a factor of 2) than previously obtained. The neutron emission of the new Po-B source was found to have an angular asymmetry, due presumably to the rather thick ends on the enclosing cylinder.

The Hurst counter for fast neutrons was found to have a sensitivity of 0.67 c/m/neutron/cm^2 sec. from a Po-B source when the counts due to a gamma radiation field of 8 r/hr were completely biased off. The background under these conditions was 0.1 c/m. Further tests of a neutron scintillation counter using a very dilute suspension of ZnS in polystyrene indicated that this arrangement was too sensitive to gamma rays.

Instrument Development

A simplified scheme for monitoring air with a minimum of equipment was devised. Saving in materials and simplification of operation was effected through the use of a stepping relay.

Two scintillation counters for I^{131} in human thyroids were built, and a third was tested. Slight plateaus have been found for certain photomultipliers, the

Health Instrument Divisions

last thyroid counter having one about 60 volts long. Sensitivity was about 30,000 c/m/μc of I^{131}. Practical methods for producing usable plateaus in such service are being investigated, but it seems that individual study of each tube is needed and then not all tubes respond as desired.

An anti-coincidence method for rejecting large amplitude background pulses was investigated, with promising results.

Considerable work was done with the starved pentode amplifier as an electrometer amplifier. Good amplication was off-set by drift problems.

Health Instrument Divisions

BIOLOGY DIVISION

Analyses Group

1. Radioactivity in Carcasses

A vibrating reed electrometer has been modified and is being tested, with favorable indications, for determining radon liberated from cadaver ashes.

Chemical analysis of cadaver ashes for radium continued with results comparable to previous determinations.

2. Alpha and Beta Analyses of Organic Material

Modification of the system now used for tritium determinations is in progress.

3. Radioelements in Organisms in Pile Effluent

Several samples from fish grown in pile effluent water were analyzed for beta emitters with comparable results to former analyses.

4. Physical Processes Affecting Methods for Isotope Use

Inactive.

5. Waste Disposal Methods for Biological Specimens

Inactive.

6. Physical Chemical Methods for Dosimetry due to Deposited Isotopes

Twenty-nine samples were analyzed for Pu in conjunction with the Physiology Group bone deposition study.

Services

Analytical services to other biology groups included calibration of 6 shipments of radioisotopes, preparation of 10 spike solutions for animal and plant feeding, and the analysis of approximately 2100 samples. Approximately 3900 alpha and beta counts were made.

Aquatic Biology Group

1. Effect of Pile Effluent Water on Aquatic Organisms

Monitoring studies with chinook salmon terminated since the fish were ready to migrate to the ocean. No adverse effects were observed in 2% strength effluent;

measurable increase in mortality occurred at the 5% level; and excessive mortalities occurred at 10%. Where temperatures of process waters were reduced to, or near, that of the control, growth was retarded at and above the 5% level. Increased temperatures stimulated growth even at the 10% level. A considerable attenuation of mortality was observed in the 10% cooled area effluent which did not occur at the 10% levels in either the pile influent or pile effluent. Observed effects could be attributed entirely to chemical toxicity with seemingly no effect resulting from radiation.

2. Biological Chains

The feeding of algae held in pile effluent water to adult trout retained in 5% pile effluent continued without unusual incident. Activity levels remained essentially the same as observed last month.

3. Radiobiological-Ecological Survey of the Columbia River

The river level receded from the freshet peak which occurred during the latter part of May. Erratic fluctuations of the water level hindered growth of algae which normally flourishes in shallow water at this season. Small fish were readily obtainable, but invertebrate collections have been at a minimum during the high water. Testing and improvement of plankton-collecting equipment for the boat continues, and routine collections on a cross-section pattern are now being made at 100-B, Hanford, and Richland.

With clearing water and warmer temperatures, the activity density of the plankton and green algae increased slightly over last month (to 3.8×10^{-3} μc/gm and 1.3×10^{-3} μc/gm, respectively, at Hanford). The activity of the small fish remained at about the same level, 3×10^{-4} μc/gm. For large fish, a maximum of 1.6×10^{-3} μc/gm was found in the liver of a sucker. Activity in the flesh of this fish was 2.5×10^{-4} μc/gm. Associated with the high water of the river, increased activities in a temporary channel below 100-H were noted again this year; a maximum value of 1.6×10^{-3} μc/gm was found in one shiner.

The abundance of planktonic organisms in the river was about double that found last month. Reduced invertebrate collecting operations permitted more extensive analysis of stomach contents of adult fish.

4. Control of Algae in 107 Retention Basins

No progress.

Biochemistry Group

1. Relative Biological Effects via Biochemical Systems

Addition of water containing tritium oxide to suboptimal medium inhibits the

rate of growth of L. Casei. The optical density attained at end of this experiment was approximately one-half that observed when no tritiated water was added. When equivalent amounts of tritium oxide were added to optimum culture medium, the growth inhibition of L. Casei was much less pronounced; final turbidity readings were approximately equal to those obtained when no tritiated water was added.

2. Absorption of Pu from the G.I. Tract

Experimental rats have already received about 180 doses of plutonium. One rat fed approximately 3,000 d/m/day in 3 doses was found dead, cause unknown. Other experimental and control rats gained weight and appeared to be in good health.

3. P-10 Biological Hazards Investigations

Bound tritium in the tissues of rats, 130 days after the intraperitoneal injection of tritium oxide, is lost with a half-time of 55 days. The skin has the highest activity density at 130 days, and then exhibits a biological half-life of about 90 days.

Fifteen rats which had been intraperitoneally injected with 0.1 curie of tritium oxide about 4 months ago were sacrificed. Various organs were pooled and placed in the deep freeze for later analysis. Residual carcasses contained 0.013 and 0.21 μc of the isotope in the unbound and bound state, respectively, per gram of wet tissue. Hair was observed to contain large amounts of tritium ($\sim$1 μc per gram). The half-life for bound tritium in the residual carcass calculated from the ratio of body-water tritium to bound tritium was 53 days, in agreement with values previously reported.

The percutaneous absorption of water vapor (by tritium tracer method) in rats, mice, and 12 human subjects, was found to be 6, 20, and 9 $\mu g/cm^2$/minute, respectively.

4. Possible Therapeutic Agents for Radiation Damage

No progress.

5. Percutaneous Absorption of Radioelements

No progress.

Services

During the month of June, the Clinical Services Laboratory performed 500 hematological determinations. The personnel of this unit has been trained in the procedure for determining PBI (protein-bound iodine), and will routinely follow the iodine levels in the sera of the sheep of the Animal Farm.

Health Instrument Divisions

Botany Group

1. Agricultural Field Station

No report.

2. Translocation of Radioelements in Plants

Cerium and lanthanum competitively inhibited the uptake of yttrium by excised barley roots. Results indicated that plants growing in soil containing rare earths would probably take up less yttrium than those growing in soil in which rare earths were absent.

3. P-10 Botanical Investigation

Azotobacter vinelandii incorporated tritium oxide into cellular constituents at the rate of 130 μc/100 mgs cellular N/24 hours. The rate of fixation by E. Coli was 410 μc/100 mgs cellular N/24 hours, and the rate value for Proteus vulgaris was 130 μc/100 mgs cellular N/24 hours. In these experiments, the organisms were grown at pH 6.5 and at 23.5° C; tritium oxide concentration of the medium was 5 mc/ml.

Chlorella pyrenoidosa cells have been found to bind tritium oxide rapidly through exchange reactions in exposures of short duration.

4. Effects of Radiation on Plant Life

No report.

Physiology Group

1. Biological Effects of Active Particles

Mouse stock of a strain which spontaneously develops pulmonary tumors has been built up from 5 to 26, with three of breeding size.

2. Bone Metabolism of Radioelements

The second Pu treated animal has now survived 32 days. Excretion analyses indicate a plateau has been reached.

3. Techniques in Autoradiography

A laboratory was modified for use as a darkroom and autographs are being made.

4. Inhalation of Tritium

27 Nine experiments on the inhalation and retention of tritium gas and the degree

to which it may be converted to oxide have been run. Fractionation of the results by means of dry-ice traps and selective combustion have given definite portions, the analysis of which gave erratic results ranging from 69% recovery to 300% recovery. Attempts at reanalysis and dilution are being made to provide greater consistency.

Services

One hundred and fifty microscope slides were prepared and processed.

Zoology Group

1. Biological Monitoring

Waterfowl

The monthly aerial census showed a total of 570 wild waterfowl on the river within the plant boundaries; a decrease of approximately 20% from last month. This decrease was probably due to dispersal of Canada geese since banding operations.

A total of 124 Canada geese was banded during a 2-day operation, in cooperation with the Washington State Department of Game. Returns thus far from banding operations conducted during 1950 number six; three from the Moses Lake-Sprague Lake region; two from the Hanford Works Project; and one from Clackamas County, Oregon. Thyroid glands of 2 juvenile Canada geese taken during banding operations exhibited activity densities exceeding the chronic MPC of I^{131} in man; with a maximum value of 1.2×10^{-2} μc/g. Tissues, including thyroid glands, from 3 other aquatic birds were below the MPC of both I^{131} and P^{32}. Maximum value found in bone samples was 5.0×10^{-4} μc/g.

Pekin and Mallard ducklings have been established on the 200 North "R" area waste ditch, and at the Hanford Ferry. Monitoring studies through radioassay of various organs of the birds will be initiated next month.

Upland Wildlife

Thyroid activity densities in jackrabbits continued to advance, exceeding last month's values by a factor of 1.5. Activity densities noted at various stations are tabulated on the following page; all thyroid activity densities exceeded the chronic MPC of I^{131} in man ($\sim$ 0.0035 μc/gm).

Health Instrument Divisions

Location	Species	Activity Density (μc/g) Maximum	Average
200-E	jackrabbit (4)	0.5	0.24
100-F	jackrabbit (2)	0.05	0.04
Hanford	jackrabbit (1)	0.04	0.04
Prosser Barricade	jackrabbit (3)	0.09	0.06

All other tissues were found to contain less than 2.0×10^{-4} μc/g.

2. Toxicology of I^{131} in stock animals

Three young control lambs were subjected to surgical thyroidectomy during this period. None survived beyond one week. The principal hazard appears to be the general anesthesia which is consistent with the limited observations of other workers. Ether, pentobarbital sodium, and sodium pentothal were the anesthetics administered.

The new coded Radioanalysis Sample Form specially adapted to IBM transfer is saving considerable time, and increasing the value of sample data. As of June 20, all regular and special groups' thyroid counts were entered on the new counting form. Final calculations by the IBM are nearing completion for all groups.

Lactation quantity tests made upon several ewes during the time of estimated heaviest milk-flow indicated that 24-hour production varied generally between 1 and 2 liters per ewe.

GENERAL ACCOUNTING DIVISION
MONTHLY REPORT

June 1951

Revision of Cost Accounting procedures and establishment of new procedures in accordance with recommendations of the Cost Accounting Committee were reaching final stages in many respects at the month end. Schedules of special cost liquidations to other divisions were prepared and forwarded to division accountants. General Divisions' cost codes were revised and revised codes together with instructions relative to the use of the new codes were forwarded to division heads. Operating report forms were revised in order to present information as to the nature of the cost rather than the source, and to reflect revisions in cost procedures. A chart, illustrating the flow of costs from all divisions to end result, was prepared and forwarded to interested individuals.

Considerable time was spent in analyzing the balances of general ledger accounts and a number of year-end adjustments were made. Accruals were made for work performed but not yet billed and certain over and under accruals were adjusted. A close contact with other accounting divisions and AEC was maintained relative to the transfer of charges and the meeting of previously established closing dates.

Accounts Payable, which normally closes on the last day of the month, remained open through July 6, 1951 in order that vendors' invoices received through that date could be booked as June costs. Number of vouchers booked in June numbered 2 222 (amounting to $1 289 280) as compared with 1 947 in May -- an increase of 14%. During FY 1951, 24 771 accounts payable vouchers and 3 877 freight bills were booked as compared with 19 514 and 2 659 in FY 1950.

General Accounting Division

Plant Accounting personnel continued the taking of physical inventories of selected plant accounts during the month. Much time was devoted to studies concerning the allocation of depreciation expense to products in accordance with revised cost accounting procedures. An effort was made in June to expedite receipt of as many project completion reports as possible in order that project costs could be unitized and transfers could be made from Unclassified Property in Service to appropriate plant accounts. As a result of reviews of depreciation rates on Production Facilities, adjustments totaling approximately $12 000 000 were made in accumulated reserves to date.

The Internal Audit Section completed a number of audit reports and special assignments which included the following: Timekeeping study in areas where time clocks are not used, analysis of balances in certain General Ledger accounts, audit of divisional control of direct charge materials, supplies and protective clothing and equipment considered as memo sales to employees, and audit of area classification of exempt personnel. New audits begun during the month included year-end audits and studies of disposal of surplus materials.

In connection with the establishment of the Perfect Attendance Recognition Plan, approximately 450 man hours were expended by the Payroll Division to determine those employees eligible for one, two, three and four year perfect attendance awards.

Reimbursement authorization No. 157 covering the General Salary Increase announced on June 19, 1951, was issued on June 22, 1951 by the Atomic Energy Commission.

Work was started on calculation of the retroactive portion of the general salary increase which was announced on June 19, 1951. The new rates will be paid to weekly paid employees on a current basis effective with salary checks to be distributed July 6, 1951. Approximately 200 man hours were required to change addressograph plates and verify for correctness. Listings of the increased rates were prepared and were checked for accuracy by the Wage Rate Division. The retroactive portion of the increase to weekly paid employees will be included in checks to be distributed on July 20, 1951. For exempt salaried employees, the increased rates and the retroactive portion will be paid in salary checks for the month of July, 1951.

Preparation of individual insurance certificates for approximately 8 500 employees insured under the new Insurance Plan was started in June. Approximately 50% of the certificates are ready for distribution to employees.

Advances from AEC increased from $5 000 000 as of May 31, 1951 to $15 883 210 as of June 30, 1951. For the most part, this increase is reflected in Cash in Bank and represents an advance from AEC in the amount of $12 000 000. AEC advised that there was a possibility that no FY 1952 funds would be available until late in July and issued this advance in June to insure adequate funds for the month of July. Advances are accounted for as follows:

	June	May
Cash in Bank - Contract Accounts	$15 433 210	$ 4 003 389
Cash in Bank - Salary Accounts	50 000	50 000
Cash in Transit	-0-	496 611
Advances to Subcontractors	300 000	300 000
Travel Advance Funds	100 000	150 000
Total	$15 883 210	$ 5 000 000

Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of June 1951 as compared with May 1951 may be summarized as follows:

	June	May
Disbursements		
Material and Freight - GE	$ 2 524 942	$ 2 941 959
Payrolls - GE (Net)	2 730 180	2 182 126
Payments to Subcontractors	4 800 796	4 993 065
Payroll Tax	465 214	409 565
General & Administrative Expenses	200 000	200 000
U. S. Savings Bonds	162 098	139 392
Reimbursement of Travel & Living Expense Variation Account	33 554	-0-
Others	338 942	395 039
Total	$11 255 726	$11 261 146
Receipts		
Rents	$ 128 472	$ 132 880
Refunds From Vendors	5 231	1 766
Hospital	48 830	63 972
Telephone	17 684	16 294
Miscellaneous Accounts Receivable	29 922	13 514
Bus Fares	9 030	9 807
Scrap Sales	14 854	7 109
Sales to AEC Cost-type Contractors	7 415	6 054
Refund of Washington State Pension Awards	18 062	-0-
Dividend-Group Disability & Health Insurance	48 563	-0-
Other	10 873	13 139
Total	$ 338 936	$ 264 535
Net Disbursements	$10 916 790	$10 996 611

General Accounting Division

STATISTICS	Total	Monthly Payroll	Weekly Payroll
Employees and Payroll			
Employees on Payroll at beginning of month	8 328	1 982	6 346
Additions and transfers in	524	18	506
Removals and transfers out	(202)	(27)	(175)
Transfers from Weekly to Monthly Payroll	--	15	(15)
Transfers from Monthly to Weekly Payroll	--	(2)	2
Employees on Payroll at end of month	8 650	1 986	6 664
Number of Employees		June	May
Bargaining group - HAMTC		3 215	3 182
Bargaining group - Building Services		73	70
Other weekly		3 376	3 094
Two platoon firemen		57	57
Executive, administrative and operating		1 361	1 338
Professional		545	550
Other monthly		23	37
Total		8 650	8 328
Number of Employees			
Manufacturing		3 338	3 303
Technical, Engineering & Construction		1 932	1 784
Municipal		250	238
Real Estate and General Services		420	432
Health Instrument		451	445
Employee and Community Relations		117	110
Plant Security & Services		1 088	1 069
Purchasing and Stores		412	399
Medical		279	284
General Accounting		215	204
General Administrative		148	60
Total		8 650	8 328
Overtime Payments			
Weekly Paid Employees		$ 250 115	$ 148 930
Monthly Paid Employees		84 384 (1)	93 915 (2)
Total		$ 334 499	$ 242 845
Number of Changes in Salary Rates and Job Classifications		1 801	979
Gross Amount of Payroll			
Manufacturing		$ 1 607 919	$ 1 281 995
Technical, Engineering & Construction		852 395	738 552
Municipal, Real Estate and General Services		271 102	226 947
Other		1 037 546	848 256
Total		$ 3 768 962 (3)	$ 3 095 750 (4)

(1) Payments cover period June 1 through June 30, except in the case of Patrolmen in the Plant Security & Services Division who were paid for period May 1 through May 31, 1951.

(2) Payments cover period from April 16 through May 31 in all divisions except in the case of Patrolmen in the Plant Security & Services Division who were paid for period April 16 to April 30, 1951 and the Engineering and Construction Divisions who received overtime payments from April 1 through May 31, 1951.

(3) Includes payments for five (5) week period ended June 24 in case of weekly paid employees.

(4) Includes payments for the four (4) week period ended May 20, 1951 in the case of weekly paid employees.

General Accounting Division

Annual Going Rate of Payroll	June	May
Base	$ 35 791 883	$ 34 631 154
Overtime	3 849 095	3 232 794
Isolation pay	1 134 980	1 107 412
Shift Differential	463 222	457 168
Other	68 662	67 050
Total	$ 41 307 842	$ 39 495 578

Average Hourly Base Rates		
Bargaining group - HAMTC	1.915	1.927
Bargaining group - Building Services	1.507	1.493
Other weekly	1.604	1.605
Two platoon firemen (monthly rate ÷ 173.9 hours)	1.878	1.878
Executive, administrative and operating	2.809	2.795
Professional	2.736	2.673
Other monthly	2.234	2.187
Total	1.983	1.993

Average Earnings Rate Per Hour (1)

	June			May		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$2.098	$2.836	$2.218	$2.108	$2.808	$2.223
Technical, Engineering & Construction	1.695	2.843	2.076	1.700	2.788	2.092
Municipal, Real Estate & General Services	1.834	2.375	1.992	1.847	2.365	2.002
Other	1.685	2.692	1.853	1.695	2.678	1.868
Total	$1.867	$2.756	$2.055	$1.883	$2.723	$2.069

% Absenteeism	June	May
Weekly - Men	2.18	2.52
Weekly - Women	2.80	3.21
Total Weekly	2.34	2.70
Monthly	1.19	1.43
Grand Total	2.07	2.30

Employee Benefit Plans		
Pension Plan		
Number participating at beginning of month	6 434	6 457
New participants and transfers in	74	61
Removals and transfers out	(96)	(84)
Number participating at end of month	6 412	6 434
% of eligible employees participating	94.8%	95.1%

(1) Includes Shift Differential and Isolation Pay. Excludes overtime premiums, commissions, suggestion awards, etc.

General Accounting Division

Employee Benefit Plans (continued)

Pension Plan (continued)

Employees Retired	June	Total to Date
Number	-0-	168 -a)
Aggregate Annual Pensions Including Supplemental Payments	-0-	$39 108 -b)
Amount contributed by employees retired	-0-	$27 934

(a- Includes 6 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.

(b- Amount before commutation of pensions in those cases of employees who received lump sum settlement.

Insurance Plan (1)

Personal Coverage	June	May
Number participating at beginning of month	8 141	7 943
New participants and transfers in	590	290
Cancellations	(15)	(1)
Removals and transfers out	(154)	(91)
Number participating at end of month	8 562	8 141
% of eligible employees participating	97.8%	96.7%

Dependent Coverage		
Number participating at beginning of month	5 106	5 046
Additions and transfers in	218	121
Cancellations	(3)	(6)
Removals and transfers out	(87)	(55)
Number participating at end of month	5 234	5 106

Claims - Disability Benefits (2)		
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	119	129
Daily Hospital Expense Benefits	140	131
Special Hospital Services	156	150
Surgical Operations Benefits	94	103
Dependent Benefits		
Daily Hospital Expense Benefits	153	224
Special Hospital Services	180	274
Surgical Operations Benefits	116	194
Amount of claims paid by insurance company:		
Employee Benefits	$26 413	$28 268
Dependent Benefits	17 816	24 964
Total	$44 229	$53 232

Claims - Death Benefits (3)	June	Total to Date
Number	1	64
Amount	$5 000	$339 812

(1) The new Insurance Plan was made effective on December 1, 1950.

(2) Statistics cover only claims paid and not all claims incurred during the month.

(3) Total to date includes all claims under the old and new Insurance Plans and two deaths resulting from accidents.

Employee Benefit Plans (continued)

Group Life Insurance

The Group Life Insurance Plan was discontinued November 30, 1950. As of June 30, 1951, 15 employees who are absent with continuous service are still participating in the Group Life Insurance Plan. They were not actively at work on December 1, 1950, and therefore were not eligible to participate in the new Insurance Plan. However, they will become eligible upon their return to work.

Group Disability Insurance

The Group Disability Insurance Plan was discontinued November 30, 1949 for all employees actively at work. However, one employee who has been absent from work since September 15, 1949, is still insured under the Group Disability Insurance Plan.

Group Health Insurance

The Group Health Insurance Plan was made effective December 1, 1949 and was discontinued on November 30, 1950. As of June 30, 1951, 4 employees who are absent with continuous service are still participating in the Group Health Insurance Plan. They were not actively at work on December 1, 1950, and therefore were not eligible to participate in the new Insurance Plan. However, they will become eligible upon their return to work. During June, 46 checks in payment of benefits of $2,847 on 30 Group Health Insurance claims were received from Metropolitan Life Insurance Company.

Vacation Plan

Number of employees granted permission to defer one week of their 1951 vacation to 1952

	June			Total to Date			
	Weekly	Monthly	Total	Weekly	Monthly	Total	
Manufacturing	3	8	11	105	50	155	-a)
Technical, Engineering & Construction	5	3	8	19	27	46	
Municipal, Real Estate & General Services	4	2	6	19	5	24	
Health Instrument	-0-	-0-	-0-	1	-0-	1	
Employee & Community Relations	-0-	1	1	1	1	2	
Plant Security & Services	10	4	14	53	20	73	-b)
Purchasing & Stores	2	-0-	2	9	-0-	9	
Medical	1	-0-	1	4	-0-	4	
General Accounting	-0-	-0-	-0-	4	-0-	4	
General Administrative	-0-	-0-	-0-	-0-	2	2	
Total	25	18	43	215	105	320	

(a- Total to date reduced by 2 cancellations
(b- Total to date reduced by 1 cancellation

Employee Benefit Plans (continued)

U. S. Savings Bonds	Mfg.	Technical, Engineering & Construction	Municipal, Real Estate & General Services	Other	Total
Number participating at beginning of month	1 505	681	263	1 016	3 465
New authorizations	32	27	1	23	83
Voluntary cancellations	(23)	(11)	(5)	(10)	(49)
Removals and transfers out	(20)	(14)	(2)	(19)	(55)
Transfers in	4	3	-0-	-0-	7
Number participating at end of month	1 498	686	257	1 010	3 451
Percentage of Participation					
G. E. Employees Savings and Stock Bonus Plan	39.2%	31.7%	33.9%	31.7%	34.7%
G. E. Savings Plan	11.7%	6.5%	9.1%	9.5%	10.0%
Both Plans	44.9%	35.5%	38.4%	37.3%	39.9%
Bonds Issued					
Maturity Value	$111 525	$ 44 925	$ 17 450	$ 64 100	$ 238 000
Number	1 789	723	290	1 053	3 855
Refunds Issued	45	21	8	18	92
Revisions in authorizations	32	20	2	15	69
Annual going rate of deductions					
G.E. Employees Savings and Stock Bonus Plan	$605 422	$280 088	$ 94 654	$360 834	$1 340 998
G.E. Savings Plan	210 244	63 396	28 469	113 218	415 327
Total	$815 666	$343 484	$123 123	$474 052	$1 756 325

Annuity Certificates (For duPont Service)	June	Total to Date
Number issued	1	77

Suggestion Awards		
Number of awards	37	1 028
Total amount of awards	$780	$17 110

Employee Sales Plan

	June		
	Major Appliances	Traffic Appliances	Total
Certificates issued	32	233	265
Certificates voided	1	9	10

Salary Checks Deposited

	June		May	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle First National Bank	662	836	668	828
North Richland Area Office - Seattle First National Bank	12	8	11	7
Richland Branch - National Bank of Commerce	265	201	264	201
Out of state banks (Schenectady Staff)	--	3	--	3
Total	939*	1 048	943**	1 039

*Week ended 6-17-51
**Week ended 5-20-51

Special Absence Allowance Requests	June	May
Number submitted to Pension Board	4	11

Absenteeism (Weekly Paid Employees)	1951	1950
January 1 to June 24	3.04%	2.43%

General Accounting Division

PERSONNEL AND ORGANIZATION

	June	May
Number of Employees		
On Payroll at beginning of month	204	195
Removals and transfers out	(16)	(10)
Additions and transfers in	27	19
Number at end of month	215	204
Net increase (or decrease) during month	11	9
% of terminations and transfers out	7.8%	5.1%
% of absenteeism	2.24%	3.67%

Changes by division in number of Accounting Division employees during June, 1951 were as follows:

	Name
General: Decrease of one employee	
One transfer from Cost	Marilyn Norman
One transfer to Plant Security & Services	Edna B. Foster
One termination	Lacy F. Ross
Accounts Payable: Increase of one employees	
One new hire	Evelyn M. Knecht
Cost: Decrease of one employee	
One transfer from Plant Security & Services	Helen M. Rogers
One transfer from Plant Accounting	Lois G. Wheadon
One transfer to Technical, Engineering & Construction	Thelma S. Crockett
One transfer to General	Marilyn Norman
One termination	D. L. Crosier
General Accounts: Decrease of one employee	
One transfer from Plant Security & Services	Ardell M. Meissner
One illness removal	Lola S. Schliep
One termination	Alma C. Rau
Plant Accounting: Decrease of one employee	
Two new hires	Frances R. Gay
	Florence S. Stoughton
One transfer to cost	Lois G. Wheadon
One illness removal	Elsie K. Graham
One termination	Clara M. Day
Weekly Payroll: Decrease of one employee	
Five new hires	Gladys B. Chalcraft
	Gloria A. Downing
	Joanne H. Hazlett
	LaVerne G. Mandell
	Jacqueline S. Woodall
One transfer to Monthly Payroll	L. G. Anderson
Two transfers to Technical, Engineering & Construction	Joan A. Daer
	Barbara A. Razavich
Two illness removals	Helen H. Huntley
	Shirley M. Sletkolen
One termination	Maili M. Pendleton

General Accounting Division

PERSONNEL AND ORGANIZATION (continued)

	Name
Monthly Payroll: No Change	
One transfer from Weekly Payroll	L. G. Anderson
One termination	Donna C. Ashby
Special Assignment: No Change	
Budgets: Decrease of one employee	
One transfer to Technical, Engineering & Construction	Dorothy L. Balderson
Internal Audit: Increase of one employee	
Two new hires	J. D. Howell
	J. I. Moffett
One leave of absence	G. M. Myers
Rotational Training Program: Increase of fifteen employees	
Fifteen new hires	I. L. Burnett
	J. E. Calahan
	R. W. Calhoun
	G. D. Don
	F. W. Gates
	M. Kreil
	D. C. Myers
	D. S. Parsley
	W. S. Richards
	J. D. Ryan, Jr.
	L. W. Shiels, Jr.
	S. A. Spahr
	K. G. Warner
	S. C. Watson
	A. W. Wells

Injuries	June	May
Major	-0-	-0-
Sub-Major	-0-	-0-
Minor	1	3

Number of Accounting Division employees as of June 30, 1951 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	3	6	9
Accounts Payable	18	1	19
Cost	12	1	13
General Accounts	17	1	18
Plant Accounting	26	2	28
Weekly Payroll	66	6	72
Monthly Payroll	19	2	21
Special Assignment	-0-	2	2
Budgets	3	1	4
Internal Audit	3	7	10
Rotational Training Program	19	-0-	19
Total	186	29	215

PERSONNEL AND ORGANIZATION (continued)

Non-exempt employees may be summarized as follows:

Classification	Number as of 6-30-51	5-31-51
Accounting A	2	2
Accounting B	3	3
Accounting C	8	8
Accounting D	8	11
Business Graduate	26	11
Clerical Working Leader	7	8
Cost Clerk A	2	2
Cost Clerk B	1	1
Cost Clerk C	2	2
Cost Clerk D	3	4
Field Clerk B	3	3
Field Clerk C	3	1
General Clerk A	18	16
General Clerk B	42	44
General Clerk C	17	19
General Clerk D	9	11
General Clerk E	2	2
Office Machine Operator A	10	9
Office Machine Operator B	5	5
Secretary B	1	1
Steno-Typist A	2	3
Steno-Typist B	6	7
Steno-Typist C	5	2
Steno-Typist D	1	2
Total	186	177

Open employment requests as of June 30, 1951 were as follows:

Accounting B	1
General Clerk B	2
Total	3

General Accounting Division

	June	May
Accounts Payable*		
Balance at Beginning of Month	$ 148 143	$ 153 857
Vouchers Entered	1 289 280	1 376 716
Cash Disbursements	1 273 758 DR	1 382 480 DR
Cash Receipts	470	50
Balance at end of month	$ 164 135	$ 148 143
Number of Vouchers Entered	2 222	1 947
Number of Checks Issued	1 143	1 310
Number of Freight Bills Paid	283	350
Amount of Freight Bills Paid	$ 4 207	$ 6 675
Number of Purchase Orders Received	1 050	631
Value of Purchase Orders Received	$ 298 783	$ 235 769
Cash Disbursements		
Municipal, Real Estate & General Services	459 711	236 438
Technical, Engineering & Construction	5 921 241	6 446 501
General	4 166 037	3 703 998
Manufacturing	708 737	874 209
Total	$11 255 726	$11 261 146
Material and Freight	$ 2 524 942	$ 2 941 959
Lump Sum and Unit Price Subcontracts	1 030 585	641 183
CPFF Subcontracts		
Labor	3 040 374	3 514 678
Others	729 837	837 204
Payrolls (Net)	2 730 180	2 182 126
Payroll Taxes	465 214	409 565
U. S. Savings Bonds	162 098	139 392
General & Administrative Expenses	200 000	200 000
Reimbursement of Travel & Living Expense Variation Account	33 554	-0-
All Other	338 942	395 039
Total	$11 255 726	$11 261 146
Cash Receipts		
Municipal, Real Estate & General Services	$ 115 471	$ 116 516
Technical, Engineering & Construction	47 192	42 252
General	22 488 929	11 238 393
Manufacturing	33 954	20 685
	$22 685 546	$11 417 846

*General Divisions Only

General Accounting Division

	June	May
Detail of Cash Receipts		
Advances from AEC	$22 296 611	$11 153 311
Rents	128 472	132 880
Hospital	48 830	63 972
Telephone	17 684	16 294
Scrap Sales	14 854	7 109
Bus Fares	9 030	9 807
Miscellaneous Accounts Receivable	29 922	13 514
Sales to AEC Cost-type Contractors	7 415	6 054
Refunds from Vendors	5 231	1 766
Employee Sales	841	754
Educational Program	28	172
Refund from Travel Advance Account	50 000	-0-
Refund of Washington State Pension Awards	18 062	-0-
Dividend-Group Disability & Health Insurance	48 563	-0-
All Other	10 003	12 213
Total	$22 685 546	$11 417 846
Number of Checks Written		
Municipal, Real Estate & General Services	256	259
Technical, Engineering and Construction	1 078	946
General	1 143	1 310
Manufacturing	672	753
Total	3 149	3 268
Bank Balances At End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$12 766 755	$ 890 004
Seattle First National Bank - Richland		
Contract Account	2 269 306	2 547 788
U. S. Savings Bond Account	235 351	203 039
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	46 241	59 828
Seattle First National Bank - Seattle		
Escrow Account	31 685	31 685
National Bank of Commerce - Richland		
Contract Account - Manufacturing	313 059	501 797
Contract Account - Municipal, Real Estate & General Services	84 089	63 800
Total	$15 796 486	$ 4 347 941
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	$ 29 927	$ 30 487
Cash Advance balance outstanding over one month*	9 781	10 055
Traveling and Living Expenses:		
Paid Employees	42 663	40 864
Billed to Government	38 376	37 253
Balance in Variation account at end of month	-0-(1)	29 267 DR

*General Divisions Only

(1) Balance of $33 553.96 as of June 30, 1951 charged to Accounts Receivable Miscellaneous to be billed to Schenectady for reimbursement from General and Administrative Fund.

General Accounting Division

	June	May
Hospital Accounting		
Accounts Receivable		
Balance at Beginning of Month	$ 121 154	$ 131 592
Invoices Issued	54 927	60 162
Refunds	1 262	820
Cash Receipts	48 830 CR	63 972 CR
Payroll Deductions	5 111 CR	5 195 CR
Bad Debts Written Off	-0-	2 234 CR
Adjustments	46 CR	19 CR
Balance at End of Month	$ 123 356	$ 121 154

Scrap Sales	June	Total to Date
Number of Sales	21	386
Revenue (excluding Sales Tax):		
Scrap Sales	$ 14 854	$ 363 599
Tract House Sales		
Revenue to AEC	946	33 449
Revenue to GE	236	14 498
Total	$ 16 036	$ 411 546

General Accounting Division

ACCOUNTS PAYABLE

This section continued Saturday work in June which permitted the completion of a large back-log of final audit work on old purchase orders. Auditing of completed files will continue as time permits during the regular work week schedule and it is expected that this work will be maintained on a current basis in the future.

Three new Business Graduates started in rotational training during June in this section and considerable time was spent in teaching and training them.

Volume of work continues heavy, increasing 14% in June over May. Number of vouchers booked in June was 2 222 amounting to $1 289 280 compared with 1 947 in May amounting to $1 376 716. Accounts Payable vouchers dated in June affecting cost accounts were recorded as June items through July 6.

Number of invoices paid in June was 1 912 amounting to $1 273 758 compared with 2 042 in May amounting to $1 382 480; a decrease in number paid of 6%.

There was a decrease in number of checks issued in June compared with May. Details are as follows:

	June	May
Chemical Bank & Trust Company	329	419
Seattle-First National Bank	814	891
Totals:	1 143	1 310

On June 30 there were 1 480 vouchers on hand requiring additional supporting data before they could be considered complete and ready for audit by A.E.C. This is an 11% increase over May. Details are as follows:

	June	May
Number on hand - Paid	284	367
Number on hand - Unpaid	1 196	961
Totals:	1 480	1 328

New purchase orders issued in June pertaining to General Divisions increased considerably over May. Details are as follows:

	June		May	
	No.	Value	No.	Value
New Orders Issued	1 050	$298 783	631	$235 769
Alterations Issued	116		76	

During June there were 36 boxes of records prepared for storage in the Records Center. Most of these contained old purchase orders audited during the last two months.

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General Accounting Division

ACCOUNTS PAYABLE (CONT'D)

Certain statistics for FY 1951 may be compared with FY 1950 as follows:

	FY 1951	FY 1950	Increase
Total vouchers recorded	24 771	19 514	27%
Total checks issued	14 955	13 458	11%
Total freight bills paid	3 877	2 659	46%
Total purchase orders received	12 573	11 739	7%

As can be seen, the volume of work handled in this section increased considerably in FY 1951. One significant point in the above statistics is that although total vouchers recorded increased 27%, total checks issued increased only 11%. This is convincing evidence that more invoices are being paid per check now than was the case a year ago. This has resulted in increased efficiency and reduced costs.

The final draft of Accounts Payable Procedures was completed in June and was submitted to supervision for approval.

BUDGET ACCOUNTING

Work on budgets during the month was confined to entering budgeted amounts on cost working papers and other routine budget responsibilities. As of this date no requests for revisions have been received for the budget for FY 1953 and the revised budget for FY 1952, which are currently being reviewed by the Washington Office of the A.E.C.

During the month assistance was given by Budget Accounting personnel on problems in connection with the revision of Cost Accounting procedures. In addition to completing several analytical assignments, a flow chart was prepared illustrating the flow of plant divisional cost to end activities. At the close of the month work was progressing on graphic illustrations of overhead cost trends and on problems relating to the revision of Cost Accounting procedures.

COST

In connection with the proposed system of cost accounting to be made effective July 2, 1951, complete schedules of special liquidations to other than production, service or administrative divisions were prepared. The completed schedules detailed proposed charges from General Divisions to Engineering and Construction, M.R.E.&G.S., Hospital, A.E.C. and others, and were distributed on June 25 to members of the Cost Accounting Committee for review.

Work continued in connection with determining the basis for allocation of General and Administrative expense and Protection of Plant and Personnel expense to products.

General Accounting Division

COST (CONT'D)

The system of cost coding for General Divisions (excluding Medical) was reviewed and revised - the revision to become effective July 2, 1951. The net effect was to simplify the system in use and to provide more definite information as to the nature of expense and type of work or service furnished, rather than to report only the source of the cost. All divisional expense codes were regrouped in a "700" series in order to provide a more logical sequence, and code titles and definitions were revised in order to provide more definite information as to the nature of the expense.

The form of the operating cost report was also revised to reflect the changes in the coding system and to provide a simplied, more readable report.

Section codes were established for the various groups within Office Services in order to provide a means of accumulating definite cost information for each type of operation so that tentative standard rates can later be revised based on actual cost performance.

General Divisions Operating Reports for the month of May were issued on June 15, 1951, and detailed reports of Research and Development Costs for Health Instrument Divisions programs were issued on June 25, 1951.

Letters were issued to each General Division Manager on June 18 which summarized costs of his division for the month of May and afforded a comparison to similar charges incurred in the previous month. Significant changes in cost were analyzed and explained in detail.

GENERAL ACCOUNTS

Advances from A.E.C. increased from $5 000 000 as of May 31, 1951 to $15 883 210 as of June 30, 1951. These advances may be compared with those of May 31, 1951 as follows:

	June	May
Cash in Bank	$15 433 210	$4 003 389
Cash in Transit	-0-	496 611
Cash in Bank - Salary Accounts	50 000	50 000
Travel Advance Funds	100 000	150 000
Advances to Subcontractors	300 000	300 000
Total	$15 883 210	$5 000 000

The increase in Cash in Bank is due to an advance of $12 000 000 from A.E.C. received late in June. This advance was made as A.E.C. informed that there was a possibility that no fiscal year 1952 funds would be available until late July. It should also be noted that Cash in Transit was not recorded in June at the request of A.E.C., resulting in Advances from A.E.C. reflecting an odd amount.

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General Accounting Division

GENERAL ACCOUNTS (CONT'D)

Travel Advance Funds were reduced $50 000 this month. This was made possible due to the reimbursement from contract funds for net debits to the Travel and Living Expense Variation Account as of June 30, 1951 in the amount of $33 554. The General and Administrative expense fund will be charged with this payment.

This section processed 158 travel reports during June. Employees were reimbursed $24 077 while reimbursement was received from A.E.C. in the amount of $22 133. The balance of $1 944 was charged to the Travel and Living Expense Variation Account. The Travel and Living Expense Variation Account was charged with a total of $4 287 this month (all divisions) of which $673 was for entertainment expenses and the balance of $3 614 represented the difference between the amount paid employees and reimbursement received from A.E.C.

General Ledger Trial Balances were received from all divisions by June 14, 1951. Hanford Works Financial Statements and Consolidated Financial Statements were issued on June 21 and June 27 respectively.

During June, charges in the amount of $350 699 were received for General Engineering Laboratory Assistance to Hanford, $2 543 KAPL Assistance to Hanford, and $221 Research Laboratory Assistance.

Detailed procedures covering all phases of work in connection with Cash Controls and Travel Expenses were completed in draft during the month.

Considerable work and time has been expended in the preparation for fiscal year 1951 closing. All general ledger accounts have been analyzed to determine the adjustments necessary prior to closing and a preliminary study has been made of all accounts which are to be transferred to A.E.C. Adjustments that could be made prior to the actual closing of the books have been made. A close working arrangement has been maintained with other accounting divisions in order that target dates previously established can be met.

INTERNAL AUDIT SECTION

During June 1951, several audit reports and special assignment reports were completed and issued and further work was completed on other studies that were in process on the first of the month. In addition, various studies, including fiscal year end audits were begun.

Reports completed and issued covered the following studies:

1. Timekeeping - a study made, primarily, of timekeeping procedures in those areas in which time clocks are not used.

2. Analysis of Account 10.30, Reserve for Miscellaneous Inventory Adjustments the primary purpose being to determine (1) propriety of entries involving Account 10.30, (2) completeness and clarity of journal entry explanations and (3) accuracy of supporting data.

General Accounting Division

INTERNAL AUDIT SECTION (CONT'D)

3. Memo Employee Sales - covering the control by using divisions of direct-charge materials, supplies, equipment and protective clothing in connection with H. W. Instructions Letter No. 49.

4. Fractional Horsepower Electric Motors, Spare Parts Inventory - a study of procedures followed by Stores Division in making fractional horsepower electric motors available to servicing divisions for use as replacements.

5. Audit of Area Classification of Monthly Employees Grade IX or Lower - a test of appropriateness of isolation payments to exempt employees working in the outer areas.

Working papers of one physical inventory completed by Inventory and Audit Section of Purchasing and Stores Divisions was reviewed for accuracy and completeness.

New studies begun during the month included (1) Fiscal Year End Audits and (2) Study of Disposal of Surplus Materials.

The fiscal year end audits include (1) a joint audit of 60% of the cash change funds at Hanford Works, by internal auditors and personnel from General Accounting Office, (2) audit verification by internal auditors of certain deposits which appear on the Trial Balance as of June 30, 1951, and (3) analysis and review of certain other accounts appearing on the Trial Balance as of June 30, 1951, such as Unusual Maintenance Expenses and Spare Parts Inventory.

The study of the disposal of surplus materials entails an analysis and review of the procedures required by the Atomic Energy Commission to be followed, and the routines that Stores Division proposes to follow, in connection with the disposal of surplus materials. The requirements of the Atomic Energy Commission are encompassed in letters from David F. Shaw, Manager, Hanford Operations Office, to G. R. Prout, Manager, Nucleonics Department, and from B. A. Durley, Chief, Property Branch, A.E.C., to T. L. Lindgren, Superintendent Stores Division.

MEDICAL ACCOUNTING

The balance in Accounts Receivable increased $2 202 during the month; from $121 154 in May to $123 356 in June. Sales decreased in the amount of $5 235.

The increase in Accounts Receivable is primarily due to a decrease in cash receipts amounting to $15 142 as compared to May. This decrease in cash receipts is largely due to reimbursement of assigned Metropolitan Insurance Company claims not being received and booked during the month.

General Accounting Division

MEDICAL ACCOUNTING (CONT'D)

Out-patient invoices numbered 1 952 and amounted to $9 361 as compared to 2 221 invoices amounting to $10 616 in May. This represents a decrease of 269 invoices and $1 255 in amount.

In-patient revenue decreased $3 980 in June, largely due to the decrease in the adult patient day census from 81.1 in May to 76.7 in June.

A total of 36 claims in the amount of $905 were submitted this month to Fort Lewis for services rendered military personnel. Reimbursement on 24 claims in the amount of $1 501 on prior months billings was received during the month.

Blue Cross claims paid during the month numbered 44 and amounted to $3 626.

Listed below is a summary of activity to date on accounts submitted to Yakima Adjustment Service for collection:

	Number	Amount
Accounts Submitted	169	$29 467
Accounts Returned as Uncollectible	39	8 253
Collections by Yakima Adjustment Service	53*	2 869
Accounts Recalled	9	1 531
Accounts at Yakima Adjustment Service 6-30-51	92	16 814

* Includes 29 paid in full and 24 accounts partially collected.

A report comparing Kadlec Hospital costs, revenue, personnel and salaries with 13 Pacific Northwest hospitals, which were contacted during a survey in February and March of this year, was issued this month.

The results of the study showed that the average Pacific Northwest hospital employeed .203 more employees per adult patient-day than Kadlec Hospital.

Kadlec Hospital gross costs are $10.76 higher per adult patient-day than the average of the 13 Pacific Northwest hospitals contacted. Briefly summarized below is a breakdown of these costs:

	COST PER PATIENT - DAY		
	Kadlec Hospital	Average - Pacific Northwest Hospital	Variance
Administration	$ 5.63	$ 1.54	$ 4.09
Dietary	2.83	2.60	.23
Household & Property	3.90	2.92	.98
Professional Services	16.09	10.83	5.26
Depreciation	.69	.54	.15
Total	$29.14	$18.38	$10.76

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MEDICAL ACCOUNTING (CON'D)

The major reason for higher costs at Kadlec Hospital is due to the fact that salaries paid by Kadlec Hospital are 3½% higher than the average of Pacific Northwest hospitals.

Revenue of the average Pacific Northwest hospital is $1.5¼ more per adult patient-day than that of Kadlec Hospital due to higher fees charged by those hospitals. Subsequent to January 1, 1951, this difference is considerably greater due to all hospitals in the Pacific Northwest increasing room rates by approximately 2½%.

Kadlec Hospital bad debt losses are less than 1½% of gross sales as compared to losses by other hospitals of 3% to as high as 9%.

PLANT ACCOUNTING

During the month physical inventories of "Instruments - Measurement and/or Control" and of "Health Instruments" were initiated. Upon completion and reconciliation, "Instruments - Measurement and/or Control" will be discontinued as an account, and their value (approximating $2 400 000) will be transferred to the accounts in which the instruments are utilized. Instruments in storage will be identified to facilitate their transfer to Spare Equipment Held In Storage. The listing of Health Instrument nomenclatures in the Property Record Unit Catalog is being revised in order that a clearer association between the physical instrument and its listed name or description may be achieved.

A separate area and system of accounts is being established for the DR plant. A problem exists, however, as to buildings and other facilities which serve both 100-D and 100-DR. Where no physical division can readily be determined, they will be left in the 100-D Area accounts.

In addition to the above, other studies in connection with the allocation of depreciation expense to end activities were continued.

As of June 1, 1951, the balance in Unclassified Property in Service, representing for the most part completed project costs which had not been classified pending receipt of Project Completion Reports and other data, amounted to $16 700 256. During June, completion reports totaling $14 794 993 were received and the major portion of this sum will be transferred to appropriate Property in Service accounts.

PAYROLLS

During the month of June there were 202 removals from payroll including 4 leaves of absence and 3 transfers to other units of the Company. There were 524 additions to the payroll including 12 employees re-engaged with continuous service. The result is a net increase of 322 employees on the payroll.

H. W. Instructions Letters No. 44 and No. 59, relative to the Pension Plan, were revised and combined and reissued under Section II of H. W. Instructions Letter No. 3.

In connection with the establishment of the Perfect Attendance Recognition Plan, approximately 450 man hours were expended by the Payroll Division to determine those employees eligible for one, two, three or four year perfect attendance awards.

Reimbursement Authorization No. 157 covering the general salary increase announced on June 19, 1951 was issued on June 22, 1951 by the Atomic Energy Commission.

Work was started on calculation of the retroactive portion of the general salary increase which was announced on June 19, 1951. The new rates will be paid to weekly paid employees on a current basis effective with salary checks to be distributed July 6, 1951. Approximately 200 man hours were required to change addressograph plates and verify for correctness. Listings of the increased rates were prepared and were checked for accuracy by the Wage Rate Division. The retroactive portion of the increase to weekly paid employees will be included in checks to be distributed on July 20, 1951. For exempt salaried employees, the increased rates and the retroactive portion will be paid in salary checks for the month of July, 1951.

Military Duty allowances were paid during June to three weekly paid employees who entered the Armed Forces. The gross payment amounted to $758.33. A total of $18,622.25 has been paid to 55 weekly paid employees and 5 monthly paid employees for Military Duty Allowance as of June 30, 1951.

There were 166 employees, as of June 30, 1951, in the Armed Forces of the United States as follows:

	Called To Duty	Volunteered For Duty	Total
Reserve Officers	11	3	14
Enlisted Reserve	42	6	48
National Guard	6	-0-	6
Selective Service	37	-0-	37
Voluntary Enlistments	-0-	61	61
Total	96	70	166

New authorization cards for check off of union dues were received for 21 employee members of 4 unions affiliated with Hanford Atomic Metal Trades Council and 2 employee members of the Building Service Employees International Union, Local 201. In addition to the above, one authorization card was

received for one member of the Instrument Craftsmen's Guild who transferred to the International Brotherhood of Teamsters, Warehousemen, Garage Employees and Helpers, Local 839.

Check off of Union dues is in effect for 878 employee members of 12 unions affiliated with the Hanford Atomic Metal Trades Council and 24 employee members of the Building Service Employees International Union, Local 201.

There were 27 time cards received late in the Weekly Payroll during the month of June, as follows:

Week Ended	Number
6- 3-51	5
6-10-51	13
6-17-51	6
6-24-51	3
Total	27

Late time cards cause considerable extra work in preparation of payroll, statistical reports and related payroll work.

Work has continued on the revision of several sections of proposed "Appendix C".

List of 132 established and approved shift schedules, as of June 7, 1951, to be used in accordance with H. W. Instructions Letter No. 87, was distributed in June. The number of approved shift schedules has increased from 77 to 132 since September 7, 1950. Analysis is being made to determine how many of the 132 schedules are actually being used.

In addition to routine payroll assignments, approximately 150,000 items were addressographed for other divisions in June.

During the month of June approximately 300,000 items were addressographed which is an increase of 43% over the 210,000 items which were addressographed during June 1950.

During the month of June, 902 U. S. Savings Bonds having a maturity value of $46,075 were withdrawn from the G. E. Employees Savings and Stock Bonus Plan by 102 employees. U. S. Savings Bonds and Custody Receipts having a maturity value of $168,350 covering purchases by employees through payroll deductions in May were delivered to employees on June 29, 1951. There were 723 U. S. Savings Bonds and 2,424 Custody Receipts delivered.

Checks were delivered to 32 participants in the G. E. Employees Savings and Stock Bonus Plan who, during 1951, withdrew U. S. Savings Bonds purchased in 1948 or 1949. These checks cover income for the years 1949 and 1950 on General Electric common stock which has been credited to their accounts.

Replacements were requested for 7 Custody Receipts which were reported lost by 5 Nucleonics Department employees during the month of June.

Authorizations for deductions from payroll for the purchase of safety shoes were received from 111 weekly paid employees in June.

Rent and telephone charges were deducted from salaries of weekly paid employees in June, as follows:

House Rents	3,148
Dormitory Rents	701
Trailer Rents	105
Barracks Rents	116
Telephone Accounts	2,141
Total	6,211

At the request of Division Managers or their representatives, approximately 400 salary checks were held in the Payroll Division. These checks were delivered by payroll representatives to individual employees who were scheduled off on Thursday and Friday and who called at the Payroll Division for their checks.

Approximately 100 salary checks were released to a representative of the Employee and Community Relations Division for delivery to employees absent due to illness. Thirty-five salary checks and 138 U. S. Withholding Statements were mailed direct to employees who have been removed from the payroll.

There was one garnishment case pending at May 31, 1951 and five garnishments were served on the Company in June. Two of these cases were dismissed during the month without payment to the Court. As of June 30, 1951, four garnishment cases are pending.

There were 4 lost salary checks not reissued as of May 31, 1951, and one lost salary check was reported in June. One check was reissued in June. There were 4 lost salary checks not yet reissued at June 30, 1951.

At June 30, 1951, there were approximately 1,000 employees having preferential rates as a result of the salary rate revision made effective July 19, 1948. During June, preferential rates were eliminated in 17 cases where employees were transferred or reclassified.

During the month of June, continuity of service was restored by the Pension Board to one Nucleonics Department weekly paid employee who was reengaged after an absence due to lack of work in excess of one year. Continuity of service was also restored by local management to two Nucleonics Department employees who were reengaged after being laid off for lack of work and who lost their continuity of service because they withdrew their Pension contributions.

A total of 1,094 employees were scheduled to begin their 1951 vacations in June. Division Managers or their authorized representatives approved deferment of one week of the 1951 vacation to 1952 for 25 weekly paid employees and 18 monthly paid employees. As of June 30, 1951, 218 weekly paid employees and 105 monthly paid employees had deferred one week of their 1951 vacation to 1952.

Under the G. E. Pension Plan, 95 weekly paid employees became eligible for participation in May. Enrollment cards were received from 53 of these

employees and 39 elected not to participate in the Plan. Three of the newly eligible employees have not returned either an enrollment card or a "waiver card". Thirty-five employees who were participating in the Plan have discontinued making contributions as of June 30, 1951.

Preparation of individual insurance certificates for approximately 8,500 employees insured under the new Insurance Plan was started in June. Approximately 50% of the certificates are ready for distribution to employees.

During June, 437 claims for disability benefits, surgical benefits and hospital benefits under the Insurance Plan were processed and forwarded to Metropolitan Life Insurance Company. In June, 771 checks totaling $47,076 for 625 claims were received from the Insurance Company and forwarded to the employees or to hospitals and surgeons in accordance with authorization of the employees.

Bank reconciliations completed:

Weekly Salary through #249, week ended June 3, 1951
Weekly Salary vacation #249, week ended June 3, 1951
Bond Account - May
Monthly Payroll #57, May 1951

PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - JUNE 1951

SUMMARY

There were no major injuries in June. The total number of major injuries for the year to date is four, with a frequency rate of 0.48.

There were ten industrial fires with a loss of $62.00.

Savings created during the month by the Procedures Analysis group amounted to $3,809. Of this amount, $3,140 is considered to be on an annual recurring basis.

On June 18, 1951, the 277-S and 277-U Buildings in the Redox Construction area were enclosed within a single fence and the area designated a "Construction Exclusion" area. "Q" clearance is now required for entrance to this area.

PLANT SECURITY AND SERVICES DIVISIONS
MONTHLY REPORT - JUNE 1951

ORGANIZATION AND PERSONNEL:

Number of employees on payroll:

	Beginning of Month	End of Month	Increase	Decrease
Staff	3	3		
Patrol and Security	641	634		7 (a)
Safety and Fire Protection	147	145		2 (b)
General Service (Building & Laundry Service, Office Service, Records Control and Procedures Analysis)	278	290	12 (c)	
TOTALS	1,069	1,072	12	9

NET INCREASE: 3

(a) - Patrol and Security

6 - New Hires
1 - Transferred from Municipal
2 - Transferred to other Divisions
12 - Terminations

(b) - Safety & Fire Protection

3 - New Hires
3 - Removed from Roll due to Leave of Absence
2 - Terminations

(c) - Building and Laundry Service

8 - New Hires
2 - Transferred to other Divisions

Office Service

32 - New Hires
2 - Transferred from other Divisions
24 - Transferred to other Divisions
2 - Removed from Roll due to Leave of Absence
1 - Termination

Records Control

1 - Removed from Roll due to Leave of Absence

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	40
Accumulated Exposure Hours since last Major Injury	1,998,155
Major Injury Frequency Rate (1/1/44 through 6/30/51)	0.80

	May	June	Year to Date	Comparative Period, 1950
Major Injuries	2	0	4	2
Sub-Major Injuries	2	1	10	13
Minor Injuries	322	335	1,822	1,879
Exposure Hours	1,444,369	1,541,907	8,257,309	7,421,022
Major Injury F/R	1.41	0.00	0.48	0.27
Major Injury S/R	0.002	0.00	0.05	0.002
Penalty Days	0	0	450	0
Actual Days Lost	4	0	35	15
Minor Injury F/R	2.28	2.17	2.20	2.53
ESTIMATED MEDICAL TREATMENT TIME REQUIRED		1,358 hours	7,556 hours	

Sub-Major Injury No. 202

This injury, which occurred to a Maintenance Division employee in the 200-W Area on May 16, 1951, has been reclassified to Major Injury No. 74½. A skin graft was necessary, requiring hospitalization.

Sub-Major Injury No. 204

On June 15, at 10:00 P.M., a sanitation helper in the Public Works Division sustained a fracture to the first left metacarpal when his hand was caught between the center support for an overflow plate and the compactor door on a garbage truck.

Either through a misunderstanding or through faulty operation, a fellow employee activated the compactor in the opposite direction to that which he intended, thereby catching injured's hand between compactor and bed of truck.

Safety Activities

A Safety Quiz designed by the Safety Division to determine the correct cause of injury as shown under personal classification schedule was approved by the Program Committee and recommended by the Nucleonics Safety Council for adoption. This contest was designed to create added interest in safety and acquaint all employees who participate with the details of many of our more serious injuries.

Additional procedures are being set up for the safe use of fresh air through respirators and to prevent the probability of mistaken identity of fresh air supply lines.

Safety Activities (Contin.)

The question and answer contest that has been conducted in the 100-F Area by the P Division was won by "C" Shift. This was an interesting contest and many of the answers to Who, What, When and Where of Safety showed good interest in safe working practices.

The Safety Orientation of new employees and the safety training program for supervisors is being regularly conducted in all industrial areas. This activity is meeting with the approval of the chief supervision in the Areas.

Additional safety activity is being put forth in the 200-W Area for the purpose of giving adequate safety coverage in buildings recently constructed. This activity consists of many meetings with supervision to adopt safe methods and practices before operating the newly completed buildings.

During the last two weeks in June, an excessive number of minor injuries (some of a serious nature) were experienced. Investigation showed they involved mainly new employees who had not been sufficiently impressed and instructed in safe practices. Steps are being taken at once to correct this condition.

The Safety Division has designed a match book program for the purpose of increasing safety consciousness in the minds of the employees by attracting and holding their attention to safety through a program of passing out book matches with impressive safety messages imprinted on the covers. This is to be presented to the Program Committee at their next meeting.

A study is currently being made of the causes of rubber deterioration in protective gloves and gas tubing in the 3706 Building; a condition resulting in some minor acid burns. The condition seems to be local and it is suspected that hydrogen and/or oxygen in the laboratory atmosphere is reacting with sulphur in the rubber causing it to break down. This conclusion is still to be substantiated. This problem has also uncovered another in that while inspecting gloves in stores stock, it was found that synthetic glove-box gloves in stock had visable defects in the form of bursted air bubbles which occurred during the manufacturing process. This would indicate a need for closer inspection in Stores Receiving.

Injury occurrence in the "P" Division operations took a sharp rise in recent weeks. Investigation discloses a combination of factors which have a bearing on this course of events. The Division Chief Supervisor is endeavoring to correct the unsafe practices through better supervisory control measures and he has also started a general review of job procedures and job hazard breakdowns. The 300 Area Safety Office is assisting with this review.

Three-hundred pairs of safety glasses were cleaned, sterilized and packaged for future use under the direction of the Safety Engineer assigned to the Stores Division. Seventy-nine pairs of safety glasses were repaired and adjusted during the month.

Fire Protection Activities

Special orientations and demonstrations on use of dry compound fire extinguishers are being conducted in all industrial areas.

Plant Security and Services Divisions

Fire Protection Activities (Contin.)

New employees are receiving orientation on fire prevention in conjunction with safety orientation.

Some defects in the Vitaguard Jr. fire alarm system are being brought to light during tests in the various areas. These conditions are being cleared up when found.

A fire alarm system with street stations was recommended to the Atkinson-Jones major construction for added protection during the building of the new 100-C Area.

Prints on new and revised additions to 108-B were reviewed and comments covering safety and fire protection were submitted.

A new method of drying slugs in 105-B before sending them to 108-B was reviewed and recommendations were submitted on the use of acetone or methyl alcohol.

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
Maintenance	200-W	1	Generated heat ignited vapors of coolant oil.	None
Analytical	200-E	1	Methanol vapors inside box ignited by a micro-burner pilot light.	$ 2.00
Analytical	200-W	1	Spontaneous ignition.	60.00
P	300	1	Explosion.	None
Transportation	100-B	1	Careless smoker caused grass fire.	None
Power	100-B	1	Line overheated when air was pumped to test safety valves.	None
	Outer	1	Carelessly discarded smoking material.	None
	Outer	1	Carelessly discarded smoking material	None
	Outer	1	Grass ignited by lightning	None
	Outer	1	Grass ignited by lightning	None
TOTAL INDUSTRIAL FIRES		10	TOTAL LOSS	$62.00

Plant Security and Services Divisions

GENERAL SERVICE

Building and Laundry Service

Plant Laundry (200-W)

	May	June
Coveralls - Pieces	47,956	33,432
Towels - Pieces	8,586	7,859
Miscellaneous - Pieces	113,265	90,032
Total Pieces	169,807	131,323
Total Dry Weight - Pounds	248,941	186,493

Richland Laundry (Building 723)

Flatwork - Pounds	65,569	50,114
Rough Dry - Pounds	20,077	16,127
Finished - Pounds	2,999	2,033
Estimated Pieces	116,125	89,439
Total Dry Weight - Pounds	88,645	68,274

Monitoring Section (200-W)

Poppy Check - Pieces	125,830	104,912
Scaler Check - Pieces	160,068	112,492
Total Pieces	285,898	216,404

The current month's volume figures for the 700 and 200-W Laundries are as of the 25th of June, thus causing a low volume report for each laundry. Effective this month, all laundry volume reports will be accumulated and recorded from the 26th through the 25th of each month.

Office Service

Central Mail

Work is continuing on bringing the Employee Location file up to date. A reduced force has been working Saturdays this month to keep abreast of mail deliveries.

The new location of the Mail Room in the 707 Building seems to be working out satisfactorily. With the addition of blacktop walkways to the 703 Building and completion of a restricted parking area for mail trucks, the Central Mail Room facilities will be adequate to handle current requirements.

Plant Security and Services Divisions

Central Mail (Contin.)

Types and pieces of mail handled:	May	June
Internal	757,589	666,701
Postal	87,456	69,452
Registered	1,411	1,174
Insured	408	321
Special Delivery	255	233
Total Mail Handled	847,319	737,881
Total postage used	$2,642.89	$2,003.20
Total Teletypes handled	8,821	6,109

Office Equipment

A complete inventory of all office equipment and machines was taken the first part of this month to bring all records up to date.

The Accounting Division has made an emergency request for a large number of desks and chairs to be furnished them by July 15, 1951.

The office equipment and machines requested for 1952 by all divisions are being consolidated and orders placed as rapidly as possible. The Records Control supervisor is reviewing the requirements for filing cabinets prior to any orders being placed for same.

	May	June
Office Machines Repaired in Shop	315	270
Office Machine Service Calls	914	439
Total Machines Serviced	709	1,229

Central Printing

The 3:48 PM to 12:18 AM shift is being continued and strengthened with new personnel in order to assure maximum production.

The first edition of the Manufacturing Divisions' annual yearbook was completed by Central Printing as per the time estimate.

A large volume of paper master work was handled this month for the first time. This medium is more properly considered as duplicating work, but no machines are available at this time to place this class of work in the Duplicating Section.

The Chief "22" Webendorfer Press was put in limited operation for the first time this month. Lack of zinc plates prevented it's use prior to this time.

Plant Security and Services Divisions

Central Printing (Contin)

A test of Xerography equipment was arranged with the Haloid Company during June. Much interest has been shown in this process which permits quick tranfer of copy to an economical paper master for printing on offset equipment.

A letter of justification covering printing equipment provided for in the FY 1952 budget was submitted to the Office Service Section of the AEC to obtain authorization for procurement from the U. S. Bureau of Printing.

Multilith Orders:	May	June
Received	378	256
Completed	355	326
On hand	142	71

Stenographic Service

Overtime was worked each Saturday throughout the month with a force tailored to handle the work load.

Breakdown of Hours:	May	June
Dictation and Transcription	12:30	6:00
Machine Transcription	28:45	20:45
Letters	48:55	113:30
Manuals & Procedures	7:45	57:10
Preparation of stencils	862:15	736:00
Special	636:40	524:45
Meeting Time	23:00	:00
Training	104:20	425:30
Absentee Time	40:00	:00
Holiday & Vacation	:00	:00
Unassigned Time	56:00	248:00
Total	1,820:10	2,131:45
Employees loaned to other divisions	1,129:00	1,046:45
Total Hours Available	2,949:10	3,178:30

Duplicating Service

The crowded working quarters of this group have been alleviated somewhat by the addition of an adjacent office to the existing space.

Two shifts are being retained indefinitely to insure quick duplicating service.

The requirements for offset duplicating machines needed to handle the proposed area duplicating work were submitted in a letter of justification to the AEC for obtaining approval to procure from the U.S. Bureau of Printing. Local approval of the proposed plan has been obtained from the AEC and a more detailed justification is being prepared for forwarding to the U. S. Bureau of Printing.

Plant Security and Services Divisions

Duplicating Service (Contin)

Stencil and fluid duplicating:	May	June
Orders received	981	732
Orders completed	1,030	706
Orders on hand	17	43
Number of stencils	4,019	2,152
Number of copies	615,174	390,905
Number of Dittos		1,319
Number of copies		55,804
Collated orders	34	17
Collated copies	132,340	17,750

Records Control

Quantity of records received, processed and stored:

Administrative Division	7	Standard Storage Cartons
Electrical Division	2	" " "
Employee and Community Relations	7	" " "
Engineering and Construction	111	" " "
General Accounting Division	122	" " "
Health Instrument Division	4	" " "
Instrument Division	4	" " "
Manufacturing Accounting	13	" " "
Medical Division	8	" " "
Municipal, Real Estate & General Services	31	" " "
Plant Security and Services	5	" " "
Power Division	28	" " "
Project Engineering Division	12	" " "
Purchasing Division	65	" " "
"S" Division	11	" " "
Stores Division	12	" " "
Subcontractors, Kellex Corp.	1	" " "
Technical Services Division	158	" " "
Transportation Division	1	" " "
TOTAL	602	Standard Storage Cartons

Persons provided records service:	790	
Records Cartons issued:	542	
Records destroyed:	5	Linear feet of duplicate non-record material.
Records reboxed from transfer cases to standard storage cartons:	202	cartons
Filing service provided:	383	pieces filed in with record already in storage.

Percentage of the Records Service Center vault occupied by records: 63.8% occupied. At the present rate of acquisitions, 4.0% a month storage capacity of 16,890 cartons will be reached on approximately April 1, 1952.

Records Control (Contin.)

A survey was completed of vital records to be microfilmed for offsite storage, and recommendations made through the Records Committee to the Assistant General Manager, Nucleonics Department. The recommendations include provisions for the microfilming of all unclassified records which represent 98.5% of the records to be microfilmed to be done on contract basis.

A meeting was held with Atkinson and Jones Company to reactivate the program for transfer of their inactive records to the Records Building in the 3000 Area.

A uniform filing system was installed in the following offices:

Manager, Engineering and Construction Divisions
Assistant Manager, Engineering and Construction Divisions
300 Area Instrument Division
Procedure and Analysis Division
Engineering and Contract Division
Staff Assistant, General Service, Plant Security and Services Division
Steno Pool
Public Relations Division for distribution throughout various General Electric Company offices over the U.S. - 15 Copies.

Filing Equipment:

Requests for file cabinets received:	41
Requests for file cabinets filled:	26
Requests for file cabinets cancelled through more efficient use:	2
Requests for file cabinets cancelled through transfer to Records Center:	13

Procedures Analysis

	May	June
Printing Orders Received	454	335
Printing Orders Cancelled	26	20
New Numbers Assigned	108	119
Forms Designed	33	25

Revision of "This Way, Please" has been extended to incorporate the new plant-wide uniform filing system. All proofs have been approved and returned to the printer for final preparation of the manual.

A survey for physical stocking of all forms by the Procedures Analysis group is progressing as scheduled. Since this survey is conducted as a part time fill-in type study, the final detailed report will not be completed for several weeks. To enable proper budgeting for space, a letter is being prepared at this time giving the estimated space requirements to perform this function.

Indoctrination Manual for the Procedures Analysis group has been discussed and a standard format has been adopted. Work is proceeding as scheduled.

Plant Security and Services Divisions

Procedures Analysis (Contin.)

The final forms survey and procedure report to Security Patrol has been completed. This copy will be submitted to Security Patrol supervision for review before additional copies are distributed. Savings derived from printing cost alone are approximately $1000. Since the savings calculations are not complete, the $1000 is not included in the figures shown for savings created this month. Total savings will appear in the report for July.

Savings created during this month were $3809. Of this amount, $3140 will be on an annual recurring basis.

PATROL AND SECURITY

There were 513 GE employees given orientation talks which dealt with plant safety and security rules, also a brief resume of plans and policies of the General Electric Company for its employees.

There were 150 GE employees given termination interviews, at which time the terminated employees were asked to sign Security Termination Statement and Security Acknowledgment, Atomic Energy Forms Nos. 136 and 15, respectively.

There were 249 Security meetings held and attended by 3,570 employees during the month.

The following security education items were issued during the month:

Five items appeared in the Works NEWS concerning the subject of security.

Nine-thousand copies of "A-B-C" security bulletins with the inscription "Soups and Spies" were distributed to employees on June 15.

Five-hundred copies of the poster "Half the World Wants Your Secrets" were posted throughout the plant area and Community of Richland on June 20.

Eleven-thousand copies of "A-B-C" security bulletins with the inscription "Who, Me?" were distributed to the residences of all employees on June 29.

A new "Hanford Works Security Handbook", explaining security procedures and regulations, was ready for distribution to all new employees during the month.

A representative of the Security Division showed the following security films during the month:

"Sabotage" at 24 meetings with 525 employees in attendance.
"On Guard" at one meeting with 40 employees in attendance.
"Fitting U Into Security" at one meeting with 40 employees in attendance.

There were 184 employees who received "Q" orientation talks from a representative of the Security Division during the month.

Plant Security and Services Divisions

Patrol and Security (Contin.)

The following emergency plans were placed into effect during the month throughout the plant areas:

Number of practice evacuations held:	4
Number of practice blackouts:	19
Number of practice mobilizations:	20

On June 11, Operations Order I-251, covering the elimination of the necessity for obstruction lights within the plant area, was issued. This instruction concerned air space regulations forbidding the flight of all air craft except those in official use over the areas. All authorized air craft have necessary information on area obstructions.

Operations Order I-253 which provides that Security Patrol will obtain approval of the Electrical dispatcher before initiating a practice blackout was issued June 11.

Effective June 12, Operations Order I-182, Supplement No. 20, cancelled Order I-237. This instruction allowed certain Construction personnel to be escorted into "limited" areas by cleared supervisory employees. This procedure was cancelled and escorts will be furnished by Security Patrol only in special instances.

On June 13, Operations Order I-254 was issued establishing the procedure for the movement of equipment and materials in loads up to eighteen feet in overall height on certain specified plant roads without Electrical Distribution escort.

On June 18, the construction fence around the 100-C Area was secured and all gates entering that area were locked at 7:30 A.M. Construction personnel working in that area will make their entry through the old fence in the south side of the old fence line.

An inspection was made June 18 by Security Patrol personnel of the abandoned vault located 300 yards towards the Columbia River from the present arsenal at Hanford. It was found that with an expenditure of five hundred dollars, this vault could be made into a suitable arsenal for the Security Patrol Division, which would release two buildings now being utilized for that purpose. A Work Order was issued to have the necessary work performed.

A memorandum was issued by the Security Division to all Superintendents and Division Heads stating that effective June 18, 1951, at 12:01 A.M., the 277-S and 277-U Buildings in the Redox Construction Area were to be enclosed within a common fence area to be designated as the "277-S Construction Exclusion" Area. Thus, a "Q" clearance will be a prerequisite for all personnel prior to entrance to this area.

Effective June 19, a new post was established in the 200-W Area, and it will be known as the 241-TX Tank Farm. It will be manned by one patrolman from 7:30 A.M. to 5:00 P.M., Mondays through Saturdays, and at all other times when necessary. This post was established to control the entrance and exit of "Q" cleared personnel to and from the 241-TX Tank Farm.

Plant Security and Services Divisions

Patrol and Security (Contin.)

At 6:00 A.M., June 20, construction post 277-S was moved from inside the 277-S Building to Corridor south of 277-S Building. This post now includes the badge house and the vehicle gate.

On June 25, at 10:00 A.M., a new post was established in the 200-W Construction Area, and it will be designated as the 202-S Silo Badge House and Rover Escort. This post will be manned by three Security Patrolmen twenty-four hours per day. This post consists of one badge house on the first level and one badge house on the sixth level, and one patrolman to escort Construction personnel working on windows, etc. These posts will control the entrance and exit of authorized Construction personnel to and from the 202-S Silo.

The following additional security safeguards were established in the Blueprint Reproduction Section and Drafting Room, of the Engineering and Construction Divisions, located in the 760 Building, 700 Area, during the month of June:

Reproduction Section:

"Q" cleared personnel only will be employed.

Buzzer gates will be installed in three places to restrict access.

A special services counter will be installed for "P" personnel.

Drafting Room:

This room will be rearranged to segregate "P" personnel from "Q" cleared personnel, thus establishing a definite "restricted" area.

Access to "restricted" area will be controlled by a clerk in constant attendance during working hours.

Field Security Inspection Activities:

Reports written to Division Managers on unattended documents, improper storage of classified material, classified scrap being unattended, etc.:	10
Contacts made regarding unaccounted for documents:	11
Physical searches made for unaccounted for documents:	5
Unaccounted for documents located:	22
Classified burning details handled:	4
Contacts made regarding changes of combination on combination lock file cabinets being due, incorrect custodian listings, etc.:	89
File combinations changed:	19

Plant Security and Services Divisions

Patrol and Security (Contin)

A total of 673 pat searches were made during the month. Escorts handled totalled 383.

The Patrol Division made 20 ambulance runs for the Medical Division during the month.

There were 2,830 badge transactions completed during June including "A", "B", "C" and temporary type badges.

[redacted]

HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING JUNE 30, 1951

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
GENERAL ACCOUNTING DIVISION							
I. Visits to other Installations							
F. E. Baker to: General Electric Company Schenectady, New York	Discuss prime contract for HW and KAPL	W. H. Milton, Jr. H. A. Winne C. G. Suits	6-13-51	6-18-51	X		
F. E. Baker to: Knolls Atomic Power Lab. Schenectady, New York	Discuss prime contract for HW and KAPL	H. E. Scott	6-13-51	6-18-51	X		
COMMUNITY DIVISIONS							
I. Visits to other Installations							
H. A. Root to: General Electric Company Schenectady, New York	Problems related to Community Divisions of HW	W. H. Milton, Jr.	6-7-51	6-8-51	X		
EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS							
I. Visitors to this Works							
B. Herriod Dept. of Labor & Industries Olympia, Washington	Inspect First Aid Building	C. C. Tallman	6-28-51	6-28-51		X	200-W XXX

[redacted]

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
A. M. Johnson Dept. of Labor & Industries Olympia, Washington	Inspect First Aid Building	C. C. Tallman	6-28-51	6-28-51		X	200-W XXX
D. C. Jurgensen Dept. of Labor & Industries Olympia, Washington	Inspect First Aid Building	C. C. Tallman	6-28-51	6-28-51		X	200-W XXX
F. Smith Dept. of Labor & Industries Olympia, Washington	Inspect First Aid Building	C. C. Tallman	6-28-51	6-28-51		X	200-W XXX
E. Sorger Dept. of Labor & Industries Olympia, Washington	Inspect First Aid Building	C. C. Tallman	6-28-51	6-28-51		X	200-W XXX
II. Visits to other Installations							
J. N. Dupuy to: General Electric Company Schenectady, New York	Discuss prime contract for HW and KAPL	W. H. Milton, Jr. H. A. Winne C. G. Suits	6-13-51	6-18-51	X		
J. N. Dupuy to: Knolls Atomic Power Lab. Schenectady, New York	Discuss prime contract for HW and KAPL	H. E. Scott	6-13-51	6-18-51	X		
ENGINEERING AND CONSTRUCTION DIVISIONS							
I. Visitors to this Works							
F. J. Champlin General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-4-51	7-13-51	X		200-W Const 234-5 Const 200-W (Op) 234, 235
C. W. George General Engineering Laboratory Schenectady, New York	Consultation on 43 Project	W. P. Ingalls	6-4-51	6-16-51	X		200-W Const 234-5 Const 200-W (Op) 234, 235

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. P. Diehl General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-4-51	6-30-51	X		200-W Const 234-5 Const 200-W (Op) 234, 235
L. D. Singleton Hadley Associates Burlington, Vermont	Installation of balancing equipment in 234-5 Construction Area	W. P. Ingalls	5-18-51	6-23-51	X		200-W Const 234-5 Const 200-W (OP) 234-5 Const
E. Long General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-26-51	7-14-51	X		200-W Const 234-5 Const 200-W Op 234; 235
H. W. Wallace General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-12-51	6-23-51	X		200-W Const 234-5 Const 200-W Op 234, 235
J. N. Hall General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-7-51	6-16-51	X		200-W Const 234-5 Const 200-W (Op) 234, 235
C. D. Carroll General Engineering Laboratory Schenectady, New York	Consultation on 432 Project	W. P. Ingalls	6-5-51	6-9-51	X		200-W Const 234-5 Const 200-W (Op) 234, 235
H. N. Hackett Knolls Atomic Power Laboratory Schenectady, New York	See reactor installations, new construction and methods of handling design and construction programs	J. S. Parker	6-4-51	6-6-51	X		202-S Canyon 202-S Silo 200-W Const 234-5 Const 277-S

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. D. Shaw Knolls Atomic Power Laboratory Schenectady, New York	See reactor installations, new construction and methods of handling design and construction	J. S. Parker programs	6-4-51	6-6-51	X		202-S Canyo 202-S Silo 200-W Const 234-5 Cons 277-S
T. Trocki Knolls Atomic Power Laboratory Schenectady, New York	See reactor installations, new construction and methods of handling design and construction	J. S. Parker programs	6-4-51	6-6-51	X		202-S Canyo 202-S Silo 200-W Const 234-5 Cons 277-S
A. A. Batza General Engineering Laboratory Schenectady, New York	Consultation on 432 Project and P-10 consultation	W. P. Ingalls H. F. Zuhr (Tech) H. L. Henry (Tech)	3-8-51	Still here	X		200-W Const 234-5 Cons 200-W Op 234, 235 300 XXX 0
		6-7-51 only for 300 Area Library					
W. A. Hartman General Engineering Laboratory Schenectady, New York	Consultation on 432 Project and P-10 consultation	W. P. Ingalls	3-8-51	Still here	X		200-W Const 234-5 Const 200-W Op 234, 235 300 XXX
		H. F. Zuhr (Tech)	6-13-51 for 100-B				100-B 105,10
C. D. Carroll General Engineering Laboratory Schenectady, New York	Consultation on 432 Project and P-10 consultation	W. P. Ingalls H. F. Zuhr (Tech)	6-13-51	6-13-51	X		100-B 105, 108
A. R. Whittlesey Traveller's Insurance Company Seattle, Washington	Boiler inspection	E. D. Morris	6-6-51	6-6-51		X	200-W Op XXX (284 Bldg)

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. T. Holmes H & N Company Los Angeles, California	Contract procurement procedures	A. Gavin	6-28-51	6-30-51	X		
H. G. Ross Western Electric Company Sandia Corporation Los Alamos, New Mexico	Secure information regarding purchasing and procurement procedures for HW	A. Gavin H. A. Hausor	7-9-51	7-11-51	X		
G. White, Jr. Kellex Corporation New York, New York	Engineering consultation on Project C-362	V. D. Nixon	6-28-51	6-29-51	X		
C. A. Hanson, Jr. Knolls Atomic Power Laboratory Schenectady, New York	Instrumentation for "C" reactor	H. E. Grantz	6-4-51	6-4-51	X		
C. D. Carroll General Engineering Laboratory Schenectady, New York	Discuss progress of heater tube for inpile controlled atmosphere experiments	H. J. Bollarts A. F. Luebke H. P. Shaw	6-13-51	6-13-51		X	
II. Visits to other Installations							
F. H. Amos, Jr. to: General Engineering Lab. Schenectady, New York	Consultation regarding design and installation of equipment for 432 Project	C. W. George	6-19-51	6-30-51	X		
J. H. Black to: General Electric Company Schenectady, New York	Interview regarding reorganization	W. H. Milton, Jr.	6-18-51	6-22-51	X		
V. G. Blanchette to: Kellex Corporation New York, New York	Discuss electrical and instrumentation design for Project C-431-B	G. White, Jr.	7-2-51	7-4-51	X		
B. R. Elder to: Kellex Corporation New York, New York	Engineering consultation	G. White, Jr. K. O. Donelian	6-20-51	6-23-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
J. M. Framo to: Knolls Atomic Power Lab. Schonectady, New York	SPRU consultation	L. B. Bragg	6-13-51	6-14-51	X		
J. J. Gately to: General Engineering Lab. Schonectady, New York	Consultation on Project C-413, RMB Line	C. W. George E. P. Diehl	7-16-51	7-20-51	X		
W. F. Garetson to: Kellex Corporation New York, New York	Consultation on preparation of estimate of cost on Project C-431	W. C. Barnholt	6-25-51	6-30-51	X		
R. C. Hollingshead to: Kellex Corporation New York, New York	Consultation on pulse generator	G. White, Jr.	6-9-51	6-9-51	X		
J. MacGregor to: Kellex Corporation New York, New York	Consultation on preparation of estimate of cost on Project C-431	W. C. Barnholt	6-25-51	6-30-51	X		
P. M. Murphy to: Kellex Corporation New York, New York	Design consultation on Project C-362	G. White, Jr.	6-16-51	6-19-51	X		
V. D. Nixon to: Kellex Corporation New York, New York	Review design on Project C-431-B	G. White, Jr.	6-19-51	6-21-51	X		
J. R. Walcott to: Kellex Corporation New York, New York	Engineering consultation	G.White, Jr. K. O. Donelian	6-20-51	6-23-51	X		
C. W. Hendricks to: Portland, Oregon	View new copyflex machine	P. Olson (C. Bruining Co.)	6-12-51	6-14-51		X	
D. D. Taylor to: Portland, Oregon	View new copyflex machine	P. Olson (C. Bruining Co.)	6-12-51	6-14-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
G. H. Hill to: Philadelphia, Pennsylvania	Attend Drafting Committee Meeting	W. L. Healy	6-6-51	6-6-51		X	
G. H. Hill to: General Electric Company Schenectady, New York	Drafting consultation	A. H. Rau B. Schier	6-7-51	6-7-51		X	
J. L. Boyd to: Leland S. Rosener San Francisco, California	Design liaison on sub-contract G-304	L. S. Rosener, Jr.	6-24-51	6-28-51		X	
W. O. Priebe to: Leland S. Rosener San Francisco, California	Design liaison on sub-contract G-3[illegible]	L. S. Rosener, Jr.	6-24-51	6-28-51		X	
J. W. Conley to: Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-363	R. A. Monerieff L. L. Ketchan	6-28-51	6-30-51		X	
T. Williams to: Crane Company Chicago, Illinois	Contact vendor about connectors	P. M. Weiss	6-4-51	6-9-51		X	
R. W. Copeland to: Pacific Coast Engineering San Francisco, California	Design consultation on C-362	Mr. Ramsden	6-11-51	6-12-51		X	
W. B. Webster to: Pacific Coast Engineering San Francisco, California	Design consultation on C-362	Mr. Ramsden	6-11-51	6-12-51		X	
H. E. Hanthorn to: General Machinery Company Spokane, Washington	Arrange for parts of fabrications on 202-S Building	Mr. Gustafson	6-13-51	6-14-51		X	
R. C. Mann to: Kollox Corporation New York, New York	Expedite materials on Project C-362 instrumentation	J. S. Atwood	6-21-51 6-7-51 6-28-51	6-22-51 6-9-51 6-29-51	X X X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. C. Mann to: Foxboro Company Foxboro, Massachusetts	Expedite materials for Project C-362	J. Dobson	6-19-51	6-20-51		X	
R. C. Mann to: Cook Electric Company Chicago, Illinois	Expedite materials for Project C-362	R. T. Mathias	6-25-51	6-26-51		X	
T. Williams to: Perry Brown - Johnston Pump Company Los Angeles, California	Consultation with vendor	P. Brown	6-25-51	6-29-51		X	
A. J. Karnie to: Kowaunee Mfg. Co. Adrian, Michigan	Inspect engineering equipment for 234-5 Building	J. Campbell	6-26-51	6-26-51		X	
A. J. Karnie to: Oscar Kronz Mfg. Co. Oakland, California	Inspection engineering equipment for 234-5 Building	O. Kronz	6-29-51	6-29-51		X	
P. M. Murphy to: Vulcan Copper Cincinnati, Ohio	Procurement for project C-362	- -	6-12-51	6-30-51		X	
J. B. Hughes to: Eastern Industries Norwalk, Connecticut	Inspect mechanical equipment for TBP Project	Mr. Wilcox	6-26-51	6-29-51		X	
R. C. Hollingshead to: Proportioneers Providence, Rhode Island	Observe performance test of prototype pulse generator	Mr. Pickering	6-4-51	6-29-51		X	
R. C. Hollingshead to: Stearns- Rogers Denver, Colorado	Observe performance test of prototype pulse generator	Mr. Rosengren	6-4-51	6-29-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
R. C. Hollinghead to: Johnston Pump Company Los Angeles, California	Observe performance test of prototype pulse generator	P. Brown	6-4-51	6-29-51		X	
J. B. Modlin to: Seamsex Company Long Island, New York	Contact vendor on pigtails, rubber, gun barrels and winches	- -	5-20-51	6-8-51		X	
M. G. Patrick to: Halliday Machinery Seattle, Washington	Discuss metallurgical laboratory saw	Mr. De Armand	6-19-51	6-20-51		X	
M. G. Patrick to: Pemberthy Instrument Co. Seattle, Washington	Discuss loaded glass	- -	6-19-51	6-20-51		X	
H. J Bollarts to: Pacific Car & Foundry Renton, Washington	Discuss feasibility of casting component parts of Ball 3X hopper	Mr. Findleyson	6-4-51	6-4-51		X	
H. P. Shaw to: Pacific Car & Foundry Renton, Washington	Discuss feasibility of casting component parts of Ball 3X hopper	Mr. Findleyson	6-4-51	6-4-51		X	
H. J. Bollarts to; Puget Sound Navy Shipyard Bremerton, Washington	Discuss casting and fabri- cating hopper	C. L. Fears	6-5-51	6-5-51		X	
H. P. Shaw to: Puget Sound Navy Shipyard Bremerton, Washington	Discuss casting and fabri- casting hopper	C. L. Fears	6-5-51	6-5-51		X	
D. M. Brown to: Tri-Clover Machinery Co. Kenosha, Wisconsin	Determine status of stainless steel orders for C-349	Mr. Greenwood	6-16-51	6-21-51		X	
D. M. Brown to: Ladish Company Cudahy, Wisconsin	Determine status of stainless steel orders for General E[redacted]	Mr. Foley	6-16-51	6-21-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
W. J. Dowis to: Kellex Corporation New York, New York	Electrical design on 105-C Reactor Bldg.	G. White, Jr.	7-2-51	7-3-51	X		
ELECTRICAL DIVISION							
I. Visits to other Installations							
E. E. Woyorts to: General Electric Company Nela Park Cleveland, Ohio	Attend Plant Engineers Lighting Conference	J. M. Smith	6-3-51	6-6-51		X	
HEALTH INSTRUMENT DIVISIONS							
I. Visits to other Installations							
F. E. Adley to: Harvard School of Public Health Boston, Massachusetts	Conference on air cleaning devices and demonstrations in lab.	L. Silverman	6-12-51	6-16-51	X		
P. L. Eisenacher to: G. E. X-ray Corporation Milwaukee, Wisconsin	Observe radiation instrument development facilities	E. D. Trout	6-25-51	6-25-51		X	
P. L. Eisenacher to: G. E. Electronics Dept. Syracuse, New York	Observe radiation instrument development facilities	R. H. Rudolph	6-27-51	6-27-51		X	
P. L. Eisenacher to: General Engineering Lab. Schenectady, New York	Attend meeting of G.E. Radiation Instrument Committee	W. J. Morlock	6-28-51	6-28-51	X		
P. L. Eisenacher to: Knolls Atomic Power Lab. Schenectady, New York	Observe and discuss H.I. instrumentation problems	L. L. German	6-29-51	6-29-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. F. Foster to: Radiation Laboratory Berkeley, California	Discuss biological investigations and inspect facilities	T. J. Haley	6-18-51	6-21-51	X		
J. W. Porter to: Los Angeles, California	Attend Am. Soc. of Plant Physiologists meeting		6-18-51	6-22-51		X	
G. R. Hilst to: Los Angeles, California	Attend Am. Meteorological Society meeting		6-18-51	6-23-51		X	
MAINTENANCE DIVISION							
I. Visitors to this Works							
C. D. Cummins Worthington Pump & Machinery Seattle, Washington	Inspect facility	J. F. Heberer	6-13-51	6-13-51		X	100-D XXX
MANAGEMENT							
I. Visits to other Installations							
D. W. McLenegan to: Knolls Atomic Power Lab. Schenectady, New York	Review prospective needs and education program	K. H. Kingdon D. E. Irwin	6-21-51	6-22-51	X		
W. P. McCue to: Oak Ridge National Lab. Oak Ridge, Tennessee	Salary survey	L. Groenigor (AEC) T. Lane	6-6-51	6-8-51	X		
MANUFACTURING MANAGEMENT							
I. Visits to other Installations							
J. E. Maider, Jr. to: Oak Ridge National Lab. Oak Ridge, Tennessee	Combined operations conference	W. B. Humes	6-4-51	6-5-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
POWER DIVISION							
I. Visitors to this Works							
A. R. Whittlesey Travellor's Insurance Company Seattle, Washington	Inspect boiler houses	J.A. Todd	6-7-51	6-8-51		X	700 300 100-B XXX 100-D XXX 100-F XXX 100-H XXX 200-E XXX 200-W XXX
A. H. Y. Hodnor Travellor's Insurance Company Seattle, Washington	Inspect boiler house	H. F. Measley	6-21-51	6-21-51		X	200-W XXX
"P" DIVISION							
I. Visits to other Installations							
K. T. Perkins to: Kellex Corporation New York, New York	Consultation in conjunction with Project C-431	G. White, Jr.	6-20-51	6-24-51	X		
"S" DIVISION							
I. Visits to other Installations							
W. A. Brown to: General Engineering Lab. Schenectady, New York	Consultation on 432 RMB Line	C. W. George	6-18-51	6-27-51	X		
TRANSPORTATION DIVISION							
I. Visitors to this Works							
R. J. Horvath General Electric, Portland	Inspect locomotive	L. A. Powell	6-5-51	6-7-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. P. Sullivan Alco Locomotive Schenectady, New York	Inspect locomotive	L. A. Yowell	6-5-51	6-7-51		X	
F. C. Gallaway Intermountain Equipment Co. Spokane, Washington	Inspect crushing equipment	A. P. Mitchell	6-22-51	6-22-51		X	White Bluffs
O. E. Whitney Intermountain Equipment Co. Spokane, Washington	Inspect crushing equipment	A. P. Mitchell	6-22-51	6-22-51		X	White Bluffs
PURCHASING AND STORES DIVISIONS							
I. Visitors to this Works							
A. J. Luberts Edoror Engineering Company Seattle, Washington	Supervise direction and test of silo crane in 202-S Bldg.	G. J. Hayward	6-18-51	6-22-51		X	202-S Bldg
B. R. Tarrant Ingersoll - RandCompany Seattle, Washington	Supervise start-up of air compressors	G. J. Hayward	6-20-51	6-20-51		X	202-S Bldg
C. G. Gloszl Applied Research Laboratory Glendale, California	Service spectrographic equipment	G. J. Hayward	6-27-51	6-29-51		X	300 3706 200-W 234
F. Haines Whiting Corporation Harvey, Illinois	Supervise installation of equipment by his firm	G. J. Hayward	5-28-51	6-15-51		X	202-S
G. P.White Roberts Filter Company Darby, Pennsylvania	Supervise installation of filter plant	G. J. Hayward	6-11-51	June 1952		X	200-W 283-W
G. R. Kunzo Roots-Connersville Blower Corp.	Supervise operation of gas generator	G. J. Hayward	6-29-51	7-13-51		X	202-S Bldg

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. Abokn Standard Oil Kennewick, Washington	Deliver gas on order AEC 57332	H. H. Hart	6-2-51	6-2-51		X	300 XXX
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order HW 53006-M	H. H. Hart	7-2-51	7-2-51		X	100-F 105
C. Freauff Lee & Estes Kennewick, Washington	Deliver material on order HW 53006-M	H. H. Hart	6-5-51	6-5-51		X	300 303-J
W. Woigand Lee & Estes Kennewick, Washington	Deliver material on order HW 53006-M	H. H. Hart	6-5-51	6-5-51		X	300 303-J
N. Schmitt Inland Motor Freight Kennwick, Washington	Deliver material on order HW 81732-M	H. H. Hart	6-6-51	6-6-51		X	100-D 105
N. Schmitt Inland Motor Freight Kennewick, Washington	Deliver material on order HW 81732-M	H. H. Hart	6-6-51	6-6-51		X	100-B 105
W. Fruohling United Truck Lines Kennewick, Washington	Deliver material on order - empty cylinders	H. H. Hart	6-6-51	6-6-51		X	300 303-J
G. Hixon Inland Motor Freight Kennewick, Washington	Deliver material on order HW 81732-M	H. H. Hart	6-12-51	6-12-51		X	100-D 105
A. Frouhling United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-13-51	6-13-51		X	100-F 189

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Class	Date Unclass	Areas
W. Fruehling United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-13-51	6-13-51		X	100-H 189
F. Colbert United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-13-51	6-13-51		X	100-F 189
R. Thorne United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-13-51	6-13-51		X	100-h 189
A. Fruehling United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-14-51	6-14-51		X	100-F 189
F. Colbert United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-14-51	6-14-51		X	100-H 189
W. Fruehling United Truck Lines Kennewick, Washington	Deliver material on order HW 80120-M	H. H. Hart	6-14-51	6-14-51		X	100-H 189
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order HW 81732-M	H. H. Hart	6-28-51	6-28-51		X	100-D 105
W. Fruehling United Truck Lines Kennewick, Washington	Deliver material	H. H. Hart	6-15-51	6-15-51		X	200-W 234
A. Schumm United Truck Lines Kennewick, Washington	Deliver material on order AEC 57258	H. H. Hart	6-18-51	6-18-51		X	200-W 234
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order HW 81759-M	H. H. Hart	6-18-51	6-18-51		X	100-D 105

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order IW 81759-M	H. H. Hart	6-18-51	6-18-51		X	100-B 105
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order IW 81759-M	H. H. Hart	6-18-51	6-18-51		X	100-F 105
H. Brockman West Coast Fast Freight Yakima, Washington	Deliver material on order IW 80114-M	H. H. Hart	6-25-51	6-25-51		X	200-W 271-T
W. Fruehling United Truck Lines Kennewick, Washington	Deliver material on order - Argonne cylinders	H. H. Hart	6-25-51	6-25-51		X	300 303-J
C. Froauff Lee & Estes Kennewick, Washington	Deliver material on order IW 78939	H. H. Hart	6-28-51	6-28-51		X	300 352

II. Visits to other Installations

H. A. Hauser to: Pacific Car & Foundry Seattle, Washington	Discuss changes on structural steel order	O. Bionz	6-8-51	6-9-51	X	
G. Wright to: Johnston Pump Company Los Angeles, California	Discuss possible changes on order for pumps	P. Brown	6-24-51	6-29-51	X	
J. W. O'Rourke to: Tri-Clover Machine Co. Ladish, Wisconsin	Placement of orders	- -	6-16-51	6-21-51	X	
C. W. Rushmore to: Pacific Coast Eng. Co. Alameda, California	Procurement of material	- -	6-10-51	6-13-51	X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
C. W. Rushmore to: Crane Company Chicago, Illinois	Expedite material on orders HWC 10230	Mr. Weiss	6-3-51	6-7-51		X	
C. W. Rushmore to: Pacific Car & Foundry Seattle, Washington	Layout schedule for delivery of structural steel	Mr. Bionz	6-24-51	6-25-51		X	
R. T. Cooke to: Vulcan Copper & Supply Cincinnati, Ohio	Negotitate movement of vessel fabrication	T. Carroll	6-13-51	6-14-51		X	
R. T. Cooke to: Newport New Shipbldg. Newport News, Virginia	Negotitate movement of vessel fabrication	F. Horne	6-15-51	6-15-51		X	
R. T. Cooke to: Farrell-Birmingham New York, New York	Negotitate movement of vessel fabrication	A. Kuhns	6-16-51	6-16-51		X	
R. T. Cooke to: Whitlock Mfg. Co. Hartford, Connecticut	Negotiate movement of vessel fabrication	D. B. Cole	6-18-51	6-18-51		X	
R. T. Cooke to: Foster Wheeler Corp. New York, New York	Negotiate movement of vessel fabrication	G. D. Dodd	6-19-51	6-21-51		X	
R. M. Brennan to: Knolls Atomic Power Laboratory Schenectady, New York	Interview	H. E. Scott	6-4-51	6-8-51	X		
J. C. Hamilton to: Vulcan Copper & Supply Cincinnati, Ohio	Discuss possibilities of cancelling orders	T. Carroll	6-13-51	6-14-51		X	
J. C. Hamilton Newport News Shipbldg Co. Newport News, Virginia	Discuss order removed Vulcan Copper & Supply	[redacted]	6-15-51	6-15-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
J. C. Hamilton to: Whitlock Mfg. Co. Hartford, Connecticut	Attempted to place order removed from Vulcan	R. D. Cole	6-18-51	6-18-51		X	
J. C. Hamilton to: Canadian Vickers, Ltd. New York, New York	Discuss possibility of their performing work for DW	Mr. Thomas	6-19-51	6-19-51		X	
J. C. Hamilton to: Foster-Wheeler Corp. Cartaret, New Jersey	Placed order removed from Vulcan	G. D. Dodd	6-20-51	6-20-51		X	
J. C. Hamilton to: Struthers-Wells Corp. Warren, Pennsylvania	Discuss GE orders and expedited delivery	Mr. Logan	6-21-51	6-21-51		X	
J. C. Hamilton to: Gen. American Transport Corp. East Chicago, Indiana	Review GE orders and expedite delivery	Mr. Belcher	6-22-51	6-22-51		X	
J. C. Hamilton to: Gen. American Transport. East Chicago, Indiana	Discuss overtime and Coengineering questions	Mr. Sheppard	6-25-51	6-25-51		X	
J. C. Hamilton to: Graver Tank Mfg. Co. East Chicago, Indiana	Discuss engineering questions	D. D. Glaghorn	6-26-51	6-26-51		X	
J. C. Hamilton to: A. O. SmithCorp. Milwaukee, Wisconsin	discuss engineering questions	C. J. Henl	6-27-51	6-27-51		X	
R. R. Wall to: Puget Sound Navy Shipyard Bremerton, Washington	Inventory of machine tools	S. L. Allison	6-11-51	6-16-51		X	

TECHNICAAL DIVISIONS

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Restricted Data Areas
C. F. Metz Los Alamos Scientific Laboratory Los Alamos, New Mexico	Discuss chemical analysis of plutonium	F. W. Albaugh A. H. Bushey L. M. Knights	6-5-51	6-7-51	X		300 3706 200-W 234, 235
J. Reinschreiber Los Alamos Scientific Laboratory Los Alamos, New Mexico	Discuss chemical analysis of plutonium	F. W. Albaugh A. H. Bushey L. M. Knights	6-5-51	6-7-51	X		300 3706 200-W 234, 235
A. M. Howard E. I. du Pont de Nemours & Co. Wilmington, Dealware	Analytical control of canning process	G. J. Bohling	6-26-51	6-28-51	X		300 3706
G. O'Connor E. I. du Pont de Nemours & Co Wilmington, Dealware	Analytical control of canning process	G. J. Bohling	6-26-51	6-28-51	X		300 3706
C. G. Gioszl Applied Research Laboratory Glendale, California	Service spectrometer and spectrographic equipment	P. R. Anderson H. W. Murray	6-27-51	6-28-51	X		300 3706 200-W 234
C. H. Secoy Oak Ridge National Laboratory Oak Ridge, Tennessee	Experimental radiations in 100-H Pile	R. E. Nather H. L. Henry	6-14-51	6-14-51	X		100-H 105
N. E. Ballou Radiation Laboratory Berkeley, California	Special irradiation experiments	R. E. Nather	6-12-51	6-19-51	X		100-H 105 101 300 XXX, 700
P. S. Flint Knolls Atomic Power Laboratory Schenectady, New York	P-10 consultation	W. M. Harty W. L. Schalliol	6-18-51	6-20-51	X		100-B 105, 108 300 XXX
C. H. Secoy Oak Ridge National Laboratory Oak Ridge, Tennessee	Plutonium handling equipment discussions	O. F. Hill J. B. Work	6-14-51	6-14-51	X		300 XXX 200-W 221-T, 231 272-A

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
M. R. Fensko Pennsylvania State College State College, Pennsylvania	Redox consultations	R. B. Richards	6-15-51	6-16-51	X		300 XXX 200-W 221-T, 231 200-E 221-B 202-S Silo & canyon 277-S 277-U 222-S
C. R. Johnson E. I. du Pont de Nemours & Co. Wilmington, Delaware	234-5 consultations	J. B. Work	6-19-51	6-21-51	X		200-W 231 234-5 Const 234, 235 300 XXX
N. E. Ballou Irradiation Laboratory Berkeley, California	Discuss irradiation experiments	O. F. Hill	6-12-51	6-19-51	X		300 XXX
W. W. Carter Los Alamos Scientific Laboratory Los Alamos, New Mexico	Consultation on neutron and alpha counting	V. R. Cooper	6-19-51	6-20-51	X		200-W 234, 235
S. G. English Atomic Energy Commission Washington, D. C.	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X		300 XXX
W. D. Urry U. S. Air Force Washington, D. C.	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X		300 XXX
D. L. Northrup Argonne National Laboratory Chicago, Illinois	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X		300 XXX
F. T. Hageman Argonne National Laboratory Chicago, Illinois	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X		300 XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Declass	Areas
G. M. Kavanaugh Brookhaven National Laboratory Upton, Long Island, New York	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X	300	XXX
W. Rubinson Brookhaven National Laboratory Upton, Long Island, New York	Methods of calculation data	C. A. Rohrmann C. A. Bonnott	6-27-51	6-29-51	X	300	XXX
D. J. Pflaum U. S. Atomic Energy Commission Division of Research Washington, D. C.	Discuss standard distribution list	C. G. Stevenson	6-11-51	6-12-51		X 700	
W. A. Strausser U. S. Atomic Energy Commission Oak Ridge, Tennessee	Study declassification procedures	C. G. Stevenson	6-26-51	6-27-51	X	700	
Miss Marian Chase University of Washington Washington, D. C.	Study declassified catalog	B. B. Lane	6-14-51	6-14-51		X 700	
D.W. Pendery Internat'l Bus. Machines Los Angeles, California	Services IBM equipment	P. M. Thompson	6-12-51	6-13-51		X 101	
G. E. Turnquist Internat'l Business Machines Seattle, Washington	Services IBM equipment	P M. Thompson	6-12-51	6-14-51		X 101	
II. Visits to other Installations							
C. G. Stevenson to: Radiation Laboratory Berkeley, California	Attend Technical Information Panel	R. K. Wakerling	6-6-51	6-9-51	X		
B.B. Lane to: St. Paul, Minnesota	Attend Special Libraries - - Association meeting		6-18-51	6-21-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Unclass	Areas
E. F. Gatos to: Litton Latho Company San Carlos, California	Review glassworking equipment available from this firm	P. Larson C. Litton	6-11-51	6-11-51		X	
L. P. Bupp to: North American Aviation Downey, California	Technical discussion on graphite	C. Starr	6-11-51	6-15-51	X		
M. W. Carbon to: Knolls Atomic Power Lab. Schenectady, New York	Hanford Assistante program	J. Marsden J. P. Howe D. H. Ahmann	6-13-51	6-15-51	X		
M. W. Carbon to: General Engineering Lab. Schenectady, New York	Hanford assistance program	M. A. Edwards	6-13-51	6-15-51	X		
D. E. Davenport to: Argonne National Lab. Chicago, Illinois	Calibrating radium-beryllium source	Dr. Egglor	6-25-51	6-28-51	X		
J. O. Erkman to: Argonne National Lab. Chicago, Illinois	Discussion on scintillation counters	W. Buck	6-19-51	6-21-51	X		
R. E. Ewing to: Inst. for Nuclear Research Ames, Iowa	Consultation on analytical methods	F. Spedding	6-27-51	6-28-51	X		
M. B. Lebocuf to: Radiation Laboratory Berkeley, California	Inspect various counting instruments	G. T. Seaborg	6-20-51	6-21-51	X		
G. E. McCullough to: Knolls Atomic Power Lab. Schenectady, New York	Hanford assistance program	J. Marsden D. H.Ahmann J. P. Howe	6-13-51	6-15-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
G. E. McCullough to: General Engineering Lab. Schenectady, New York	Hanford assistance program	M. A. Edwards	6-13-51	6-15-51	X		
G. E. McCullough to: Mound Laboratory Miamisburg, Ohio	Discussion regarding special irradiations	F. Meade	6-18-51	6-19-51	X		
R. L. Moore to: Knolls Atomic Power Lab. Schenectady, New York	Consult on progress of various Separations Processes	E. Zobroski	6-22-51	6-23-51	X		
R. L. Moore to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consult on progress of various Separations Processes	F. Steahly F. Hurd W. H. Lanham	6-25-51	6-27-51	X		
R. L. Moore to: Argonne National Lab. Chicago, Illinois	Consult on progress of various Separations Processes	S. Lawroski	6-28-51	6-29-51	X		
J. F. Music to: Knolls Atomic Power Lab. Schenectady, New York	Hanford assistance program	J. Marsden D. H. Ahmann J. P. Howe	6-13-51	6-15-51	X		
J. F. Music to: General Engineering Lab. Schenectady, New York	Hanford assistance program	M.A. Edwards	6-13-51	6-15-51	X		
J. T. Stringer to: General Engineering Lab. Schenectady, New York	Long range bearing program	R. A. Koehler	6-6-51	6-12-51	X		
B. Weidenbaum to: Harvard University Cambridge, Massachusetts	Air space meeting	- -	6-12-51	6-15-51		X	
W. K. Woods to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	K. H. Kingdon	6-25-51	6-28-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Restricted Data Areas
W. K. Woods to: General Engineering Lab. Schenectady, New York	P-10 consultation	D. H. Marquis	6-25-51	6-28-51	X		
J. B. Work to: Mound Laboratory Miamisburg, Ohio	AEC Waste Processing Committee meeting	F. C. Mead	6-27-51	6-29-51	X		
Visitors to this Works (cont'd)							
C. A. Hanson Knolls Atomic Power Laboratory Schenectady, New York	Consultation on construction and inspection	B. W. Pearce	6-6-51	6-9-51	X	700, 300 All 100-H 105 202-S Canyon 100-D 105 200-W 234, 235	
Non classified visits of Technical to other sites (cont'd)							
A. R. Maguire to: Proportioneers Providence, Rhode Island	Test of prototype pulse generator for TBP plant	- -	6-7-51	6-20-51		X	
J. K. Figenshau to: Reed College Portland, Oregon	Discuss equipment for development sub-contract	A. F. Scott	6-8-51	6-9-51		X	

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PURCHASING & STORES DIVISIONS

SUMMARY

JUNE 1951

Personnel of the Purchasing & Stores Divisions showed a net increase of twenty-two as indicated by the tabulation below:

	Total Personnel as of 5-31-51	Total Personnel as of 6-30-51	Net Change
Exempt	86	86	0
Non-Exempt	306	328	+22
Total	392	414	+22

A trip to Washington, D. C., resulted in approval of items previously held up by the National Production Authority on melt schedules.

Conversion of approximately 18,000 purchase orders from the old priority system to the new Controlled Materials Plan was effected during the month.

Although the number of purchase requisitions processed during the month decreased, actual dollar value of orders placed increased by $723,487.

Sufficient funds are available on Project C-431 to complete ordering of all material. Commitments to date applied against this project amount to $11,769,250.

Fabrication work on Project C-362 was held up approximately 30 days due to a labor strike at Vulcan Copper & Supply Company. Due to this strike it was necessary to subcontract this order to Foster Wheeler.

Fabrication of structural steel for the 105-C Building is held up because the vendor, Pacific Car & Foundry Company, has not received sufficient approved drawings.

Because of production difficulties in getting their new California plant underway, the Masonite Corporation advised us that our masonite order will be produced at Laurel, Mississippi. Masonite sheet sizes will be no larger than 48" by 192" due to limited production facilities there.

Contracts for yearly requirements of Soda Ash and Hydrofluoric Acid have been awarded.

Major production tools for the "B" Block fabrication on Project C-431-B have been received by the Bremerton Naval Shipyard. We are assisting in the installation of this equipment.

Since our contract with U. S. Steel Supply Company for the warehousing, cutting, and shipping of steel to our fabricators, expires August 1, 1951, a physical inventory was taken. Arrangements will be made to either ship remaining steel to Hanford Works or negotiate an extension to the contract.

Of the 2,262 purchase requisitions processed through screening, 1,782 items were furnished from plant sources. 113 items of stainless steel not immediately available on the open market were furnished fabricators from plant inventories.

Maintenance materials and supplies valued at $253,644.99 were withdrawn from Operations inventories.

Materials and equipment valued at $844,535.82 were disbursed from the 10.20 Account, Construction Materials held for Possible Future Use.

Materials and equipment valued at $297,455.83 were disbursed from the 10.10 Account, Excess Materials.

Thirteen lists of excess material valued at $443,305.14 were submitted to the Commission for disposition.

The Interstate Commerce Commission ordered the Chicago, Milwaukee, St. Paul and Pacific Railroad Company to waive collection from General Electric Company of undercharge amounting to $12,668 on shipment of sixteen cars of Ferric Sulphate.

As a result of proposals presented by the Traffic Manager at the Pacific Southcoast Freight Bureau Docket Meeting in San Francisco, freight rates were reduced on Sodium Sulphate, Salt, and Castings.

The Interstate Commerce Commission suspended effective date of increase in rates for switching carload express shipments via the Milwaukee, Northern Pacific or Union Pacific Railroads to Hanford.

A special plane was chartered to fly approximately 4,000 pounds of special plate glass from Pittsburgh, Pennsylvania to Richland.

As a result of rate reductions obtained from the carriers, total savings in freight rates for June amounted to $44,967.62.

PURCHASING & STORES DIVISIONS
STAFF SECTION
JUNE 1951

GENERAL

Advised General Services Division of estimated increase in personnel in the Purchasing and Stores Divisions through FY 1953 who will require office space in the 700 Administration Area.

Physical inventory and reconciliation of Captions 903-14, 903-24, 906 and 912 was completed. A special inventory of brass fittings in Caption 903-11 was taken.

Pricing of materials listed on field inventories was finished and thirty days' stock requirements for these inventories were established.

Revised catalogs for Captions 903-3, 5, 14, 15 and 18 were printed.

Conversion of open purchase orders from the priority system in effect during the past nine months to the Controlled Materials Plan necessitated the analysis of approximately 18,000 purchase orders on file. Instructions and explanations regarding the change to the Controlled Materials Plan have been furnished all parties concerned.

Request to the Atomic Energy Commission for an additional allotment of stainless steel was approved.

Three material requirement studies were submitted to the Commission as requested. These covered requirements for:

1. Wire, steel, aluminum and copper
2. Coke anodes and artificial graphite
3. Electronics equipment

Unsatisfactory action regarding melt schedule approvals by NPA necessitated a trip to Washington, D. C., by a representative of the Priorities Section. This trip resulted in approval of thirteen items previously held up by the NPA.

Six requests for directives were submitted to the Commission.

Instructions were received to discontinue present accounting procedure involving the monthly report of DO-40 and DO-41 priority ratings applied to our purchase orders.

PERSONNEL

	As of 5-31-51			As of 6-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Admin., Costs & Budgets	2	1	3	2	1	3	0	0	0
Audit & Inventory	2	11	13	2	9	11	0	-2	-2
Priorities	1	9	10	1	12	13	0	+3	+3
Total	5	21	26	5	22	27	0	+1	+1

PURCHASING AND STORES DIVISIONS
STAFF SECTION (CONTINUED)

SAFETY AND SECURITY

Safety and Security Meetings Scheduled - 1
Number of Employees attending ---------- 8

STATISTICS

Dollar value of orders to date to which priority rating was applied:

	1st Quarter 1951	2nd Quarter 1951	3rd Quarter 1951	4th Quarter 1951
DO-40	$ 1,844,935.25	$ 2,017,082.25	$ 934,702.59	$ 207,998.41
DO-41*	8,775,919.69	13,710,455.11		

*Includes Contract Section, Technical, Engineering & Construction Divisions.

The following schedule reflects June allotments received and allotments used or extended to suppliers and subcontractors during June. Top figures under each item number indicate allotment received from the Atomic Energy Commission. Lower figures under each item number reflect material allotment used or alloted for the quarter indicated:

OPERATIONS

Item No.	Controlled Material	Unit Measure	3rd Quarter 1951	4th Quarter 1951	1st Quarter 1952	2nd Quarter 1952
10	Carbon Steel (including	Short	53	66	78	82
	Wrought Iron)	Tons	18	.16	0	0
20	Alloy Steel (excluding	Short	2	1	1	1
	Stainless Steel)	Tons	.42	0	0	0
30	Stainless Steel	Lbs.	34800*	30000	30000	30000
			7747	3227	0	0
40	Copper & Copper Base Alloy	Lbs.	10000	10000	10000	5000
	Brass Mill Products		3441	0	0	0
50	Copper Wire Mill Products	Lbs.	6000	6000	6000	4000
			5785	63	0	0
60	Copper & Copper Base Alloys	Lbs.	4000	4000	2500	1200
	& Foundry Products & Powder		0	0	0	0
70	Aluminum	Lbs.	90000	90000	44000	44000
			65157	20000	0	0

*Includes 4800 pounds supplemental.

STATISTICS (Continued)

CONSTRUCTION

Item No.	Controlled Material	Unit Measure	3rd Quarter 1951	4th Quarter 1951	1st Quarter 1952	2nd Quarter 1952
10	Carbon Steel (including Wrought Iron)	Short Tons	7000 2736.92	12000 3485	2000 10	800 0
20	Alloy Steel (excluding Stainless Steel)	Short Tons	50 1.08	20 1	12 1	12 0
30	Stainless Steel	Lbs.	683200* 370109	289000 55142	169000 3300	199000 0
40	Copper & Copper Base Alloy Brass Mill Products	Lbs.	39000 7263	35000 1250	9000 1250	8000 0
50	Copper Wire Mill Products	Lbs.	90000 33351	68000 700	31000 1086	17000 0
60	Copper & Copper Base Alloys Foundry Products & Powder	Lbs.	8000 100	3000 100	2000 100	1200 0
70	Aluminum	Lbs.	38000 26276	83000 1450	26000 1360	12000 0

*Includes 394,200 pounds Supplemental.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION - PURCHASING
JUNE 1951

The number of purchase requisitions received by the Division during June decreased approximately thirty percent from the number received in May. 2342 purchase requisitions were received and assigned as compared with 3180 in May. Orders and alterations placed totaled 2005 as compared with 2450 the previous month. Requisitions on hand at the end of the month totaled 1000.

The dollar value of orders and alterations placed during June amounted to $4,190,854.87

Sufficient funds were made available on Project C-431 for the procurement of all materials. Commitments to date applied against this project totaled $11,769,250.56. This commitment is based on original purchase orders issued and does not include increases and decreases resulting from alterations.

Fabrication work on 32 vessels for project C-362 was held up for a period of approximately 30 days because of a labor strike in the Fabricator's plant. The Purchasing Division located an alternate fabricator and negotiations for the release of the material from the strike bound plant were handled by General Electric Company and Atomic Energy Commission Labor Relation Divisions. The strike was settled during the week of June 25 and immediate steps were taken to move the material to the alternate Fabricator's plants at Carteret, New Jersey and Dansville, New York. The work of completing the vessels is being handled on a subcontract between Foster Wheeler Corporation and Vulcan Copper & Supply Company. Vulcan holds the original General Electric Company purchase order.

Nine purchase requisitions were received for the proposed Radiometallurgy Building in the 300 area. Action on these requisitions has been withheld on the basis of a verbal request from the Engineering Division pending final approval of the Project Proposal.

The lack of approved design drawings for the 105-C Building is delaying fabrication of the structural steel. The order for the structural steel was placed with Pacific Car & Foundry Company in March and as of the end of June, the vendor has not been supplied with sufficient approved drawings to complete detailing of fabrication.

The Masonite Corporation advised it could not produce our "B" Block masonite in its California plant because of production difficulties in getting this new plant started. The masonite will be produced in Masonite's Laurel, Mississippi plant. Because of production limitations at the Laurel plant, the masonite sheet sizes can not be larger than 48" x 192" max. This will necessitate a revision of our purchase order. Engineering has been advised of the necessary changes which will have to be made.

661 purchase orders issued by Atkinson & Jones were audited, screened and certified.

Essential Material contracts for the coming 12 months have been placed as follows: Soda Ash - West End Chemical Company, Hydrofluoric Acid - General Chemical Division, Allied Chemical & Dye Corporation. Extended orders have been placed as follows: Hydrogen Fluoride Anhydrous - Pennsylvania Salt Company, Aluminum Cans - Victor Industries Corporation. Requests for quotation for our yearly requirements for steam coal have been sent to the industry and contracts will be placed early in July.

PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION - PURCHASING

Essential Materials for Redox - Deliveries are being made of Aluminum Nitrate, Methyl Isobutyl Ketone and Nitric Acid. Caustic Soda tanks are expected to be ready early in July which will enable us to begin receiving caustic stock. A shipment of Sulfamic Acid is enroute to the Project. All other materials are scheduled for deliveries as rapidly as storage facilities are completed.

Essential materials for TBP - 30 gallon drums and pallets are now being received on plant. All other materials are presently scheduled to begin arriving as soon as storage facilities are available.

PERSONNEL

	As of 5-31-51			As of 6-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Purchasing - Constr.	18*	27*	45*	10	14	24	-8	-13	-21
Purchasing - Opr.				7	17	24	+7	+17	+24
Clerical		28	28	1	31	32	+1	+3	+4
TOTALS	18	55	73	18*	62*	80*	+0	+7	+7

* Combined total of construction and operations Purchasing.

STATISTICS	G	D	TOTAL
Requisitions on hand 6-1-51 (includes 129 assigned to Gov't.)	612	402	1014
Requisitions assigned during June	1560	782	2342
Requisitions placed during June	1497	809	2306
Requisitions on hand 6-30-51 (includes 78 assigned to Gov't.)	608	392	100

	NUMBER	
H.W. Orders placed	1086	$536,039.75
H.W. Alterations	155	6,117.31 CR.
Total	1241	$529,922.44
H.W.C. Orders placed	647	$3,554,478.92
H.W.C. Alterations placed	117	106,453.51
Total	764	$3,660,932.43
A.E.C. Orders placed	123	$ 90,074.15
D.C. Orders	54	1,347,569.27

Gov't Transfers	OR	ORC	Total
	1	0	1

Return Orders Issued 151

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Number of employees attending	50
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
INSPECTION-EXPEDITING DIVISION
JUNE 1951

GENERAL - The Superintendent, Inspection & Expediting, completed a three-week tour of the east and middle west areas. All the major fabricators of equipment for the Separations Division were visited with the Project Engineer representing Design and the Inspector assigned to each order. The purpose of these visits was to firm up a delivery schedule, settle any design problems, and expedite delivery. On a visit to one fabricator's plant, it was evident that he would be unable to complete the order in the time required. A source with open shop time was located and the order transferred. Concurrence of A.E.C. and the fabricator was obtained prior to the transfer.

The work load of both the Inspection and Expediting Sections was greater than that of the previous month. Due to the increased work load additional personnel for both Inspection and Expediting will be engaged.

There are remaining only five items outstanding for MJ-1 Project start-up. These are being carefully followed for early delivery.

INSPECTION SECTION - The sustained work load of the Inspection Section on Separations Division fabrication orders has been further increased by Inspection requirements for the Hot Semi-Works Program and has necessitated several changes in location of personnel to provide adequate coverage of work.

The major production tools for Project C-431-B, with exception of two machines, have been received by Bremerton Naval Shipyard. One Technical Inspector has been assigned to lend technical assistance in the installation of the equipment.

Inspection Section personnel assisted the Pittsburgh Warehouse operation in completing a physical inventory.

Statistics:

Number of open orders requiring inspection	593
Number of open orders being inspected	462
Number of new orders requiring inspection	72
Number of open requisitions requiring inspection	233
Number of completed orders	8
Number of open orders requiring inspection - sub-vendor	7
Number of open orders being inspected - sub-vendor	7
Number of completed orders - sub-vendor	5

Personnel:

	June 1, 1951	JULY 1, 1951
Exempt	29	28½
Non-Exempt	16	20
TOTAL	45	48½

PURCHASING AND STORES DIVISIONS
INSPECTION-EXPEDITING DIVISION

EXPEDITING SECTION - Two Expediters have spent full time in vendors' plants during the past month. In addition, the services of one engineer from the Separations Division has been utilized on a part time basis to expedite a critical order. It is anticipated that additional expediters may be assigned to vendors' plants where inspectors are not necessary.

Due to inability of many vendors to obtain materials to complete our orders, it is necessary that the Expediting Section follow sub-sub-vendors, and as can be noted from the tabulation below, these orders exceed the number of direct orders expedited It is also necessary to furnish a great amount of materials from G. E. plant stock where vendor is unable to obtain delivery.

Statistics:		
	HW Orders expedited in June (active)	654
	HW Orders expedited in June (routine)	773
	HWC Orders expedited in June	1507
	Sub-vendor orders expedited in June	2500*
	HW Orders completed in June	1096
	HWC Orders completed in June	629

*Estimated

Personnel:

	June 1. 1951	July 1, 1951
Exempt	15	15½
Non- Exempt	14	15
TOTAL	29	30½

PURCHASING AND STORES DIVISIONS
STORES DIVISION
JUNE, 1951

GENERAL

2262 purchase requisitions were processed through screening and 1782 items were furnished from plant sources. 113 items of stainless steel not immediately available on the open market were furnished to fabricators from plant inventories.

Maintenance materials and supplies disbursed from active inventories were valued at $253,644.99.

Materials and equipment valued at $204,263.02 involving 20 captions in the 10.20 Account (Construction Held Materials) was disbursed to construction forces during the month. In addition to the foregoing, materials valued at $27,542.20 were withdrawn for use by operations' forces and materials valued at $612,730.60 were shipped as directed by the Commission. Materials declared excess from the above account totaled $119,988.45.

Materials and equipment valued at $53,456.36 were withdrawn from the 10.10 Account (Excess) and returned for use on the Project. Of this amount, construction forces' withdrawals were valued at $46,788.99.

During the month, thirteen formal excess lists totaling $443,305.14 were submitted to the Commission for disposition. Excess materials and equipment valued at $213,999.47 were shipped from the Project as directed by the Commission. Scrap sale revenue for the month amounted to $15,096.62.

12 representatives of government and private businesses were escorted through our warehouses and scrap yards for the purpose of negotiating the sale of scrap and transfer of excess property.

The Stores Division has been requested to vacate certain warehouses located at White Bluffs which are now being used to store materials held for future use. These warehouses are needed by the E&C Divisions and by A&J to warehouse new materials for the current construction programs. Arrangements have been made to vacate Warehouses Nos. 3 and 105 at White Bluffs and move the material to North Richland where warehouse space is being made available. Additional warehouse space cannot be made available to the construction divisions until the storage area at North Richland is fenced. The Stores Division has requested the Project Engineering Division to prepare a Project Proposal for this purpose. Associated with this proposal are other requirements for better control of excess materials arising from the Surplus Sales Program and the "Procedure to Prevent the Accumulation of Excess Materials".

Plans for the Surplus Sales Program are gaining momentum. A series of meetings have been held during the past month to establish accounting procedures for the sales program.

The Commission has reported that final Design Drawings for the proposed New Stores Warehouse will be completed July 15, 1951.

PURCHASING AND STORES DIVISIONS
STORES DIVISION

PERSONNEL

	As of 5-31-51			As of 6-30-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	5		5	5		5			
Construction Mat'l Sect.	2	29	31	2	33	35		+4	+4
Operations Mat'l Section	4	119	123	4	117	121		-2	-2
Surplus, Salvage & Scrap Materials Section	4	44	48	4	47	51		+3	+3
TOTALS	15	192	207	15	197	212		+5	+5

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	8
Number of Employees Attending	179
Minor Injuries	1

STATISTICS

Construction Materials Section

Items in Stores Stock	46,629
Items Added to Stock	1,118
Items Completely Liquidated from Stock	855
Store Orders Posted (Items)	5,985
Number of Requisitions Screened - A.J.	604
Number of Items Screened - G.E.	3,720
Number of Items Furnished from Stock	473
Value of Disbursements	$844,535.82*
Inventory Valuation at Month End - Materials	6,318,647.08
Value of Materials Received	571,673.08
Value of Materials Declared Excess	119,988.45

*Includes $204,263.02 disbursed to Construction & CPFF Subcontractors
27,542.20 disbursed to Operations forces
612,730.60 shipped at the Commission's direction

Operations Materials Section

Number of Items Added to Stores Stock	522
Number of Items Deleted from Stores Stock	257
Items in Stores Stock at Month End	48,153
Store Orders Posted	23,463
Number of Requisitions Screened This Month - G.E.	1,658
Number of Items Furnished from Plant Sources This Month	1,309
Inventory Valuation at Month End (903-All Captions, 906 & 912)	1,476,602.88
Inventory Valuation at Month End (Spare Parts)	1,394,491.11
Inventory Valuation at Month End (Special Materials)	3,141,865.32
Inventory Valuation at Month End (Spare Equipment Held in Storage)	260,745.28

STATISTICS (Continued)

Total Value Inventory Accounts			$6,273,704.59
Value of Disbursements, not including Cash Sale Items			251,649.43*
Value of Cash Sales			625.79
Value of Sales, Payroll Deduction			1,369.77
Value of Materials Declared Excess			12,794.80
Value of Materials Returned to Stores Stock for Credit			25,735.21

* Includes $61,350.31 disbursed to Construction and CPFF Subcontractors

Surplus, Salvage & Scrap Materials Section

Balance of Account 10.10 as of 5-31-51			$4,952,917.78
Receipts 5-31-51 to 6-30-51			
Lumber	2,315.38		
Automotive Equipment	14,718.52		
Office Furniture	31,444.48		
Material and Supplies	147,060.34		
Miscellaneous Equipment	195,618.69		
Machine Tools and Equipment	1,305.49		392,462.90
Adjustments - Classes and Current Market Prices			24,686.40
			5,370,067.08

Disbursements 5-31-51 to 6-30-51

On Project			
Lumber	16,707.40		
Automotive Equipment	2,390.59		
Machine Tools & Equipment	5,549.14		
Office Furniture	30.84		
Material and Supplies	22,384.29		
Miscellaneous Equipment	6,394.10	$53,456.36*	
Stores Material Transfers		1,168.00	
Transfers to 10.20 Account		8,176.52	
Off Project			
Lumber	6,237.80		
Automotive Equipment	167,532.27		
Office Furniture	1,815.36		
Material and Supplies	46,028.76		
Miscellaneous Equipment	21,315.37		
Machine Tools and Equipment	1,069.91		
		243,999.47	306,800.35
Balance of Account 10.10 as of 6-30-51			$5,063,266.73

* Includes $46,788.99 disbursed to Construction & CPFF Subcontractors

PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Continued)

Total Receipts to Date		$35,687,264.13
Total Disbursements to Date		30,623,997.40
Scrap and Salvage Disbursed		
Scrap Sales Completed	14	
Scrap Sales in Process	2	
Scrap Sales Revenue for Month of June		$15,096.62
Total Scrap Sales Revenue to Date		69,853.61

WAREHOUSING, RECEIVING, DISBURSING & SHIPPING SECTIONS

Construction Materials Section	
Store Orders Filled	2,707
Items Filled for Shipping	22
Items Excessed	12
Operations Materials Section	
Receiving Reports Issued	5,806
Emergency Store Orders Filled	4
Shipments Processed (Containers & Materials)	359
Shipments Received	5,355
Store Orders Registered	21,781
Surplus, Salvage & Scrap Materials Section	
Store Orders Filled	785
Truckloads of Material Shipped	42
Carloads of Material Shipped	7

MINOR CONSTRUCTION STORES

Account No.	Balance 5-31-51	Purchases	Disbursements	Balance 6-30-51
10.16-101 Cement	Cr. 50.60	52.38	161.33	Cr 159.55
10.16-102 Sand, Blasting Sand, Gravel	78.00	-0-	6.50	71.50
10.16-103 Plaster, etc.	5.66	-0-	109.60	Cr 103.94
10.16-104 Lumber	8,248.73	4,995.88	6,858.34	6,386.27
10.16-105 Reinforced Steel	5,808.95	886.11	176.94	6,518.12
10.16-106 Miscellaneous	20,888.43	6,215.94	6,056.88	21,047.49
10.16-107 Plumbing	64,709.26	3,970.19	1,852.42	66,827.03
10.16-108 Electrical	71,475.79	10,649.01	6,485.02	75,639.78
10.16-109 Vitrified Clay Pipe	94.60	-0-	46.18	48.42
10.16-110 Paint, Glass	3,431.47	378.18	729.07	3,080.58
10.16-111 Welding Rod	2,093.52	763.25	980.60	1,876.17
10.16-112 Structural Steel	53,394.02	1,312.43	2,516.81	52,189.64

PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Continued)

Account No.	Balance 5-31-51	Purchases	Disbursements	Balance 6-30-51
10.16-113 Concrete & Masonry Supplies	Cr 763.01	707.25	514.49	Cr 570.25
10.16-114 Thermal Insulation	45.99	-0-	-0-	45.99
10.16-115 Roofing Supplies	385.82	47.60	151.85	281.57
10.16-116 Transformers	1,209.95	-0-	Cr 396.60	1,606.55
10.16-118 Automotive	33,850.61	8,440.43	7,940.60	34,350.44
10.16-133 Small Tool Repair Parts	681.18	459.39	144.61	995.96
10.16-134 Clothing	651.24	8,370.87	4,021.35	5,000.76
TOTAL	$266,239.61	$47,248.91	$38,355.99	$275,132.53

PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

GENERAL

The work load of the Traffic Division continued at a high level.

The Interstate Commerce Commission under their Special Docket No. 218888 has ordered the Chicago, Milwaukee, St. Paul and Pacific Railroad Company and its connections to waive collection from General Electric Company of undercharge amounting to $12,668.08 on shipment of sixteen cars of Ferric Sulphate from East Point, Georgia, and Lockland, Ohio, to Hanford, Washington, which moved during the period from August 24, 1948, to February 12, 1949.

The above action resulted from our proposal to the carriers to seek authorization from the Interstate Commerce Commission to waive collection of the sum of $12,668.08 which was legally due them. Our reason for this action was prompted by the fact that the freight rates resulting in these excessive charges were unreasonable and unduly high. The Milwaukee Railroad has now advised that they will withdraw the suit filed against General Electric Company in King County, Washington, on August 8, 1950, seeking judgment in the sum of $12,668.08 which was necessary to protect their interests because of our refusal to pay freight charges legally due them.

As a result of proposals presented by the Traffic Manager at the Pacific Southcoast Freight Bureau Docket Meeting in San Francisco on May 23, 1951, freight rates were reduced on the following commodities:

1. SODIUM SULPHATE from San Francisco to Hanford or Richland--
   Reduction of 18¢ per cwt., or $180.00 per car, effecting annual savings in freight charges of approximately $1,167.00. As requested, the rate was made effective June 9, 1951, on short notice application to the Interstate Commerce Commission.

2. SALT, crude, from Newark, California, to Hanford or Richland--
   Reduction of 12¢ per cwt., or $120.00 per car, effecting annual savings in freight charges of $2,480.00. As requested, the rate was made effective June 16, 1951, on short notice application to the Interstate Commerce Commission.

3. CASTINGS, in the rough, from Los Angeles to Hanford or Richland--
   Reduction of $1.25 per cwt., or $1,250.00 per car. On purchase orders placed through June, total savings in freight charges on this commodity will amount to $17,500.00. As requested, the rate was made effective June 19, 1951, on short notice application to the Interstate Commerce Commission.

4. CASTINGS, rough, machine finished, from Los Angeles to Hanford or Richland--
   Reduction of 97¢ per cwt., or $970.00 per car. On purchase orders placed through June, total savings in freight charges on this commodity will amount to $1,940.00.

GENERAL (CONTINUED)

As a result of our request of June 6, 1951, to publish a reduced rate on B-Block machinery for movement from Richland to Bremerton, Washington, the motor carriers issued Section 22 Quotation No. 67-A effective June 7, 1951. This resulted in a reduction of 8¢ per cwt. and effected savings of $445.00 on the movement.

On June 14, 1951, we were advised that effective June 21, 1951, the Railway Express Agency in their Tariff of Terminal and Switching charges were publishing a rate of $40.00 per express carload when handled in regular service, and $165.00 per express carload when handled in special service for switching such shipments via the Milwaukee, Northern Pacific or Union Pacific Railroads to Hanford. Such charges are unjust and unreasonable and would increase carload express charges to and from Hanford Works thousands of dollars each year. Therefore, an immediate protest was made not only to the Railway Express Agency but also to the three rail lines serving Hanford Works, and request was made to the Interstate Commerce Commission to suspend for investigation the Items in the Tariff which set forth these charges. On June 19, advice was received that the Interstate Commerce Commission had suspended the effective date of these Items for thirty days. It is expected that a formal investigation before the Interstate Commerce Commission will be necessary in order to attempt to have these charges permanently canceled.

In order to effect delivery of approximately 4,000 pounds of special plate glass from Ford City, Pennsylvania, to Richland to meet plant requirements it was necessary to charter a plane from Slick Airways, Inc. Shipment was picked up in Pittsburgh, Pennsylvania, on June 22nd and delivered the evening of June 23rd in time to meet plant requirements.

As a result of rate reductions obtained from the carriers there was a total savings in freight charges for the month of June amounting to $33,967.62. This makes a total savings from September 1, 1946, to date of $1,584,310.11.

PERSONNEL

	Total Personnel as of 5-31-51	Total Personnel as of 6-30-51	Net Change
Exempt	2	2	0
Non-Exempt	8	8	0
	10	10	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Meetings Held	1
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

STATISTICS

Savings Report

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for June	Savings 9-1-46 thru May, 1951	Total Savings 9-1-46 to date
Coal	Roundup, Mont.	$25,943.08		
Lime	Evans, Wash.	264.00		
Phosphoric Acid	South Gate, Cal.	2,435.67		
Caustic Soda	Willbridge, Ore.	1,053.49		
Caustic Soda	Tacoma, Wash.	1,202.24		
Soda Ash	Trona, Cal.	202.00		
Iron & Steel	Los Angeles, Cal.	340.25		
Railway Express	Various	2,297.42		
Truck	Various	37.65		
Hydrocarbon Gas	Various	191.82		
		$33,967.62	$1,550,342.49	$1,584,310.11
2. Freight Bill Audit		1,433.43	66,781.21	68,214.65
3. Loss and Damage and Over-Charge Claims		499.32	107,185.72	107,685.04
4. Ticket Refund Claims		790.48	15,265.19	16,055.67
5. Household Goods Claims		206.99	15,051.10	15,258.09
		$36,897.84	$1,754,625.71	$1,791,523.55

Work Volume Report

Reservations Made	Rail	171
	Air	169
	Hotel	154
Expense Accounts Checked		176

Household Goods & Automobiles	
Movements Arranged Inbound	4
Movements Arranged Outbound	5
Insurance Riders Issued	6
Insurance Bills Approved	4
Furniture Repair Orders	2
Requests for Claim Billing	9
Claims Filed	9
Claims Collected - Number	7
Claims Collected - Amount	206.99

PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

STATISTICS (CONTINUED)

Ticket Refund Claims	Filed	22
	Collected - Number	26
	Collected - Amount	$790.48
Freight Claims	Filed	11
	Collected - Number	11
	Collected - Amount	$499.32
	Over and Shorts Processed	10
	Damage Reports Processed	13
Freight Bill Audit Savings		$1,433.43
Freight Shipments Traced		137
Quotations	Freight Rates	264
	Routes	254
Bills Approved	Air Freight	1
	Air Express	33
	Boat	2
	Carloading	303
	Express	185
	Rail	853
	Truck	465
Return Orders Processed		65
Carload Shipments	Inbound - GE - AEC	804
	Others	91
	Outbound - GE - AEC	10
	Others	2

Report of Carloads Received

	CMST.P&P	N.P.	U.P.	TOTAL
General Electric Company				
Asphalt		1		1
Coal	453		206	659
Caustic Soda (Tacoma)	4	5		9
Caustic Soda (Portland)		1	7	8
Chairs			1	1
Liquid Chlorine	2	3		5
Containers	1			1
Ferric Sulphate	1	3		4
Infusorial Earth			1	1
Lime		4		4
Methyl Isbutyl Ketone	1		1	2
Machinery	1			1

PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

	CMST.P&P	N.P.	U.P.	TOTAL
General Electric Company (Continued)				
Nitric Acid		8	11	19
Phosphoric Acid		4	1	5
Pipe	2	2	6	10
Playground Equipment			1	1
Caustic Potash	1			1
Salt			1	1
Shovel Parts		1		1
Soda Ash	1	1	2	4
Steel Plates		3	1	4
Steel Bars	3		2	5
Storage Bins		1		1
Sulphuric Acid		1		1
Tanks			1	1
Towers		1		1
Transformers	1			1
Transformer Oil	1			1
Tubing	2	1		3
wadding, Cellulose	1			1
Mdse.	3	2		5
Express	7			7
TOTAL	485	42	242	769
A.E.C.				
Appliances		1		1
Chemicals	1			1
Desks		3		3
Helium			1	1
Lumber	5	5	8	18
Poles	2	1		3
Trucks		8		8
TOTAL	8	18	9	35
Atkinson & Jones Construction Company				
Cement	7	3	6	16
Concrete Sleeves		1		1
Pipe	1	2		3
Rockwool	1			1
Steel Bars	1			1
Mdse.	2	1		3
TOTAL	12	7	6	25
Chicago Bridge & Iron Company				
Steel			2	2
Tanks			1	1
TOTAL			3	3

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PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

		CMST.P&P	N.P.	U.P.	TOTAL
F. J. Earley Co., Inc.					
Cement		5			5
Cloth		1			1
Contractor's Equipment			2		2
Steel, re-inforcing			5	8	13
	TOTAL	6	7	8	21
Richland School District					
Chairs				1	1
	TOTAL			1	1
Royal Co., Inc.					
Asbestos Siding			4	2	6
	TOTAL		4	2	6
J.P. Head Plumbing & Heating					
Mdse.		1			1
	TOTAL	1			1
Fox Metal Products Corp.					
Blowers			1		1
	TOTAL		1		1
Montgomery Electric Co.					
Light Fixtures				1	1
	TOTAL			1	1
General Hardwood Co.					
Mdse.				1	1
	TOTAL			1	1
Dix Steel Bldg. Co.					
Insulation			2		2
Roofing			1		1
	TOTAL		3		3
Industrial Electric Co.					
Pipe		1			1
	TOTAL	1			1
L. E. Baldwin Inc.					
Plasterboard				4	4
Wallboard				3	3
	TOTAL			7	7

PURCHASING AND STORES DIVISIONS
TRAFFIC DIVISION
June, 1951

STATISTICS (CONTINUED)

Report of Carloads Received (Continued)

	CMST.P&P	N.P.	U.P.	TOTAL
Thorgaard Plumbing & Heating Co.				
Radiators		1		1
TOTAL		1		1
M. G. Wagner & Co.				
Roofing Material			1	1
TOTAL			1	1
National Blowers Sheet Metal Co.				
Roofing Paper		1		1
wallboard		1		1
TOTAL		2		2
Fred Stabbert Co., Inc.				
Shingles			1	1
TOTAL			1	1
Puget Sound Sheet Metal Co.				
Steel Plates		4		4
TOTAL		4		4
Base Supply Co.				
wallboard		1		1
TOTAL		1		1
McPhail Engr. Co.				
Wallboard			1	1
TOTAL			1	1
E. J. Bartells Co.				
Insulation	1		1	2
Mdse.	1			1
TOTAL	2		1	3
U. S. Army				
Furniture		1		1
Trailers		5		5
TOTAL		6		6
TOTAL - SUBCONTRACTORS	22	36	33	91
TOTAL ENTIRE PROJECT	515	96	284	895

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SUMMARY -- JUNE, 1951

The number of applicants interviewed increased from 1,274 in May to 1,599 in June. Of these applicants, 565 were individuals who applied for employment with the General Electric Company for the first time. In addition, 145 new applications were submitted through the mail. Open, nonexempt, nontechnical requisitions decreased from 562 at the beginning of the month to 491 at month end. Total plant roll increased from 8,336 to 8,674. Turnover rate increased from 1.71% in May to 2.19% in June. During June, 54 new requests for transfer to other type of work were received in the Employment Office, and 29 transfers were effected. Advertisements were placed in newspapers in Buffalo, New York, Philadelphia, Pennsylvania, and Cleveland, Ohio, on June 1, 2, 3 and 4 for instrument mechanics and design draftsmen with rather discouraging results. During the last week of June, advertisements were placed in newspapers in Billings, Miles City and Missoula, Montana, for I.B.M. operators, production operators, patrolmen, firemen, instrument mechanics, laboratory assistants, stenographers and estimators. Simultaneously with these advertisements a recruiter was in those cities, with the results of 101 being interviewed, 32 hired, and 23 pending. Good progress has been made on the Manpower Inventory initiated in the latter part of May at the direction of the Atomic Energy Commission, with 99% of the questionnaires completed by those employees included in the initial inventory, and the information transposed to I.B.M. cards in approximately 5,000 cases. It is expected that this inventory will be completed by August 1, 1951. During June, initial recognition was given to employees with outstanding attendance records as provided for by a Perfect Attendance Recognition Plan. Appropriate awards were given to 105 employees with 4 years of perfect attendance, 125 employees with 3 years of perfect attendance, 267 employees with 2 years of perfect attendance and 1,278 employees with one year of perfect attendance.

One employee death occurred during June, and two employees retired. One hundred and eighty-six visits were made to employees confined to Kadlec Hospital and 42 salary checks were delivered to employees confined either at home or in the hospital. At month end, participation in the Pension Plan was 94.8%, in the Insurance Plan 97.8% and in the Employee Savings and Stock Bonus Plan 34.7%. As of the end of June, there were 995 employees registered under the Selective Service Act, and 724 military reservists on the rolls. Since August 1, 1950, 147 employees have terminated to enter military service.

Employee and Community Relations Divisions
Summary

The News Bureau distributed 64 releases to newspapers during the month, 46 of which were sent to local newspapers and radio stations. Eleven releases were sent to daily newspapers, radio stations and wire services throughout the Northwest, and seven releases were answers to special requests for information.

Three newsmen visited the News Bureau during the month: Bill Houseman from LOOK Magazine; Larry Davies, West Coast representative of New York TIMES; and Robert Coburn, Managing Editor of BUSINESS WEEK Magazine.

Arrangements were made during the month for the Public Library and Parks and Recreation Division to release certain routine information directly to newspapers, rather than through the News Bureau.

During the month of May, 398 column inches of news stories and 14 photographs concerning Richland and Hanford Works were printed in newspapers throughout the Northwest.

An informative letter to tenants concerning the new procedure for moving from one house to another was written at the request of the Housing Division.

A letter was written at the request of Public Works, and mailed to every residence, asking residents to water their lawns on alternate days.

Information concerning the visit of Columbia High School journalism students to Community and Public Relations Division was forwarded to ADVENTURES AHEAD Magazine for publication.

During the latter part of the month, the Community Relations Supervisor was temporarily relieved of his responsibilities and assigned the task of planning and coordinating a civil defense public information program until this assignment is completed.

"Pattern for Survival", a motion picture, was shown to approximately 80 per cent of all construction personnel on the Atkinson-Jones payroll.

A tour of the civil defense control center was arranged for a local newspaper reporter, which resulted in a feature story.

The Speakers Bureau handled three speaking engagements during the month, one of which was a HOBSO presentation. Fifteen members of Technical and Health Instrument Divisions attended the Puget Sound Regional Meeting of the ACS in Seattle, and presented papers on technical subjects, which were processed through the Bureau.

Eleven G-E produced films were obtained and scheduled.

Employee and Community Relations Divisions
Summary

"Survival Under Atomic Attack," a six-minute radio script written by the Community Relations Supervisor, was tape recorded and released to the three local radio stations. Public Functions also developed and released tape recordings for the Meistersingers, spot announcements for water conservation, and the community band concert.

Public Functions assisted in the following presentations: General Manager's address on his visit to Eniwetok Atoll, the attendance award dinner and program, quiz-type show for Kiwanis Club, P.M.S. graduation dinner, Treasury Department's award to AEC concerning savings bonds.

The Photo House produced 8,955 prints during the month, of which over 7,000 were identification prints for Security Division and Employee Relations.

Special Programs produced the monthly health bulletin on rabies, and revised the section of "This Way, Please..." on the uniform filing system. The Attendance Recognition Plan at Hanford Works was publicized in the Works NEWS, and by a letter to supervisors, a poster, and news releases to newspapers and radio stations.

The Works NEWS handled publicity for the following: MS degrees achieved at G-E School of Nuclear Engineering by two Hanford Works employees, Red Cross blood program, G-E pensioners, recreation, Payroll Department, safety, and sports.

The Women's Activities Feature writer prepared five women's pages which appeared during the month in the Works NEWS. This writer also prepared 18 stories for the Parks and Recreation Division which were released by the News Bureau.

The Supervisors' 40-Hour Training Program was not held during the month of June, and will not be held during the other peak vacation months of July and August. PMS Groups 13, 14, 15, and 16, having completed their conferences during the months of May and June, held special completion dinner meetings during this report period. As reported in May, approximately 300 supervisors at the Hanford Works have completed these studies in the art of persuasion. A total of 23 HOBSO meetings were presented to Security Patrol personnel during this report period, with an attendance of 348. Combining these totals with those reported for May, we can now report a total of 167 meetings, and a total attendance of 4,124 having attended the appreciation version and discussion of HOBSO. During the month of June, 26 Supervisor's Handbooks were turned in, brought up to date, and 24 reissued, making a total issued to date 1,479.

The final meeting of the class in Effective Presentation was held on June 5. An adaptation and condensation of this program is currently being made available in the Introductory Program for Technical employees.

Employee and Community Relations Divisions
Summary

The 8-Hour Program was presented twice for "S" Division personnel during June. A total of 43 attended the June 1 program, and on June 30, there were 26 in attendance.

Orientation was given to a total of 513 new employees during June.

Twenty-two copies of Men and Volts were sold during June.

In accordance with the responsibilities charged to the Training and Program Development Staff by the Education Committee, a complete six-week Introductory Program for New Technical Employees was developed and started during this report period. The first week of this six-week program was devoted to a General Orientation and consisted of discussions by the several division managers on the functions of their separate divisions. The second and third weeks, which carry over into the July report period, consist of classes, five of which are technical in nature, and five non-technical or of a business administration type. All members of the Training Staff are assuming responsibilities with respect to this program and, together with the instructors of the technical courses, are presenting an over-all program which to date has been very enthusiastically received if the comments of the new technical people involved are any criterion. This program is scheduled to be completed on July 27.

Contract negotiations were held between the Company and two unions -- Hanford Guards Union, Local 21, and the HAMTC representing Richland and North Richland Firemen. The Chemical Workers Union withdrew their petition to represent Chief Operators and a new petition was filed by the HAMTC. Appendix "A" of the HAMTC and BSEIU contracts was modified to include a $3.60 a week wage increase.

Master Agreement open by nine of fourteen Signatory Unions -- all Unions signatory to the Master Agreement contemplating petitioning the NLRB for UA elections. Boilermaker and Bricklayers demanding double time for the sixth day. Discontinuance of GE-controlled uniformity policy being considered. Inland Empire Plumbing and Heating Contractors Association is objecting to a six-day workweek on the Project.

The Davis Panel has made no recommendation on the Isolation Pay question.

The Operating Engineers Arbitration hearing resulted in a ruling in favor of AJ.

Release of critical material from a strikebound plant sought by representatives of GE and AEC.

Employee and Community Relations Divisions
Summary

On June 5, Plumbers refused to handle material which was fabricated off the project for the Hoffman Company job. On June 21, they agreed to handle.

On June 29, the Plumbers refused to handle a load of pipe delivered by AJS (USW) to the Early Company job (J. P. Head, mechanical subcontractors).

Upon receipt of Wage Stabilization Board approval of the $3.60 weekly increase for nonexempt employees and reimbursement authorization from the AEC, work was begun computing and revising all wage rate records to reflect the increase. New Wage Rate Manuals were published and issued. New rates will be included in the checks on July 6 and the retroactive money in the checks of July 20.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

JUNE, 1951

ORGANIZATION AND PERSONNEL

Employment and Employee Services

Effective June 6, 1951, a Steno-Typist "D" was engaged and assigned to the Investigation and Files Group.

Effective June 11, 1951, a General Clerk "D" was engaged and assigned to the Investigation and Files Group to replace a General Clerk "D" who was removed June 8, 1951, due to illness.

Effective June 18, 1951, a General Clerk "C" who had been on an illness leave returned to the Procurement Group.

Effective June 22, 1951, a Messenger was engaged and assigned to the Investigation and Files Group, to replace a Messenger who is being upgraded and transferred to another division.

Community and Public Relations

On June 1, one General Clerk B terminated, and was replaced by a General Clerk B who was employed on June 21.

On June 25, one Reproduction & Photographic D was employed to work in the Photo House.

Also on June 25, one General Clerk D was employed to work in the Photo House.

Training and Program Development

No organizational changes.

Union Relations

On June 1, one Steno-Typist A terminated voluntarily.

On June 4, one Steno-Typist B transferred from the Steno-Services Division.

Employee and Community Relations Divisions
Organization and Personnel

Effective June 11, one Steno-Typist B was added to the rolls of the Wage Rates Division.

Effective June 15, one Steno-Typist B was added to the rolls of Union Relations - Subcontractor Personnel.

Number of employees on roll	June, 1951
Beginning of Month	110
End of Month	117
Net Gain	7

Reason: Increased activities.

Employee and Community Relations Divisions

ACTIVITIES

Employment and Employee Services

Employment:

	May, 1951	June, 1951
Applicants interviewed	1,274	1,599

565 of the above applicants interviewed during June were individuals who applied for employment with the Company for the first time. In addition, 145 new applications were received through the mail.

Open requisitions	May, 1951	June, 1951
Exempt	1	3
Nonexempt	562	491

Of the 562 open, nonexempt, nontechnical requisitions at the beginning of the month, 372 were covered by interim commitments. Of the 491 open, nonexempt, nontechnical requisitions at month end, 316 were covered by interim commitments. During June, 189 new requisitions were received requesting the employment of 317 nonexempt employees.

	May, 1951	June, 1951
Employees added to the rolls	279	524
Employees removed from the rolls	141	186
NET GAIN OR LOSS	+ 138	+ 338

Of the 186 employees removed from the rolls, none were removed due to lack of work.

Turnover:	May, 1951		June, 1951	
	Male	Female	Male	Female
Excluding employees laid off for lack of work	1.44%	4.02%	1.88%	3.35%

Over-all Turnover:	May, 1951	June, 1951
Excluding employees laid off for lack of work	1.71%	2.19%

During June, 55 employees terminated voluntarily to accept other employment, 22 terminated to leave this vicinity, and 16 terminated to return to school.

Employee and Community Relations Divisions

At the end of June, there were 11 employees in lack of work status, divided into the following categories:

	May, 1951	June, 1951
Nonbargaining unit employees	12	3
Bargaining unit employees	10	8

Transfer Data

Accumulative total of requests for transfer received since 1-1-51	353
No. of requests for transfer received during June	54
No. interviewed in June, including promotional transfers	75
Trans. effected in June, including promotional transfers	29
Trans. effected to date since 1-1-51, including promotional trans.	229
Transfer requests active at month end	66
Trans. effected in June, for employees given lay off notices	0
Trans. effected since 1-1-51, for employees given lay off notices	0
No. of stenos. trans. out of steno. pool in June	19

During June, 5 people whose continuity of service was broken while in an inactive status were so informed by letter.

On June 1, 2, 3 and 4, advertisements were placed in newspapers in Buffalo, New York; Philadelphia, Pennsylvania; and Cleveland, Ohio, for instrument mechanics and design draftsmen. The results received from this advertising were none too encouraging.

Advertisements for I.B.M. Operators, Production Operators, Patrolmen, Firemen, Instrument Mechanics, Laboratory Assistants, Stenographers and Estimators were placed in Billings, Montana, newspapers on June 23, 24, 25 and 26; in Miles City, Montana, newspapers on June 24, 25, 26 and 27; and in Missoula, Montana, newspapers on June 27, 28 and 29. In conjunction with these advertisements in Montana, a representative of the Employment Office recruited in those cities, with the following results: 101 interviewed, 32 hired, and 23 pending.

The Manpower Inventory initiated in the latter part of May at the direction of the Atomic Energy Commission showed good progress during June. Ninety-nine per cent of the questionnaires had been completed by month end by those employees to be included in the initial inventory. The information was transposed from the individual questionnaires to I.B.M. cards in about 5,000 cases. It appeared at month end that the initial inventory should be completed and I.B.M. cards prepared and transmitted to the Atomic Energy Commission by August 1, 1951.

Employee and Community Relations Divisions

During June, recognition was given to employees with outstanding attendance records as provided for by a Perfect Attendance Recognition Plan. This Plan was devised for the purposes of (a) providing a means for giving uniform recognition to employees with outstanding attendance records and (b) to stimulate an interest in minimizing avoidable absenteeism in spite of the fact that the absenteeism rate has never been alarmingly high. Certificates, wallet cards, and one-year pins were presented to 105 employees who had had perfect attendance throughout the period 1-1-1947 to 1-1-1951; certificates, wallet cards, and one-year pins were presented to 125 employees who had had perfect attendance throughout the period 1-1-1948 to 1-1-1951; and certificates, wallet cards, and one-year pins were awarded to 267 employees who had had perfect attendance for the period 1-1-1949 to 1-1-1951. In addition, 1,278 employees received wallet cards and one-year pins in recognition of perfect attendance for a consecutive twelve-month period since 1-1-1950. Those receiving four-year awards were guests of the Company at a special attendance recognition dinner held June 26, 1951. In the future recognition will be given all employees, both exempt and nonexempt, who maintain a perfect attendance record during any twelve-month period. Bronze pins with 1, 2, 3 or 4 insert tabs will be awarded in recognition of perfect attendance on a cumulative basis for periods of 1 through 4 years; a silver pin with an appropriate figure insert will be awarded in recognition of cumulative years of perfect attendance for 5 through 9 years; a gold pin with an appropriate insert will be awarded in recognition of cumulative years of perfect attendance for periods of 10 through 14 years; and a jeweled pin will be awarded in recognition of 15 or more cumulative years of perfect attendance.

Employment Statistics:

	5-31-1951	6-30-1951
Number of employees on rolls		
Exempt		
Male	1,933	1,919
Female	55	55
	1,988	1,974
Nonexempt		
Male	4,641	4,937
Female	1,707	1,763
	6,348	6,700
TOTAL	8,336	8,674

Employee and Community Relations Divisions

ADDITIONS TO THE ROLLS

	Exempt	Nonexempt	Total
New Hires	13	500	513
Re-engaged	0	1	1
Reactivations	1	9	10
Transfers (from other plants)	0	0	0
Actual additions	14	510	524
Payroll exchanges	0[a]	2[b]	2
GROSS ADDITIONS	14	512	526

TERMINATIONS FROM THE ROLLS

Actual Terminations	24	126	150
Removals from the rolls (deactivations)	2	34	36
Payroll exchanges	2[c]	0[d]	2
GROSS TERMINATIONS	28	160	188

GENERAL

	5-1951	6-1951
Applicants interviewed	1,274	1,599
Photographs taken	322	629
Fingerprint impressions (taken in duplicate)	472	501

ABSENTEEISM STATISTICS (Weekly Salary Roll)[e]

Male	2.65%	2.13%
Female	3.49	2.74
Total plant average	2.62	1.79

INVESTIGATION STATISTICS

Cases received during the month	501	360
Cases closed	330	344
Cases found satisfactory for employment	471	351
Cases found unsatisfactory for employment	12	5
Cases closed before investigations completed	17	32
Special investigations conducted	20	12

a Transferred from Weekly Payroll
b Transferred from Monthly Payroll
c Transferred to Weekly Payroll
d Transferred to Monthly Payroll
e Statistics furnished by Weekly Payroll Division

Employee and Community Relations Divisions

Employee Services:

The following visits were made with employees during the past month by a representative of the Employee Services Group:

Employees visited at Kadlec Hospital	186
Salary checks delivered to employees in Kadlec Hospital	33
Salary checks delivered to employees confined at home	9
Disability checks delivered to employees in Kadlec Hospital or at home	6

As of the end of June, participation in Company Benefit Plans was as follows:

Pension Plan	94.8%
Life and Health Insurance	97.8
Employee Savings and Stock Bonus Plan	34.7

In conjunction with the training program now in progress for the Technical Graduates added to our rolls at the end of the past school year, a representative of this Group discussed with them the various Employee Benefit Plans. During this orientation period all of the 126 in attendance elected to sign up for the Life and Health Insurance Plan.

In the past month, 8 letters were written to members of deceased employee's families concerning payment of moneys due them from the Company, as well as answering other pertinent questions for them.

One employee death occurred during June, namely:

Electrical Division.

Two employees retired during the month, namely:

George L. Wilkins, Power Division;
John C. Williams, Real Estate Division (Optional).

During June, 20 letters were written to retired employees giving them information of a general nature in which they would be interested. In addition, three articles were prepared about local pensioners for release in the Works News during the month.

Military Reserve and Selective Service:

The statistics with respect to employees registered under the Selective Service Act are as follows:

Employees registered under the Act	995
Employees registered who are veterans	523
Employees registered who are nonveterans	472

Employee and Community Relations Divisions

Employees classified as 1-A	319
Deferments requested to date	227
Deferments granted	82
Deferments denied and appealed at state levels	9
Deferments denied and appealed at national levels	2
Deferments requested, employees later reclassified	31
Deferments requested, later withdrawn	1
Deferments pending	102

Statistics with respect to employees who are members of the military reserve are as follows:

Number of reservists on the roll	724
Number who returned to active duty to date	72
Number who returned to active duty in June	10
Deferments requested to date	82
Deferments granted	66
Deferments pending	11
Deferments denied	2
Deferment requests recalled	3

Military terminations since 8-1-1950 are as follows:

Reservists recalled	72
Selective Service	73
Female employees enlisted	2
TOTAL	147

The large increase reflected in the above statistics resulted from the addition of a number of newly engaged Technical and Business Graduates.

Employee and Community Relations Divisions

Community and Public Relations

PUBLIC INFORMATION - News Bureau

Coverage - A total of 64 releases were distributed during the month. Of these, 46 were sent to the "local list" which includes Columbia Basin NEWS, Tri-City HERALD, Lind LEADER, Yakima Morning HERALD, Walla Walla UNION-BULLETIN, Hanford Works NEWS, Spokane CHRONICLE, and radio stations KPKW, KWIE, KALE, KREW, and KIT. Eleven stories were sent to approximately 75 daily newspapers and wire services throughout the Northwest. The other 7 releases were answers to special requests for information.

Feature Stories - Four long feature stories were written during May and distributed with photos. The stories concerned: use of cast iron pipe in Richland plus general information about the project to CAST IRON PIPE NEWS Magazine; Columbia High School student's preparation of two pages of Works NEWS issues to ADVENTURES AHEAD Magazine; a complete description with photos of the mechanics followed in getting out the weekly payroll; addition of more than 200 technical graduates to the Hanford Works payroll. The latter story, plus photos, is being held pending approval of the Hanford Works Education Committee.

Story Topics - Important news stories released during the month concerned approval of a wage increase by the Wage Stabilization Board and arrangements for paying the increase on a current and retroactive basis; extension of the AEC-GE contract; key organization changes in Technical Engineering and Construction Division and Purchasing Division; developments in Richland's Civil Defense program.

Visitors - Bill Houseman from LOOK Magazine spent two days in Richland gathering material and photos for a story scheduled to appear in about a month. Interviews were arranged for Houseman and he was escorted to take pictures and given considerable background information.

Larry Davies, West Coast representative of New York TIMES, was given information about Richland and accompanied for an interview with the Assistant General Manager by the Division Manager.

Robert Coburn, Magaging Editor of BUSINESS WEEK Magazine, spent two days in Richland. Interviews were arranged with C.N. Gross, A.E. Creninger and W.E. Johnson. Representatives of the News Bureau accompanied Coburn on the interviews and furnished him with information about G.E.'s coperation here.

Library - Arrangements were made for the Richland Library to release routine publicity directly to newspapers and radio stations.

Parks and Recreation Division - Arrangements were made for this group to release certain routine information directly to local media. Direct release of information in these two instances was arranged with the consent of the two divisions.

It is felt that this arrangement will result in more publicity for the two groups and will allow News Bureau personnel more time to prepare feature and institutional type stories.

Employee and Community Relations Divisions

Organization Announcements - Arrangements were made for News Bureau to receive copies of organization announcements before they are distributed throughout the plant, thus providing time to prepare news releases sufficient sufficiently ahead of release dates to guarantee their news value to local papers.

Legal Clearance - Discussion with D.S. Cameron defined what releases should be cleared with legal. A procedure was set up to be followed in the future in clearing these stories with the Legal Division.

Other Activities - A speech to be given by H.E. Callahan in Seattle was rewritten in manuscript form for publication in the proceedings of the Conference.

PUBLIC INFORMATION- Community Relations

A letter to tenants who want to move to a different house was written for the Housing Division, at that group's request, to acquaint concerned tenants with the new procedure for moving from one house to another.

A letter asking residents to irrigate lawns on alternate days only was written and mailed to every residence at the request of Public Works.

Housing maintenance personnel as "good will ambassadors" for the Company was discussed in a letter sent to the Housing Division Superintendent, pointing out that maintenance men have more direct contact with residents than any other group on the project. It was suggested that, if these men speak well of the organizations they represent, they can accomplish a great deal toward winning good will for the Municipal, Real Estate, and General Services Divisions, and consequently General Electric at Hanford Works.

A news story damaging to the Housing Division was written by a local newspaper reporter, which concerned water leaking into the basements of certain Richland homes, and the Housing Division's failure to correct the situation. Before releasing the story the reporter asked if the Housing Division had anything to say on the subject. The matter was investigated, and pertinent facts were passed along to the reporter. Both stories were published.

Civil Defense Public Information

In the latter part of the month, the Community Relations Supervisor was temporarily relieved of his responsibilities and assigned the task of planning and coordinating a civil defense public information program, at the request of the Richland CD director. This supervisor will remain on the special assignment until it is completed. A program was approved by the CD director for acquainting residents with home and community defense measures, as well as CD plans and activities.

Activities in this capacity during June included: two press interviews by reporters from the Tri-City HERALD and Walla Walla UNION-BULLETIN with the local CD director, a tour of the civil defense control center by a local newspaper reporter, two news stories released concerning CD organization changes, radio script, "Survival Under Atomic Attack," written and recorded for radio broadcast.

Employee and Community Relations Divisions

"Pattern For Survival," a motion picture, was shown to approximately 80 per cent of all construction personnel on the Atkinson-Jones payroll.

PUBLIC INFORMATION - Public Functions

Speaker's Bureau

Heading a creditable list of out-of-city speaking engagements for the month were the Divisions Manager, who addressed a group of 200 executives attending the Business Leadership Conference at the University of Washington on the subject, "The First-Line Supervisor." It was a 45-minute presentation. The Division Manager presented HOBSO to 75 members and guests of the Pasco Rotary Club.

The Divisions Manager later in the month gave his visualizer presentation, "Our Relations," at one of the meetings of the Introductory Program arranged for Technical Graduates.

Fifteen members of Technical and Health Department Divisions attended the Puget Sound Regional Meeting of the American Chemical Society in Seattle and presented papers on technical subjects which were processed through the Bureau.

Film Showings

Eleven G-E-produced films were obtained and scheduled for plant and community showings along with several civil defense and educational films furnished by other distributors.

Radio

"Survival Under Atomic Attack," a six-minute radio script written by the Supervisor of Community Relations for the Richland Civil Defense Authority, was cast, tape recorded, and released to three stations serving this area.

Other radio scripts and programs developed and recorded for radio broadcast included a half-hour composite tape recording of the Meistersingers, spot announcements on the "odd-even" plan of water conservation in Richland, and the Parks and Recreations Divisions' sponsored Band Concert at Riverside Park.

Program Development

The General Manager reviewed and described his visit last spring to the Atomic bomb test, "Operation Greenhouse," at Eniwietok Atoll. A tape recording was made of his address which was augmented by a film showing of "Operation Sandstone," the 1948 test made at the same location.

For the second time within sixty days the Community and Public Relations Division was afforded the opportunity to produce a "package presentation." The event for which this service was extended was the announcement of the Hanford Works Attendance Award Plan. Feature news articles, a radio broad cast, and poster advertising were included in the package, as well as

all dinner arrangements, recorded dinner music, public address system, arrangements for a live radio broadcast and preparation of scripts for principals that included the Assistant General Manager, announcers, and two long-service employees.

The Supervisor of Plant and Public Events assisted the Division Manager in presenting a quiz-type show at a regular luncheon meeting of the Richland Kiwanis Club.

Public address and tape recording equipment was installed and operated in order to provide dinner music for two banquets presented by Training and Program Development Group to P.M.S. "graduates."

A public address system was furnished and operated for the AEC on the occasion of an award presentation to the Manager of the Hanford Operations Office by the U.S. Treasury Department's Savings Bond Division.

Photographic Services

Three days were devoted to conducting Ed Wilber of the AEC Public Information Service at Washington, D.C., and a party of Signal Corps cameramen on a tour through various locations in the community and plant areas.

A total of 9,445 prints were produced during the month, an increase of 1,826 prints over last month's production. Requests from G.E. Security for 1000 badge prints and from Employee Relations for identification photos of new employees account principally for the increase. Over 7,000 identification prints were produced for these two divisions. Ninety-eight rotational training employees were photographed in the Photo House studio during the month and 610 portraits were prepared for the Technical Personnel Office.

Seventy-two 35 mm color slides were produced and processed during the month.

One hundred forty-five 8 x 10 prints were photographed, processed, and mounted for the Nucleonics Department's Schenectady office on a special subject of our operations at Hanford Works.

Commercial Art

The artwork for three-color Attendance Award posters, and three one-color illustrations for the July health bulletin were prepared, as was a layout for placement of lettering and artwork to be painted on the sides of the Safety Shoe Truck.

Artwork for the two-color "Your Plant Library" booklet was designed and completed. Layouts were made for 44 pages of the "New Uniform Filing System" section to be added to "This Way, Please..." the H.W. steno's manual.

Four editorial cartoons and one photo layout were made for the Works NEWS.

Artwork was produced for a "Community Newsletter" being prepared by the Community Relations Supervisor.

Employee and Community Relations Divisions

General

Stepped-up employment activities and increased tempo in divisional requirements provided the necessity for additional non-exempt personnel. One new photographer and a General Clerk D were added to the staff for photographic services. A replacement for the former General Clerk serving Plant and Public Events and Special Programs was made. The position was reclassified to General Clerk B and filled by a young lady possessing the background required for the position.

EMPLOYEE INFORMATION - Special Programs

Monthly Health Bulletin on the subject of rabies for distribution to all employees during July was developed. A health leaders discussion guide to accompany the health bulletin also was written and produced. Publicity for the health topic was developed for the Works NEWS. Special Programs' staff assistant serves as secretary for the Health Activities Committee through which subject matter to be covered in monthly health topics is determined.

Staff pages of the Hanford Works Organization Directory were brought up to date and supplied to the Office Services group at their request.

Reprints of material handled during June included: a news story published in the OREGON JOURNAL about Richland, for distribution to prospective Hanford Works employees; and the MONOGRAM article on Richland, "The Town That Plutonium Built," which was distributed to members of the National Editorial Association at their national convention in Seattle, following an address by the General Manager who was a principal speaker at the convention.

Uniform filing system section of "This Way, Please--" was written and approved, and visual art work and page layouts developed during June.

A new safety booklet, "Safety Is Part of Your Job," developed for distribution to all Hanford Works employees, at the request of the Safety Division, was received from the printer during June. A copy of the booklet with an accompanying letter will be mailed to each employee's home during July. Written material was revised and localized from a safety booklet of the same name which has had wide distribution in various Departments of the Company. A portion of the artwork from the original booklet was borrowed from Schenectady, and the Hanford Works cartoon character, "Dupus Boomer," was inserted to further localize the booklet. All photographs were taken at Hanford Works by the Photographic Services group, and page layouts were developed by the Community and Public Relations commercial artist.

Information to supervisors on the general salary increase was relayed via two letters over the signature of the Manager, Employee and Community Relations Divisions.

A letter to supervisors announcing that the General Manager would address a meeting for all exempt employees at Carmichael Junior High School on June 25 was developed and distributed.

Employee and Community Relations Divisions

Display recruitment advertisements were written and placed in daily newspapers serving Billings, Miles City and Missoula, Montana, at the request of Employment. Approximately 100 personal responses resulted.

New Security handbook developed for Security was received from the printer during June. Copies will be distributed to all new employees.

Hanford Works Attendance Recognition Plan was publicized through: four June issues of Hanford Works NEWS, a letter to supervisors prepared for the signature of employee and community relations Divisions Manager, a poster, news stories released to local newspapers and radio stations by the News Bureau, and an Attendance Award Dinner. Printing of wallet cards for presentation to all awardees under the Plan, and certificates for employees with two, three, or four consecutive years of perfect attendance, was arranged. Prior to June, purchase of specially designed Attendance Recognition Plan Award Pins was handled by Special Programs through the Purchasing Division.

An Attendance Award Dinner was arranged to honor 104 Hanford Works employees who had achieved four years of perfect attendance prior to the effective date of the Plan. Principal speaker was the Nucleonics Department's Assistant General Manager. Printing of invitations, programs, place cards, and a large mock-up of an Attendance Award Pin was handled, in addition to arranging seating and sequence of the program.

A petition from employees to change qualifications for recognition under the Attendance Award Plan (whereby absences due to personal reasons would not be counted against an employee's attendance record) was answered in a letter prepared for the signature of the Manager, Employee and Community Relations Divisions, to the originator of the petition. It stressed that no employee should attempt to attend work when ill.

A Richland Public Library practice of sending a strong note to holders of overdue books without prior requests for the return of these books was pointed out to a member of the Library Board as detrimental to the interests of good public relations on the part of the Library. As a result, the need for returning books promptly--due to the tremendous use of library facilities--will be brought out via newspaper publicity. Also, the strong note will not be sent unless it is first preceded by two advance requests for return of overdue books.

Report on printing facilities available at Hanford Works was developed for use by a Schenectady representative in determining place of publication of a forthcoming classified report.

EMPLOYEE INFORMATION--Works NEWS

Special promotional activities of the Works NEWS for the plant and community included:

Recognition of an operation of a group of employees working in the Receiving and Shipping Section through pictures and caption story, giving credit for the large amount of work they are performing.

Employee and Community Relations Divisions

Attendance Award Plan was introduced and promoted during the month in the Works NEWS in cooperation with Special Programs.

Promotional material included banner headlines, pictures, an editorial cartoon, news and feature stories. Special emphasis was placed on giving recognition to weekly-paid employees with longest attendance records, and individual employees were featured. Climax to presentation of plan was coverage of banquet, with the names of all people listed who attended the banquet. A congratulatory telegram from the Company's President was published in full, along with a suggested change to the plan made through a petition.

Master of Science degrees achieved by two employees resulted in a Works NEWS exclusive story. Pictures of the men were run and background material on how each man achieved his degree through part-time evening study at the G.E. School of Nuclear Engineering was included.

Red Cross Blood Program was publicized through feature handling by one of the Works NEWS reporters. A picture accompanied the article which pointed out the need for more donors.

Pensioner series was introduced during the month and will be included as a regular feature on people who have retired from Hanford Works. Articles are prepared by the Employee Services.

Payroll activities were included as a full two-page feature to give people a clearer understanding of all the functions that are performed in making out the checks each week. The article was submitted for release in the Works NEWS by the News Bureau.

Special efforts were made during the month to improve the paper's layout and by using bold heads to pep up the safety and sports pages. Bigger pictures, bolder heads, and more appeal to the way stories are written has been the objective.

EMPLOYEE INFORMATION - Women's Activities

Five women's pages appeared in the five issues of the Hanford Works NEWS during the month of June. A feature on summer hair styles appeared with a feature from the General News Bureau on saving money on food bills. Booklets on deep freeze methods from the Consumers Institute was offered and 50 were mailed to readers upon their request.

On June 8 a second article from the General News Bureau appeared on how to find bargain buys at the grocery store by buying in season. Patterns for summer sewing were offered and 25 mailed to readers.

Five women, perfect attendance award winners, were featured on the June 22 women's page of the Works NEWS. Pictures and a write-up were included on each of the women.

Employee and Community Relations Divisions

Helen Casey, recreation leader at Community House was the subject of the women's page feature on June 29.

A special feature was prepared for the June 22 Works NEWS for the benefit of new employees--especially rotational trainees and technical grads. The feature included various activities going on in Richland this summer and how to get in touch with various clubs which would interest them.

A feature was prepared about the progress of the new public library which appeared in the Works NEWS and local papers.

Eighteen stories were prepared for the Works NEWS and local release for the Parks and Recreation Division.

NEWSPAPER SPACE REPORT
June, 1951
As compiled from Nucleonics Department News Bureau Clipping Files

SUBJECT	NEWSPAPER	DATE	COLUMN INCHES	PHOTOS
Pub. on Prout's speeches during month	Tri-City Herald	May 2	6½	
	Columbia Basin News	May 8	3	
	San Francisco Examiner	May 8	13	
	San Francisco Chronicle	May 8	9	1
Callahan's speech in Cheney, Wash.	Spokesman-Review	May 22	1	1
	Spokane Chronicle	May 22	3½	1
Johnson's speech in Yakima	Yakima Herald	May 27	2½	1
Speech by Prout on radioactive fish	Columbia Basin News	May 31	2½	
	Yakima Herald	May 31	2½	
	Seattle Times	May 31	7	
	Oregon Journal	May 31	18	4
Organization changes	Columbia Basin News	May 2-10	2	
	Tri-City Herald	" "	5	
	Walla Walla Union-Bulletin	" "	4	
Employee benefit plans	Walla Walla Union Bulletin	May 25	5	
	Tri-City Herald	May 25	5½	1
C.C. Gamertsfelder, sent to England	Tri-City Herald	May 4	2½	
	Walla Walla Union-Bulletin	May 4	3	
Plant construction	Walla Walla Union-Bulletin	May 24-31	3	
	Tacoma News Tribune	" "	1	
	Spokesman Review	" "	2	
	Seattle Jr. of Commerce	" "	2	
	Columbia Basin News	" "	1½	
	Portland Jr. of Commerce	" "	7½	
Plant hiring	Spokane Chronicle	May 31	4	3

SUBJECT	NEWSPAPER	DATE	COLUMN INCHES	PHOTOS
Security	Tacoma Tribune	May 20		1
Community Construction	Spokesman Review	May 1-25	3	
	Columbia Basin News	" "	2	
	Spokane Chronicle	" "	1½	
	Portland Jr. of Commerce	" "	8½	
Meter bids announced	Walla Walla Union-Bulletin	May 3-9	2	
	Columbia Basin News	" "	8	
	Grandview Herald	" "	3½	
	Spokesman Review	" "	1	
Civil Defense	Spokane Chronicle	May 1	2	1
Recreation	Walla Walla Union-Bulletin	May 2-25	23	
	Spokesman Review	" "	3	
	Columbia Basin News	" "	7	
	Tri-City Herald	" "	5	
Housing	Tri-City Herald	May 18-28	13	
	Spokesman-Review	" "	6	
	Walla Walla Union Bulletin	" "	8½	
		Sub total	223 col. in.	14
Radio-active patrolman	Appeared in 25 daily newspapers throughout the Northwest	May 7-22	175 col. in.	
		Grand Total	398 col. in.	14

Employee and Community Relations

Hanford Works Photo House

	2" x 2"	2" x 4"	5" x 7"	8" x 10"	11" x 14"	Color Slide 35mm	16mm B & W color	Portrait	Negatives	2 " x 2" Slides
CUSTOMER DIVISIONS										
Engineering & Construction										
Project Engineering			36						36	
Reactor Division				9					10	
Design & Construction				7					6	
Employee & Community Rel.										
Employee Relations	2156		2						516	
Community Relations			15	3					8	
News Bureau			108	49					58	
Special Programs			26	4					24	
Works News			71	16					61	
Public Functions						72	24			
Health Instrument Div.					25					
Manufacturing Divisions										40
Medical Divisions										
Municipal, Real Estate & General Services										
Richland Safety Council			8						6	
Community Safety			6							
Parks & Recreation			32	16					4	
Village Maintenance				54					18	
Police Dept.			49	6					7	
Plant Security & Service										
Security-Badge Photos	5191	610								
Staff Organization										
Rotational Training		490						98		
Technical Divisions										
Pile Technology				22					20	
Chemistry Research				21						
Miscellaneous										
A.E.C.				163						
Nucleonics Dept.-Schenectady				145						
Industrial Engineering				5						
TOTAL	7347	1100	355	520	25	72	24	98	884	40

	April	May	June
Total Prints	8206	7129	9445
Total Negatives	860	608	774
Total Assignments	128	102	89

1200954

Employee and Community Relations Divisions

TRAINING AND PROGRAM DEVELOPMENT

The Supervisors' 40-Hour Training Program was not held during the month of June, and will not be held during the other peak vacation months of July and August.

PMS Groups 13, 14, 15, and 16, having completed their conferences during the months of May and June, held special completion dinner meetings during this report period. On June 13, Mr. G. R. Prout was principal speaker at the dinner meeting for Groups 13 and 15, and Mr. W. E. Johnson gave the principal address at the dinner meeting for Groups 14 and 16 on June 19. As reported in May, approximately 300 supervisors at the Hanford Works have completed these studies in the art of persuasion. Additional PMS groups are tentatively scheduled for straight day members of supervisory-management starting in late August and early September, when a sufficient number have completed vacations to enable quotas to be met.

A schedule of special meetings was established and maintained during this report period presenting HOBSO to Security Patrol personnel at the Pistol Range. A total of 23 meetings were held with an attendance of 348. Combining these totals with those reported for May, we can now report a total of 167 meetings, and a total attendance of 4,124 having attended the appreciation version and discussion of HOBSO.

During the month of June, 26 Supervisor's Handbooks were turned in, brought up-to-date, and 24 were re-issued, making a total issued to date of 1479. We now have 21 Handbooks in stock and eleven requests that will be supplied in early July. Four revisions to the Supervisor's Handbooks, consisting of eleven pages, were delivered to the Printing Shop and release is anticipated for early July.

The final meeting of the evening class in Effective Presentation was held June 5, and consisted of a critique of the examination and a final question period. An adaptation and condensation of this program is currently being made available in the Introductory Program for Technical employees.

At the request of the "S" Division, an 8-Hour Program was presented twice, during this report period, to non-exempt people. On June 1, this program was presented to a group of 43, and June 30, there were 26 in attendance. It was necessary to hold the June 30 meeting as scheduled on a Saturday in view of new shift assignments in the "S" Division.

During the month of June, Orientation was given to a total of 513 new employees. There were no re-engaged or transferred employees reporting to Orientation during this period. Of the 513 new employees, 95.3% elected to participate in the Group Insurance Plan. The new Hanford Works Safety Booklet and Security Handbook are now available and are being distributed regularly in Orientation.

There were 22 copies of Men and Volts sold during the month of June. Cash in the amount of $22.66 was paid to the G-E Cashier in Building 703. Receipt for this payment is being maintained in our files.

Employee and Community Relations Divisions

TRAINING AND PROGRAM DEVELOPMENT

D. G. Dayton completed his assignment with respect to the Employee and Community Relations Safety Program by being responsible for the Monthly Safety Meeting. M. R. Adair has been newly assigned to this responsibility representing the Training Staff for the coming six months period.

At the request of President R. B. Britton, W. W. Chamberlain has accepted the responsibility of Publicity Chairman for the Hanford Works Supervisors Association.

In accordance with the responsibilities charged to the Training and Program Development Staff by the Education Committee, a complete six-weeks Introductory Program for new Technical employees was developed and started during this report period. As reported in May, this program is designed to give proper introduction to industry, to the General Electric Company, and to the Atomic Energy Program for some 200 new technical graduates reporting for work in June, 1951, at the Hanford Works. The first week of this six-weeks program was devoted to a General Orientation and consisted of discussions by the several Division Managers on the functions of their separate divisions. Included also in this first week was a discussion by Mr. G. R. Prout on the potentialities in the General Electric Company, and a presentation by Mr. W. E. Johnson on the relationship between General Electric Company and the United States Atomic Energy Program. The second and third weeks, which carry over into the July report period, consist of classes, five of which are technical in nature, and five non-technical or of a business administration nature. All members of the Training Staff are assuming responsibilities with respect to this program and, together with the instructors of the technical courses, are presenting an over-all program which to date has been very enthusiastically received if the comments of the new technical people involved are any criterion. This program is scheduled to be completed on July 27.

Employee and Community Relations Divisions

Union Relations and Wage Rates

Union Relations - Operations Personnel:

During June approximately ten meetings were held between the Company and Union representatives for the purpose of negotiating separate contracts with the Hanford Guards Union, Local 21, and the Hanford Atomic Metal Trades Council, representing Richland and North Richland Firemen.

On June 5, the Company presented the Guards with a draft of a proposed contract, with the result that all but four or five articles have been declared acceptable to both parties. "Hours of Work," "Check-off," and "Sick Leave" appear to be the most controversial issues yet to be resolved. A contract draft was also prepared and presented to the HAMTC on behalf of the Firemen and it was still being reviewed by the Union at month-end. The most significant demand of this group was their request for a 40-hour week in contrast to the two platoon system currently in effect. A brief survey of conditions in fire departments in other Northwest communities indicates that wages and hours of work in Richland are comparable, if not more favorable.

The National Labor Relations Board advised that the Chemical Workers withdrew their petition to represent production Chief Operators, and that simultaneously the HAMTC had petitioned to represent this group. A consent election will be conducted by the NLRB in the near future.

Upon receipt of approval from the Wage Stabilization Board to grant a $3.60 a week increase to all weekly employees, Appendix "A" of the HAMTC and BSEIU contracts was modified with union approval. Agreement was reached with the Guards Union making the increase applicable to all employees in the bargaining unit.

Grievance Statistics:

Fourteen grievances were received during the month, bringing the total received this year to 69.

Grievances were sent in this month from the following divisions:

General Maintenance	1
Health Instrument	2
Manufacturing - Maintenance	1
Manufacturing - "P" Division	1
Manufacturing - "S" Division	4
Manufacturing - Transportation	1
Public Works	2
Separations Technology	2
Total	14

Employee and Community Relations Divisions

Employee grievance reports were received regarding the following subjects:

Jurisdiction	4*
Hours of Work	2
Overtime Rates	2
Seniority	1
Wage Rates	5*
Miscellaneous	1
Total	14

* One grievance covered both Jurisdiction and Wage Rates.

The status of grievances received in 1951 as compared to those received during the same period in 1950 is as follows:

	1951	1950
Received in June	14	23
Received through June 30	69	100
Settled satisfactorily, Step I thru June 30	29	19
Pending at Step I thru June 30	5	--
Settled Step II thru June 30	15	23
Pending at Step II thru June 30	26*	81
At arbitration	4*	--

*Including grievances received in 1950.

Eight per cent of the total grievances received this year have been submitted by employees outside the bargaining unit.

Two meetings were held during the month for the purpose of processing grievances at the Step II level.

Union Relations - Subcontractor Personnel:

Notice of a desire to open the Master Agreement was required by June 10 (60 days prior to the anniversary date). Nine of the 14 signatory Unions filed opening notice. In addition, the Plumbers, Machinists and Bricklayers, who have separate agreements, have opened their contracts. No negotiations have been scheduled to date.

All Unions signatory to the Master Agreement are contemplating petitioning for UA elections (except the Operating Engineers who have had elections and Teamsters who have petitioned for a Representation and UA election). They requested that GE write the NLRB stating the Master Agreement covers all GE subcontractors. In a meeting with AJ, GE and the Union representatives, the latter were informed of the plan to discontinue the GE-controlled policy and reasons therefor--the letter which had been requested was not mentioned again.

Employee and Community Relations Divisions

The Boilermaker-Welders Union demanded double time pay for the sixth day on the contention that the "Project" is not on a six-day week. Their agreement provides that if the "Project" is on a scheduled six-day week, they will work Saturday for time and one-half. A similar demand was made by the Bricklayers Union at a meeting on May 31.

This office transmitted letters to members of the Project Negotiating Committee on June 7, wherein prompt discontinuance of the GE-controlled uniformity policy was requested. Subsequent discussions with contractors indicate general agreement with our request.

At the invitation of the Inland Empire Plumbing and Heating Contractors Association, representatives from this office and AEC attended a meeting on June 26. The sole purpose of this meeting was to discuss GE's alleged unfair and unnecessary policy of working a six-day week in competition with the internal agreement of this Association to work only five eight-hour days per week.

The 136-day delay since the Isolation Pay Hearing before the Davis Panel in New York and the 41-day delay since resubmission to the Panel is indicative of that body's reluctance to make a recommendation.

Requests for Reimbursement Authorizations handled during the month:

1. Electrician (Linemen) - Overtime
2. Electrician (Linemen) - Classification changes
3. Operating Engineers - Classifications and rates
4. Painters - Classification and rates
5. Plasterers - Wage rate
6. Carpenters - Meal time duty status
7. Plumbers - Vacation Plan

Reimbursement Authorizations received during the month:

1. Electrician (Linemen) - Classification changes
2. Operating Engineers - Classifications and rates

Work Stoppages - Actual or Threatened

The arbitration hearing of a demand by eleven Operating Engineers for payment of time lost between discharge and subsequent rehiring resulted in a ruling in favor of AJ.

On June 25, representatives from this division and AEC met in New York with Foster-Wheeler Corporation labor relations men in order to attempt solution of a situation wherein the Union at the strikebound Vulcan Copper Company refused to release certain critical materials in order that Foster-Wheeler might complete fabrication of this material. Further meetings in ~~Cincinnati~~ and discussion with AEC, Washington, D. C., developed a possible solution; however, a settlement of the strike between the Union and Vulcan Company allowed immediate release of the critical material.

Employee and Community Relations Divisions

On June 5, Plumbers refused to handle certain materials fabricated off the Project on the contention that this material should have been fabricated on the job site in accordance with the Washington State Agreement. The Plumbers' business agent was informed that GE was right, that we were not bound by the Washington State Agreement, and that as Prime Contractor, we have an obligation to prosecute the work in the most economical manner, etc., consistent with the Law. On June 21, the business agent agreed to allow his men to handle the material.

On June 29, the Plumbers refused to handle a load of pipe delivered on GE instructions by AJS (USW) to the site of the Early Company (J. P. Head mechanical subcontractor) job. This delivery was a contractual obligation and was handled in a completely proper manner. It appears that the action may be designed, in part, to furnish "ammunition" for the forthcoming contract negotiations with this Craft.

Wage Rates:

A reimbursement authorization establishing the job classification and the salary schedule for Drafting Trainee was received from the Atomic Energy Commission.

A reimbursement authorization was also received for the classification of Chlorinator Serviceman.

On June 15, 1951, the Wage Stabilization Board approved the Company's application for a $3.60 weekly increase for nonexempt employees and a six per cent salary increase for exempt employees. The reimbursement authorization for this general increase was received from the Atomic Energy Commission. The new rates will be included in the checks on July 6, and the retroactive money in the checks of July 20, 1951.

In connection with the payment of this general increase, the job of verifying current rate listings by name for approximately 6,300 nonexempt employees was started and the first of such information was furnished the Payroll Division on June 28, 1951. The work of computing and revising all wage rate records to reflect the $3.60 general raise was begun. New Wage Rate Manuals incorporating all changes were published and issued.

A study of employees receiving preferential rates was completed. The completed compilation was issued to all Division Managers with a request they eliminate these rates if possible.

A survey of Northwest Area Fire Departments was made. This survey included rates of pay, hours of work, type of platoon system and non-wage benefits.

The division participated in a survey on Company policy and working conditions conducted by the Pacific Telephone and Telegraph Company.

Employee and Community Relations Divisions

An over-all review of nonexempt job classifications in the Plant Security and Services Divisions was started. A review of nonexempt non-unit job classifications in the Municipal, Real Estate and General Services Divisions was completed.

An informal discussion with a representative of the HAMTC led to a review of a job in the Sewage Treatment Plant. The information developed in the discussion was investigated and reviewed with Community Division supervision and may involve a possible redistribution of present working forces.

Insurance, Workmen's Compensation and Suggestion System:

Suggestion System

	May, 1951	June, 1951	Total Since 7-15-47
Suggestions Received	168	180	6903
Investigation Reports Completed	180	157	
Awards granted by Suggestion Committee	60	31	
Cash Awards	$ 1,315	$ 380	
Estimated Savings	11,432.32	2,065.65	

An employee in the "S" Division received the highest award for the month for his suggestion concerning the installation of a permanent platform with safety railing and ladder leading to the platform from the top of the tunnel portal, 200 East and 200 West Areas, surrounding the roller door cover and operating mechanism of the R. R. tunnel door. The permanent platform will facilitate repairs and servicing of the door.

Workmen's Compensation

Three cases under litigation were closed during the month.

Life Insurance

Code information which is known only to Home Office Life Underwriters Association has been furnished 39 insurance companies and investigation agencies during the month of June, 1951. This is in accordance with an arrangement with the Underwriters whereby employees on this project might be insured on the same basis as those working elsewhere.

Insurance Statistics

	May, 1951	June, 1951	Total since Sept., 1946
Claims reported to the Department of Labor and Industries	166	164	4663
Claims reported to Travelers Insurance Company	11	12*	520

* Of the above claims reported during June to the Travelers Insurance Company two were bodily injury and ten were property damage claims.

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS SUMMARY-JUNE, 1951

ORGANIZATION AND PERSONNEL

Number of employees on roll:	Beg. of Month	End of Month
Administration	14	15
Accounting	31	30
Engineering & Contracts	33	32
Municipal Divisions (Total 249)		
Public Works	104	103
Parks & Recreation	35	48
Police (Richland)	42	42
Fire (Richland)	54	53
Public Safety	3	3
Real Estate Divisions (Total 231)		
Housing & Real Estate Maintenance	219	218
Commercial and Other Property	13	13
General Services Divisions (Total 114)		
Steam & General Maintenance	66	63
Patrol (North Richland)	22	19
Fire (North Richland)	32	32
	668	671

There was an increase of three employees in the Divisions during the month of June, 1951.

GENERAL

The Safety Awards Banquet on June 14, 1951, was attended by approximately 150 participants in the local safety program. The Honorable Arthur B. Langlie, Governor of the State of Washington, gave the principal address. Various safety awards were presented by other out of town dignitaries.

The Housing Office began allocation of the "C", a two bedroom duplex type house and the "K", a four bedroom single unit type house as they were released to them as completed. In the month of June ten houses were released for allocation.

Total housing applications pending - 626.

Sears, Roebuck and Company catalog order service opened a branch office as a sublessee in "The Mart".

HARoot/jak
7/13/51

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES
ACCOUNTING DIVISION
MONTHLY REPORT FOR JUNE, 1951

ORGANIZATION

Employees-Beginning of Month	31	Exempt	5	Male	9
Transfers In		Non-exempt	25	Female	21
Transfers Out			30		30
New Hires					
Terminations	1				
Total-End of Month	30				

RENTS

House Leases Processed	June	May
Total active leases beginning of month	5667	5655
New leases	124	183
Cancellations	120	171
Total active leases end of month	5671	5667
Modifications	8	20

Dormitory	June	May
Total Occupancy beginning of month	1083	1060
New assignments	127	124
Removals	154	101
Total occupancy end of month	1056	1083

Rental Revenue was as follows:	June	May
Equipment	$ 30.45cr	$ 16.95
House:		
Basic rent	198,856.77	197,306.95
Electricity	48,299.08	47,854.03
Water	7,992.45	7,928.90
Facility:		
Basic rent	45,042.40	49,094.87
Electricity	3,433.92	3,433.92
Water	490.00	490.00
Dormitory	14,364.98	15,133.36
Utilities-Electrical	646.80	1,576.90
	$319,095.95	$322,835.88

TELEPHONE

Number of work orders processed	270	288
Number of working telephones	5199	5153
Revenue including services	$ 21,888.96	$ 19,225.33

1. 1200963

Municipal, Real Estate and General
Services Accounting Division

MISCELLANEOUS

	June	May
Invoices prepared during month	329	243
Revenue derived from invoices	$ 4,643.88	$ 2,537.13

ACCOUNTS PAYABLE

Statistics

Accounts Payable Vouchers	380	336
Freight Bills Processed	16	29
Purchase Orders Received	70	60
Net Amount of Purchase Orders	$ 10,091.53	$ 22,515.44
Receiving Reports Received	85	131
Net Amount Disbursed	$459,710.76	$236,438.21
Number of Checks Issued	244	246

A summary of Active Subcontracts is shown below:

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Newland Cafeteria	-----	$ 203.73	$ 11.05	$ 203.73	$ -0-
Richland Maintenance Co.	-----	198,358.59	15,606.19	198,358.59	-0-
Associated Engineers, Inc.	G-305	173,552.80	-0-	151,079.87	7,951.57
Grant, Algot C.	G-318	23,715.54	-0-	23,715.54	-0-
Packard Pipe & Pump Co.	G-326	14,314.00	-0-	5,976.22	664.03
C & E Construction Co.	G-328	180,375.20	9,895.86	175,540.30	9,238.96
F. O. Repine Co.	G-329	29,263.00	17,962.01	26,921.96	1,463.15
Erwen, Edmund P.	G-334	16,000.00	-0-	-0-	-0-
Baldwin-Dunham Co.	G-343	1,377,159.60	214,096.18	883,751.32	62,154.78
Roof Service, Inc.	G-350	61,319.00	6,230.14	16,200.00	1,800.00
Commercial Paint.& Dec.Co.	G-353	19,600.00	-0-	13,345.00	980.00
Witzig Electric	G-358	6,751.00	6,751.00	6,751.00	-0-
Patton & Hill	G-360	8,597.83	4,471.20	7,533.00	405.00
Motorola, Inc.	G-364	8,242.00	-0-	-0-	-0-
Collins & Babcock	G-365	3,147.50	1,419.52	3,147.50	-0-
Weston Plumbing Co.	G-372	49,907.65	11,334.60	11,334.60	1,259.40
R. A. Neuman & Son	G-373	76,453.16	53,909.88	53,909.88	3,822.66
F. O. Repine Co.	G-375	42,700.00	28,113.19	34,534.84	2,135.00
C. T. Malcom & Co.	G-377	12,087.80	-0-	-0-	-0-
American Steel & Wire Co.	G-378	12,114.66	-0-	-0-	-0-
Associated Engineers, Inc.	G-381	26,878.75	-0-	-0-	-0-
Raecolith Flooring Co.	G-385	5,388.00	-0-	-0-	-0-
Erwin Construction Co.	G-387	4,999.50	-0-	-0-	-0-
		$2,351,129.31	$369,800.82	$1,612,303.35	$91,874.55

COST

Reports

The May Operating Report was issued June 18, 1951. The Comptrollers Appropriations Report and Supplemental Report was issued June 15, 1951. The Utilities Report was issued June 28, 1951.

Municipal, Real Estate and General
Services Accounting Division

SERVICE ORDERS

Service Order Charges

Code	QUANTITY (A) May	QUANTITY (A) June	LABOR COSTS May	LABOR COSTS June	MATERIAL COSTS May	MATERIAL COSTS June	TOTAL COSTS May	TOTAL COSTS June
1	971	1,444	$1,839.25	$3,054.65	$1,512.72	$2,212.66	$ 3,351.97	$ 5,267.31
2	1,603	2,469	1,970.50	3,137.26	2,353.25	2,998.75	4,323.75	6,136.01
3	76	83	184.80	365.40	179.90	110.86	364.70	476.26
4	94	235	284.55	519.25	165.04	274.43	449.59	793.68
5	260	430	466.55	667.86	571.16	864.50	1,037.71	1,532.36
6	243	477	633.85	1,264.50	216.43	368.38	850.28	1,632.88
	3,247	5,138	$5,379.50	$9,008.92	$4,998.50	$6,829.58	$10,378.00	$15,838.50
(B)		/ 1,891		/3,629.42		/1,831.08		/ 5,460.50
(C)			$ 1.66	$ 1.75	1.54	1.33	3.20	3.08

(A) Quantity covers the number of Service Charges made since some Service Orders include several changes.
(B) Over (/) or Under(-) Previous Month.
(C) Average Costs per job by labor, material and total.

A large part of increase is due to Rehabilitation of Prefabs and Other Renovation Work. More Doors are stuck increasing carpenter work. Much of this is due to jacking up prefabs for installation of new foundations.

1	Plumbing	3	Heating & Vent.	5	Lock & Key
2	Electrical	4	Glazing	6	Carpentry

WORK ORDERS

	April	May	June	Net Change
Active Routine	287	254	258	/ 4
Active Normal	2,360	2,306	2,714	/ 408
	2,647	2,560	2,972	/ 412
W. O. Received	1,349	1,310	1,596	
W. O. Completed	1,598	1,397	1,184	
	- 249	- 87	- 412	

1200965

ENGINEERING & CONTRACTS DIVISION
MONTHLY REPORT--JUNE, 1951

PERSONNEL:

Number of employees on payroll:	Exempt	Non-Exempt	Total
May 31, 1951	20	13	33
June 30, 1951	19	13	32

GENERAL:

A meeting was held with the Managers of the Municipal and Real Estate Divisions and B. R. Hennigar of the Plant Security and Services Division and it was determined that all ESRs should be returned and closed out, and if Housing and Municipal desire to have more work done on any of their respective ESRs, they should reopen their requests to the new engineering heads. Mr. Hennigar will reissue any old requests or any new requests to Project Engineering of the Engineering and Construction Divisions.

ENGINEERING SECTION

K-430 Painting Catholic and United Protestant Churches: Completed. Closure notices being prepared.

K-535 Surface Treatment - Goethals, Gillespie to Knight: Completed.

K-562 Automatic Irrigation System, Levée 2-C: Field release #1 issued 6-26.

L-017 Renovation of Tract House NN-1041: Material has been given to Contract Section to go out for bids.

L-262 Water and Sewer to Assembly of God Church: Plans and specifications are finished; prints and specifications have been sent out and are ready for bid.

L-330 Heating Equipment in T Houses: In hands of Contract Section.

L-353 Resurfacing Tennis Courts - Riverside and Columbia Parks: Leveling course completed. Finishing course and striping remains to be done.

L-406 Installation of Cyclone Fence - Barth Playlot: Construction started 6-20.

L-483 Rehabilitation of Prefab - 1313 Potter: Carpentry and electric work complete.

L-512 Humphrey's 8" Water Main: Completed.

L-550 Double Surface Treatment - Three Parking Lots: Completed.

L-551 Retaining Wall on Goethals, Davenport to Comstock: Complete except for some back filling.

Engineering Section (continued)

S-244 Irrigation Ditch Fencing - Wright to Van Giesen: Construction started 6-20-51.

S-255-B Grass Seeding - Marcus Whitman & Frankfort: Work completed and accepted.

S-255-D Parking Lot - Columbia Playfield: Completed.

S-299 Radio Communication System - Fire Department: Letter for modification of directive requesting change of completion date has been forwarded to the AEC. Factory has acknowledged order and set a 7-15-51 shipping date which will be expedited.

S-307 Guthrie-Williams 8" Water Main: Construction started 6-18-51.

S-321 Rearrangement of Steam Pits in Dorms: Design and specifications in hands of Contract Section.

S-350 Improved Lighting - 705 Building: 85% complete.

S-366 Exterior Painting - Hospital, Medical-Dental & Municipal Buildings: Complete. Closure notice being prepared.

S-379 Interior Painting Houses: Completed 6-30. Final inspection in progress.

S-405-B Street Tree Planting - Additional Erosion Control: Discontinued until fall.

S-415 Hospital Soft Water System: Contract has been let and pipe has been delivered. At this time construction is at a standstill awaiting clearance to 700 Area.

S-450 Fencing Riverside Park: Design and specifications in hands of Contract Section.

S-469 Site Preparation - New Wing 703 Building: Contract Section to go out for bids.

S-477 Service Access Panels "U" and "V" Precuts: Bids opened on 6-28.

S-479 Fire Protection - Chief Joseph School: Design complete.

S-485 Exterior Painting Houses - Div. I, II, III, IV, V, VII: Will be completed 6-30. Final inspections in progress.

C-282-R Richland Community Dust & Pollen Control: Emergency grass seeding at the Community Swimming Pool is well underway; top soil has been hauled and spread; area has been leveled, fertilized and seeded. It is being watered by subcontractor.

C-351 Installation of Irrigation System - Public Grounds: Marcus Whitman and Frankfort playgrounds and Columbia Playfield have been completed and accepted. Repair is being made to walks and drives which were cut by the installation of the irrigation system.

C-356 Recreational Facilities - Equipment for Schools and Public Grounds: A letter for modification of directive requesting change in completion date has been forwarded to the AEC. Handball court out for bids, baseball field fence under construction, lighting system complete.

C-357 Additional Capacity Sewage Lift Station: Letter for modification of directive requesting change in completion date has been forwarded to the AEC. Electrical work started 6-11-51; mechanical work waiting for three check valves.

C-372 Exterior Painting - 1414 Houses, 24 Dorms: Work completed 6-30. Final inspections in progress.

C-376 Irrigation Laterals and Sprinkler Units - Carmichael and Spalding: These systems have been inspected and accepted.

C-382 Well 1100-D, Duke Well Field: Letter for modification of directive on three items was forwarded to the AEC 6-14. Pump and pipe are in place and all that remains to be completed is the pump house and electrical work.

C-387 Interior Painting - Dormitories: Work completed 5-24. Closure notice being prepared.

C-400 Reroofing, Siding, Painting - 700 Area Buildings: Letter requesting modification of directive requesting change in completion date has been forwarded to the AEC. 70% complete.

C-407 Replacement of Bathtubs, Tileboard and Linoleum: 65% complete.

C-408 Additional Erosion Control and Irrigation of Public Areas: Letter for modification of directive requesting change in completion date has been forwarded to the AEC. Columbia Playfield seeding has been completed and accepted. Staking has been started on three new shelter belts. Tapping in on water mains will be started 7-5-51.

C-425 1951 Park Development Program: Work on both Columbia and Chief Joseph to be contracted; plans and specifications should be ready soon. Columbia Playfield, site grading and irrigation 90% complete; plans on parking areas 90% complete; plantings 30% complete. Chief Joseph 90% complete.

C-426 Additions and Alterations to Existing Streets, Sidewalks, Curbs and Gutters: Mr. Hardestie of the D & H Paving Company, Vancouver, Washington, contractor for the proposed 1951 construction, states that he will subcontract the barrow work on George Washington Way, South. Tom O'Connel has been hired to supervise the concrete work. Mr. Hardestie states that he can be on the job within a few days after notice to proceed has been given.

Work requests are now being issued to our forces to relocate telephone and power poles, hydrants and signs, in the sequence outlined in Mr. Price's letter of 6-22 to D & H Paving Company. It is our plan to have this work completed before the contractor gets on the job. The layout party has been setting grade stakes, etc. preparatory to construction.

C-430 Improvement of Lighting - 703 Building: Work request #1 issued 6-18 authorizing Minor Construction Division to order lighting fixtures. Plans and specifications complete, awaiting approvals.

C-440 Alteration to 712-A Building: Architectural work 95% complete; electrical complete on original scope; work not started on new scope. Plumbing and heating 75% complete.

C-448 Rehabilitation of 1341 Prefabs: 80% complete. Work progressing nicely.

C-449 Water Service Alterations - 1341 Prefabs: Complete and work has been accepted.

CONTRACT SECTION

C-356-R Fence and Backstop - Columbia Playfield: Cyclone Fence Division of American Steel & Wire started work 6-20-51.

C-356-R Columbia Playfield Lighting System: Witzig Electric completed the subcontract work 6-1-51.

C-356-R Recreation Facilities - Handball Court: Bid opening held 6-28 and award was made to A. C. Grant. Work expected to be completed during July.

C-426 Street Improvements: Awarded to D & H Paving Company. The award, together with subcontract documents, approved by the AEC 6-30. Subcontractor given notice to proceed 7-2.

C-440 Alterations to 712-A Building: Erwen given notice to proceed 6-13. Work is approximately 90% complete.

C-449 Water Service Alteration: Work completed by Associated Engineers 6-21.

S-244 Irrigation Ditch Fencing - Wright to Van Giesen: Cyclone Fence given notice to proceed 6-6. This work started 6-20 and is scheduled to be completed by the middle of July.

S-321 Steam Pits to Dorms: Bid assemblies made available to prospective bidders 6-28. Bid opening will be held 7-12.

S-450 Fencing Riverside Park: Bids to be called for in July.

S-477 Service Access Panels U and V Houses: Bid assemblies were made available to interested bidders 6-27. Bid opening to be held 7-3.

L-330 Heating Equipment T Houses: Bid assembly has been prepared and bids will be opened 7-17.

L-353 Resurfacing Tennis Courts: Raecolith Flooring Co. given notice to proceed 6-18. Workapproximately 90% complete.

L-406 Fencing Barth Playlot: Cyclone Fence given notice to proceed 6-6. Subcontractor preparing materials.

MUNICIPAL DIVISIONS

SUMMARY

JUNE, 1951

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Fire	53	1	53	0
Parks & Recreation	13	22	12	36
Police	16	26	16	26
Public Works	16	88	16	87
Public Safety	2	1	2	1
	100	132	99	150

The Safety Awards Banquet on June 14, 1951, was attended by approximately 150 participants in the local safety program. The Honorable Arthur B. Langlie, Governor of the State of Washington, gave the principal address. Various safety awards were presented by other out-of-town dignitaries.

MUNICIPAL DIVISIONS

Public Works Division

June, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Employees - Beginning of Month	16	88
Transfers In	-	4
Transfers Out	-	4
New Hires	-	1
Terminations	-	1
Leave of Absence	-	1
Total - End of Month	16	87

SANITATION

Collection and disposal of garbage and trash was continued according to schedule. Total weight of waste collected during June was 1,193 tons as compared to 1,157 tons in May.

Collection from Commercial Facilities is now being made with a Garwood truck and indications are that its performance is satisfactory on this type of collection. As a result of this change, the old Elgin truck formerly assigned to commercial collections has been excessed and the "relief" Elgin will be excessed if the Garwood performance continues to be satisfactory.

EROSION CONTROL

Routine maintenance of plantings and weed control operations were continued in all areas assigned to this section.

Plans for installation of an automatic irrigation system on the recently completed section of Levee 2-C, directly east of the pump station have been finished, and this project is now in the hands of the Contract Division.

ROADS AND STREETS

The contract for construction work on the Fiscal Year 1951 Street Improvement Program has been awarded to the D. and H. Paving Company of Vancouver, Washington on a bid price of $220,197.83, which was the lowest bid received. The "Notice to Proceed" has been issued, and the sub-contractor will start work during the second week of July.

Repair or replacement of 58 traffic control signs and 8 street marker signs was completed this month.

Routine maintenance of streets, sidewalks, storm and surface drainage systems, and sweeping of streets was continued per schedule. Emphasis has been placed on maintenance of gutter drainage on streets, without concrete curb and gutter, so that run-off water from over-irrigated lawns will not deteriorate asphalt surfaces and encourage mosquito breeding.

DOMESTIC WATER

The average daily water consumption during June was 15.9 million gallons, which is an increase of 2.86 million gallons over the average daily consumption in May.

Letters were sent to all Richland residents and organizations requesting that they conserve water by irrigation only on alternate days from June 25 through August 31. They were asked to follow the "Odd-Even Plan", which allows for watering of lawns, etc., at homes and buildings with odd-numbered addresses on odd-numbered calendar days, and vice versa. The request has met with fair success, and although the water consumption since the initiation of the plan is approximately the same as comparable periods of last summer, a potential increase of 1.5 million gallons per day for areas placed under domestic water irrigation this year has not materialized. Thus, it appears that the plan has resulted in a saving of 1.5 million gallons per day. A publicity campaign to encourage more people to comply with the "Odd-Even Plan" will follow during July.

The new well, (1100-D), has been equipped with a turbine pump and tied to the water distribution system by the sub-contractor. The pumphouse is nearing completion, and it is anticipated that electrical tie-in will be completed, and the well placed in service by July 14, 1951.

DOMESTIC WATER - (CONTINUED)

Construction of the Williams - Guthrie water loop was started on June 23, 1951, and completion is scheduled during July.

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	171.4719	5.7157	380.8884	12.6962
North Richland	207.3020	6.9101	64.4754	2.1492
Columbia Field	97.9289	3.2643		
300 Area			31.6922	1.0564
Totals	476.7028	15.8901	477.0560	15.9018

SEWERAGE SYSTEM

Normal operation and maintenance of the treatment plants, lift station, and collection system was continued during June.

All equipment, with the exception of check valves, required for the installation of additional pumping facilities at the Sewage Lift Station has been received. Delivery of the check valves is scheduled for the latter part of July, and installation will be started at that time.

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G. P. D.	Average Rate Flow Gals. per Min.
Plant No. 1	33.880	1.129	784
Plant No. 2	77.212	2.574	1.787
Totals	111.092	3.703	2,571

IRRIGATION SYSTEM

Routine operation and maintenance of the pressure irrigation system and gravity flow canals and lines was continued thru June.

IRRIGATION SYSTEM - (CONTINUED)

Two motors in the No. 6 station were flooded by surface drainage water following a flash rainstorm on June 7, 1951. A concrete curb has been poured at the stairwell to eliminate recurrence of this damage.

Water to the canal system was cut off at Horn Rapids Dam from June 6, 1951 through June 11, 1951 to control growth of marine weeds, and this period of time was utilized to make repairs to canal banks, fish screens, culverts, and flow control equipment.

MONTHLY REPORT

PARKS AND RECREATION DIVISION

JUNE, 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-Exempt
Beginning of Month	13	22
New Hires	0	13
Terminations	1	0
Transfers - IN	0	2
- OUT	0	1
	12	36

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of June 30, 1951:

Administration	6
Principals and Supervisors	15
Clerical	23
Teachers	243
Health Audiometer	1
Building Custodians	42
Cooks	38
Nursery School and Extended Day Care	11
Bus Drivers	2
Farm Manager	1
	382

CLUBS AND ORGANIZATIONS

As of June 30, 1951, organizations' personnel, exclusive of those included in the Real Estate Commercial Facilities Division report, include:

Youth Council - Chest	1
Boy Scouts	1
Camp Fire Girls	2
Hi-Spot Club	2
Girl Scouts	2
Justice of the Peace	1
Y. W. C. A.	2
	11

On June 2, 1951, the Girl Scouts of Richland held a revue at Riverside Park before an audience of approximately eight to ten thousand people.

 1200975

Parks and Recreation Division

The annual School Boy Patrol Picnic sponsored by Richland Post #71 of the American Legion was held on June 4, 1951, at the Community House. The Parks and Recreation Division assisted in planning entertainment for the patrol boys during the picnic.

On Thursday, June 14, a Safety Award Banquet sponsored by the Municipal Division of the General Electric Company was held in the cafeteria at Columbia High School. The amplification system used during the program was set-up and operated by personnel of the Parks and Recreation Division.

On Saturday, June 30, the Richland Little League sponsored a program by Monty Montana held at the Bomber Bowl. The Parks and Recreation Division provided the amplification system used and assisted during the program.

The number and types of organizations presently served by the Parks and Recreation Division include:

Business and Professional Clubs	29
Churches and Church Organizations	27
Civic Organizations	5
Fraternal Organizations	24
Music and Art Associations	8
Recreation and Hobby Groups	44
School & Parent Teacher Associations	13
Social Clubs and Organizations	11
Veteran and Military Organizations	12
Welfare	6
Youth - Boy Scouts	20
Camp Fire Girls	36
Girl Scouts	49
Miscellaneous	10
Miscellaneous	9
	294

RECREATION

Due to the heavy rains during the first seven days of June many of the outdoor planned activities were rescheduled and held within the Community House. The Parks and Recreation Division assisted the Richland Patrol in putting on their School Boy Patrol Picnic and program in the social room. Other class and school picnic groups met in the different rooms of the Community House.

On June 11, an outdoor Baseball Clinic was held at Memorial Softball Field with several members of the Tri-City Braves, professional baseball team, giving personalized instruction and tips to approximately 153 boys of the city. An indoor program was held in the afternoon of the same day at the Community House with 110 boys in attendance.

The Parks and Recreation Division summer playground program for Richland was started on June 18, 1951, under the direction of the Athletics and Playground Supervisor. Three Recreation Leaders, employed for the summer only, are to assist in the program which is to continue throughout the summer until August 24.

1280976

Parks and Recreation Division

The first of the Special Event Activities of the Summer Recreation Program was held on June 27, when the Baseball Pitch Contest was held for 73 boys who had signed for this activity.

The first of the Summer Band Concert series to be held every two weeks on Wednesdays at 7:45 PM under the direction of Karl Diettrich was held on Wednesday, June 27, with approximately 300 people enjoying the excellent musical program.

Playground Leaders of the Summer Recreation Program at Riverside Park gave assistance to Cub Packs 47 and 33 in planning and carrying out their field programs for almost 500 Richland Cub Scouts.

Picnic Kit useage for family and picnic groups was fairly heavy with equipment provided 19 times for such groups.

Tumbling instruction was offered to the boys and girls of the summer playground program with interest quite high, 39 following the actions of an expert tumbling and trampoline performer employed as Recreation Leader in the summer program.

Attendance figures for June, 1951, at Riverside Park are as follows:

	Children	Adults	Total
General Attendance	6,711	3,476	10,187
Special Events			
Participants	230	142	372
Spectators	138	350	488
Assisted Activities	272	236	508
Fiscal Year Totals to Date	7,351	4,204	11,555

Below is listed organized groups and classes using the Riverside Park facilities during June, 1951:

	Children	Adults	Total
Baseball Clinic - June 11	153	16	169
Baseball Pitch Contest - June 27	73	15	88
Cub Scout Pack #47 (assisted by Recreation Division)	150	150	300
Cub Scout Pack #33 (assisted by Recreation Division)	122	89	211
Totals	498	270	768

The construction of public restrooms at Memorial Softball Park (Project C-356) was completed during the month and accepted by the General Electric Company on June 12.

Parks and Recreation Division

Progress on construction work at Columbia Playfield as of June 30, 1951, is as follows:

(a)	Resurfacing of tennis courts	98%
(b)	Shuffleboard courts	75%
(c)	Ping Pong Courts	100%
(d)	Horseshoe Courts	100%
(e)	Handball Courts	*
(f)	Lighting facilities for play areas	100%

* Lights installed only

Plans and arrangements have been made to install two badminton courts and one volleyball court on the concrete slab located approximately 50 feet north of the shuffleboard courts at Columbia Playfield

Attendance - Community House - June

	No. Sessions	Boys & Girls	Adults	Total
Games Room	26	1,668		1,668
Crafts	6	182		182
Servicemen's Center	5		518	518
Hi-Spot	9	1,237		1,237
Summer Band	3		84	84
Jr. Baseball Clinic	1	134		134
Private Agencies	5		70	70
Semi-Public Agencies	6		258	258
Recreation Clubs	11		275	275
School Parties	5	758		758
	77	3,979	1,205	5,184
		Total Participants		
Burlin Camp				
	9	382		382
		Grand Attendance Total		5,566

Thirty-eight bookings for picnics were made during June at Riverside Park.

MAINTENANCE

Irrigation of grounds assigned to the Parks and Recreation Division was placed on night watering commencing June 25, 1951.

The mowing of all park areas continued during the month on a basis of once a week for all areas.

Parks and Recreation Division

Additional janitorial services provided by the Park Maintenance Division during June included the cleaning of the wading pool at Riverside Park and servicing the public lavatories at Memorial Softball Park.

Work Orders issued to other Divisions during June - 18.

Park Development

Progress Report

Proposed Work	Percentage Complete
I. Irrigation installation:	
(a) Columbia Playfield (Project C-351)	100%
(b) Frankfort Playground (Project 255-B)	100%
(c) Columbia Playfield (Project S-255)	100%
II. Grass Seeding:	
(a) Frankfort Playground (Project 255-B)	100%
(b) Columbia Playfield (Project S-255)	100%
III. Playground Equipment Installation (1950):	
(a) Project 356-R	56%

LIBRARY

Total circulation for the month was 14,208. The break-down of the circulation is as follows:

Books			Magazines	Records	Inter-Library Loan	Pamphlets
Adult	Juvenile	Total				
6,200	6,888	13,088	240	808	68	4

Total additional registration for June was 1,210 (adult - 661, juvenile - 549). The accumulative total to date is 5,442 registrations.

Books added to the collection totaled 792.

The Children's Librarian finished her visits to elementary schools explaining about the summer reading program, titled "North Star Reading Club. The reading club which got underway as soon as school was out, is for children who will be entering the third garde and including junior high school. To date over 300 youngsters have registered for the club, 70 have made reports on one or more books and one ambitious boy is already a winner having read and reported on ten books.

Parks and Recreation Division

Special recorded story hours were held on weekday afternoons at 3:00 PM for the first two weeks following the close of school. Records played were from the Library collection of LP records of especial interest to children. Attendance total 154 children at the ten sessions. This type of program will bear repeating when there are sufficient new children's records added to the collection.

Story hours on Friday afternoons for school age children continued with a total attendance for the first 3 weeks in June of 111 at the session for the younger children and of 57 at the second story hour which is for those entering third grade and beyond. Pre-school story hours on Wednesday mornings also went ahead with a total attendance of 65 for the four sessions in June.

The Library Board held its regular monthly meeting June 6. Items discussed at the Board meeting included the question of Library parking facilities. Mr. J. T. Rubey's resignation from the Board was read. With the concurrence of the Board, Community Council, and Atomic Energy Commission Mrs. Edward Chapman was appointed to fill the vacancy for the term ending December 31, 1954.

MAJOR EVENTS DURING THE MONTH

June	2	Girl Scout Revue	Riverside Park
	4	School Boy Patrol Picnic	Community House
	12	Community Swimming Pool opened	Columbia Playfield
	14	Safety Award Banquet	Columbia High School
	18	Summer Recreation Program Began	Riverside Park
	27	Community Band Concert	Riverside Park
	30	Monty Montana Show	Bomber Bowl
	30	Merchants Jack-Pot Drawing	East of Men's Dorms

MUNICIPAL DIVISIONS

RICHLAND FIRE DIVISION

JUNE, 1951

Organization and Personnel	Exempt	Non-Exempt
Employees - Beginning of the Month	53	1
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations (including temporary removal)	0	1
Total End of Month	53	0

Fire Protection

Response to Alarms	17
Fire Loss (Estimated)	$0.0
Investigation of Minor Fires and Incidents	8
Safety Meetings	8
Security Meetings	4
Inside Drills and Schools	49
Outside Drills	53
Fire Alarm Boxes Tested	186

Responded to the AEC Airport five times during the month for standby on aircraft landings and takeoffs.

Burned dead grass around three 1100 Area compounds.

Truck company dispatched to replace flagpole halyards at four Richland schools.

Ten officers and firemen of the Richland Fire Department were guests at the Annual Award Banquet June 14th at which time Chief W.K. Moore of Yakima, representing the International Association of Fire Chiefs, presented the National Fire Prevention Week Contest and the U.S. Chamber of Commerce Fire Prevention Activity Contest awards. Chief Moore also presented a gold wrist-watch to Captain Ray Hatfield of Richland for attaining the highest grade in the firemen's examination which concluded the annual fire school recently sponsored by the Washington State Firemen's Association and State Board for Vocational Education.

Grass trucks were dispatched June 15th and 16th to assist the North Richland Fire Department extinguish grass fires.

One grass truck was dispatched June 16th for standby at the Army Engineers pumphouse off George Washington Way during controlled burning.

Fire Prevention:

Fire Inspections:

700 Area Buildings	-44
1100 Area Buildings	-41
Real Estate Buildings	-49
Municipal Buildings	-49
Kadlec Hospital	- 4
Contractor Buildings	- 6
AEC Buildings	- 8
Miscellaneous weed and alteration inspections	34

Fire Extinguishers:

Inspected	- 257
Installed	- 4
Removed	- 1

Standpipe Fire Hose:

Inspected	- 25

In an effort to obtain correction of fire hazards, 23 fire inspection reports were submitted and 38 contacts made in person or by telephone.

An inspection of the new boiler house at the Old Labor Yard revealed that roof jacks failed to comply with Hanford Works standards. Corrections were recommended.

Data was obtained on a non-flammable weed killer and its use recommended in preference to the flammable type previously used.

Recommended to Superintendent of Housing and Real Estate Maintenance that letters be sent to tract house occupants requesting removal of dead grass and weeds for a safe distance back from all buildings.

Reviewed blueprints of the sprinkler systems in new wings at Kadlec Hospital and alterations to systems in old wings. With two suggested changes, verbal approval was given the plans.

With the Public Safety Coordinator, an inspection was made at Kadlec Hospital to ascertain if contractor was taking necessary precautions to prevent fires resulting from welding operations under the building.

Floorplan drawings of the Recreation Hall and Community House, including pertinent fire protection information, were prepared for reference in Fire Marshal's office and for study in fire stations.

Following recent alterations to the 760 Building, an inspection was made of the firewalls in the attic and under the floor.

Arrangements were made with manager of Desert Inn and supervisor of dormitories to use careless smoker cards to be furnished by Philip Morris & Co., Ltd. An order was placed for 1500 cards.

Real Estate Division was notified that a temporary carpenter shop under canvas attached to the Mart constituted a definite fire hazard. It was recommended this shop be moved at least 30 feet from the building.

The Public Safety Coordinator was advised of the dry weed, grass and sawdust hazard at the construction buildings at Duportail and Wright, also the hazard created by the contracting painters at the hutment south of the Lutheran Church.

The hospital administrator was contacted on recommendations of this office for installation of the new fire doors in Kadlec Hospital.

An investigation of a ruptured water main in the 700 Area construction zone revealed that the break affected the 703 Building sprinkler systems, making it necessary to temporarily shut down one of the systems.

Recommendations for marking all rooms having openings into the attics were submitted to school officials and the Kadlec Hospital administrator.

Three inspections were made during the month of weed and grass conditions creating fire hazard to buildings and contacted divisions responsible for removing the hazard.

MUNICIPAL DIVISIONS

RICHLAND POLICE DEPARTMENT

JUNE 1951

ORGANIZATION AND PERSONNEL

	Exempt	Non-exempt
Employees - Beginning of Month	16	26
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations	0	0
Total - End of Month	16	26

GENERAL

On June 18, 1951, a group of 20 Brownies were escorted on a tour of Police Headquarters.

On June 20, 1951, Sgt. A. L. Reil of the Crime Prevention Section attended a meeting of the Washington State Probation Officers in Walla Walla.

On June 28, 1951, fifteen junior members of the American Legion ball team were fingerprinted for personal identification purposes at the request of the manager of the team.

Approval has been obtained from the Federal Communications Commission to establish a radio station at Police Headquarters to operate on the Benton County Sheriff's frequency. Work on the installation of such a station and mobile unit is progressing rapidly.

During the month, a total of 241 letters were received, compared to 258 last month. These consisted of 235 inquiries on arrests and 6 requests for assistance.

During the month, 36 prisoners were processed through the Richland Jail. Seventeen of these were from North Richland.

During the month, 42 gun registrations were recorded.

During the month, 212 bicycle registrations were recorded.

During the month, 231 traffic violation reports were received. These consisted mainly of speeding, illegal parking and stop sign violations. A total of 90 other reports were received. These consisted mainly of larceny and public intoxication cases.

TRAFFIC

We were advised on June 6 that Richland had tied for second place award made by the American Automobile Association in their annual pedestrian protection contest. We tied with Hibbing, Minnesota, and Pascagoula, Mississippi.

On June 11, 1951, Sgt. E. E. Miller of the Traffic Control Section graduated from the Traffic Institute of Northwestern University, Evanston, Illinois.

Richland Police Department - Continued

On June 14, 1951, an award banquet was held at the Columbia High School to present the safety awards won by Richland during 1950.

The School Boy Patrol picnic was held on June 4, 1951. The patrol group at Sacajawea School was given a special award this year for outstanding activity. This award was based on performance of duties on post, punctuality, dependability, neatness, and conduct. This award is a floating trophy and must be won three consecutive years for permanent possession. Two boys from each school received individual medals for outstanding performance of duties.

There were 22 reportable accidents in Richland during the month of June. These accidents resulted in minor injury to five persons. This is six accidents and two injuries more than the preceeding month. There have been 118 accidents this year as compared to 100 for the same period last year. Thirty persons have been injured in automobile accidents this year as compared to 15 for the same period last year and 30 for the entire year of 1950. Fifteen of these accidents were investigated at the scene resulting in two arrests.

Causes of the above 22 accidents were as follows:

Drunken Driving	1
Negligent Driving	5
Failure to Y.R.O.W.	3
Following Too Closely	4
Exceeding Safe Speed	1
Improper Backing	2
Fell Asleep	1
Jay Walking	2
Struck Animal	1
Improper Turn	1
Defective Equipment	1

Property damage averaged $296.66 per accident as compared to $114.11 for the month of May. This was chiefly due to one accident in which a $4000 trailer house was destroyed.

Traffic counts were made of traffic entering and leaving Richland across the Bailey Bridge. Peak northbound traffic was 6,528 cars for 24 hours; and southbound traffic was 6,742. The average 24 hour volume over the Bailey Bridge is 11,423 cars.

A speed check was made on George Washington Way to determine voluntary compliance to the 25 MPH speed regulation adjacent to the Uptown Business District. It was determined that 87 per cent of the vehicles were traveling over 25 MPH and that nine of the 154 vehicles checked in a two hour period were traveling in excess of 40 MPH.

A new crosswalk was painted across George Washington Way north of Symons Street approximately 150 feet and pedestrian signs installed.

Seven stop signs were replaced in town during the month and 64 traffic control signs were installed at new locations.

Widening of the roadway at the north end of the Bailey span near the C. A. P. road was requested and completed to improve the control and flow of morning traffic. Chatter bars will be installed to separate the traffic lanes and eliminate the handling and use of several barricades.

The Walk and Wait light installed at the crosswalk in front of the Recreation Hall was put into operation June 2, 1951, and seems to be working effectively.

TRAINING

Classroom subjects covered during the month were: Police Procedures in Handling Crimes and Complaints, Procedures involving Protection, Accidents, Felonies, Misdemeanors, Service Actions.

Training at the small arms range for the period in field instruction was as follows

Pistol	2 hours
Machine Gun	1½ hours

Qualifications on the Machine Gun course were as follows:

Score	No. Men	Per Cent
Expert	11	73%
Sharpshooter	4	27%

Qualifications on the Army-L course were as follows:

Score	No. Men	Per Cent
Expert	12	50%
Sharpshooter	4	17%
Marksman	4	17%
Unqualified	4	16%

A total of 24 men reported for police training.

ACTIVITIES AND SERVICES

	April	May	June
Doors and windows found open	37	51	65
Children lost or found	23	22	13
Ambulance runs assisted	18	21	24
Ambulance driver provided	2	6	3
Dogs, cats reported lost or found	19	37	11
Dog, cat, loose stock complaints	26	30	36
Persons injured by dogs	14	11	5
Bank escorts & details	4	10	0
Fires investigated	19	20	17
Miscellaneous escorts	11	11	6
Complaints investigated	50	55	40
Deaths reported	0	1	2
Articles lost or found	32	41	28
Records inquiries	250	237	222
Law enforcement agencies assisted	17	11	21
Private individuals assisted	4	17	30
Plant divisions assisted	29	31	45
Emergency messages delivered	43	52	50
Totals	598	664	618

1200985

MONTHLY REPORT
RICHLAND POLICE DEPARTMENT
JUNE, 1951

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 & Ent.	3	1	1	1
6. Larceny—Over $50.00	3	0	0	0
Larceny—Under $50.00	15	1	7	4
Bike Theft	30	0	2	28
7. Auto Theft	1	0	0	1
TOTAL PART I CASES	52	2	10	34
PART II				
8. Other Assaults	2	0	2	0
9. Forgery	3	0	0	2
10. Embezzlement & Fraud	1	0	0	1
11. Stolen Prop:Buy:Rec.Poss.	0	0	0	0
12. Weapons:Carry:Poss:	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offense	2	0	0	0
15. Off.Ag.Fam. & Child	5	1	1	3
16. Narcotics—Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	11	0	11	0
19. Disorderly Conduct	2	0	2	0
20. Vagrancy	1	0	1	0
21. Gambling	0	0	0	0
22. Driving While Intox.	4	0	4	0
23. Violation Rd. & Dr. Laws:				
Speeding	52	0	52	0
Stop Sign	25	0	25	0
Reckless Driving	7	0	6	1
Right of Way	5	0	5	0
Negligent Driving	7	0	6	1
Defective Equipment	3	0	3	0
24. Parking	84	0	84	0
25. All Other Traffic	18	0	18	0
26. All Other Offenses:				
Public Nuisance	2	0	2	0
Dest. of Pers. Prop.	6	0	0	4
Dest. of Govt. Prop.	2	0	2	0
Malicious Mischief	7	0	3	2
Vandalism	10	1	2	5
Car Prowl	2	0	1	0
Prowlers	8	0	1	7
Investigation	11	0	0	11
27. Suspicion	0	0	0	0
TOTAL PART II CASES	280	2	231	37

(Continued on Page Two)

PAGE TWO MONTHLY REPORT RICHLAND POLICE DEPARTMENT JUNE, 1951

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART III				
28. Missing Persons	2	0	0	2
Lost Persons	10	0	0	10
Lost Animals	9	0	0	9
Lost Property	10	0	0	10
29. Found Persons	6	0	0	6
Found Animals	4	0	0	4
Found Property	26	0	0	26
TOTAL PART III CASES	67	0	0	67
PART IV				
30. Fatal Mot.Veh.Traf.Acc.	0	0	0	0
31. Pers.Inj.Mot.Veh.Acc.	5	0	0	0
32. Prop.Dam.Mot.Veh.Acc.	17	0	0	0
33. Other Traffic Acc.	0	0	0	0
34. Public Accidents	No Accurate Statistics Kept			
35. Home Accidents				
36. Occupational Accidents				
37. Firearms Accidents	0	0	0	0
38. Dog Bites	3	0	0	3
39. Suicides	0	0	0	0
40. Suicide Attempts	2	0	0	2
41. Sudden Death & Bodies Fd.	0	0	0	0
42. Sick Cared For	2	0	0	2
43. Mental Cases	0	0	0	0
TOTAL PART IV CASES	29	0	0	7
COMPOSITE TOTALS PARTS I, II, III, IV CASES	428	4	2	145

*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 in that there were no arrests.

Property Reported Stolen During Month $1907.30 ($900.00 Bikes)
Property Recovered During Month $1515.50 ($900.00 Bikes)

1 Petit Larceny Case occurred in February and cleared this month.

SEE PAGE THREE FOR JUVENILES INVOLVED.

PAGE THREE RICHLAND POLICE DEPARTMENT MONTHLY REPORT FOR JUNE, 1951 OF JUVENILES INVOLVED

OFFENSES	NO.	JUVENILES	SEX	AGES 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	TOTAL
Grand Larceny	0	0																		
Petit Larceny	4	6	M						1					1	1	1		1		5
			F												1					1
Burglary	1	3	M								3									3
			F																	0
Loitering	1	2	M									1		1						2
			F																	0
Prowlers	1	2	M														1	1		2
			F																	0
Dest. of Govt. Prop.	1	2	M									2								2
			F																	0
Malicious Mischief	2	4	M								1					1	1		1	4
			F																	0
Disorderly Conduct	1	3	M											1	1	1				3
			F																	0
TOTAL.....	11	22							1		4	3		3	3	3	2	2	1	22

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 persons:

Six Months (Jan-June 1950)	Wash.Oregon & Calif.	One Month Average	Richland (Jan-June 1950)	Richland May 1951	Richland June 1951
Murder	.49	.08	0	0	0
Robbery	14.3	2.3	0	0	0
Agg. Assault	10.3	1.7	4	0	0
Burglary	90.6	15.1	12	1	2
Larceny	269.6	44.9	223	26	17
Auto Theft	37.3	6.2	4	0	1
Bike Theft			85	29	30

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

Six Months (Jan-June 1950)	State of Washington	One Month Average	Richland (Jan-June 1950)	Richland May 1951	Richland June 1951
Murder	.53	.08	0	0	0
Robbery	10.9	1.8	0	0	0
Agg. Assault	2.7	.4	4	0	0
Burglary	80.3	13.3	12	1	2
Larceny	236.1	39.3	223	26	17
Auto Theft	30.9	5.1	4	0	1
Bike Theft			85	29	30

The portion of offenses committed by persons under the age of 25 years is shown:

	National Average(Percentage of Cases)(Jan-June 1950)	Wash.Oregon,Cal.(Actual Cases)(Jan-June 1950)	Richland (Jan-June 1950)	Richland May 1951	Richland June 1951
Robbery	55.4	7.9	0	0	0
Burglary	63.0	57.0	2	0	1
Larceny	46.7	125.9	57	7	4
Auto Theft	68.7	25.6	0	0	0

Note: Statistics of juvenile offenses throughout the United States were taken from the Uniform Crime Report published by the Federal Bureau of Investigation, which states: "It should be remembered that the number of arrests recorded is doubtless incomplete in the lower group because of the practice of some jurisdictions not to fingerprint youthful offenders."

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POLICE DIVISION - TRAFFIC CONTROL STATISTICS
June, 1951

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	May	June	May	June	May	June	May	June
Richland	18	22	0	0	0	0	2	5

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	May	June	May	June	May	June	May	June
Richland	2	5	7	3	1	1	8	15

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	May	June	May	June	May	June	May	June	May	June	May	June	May	June
Richland	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	
	May	June	May	June	May	June	May	June	May	June	May	June	May	June	May	June	May	June
Richland	28	53	16	34	3	4	6	6	7	3	20	6	27	83	37	29	144	218

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on June 20, 1951, on inbound traffic only, at Yakima River Bridge on George Washington Way - 6,528 Motor Vehicles.

NOTE: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

RICHLAND POLICE DEPARTMENT
RICHLAND JUSTICE COURT CASES
JUNE 1951

VIOLATION	NO OF CASES	NO OF CONV.	NO OF FORF.	CASES CONT.	CASES DISM.	WARR. ISS.	SENT JAIL	SENT SUSP	LIC REV	CASES ORIG. PREV. MON.	CASES INCL. OTHER VIOL.	BAIL FORF	FINES	FINES SUSP.
Dr. Lic.	19	11	1	2	4	1				4	11	$	$ 32.50	$ 25.00
Def. Equip.	1		1									3.50		
Drunken Dr.	3	3							2				105.00	
F.T.Y.R.O.W.	4	3	1									12.50	27.50	12.50
F.T.Y.R.O.W. to Ped.	1		1									5.00		
Ill. Parking	79	16	49	1	2	11						171.50	61.00	54.00
Ill. Passing	2	2									1		10.00	
Lic. Plates	2	2									2			
Negligent Dr.	11	6	4			1				3		85.00	80.00	
Permit Minor to Operate Vehicle	2	2											22.50	
Reckless Dr.	3	2			1				2	1			90.00	
Speeding	51	26	20		1	4			1	3	2	210.50	257.50	
Stop Sign	28	16	8	2	1	1				4	1	38.50	83.50	25.00
Petit Larceny	2	2					2	2						
Public Intox.	11	5	5		1							62.50	67.50	10.00
Public Nuis.	2	1	1				1					17.50		
Third Deg. Assult	2	2					2	1					17.50	
Vagrancy	1	1												
TOTALS:	224	100	91	5	10	18	5	3.	5	15	17	$606.50	$854.50	$126.50

NOTE: One Drunken Driving case taken to Superior Court.
One Reckless Driving case change of venue to Judge Morbeck's Court.
One Reckless Driving case amended to Negligent Driving.
One F.T.S.&.I. case amended to Negligent Driving.
One Grand Larceny case amended to Petit Larceny.

MUNICIPAL DIVISIONS

PUBLIC SAFETY DIVISION

June 1951

Organization and Personnel:	Exempt	Non-exempt
EMPLOYEES - BEGINNING OF MONTH	2	1
Transfers In	0	0
Transfers Out	0	0
New Hires	0	0
Terminations	0	0
Total - End of Month	2	1

*One exempt employee charging full time to Civil Defense

Statistical and General:

The National Safety theme for the month of June was publicized with radio spot announcements (with an average of twenty per day on K W I E alone), several newspaper articles, and radio interviews broadcast by law enforcement officers and members of the Community Council. Newspaper coverage this month covered the monthly theme of "Speed Control", child safety, the Safety Award Banquet, etc., in the amount of 173 column inches.

The Safety Award Banquet this year was honored by the presence of The Honorable Arthur B. Langlie and four other guests from various safety organizations. The banquet, which was attended by approximately 150 participants in the local safety program, was held in Columbia High School cafeteria, and featured the Governor's address, entitled "The State's Safety Job", presentation and acceptance of the safety awards won by the city of Richland, and a short entertainment.

Safety films in the Public Safety office during the month of June, which had a total attendance of over 2,000, included the following:

A Closed Book	Heedless Hurry	Lifelines	Safety Ahoy
Forest Ranger	Remember Jimmy	We Drivers	Case of Tommy Tucker

These films covered traffic, swimming, boating and fire safety.

The new fireworks ordinance absolutely prohibits the possession or use of any fireworks in Benton County except by special permit. The American Legion is again this year sponsoring a fireworks display, with notices of same being distributed to every home in the city by local newsboys. This office is participating in this program.

The coordinator of Public Safety attended the Thirteenth Annual Western Safety Conference in Salt Lake City and gained much information which will prove valuable to the Safety Program in Richland.

REAL ESTATE DIVISIONS

SUMMARY

JUNE

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Commercial & Other Property Divisions	7	6	7	6
Housing & Real Estate Maintenance Division	21	198	21	197
	28	204	28	203

Net decrease of employees for the month of June 1

GENERAL

Sears, Roebuck and Company catalog order service opened a branch office as a sublessee in "The Mart".

The Housing Office began allocation of the "C", a two bedroom duplex type house and the "K", a four bedroom single unit type house as they were released to them as completed. In the month of June ten house were released for allocation.

HOUSING AND REAL ESTATE MAINTENANCE DIVISION

June, 1951

ORGANIZATION AND PERSONNEL		June
Number of employees on payroll		
Beginning of month	21 Exempt Employees 198 Non-Exempt Employees	
	219	219
End of Month	21 Exempt Employees 197 Non-Exempt Employees	
	218	218

RICHLAND HOUSING

Housing Utilization As Of Month Ending June 30, 1951

Houses Occupied by Family Groups	Conventional	Block	"T"	Precut	Ranch	Prefab	Apt	4th Add	Tract	Tot.
General Electric Company	2203	258	8	388	831	1146	57	3	38	493
Commercial Facilities	88	11	2	27	73	65	6		5	277
Community Activities	9			1	7	3			1	21
Medical Facilities	5	14		2		1				22
Post Office	7			1	3	10			4	25
Atomic Energy Commission	94	29		14	41	20	1		4	203
School District	43	1		5	11	49	1			110
Kellex Corp.	9	5		6	9	6	1			36
Atkinson - Jones	9	13		4	11	4	2			43
Newberry Neon	3	1.		1			1			6
Vernita Orchards									4	4
J. G. Turnbull					1	1				2
Roberts Filter Manufacturing Co.	1									1
V. S. Jenkins					1					1
Hanley Co.					1		2			3
Urban, Smythe & Warren		1			1		1			3
Total Houses Occupied	2471	333	10	449	990	1305	72	3	56	568
Houses Assigned-Leases Written	7				3	11		1		22
Houses Assigned-Leases Unwritten	3				3	4				10
Houses Available for Assignment	19			1	4	22	2	6		54
Total Houses	2500	333	10	450	1000	1342	74	10	56	577

HOUSING & REAL ESTATE MAINTENANCE DIVISION

Housing Turnover During Month	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2480	44	53	2471	Minus 9
Block Type	330	6	3	333	Plus 3
"T" Type	10	-	-	10	-
Precut Type	446	8	5	449	Plus 3
Ranch Type	981	31	22	990	Plus 9
Prefab Type	1303	47	45	1305	Plus 2
Apartments	73	2	3	72	Minus 1
Tract	56	-	-	56	-
Fourth Housing Addition	-	3	-	3	-
Total	5679	141	131	5689	Plus 10

DORMITORY STATISTICS

Dormitories:

		Occupants	Vacancies	Total Beds
Men Occupied	15	*616	----	616
Men Unoccupied	--			
Women Occupied	12	**481	----	481*

Women's Dormitories
Occupied by:

G.E. Office	2
Education	1
Apartments	1
	31

*This includes 50 beds in W-17, and 50 beds in W-21.

**This includes space of 2 beds in W-9 used for supply rooms and dormitory offices.

There are 248 men waiting for rooms in Richland.
There are 8 women waiting for rooms in Richland.

GENERAL

Houses Allocated to new tenants	103
Exchanged Houses	6
Moves(Within the Village)	30
Turnovers	6
Total Leases Signed	141
Total Cancellations	131
Applications Pending	626

ALLOCATION SECTION STATISTICS

Voluntary Terminations	58
R.O.F.	1
Discharge	0
Transfers	5
Retirement-Divorce-Misc.	5
Houses Assigned "As Is"	57
Move off Project	22
Houses sent to Renovation	67

DORMITORY REPORT FOR JUNE 25, 1951

122	MINOR REPAIRS TO FUSES, PLUMBING, ETC.
7	WORK ORDERS STEAM, GLASS, EQUIPMENT, ETC.
184	PIECES OF FURNITURE REPAIRED.
20	HOUSEKEEPING CONTACTS.
299	ROOMS VACATED.
106	LIGHT GLOBES REPLACED.

LINENS LAUNDERED

8,017	SHEETS
4,161	PILLOW CASES
46	BED SPREADS
51	BED PADS
219	SHOWER CURTAINS
287	PAIRS DRAPES

1200997

4

MISCELLANEOUS STORES WAREHOUSE INVENTORY SUMMARY
MONTH ENDING JUNE 25, 1951

	EXPENDABLE ITEMS	FURNITURE (GEN LEDGER)	FURNITURE (KARDEX CONT.)	PLANT ITEMS	TOTAL
BEGINNING BALANCE					
RECEIPTS:	$47,375.98	$25,275.22	$25,663.98	$46,204.00	$95,351.45
n Purchase Orders	271.44				
n Store Orders	717.73				
rom Excess					
rom Housing	114.31		60.25	4,165.18	
rom Dormitories			46.60		
rom Other (Misc.)					
OTAL RECEIPTS	$ 1,103.48		$ 106.85	$ 4,165.18	
OTAL AVAILABLE ISBURSEMENTS:	$48,479.46	$25,275.22	$25,770.83	$50,369.18	
ash Sales (Backcharge)	41.22				
o Excess					
o Salvage					
o Housing	1,554.44		2,453.11	4,907.13	
o Dormitories	1,149.19				
o Dormitories - inens	175.50				
orm-Shades & eflectors	64.96				
o Warehouse Supplies	37.89				
o Other (Misc.)	129.77		130.25		
OTAL DISBURSEMENTS	$3,152.97		($ 2,583.36)	$ 4,907.13	
NDING BALANCE (1) (2) (4)	45,326.49 (1)	25,275.22 (2)	23,187.47 (3)	45,462.05 (4)	$116,063.76
ET CHANGE	$ 2,049.49		2,476.51	741.95	

NDING BALANCE GENERAL LEDGER (BALANCE - COL. 1 PLUS COL. 2) 70,601.71

OLUMN 3 FOR LOCATION CONTROL ONLY - COLUMN 4 MEMO ACCOUNT ONLY

EXCHANGED:	PIECES
Dorm. Furniture	106
Ranges	4
Refrigerator	5
Prefab Heaters	5
Sent to Maintenance	96
From Maintenance	12

COMMENT:

Total furniture on loan to Housing Rental is included in column 3.

120898

5

TENANT RELATIONS WORK ORDER AND PROGRESS REPORT - MONTH OF JUNE, 1951

Processing of Service Orders, Work Orders and Service Charges

	Orders Incomplete As of May 31, 1951	Orders Issued May 31 to June 30	Total Orders Incomplete as of June 30, 1951
Service Orders	291	2513	68
Work Orders	2824	1083	2982
Service Charges	23	347	14

Principal Work Order Load

	Incomplete as of May 31, 1951	Incomplete as of June 30, 1951
Laundry tub replacements	124	172
Bathroom Renovation (Tub-Lino-Tile)	330 (206-Sub-Cont.)	165
Tileboard Only (Bathroom)	5	8
Kitchen Cabinet Linoleum	276	215
Kitchen Floor Linoleum	57	16
Shower Stalls		129

WORK ORDERS COMPLETED DURING THE MONTH OF JUNE (In Specific Areas)

80 Bathtubs were installed

95 Prefab shower stalls and valves installed

19 Cement sidewalks were installed

8 Hot water heaters were replaced

6 Touch-up paint jobs (interior) were completed

75 Houses were completed on interior paint program

75 Roofs repaired

27 Basements sealed

Alteration Permits Issued During the Month of June Totaled 108 Compared to 119 in May

Automatic dryer	5	Oil burner in furnace	1
Air conditioner	32	Dishwasher	3
Relocate water heater	1	Change position of range	3
Patio	8	Back door	5
Driveway	4	Remove laundry trays	1
Storage box	2	Doghouse	1
Automatic washer	11	Sand floors	2
Roof and shelf on back porch	1	Water softener	1
Fence	13	Basement excavation	2
Window boxes	1	Cooling pads	3
Electric wiring	1	Remove broom closet	1
Sidewalk	1	Concrete block wall (ext.)	1
Fireplace	4		

2297 Inspections were made during the month of June as compared to 1577 made during the month of May

Alteration Permits	2	Shades	1
Bathtubs	137	Shower stalls	71
Cupboards	57	Sidewalks	110
Drainage	9	Sinks	8
Hose and sprinkler	7	Tileboard	115
Floor Boards	14	Toilet Seats	7
Grass Seed	15	Top Soil	36
House Siding	3	Cancellations	166
Jack & Shim	2	Renovations	137
Leaking Basements	47	New Tenants	160
Linoleum	291	Walls	31
Lot lines	18	Windows	10
Paint	346	MISCELLANEOUS	356
Porch & Steps	24		
Screen Doors	117		

HOUSING AND REAL ESTATE MAINTENANCE

JUNE, 1951

I. ORGANIZATION AND PERSONNEL:

	Exempt	Non-Exempt	Total
A. Beginning of month;	13	161	174
B. End of month	13	163	176

II. MAINTENANCE STATISTICS (BACKLOG)

JOB CLASSIFICATION	CRAFT. CREW		MAN HR. BACKLOG	CREW DAYS
Carpenter Shop and Field Installation.	Carpen. Jrn.	10	1234	12
	Painter Jrn.	2		
	Upholsterer	1		
	Subtotal	13		
Heavy Field Carpentery	Carpen. Jrn.	19	4743	25
	Carpen. Trs.	3		
	Lt. Tr. Dr.	2		
	Subtotal	24		
Lin. & Tile Field Carpen.	Carpen. Jrn.	19	8647	54
	Painter Jrn.	1		
	Subtotal	20		
Sheetmetal	S. M. Jrn.	4	1524	51
Millwright	Millwrights	4	64	2
Plumbing & Stema	Plumber Jrn.	6	2354	26
	Plumber S.F.Jrn	4		
	P. Helper	2		
	Subtotal	12		
Cycle & Misc. Painting	Pntrs. Jrn.	30	2056	8
	Pntrs. Trs.	2		
	Carpen. Jrn.	2		
	Lt. Tr. Dr.	1		
	Subtotal	35		
Service Section	Ser. Men	4	1206	22
	Lt. Tr. Dr.	3		
		7		
Renovation	Pntrs. Jrn.	9	2916	21
	Carpen. Jrn.	2		
	Janitress	3		
	Lt. Tr. Dr.	1		
	Ser. men.	3		
	Subtotal	18		

OB CLASSIFICATION	CRAFT CREW	MAN HR. BACKLOG	CREW DAYS
ervice Order	Electr. Jrn. 6 Plumber Jrn. 4 Carpent. Jrn. 2 Locksmith Jr. 1 Glazier Jrn. 1 Subtotal 14	228	2
rounds Maintenance	Lt. Tr. Dr. - 2 Ser. men 5 Subtotal 7	28	1
TOTAL	158	23,998	

III. MAINTENANCE TRANSPORTATION FACILITIES:

HEAVY MAINTENANCE TRUCK TYPE	NUMBER IN POSSESSION	CRAFT
1½ Ton Flatbed	11	Carpenters
Cushman Scooter	1	Carpenters
1 ten Pickups	6	Carpenters
3/4 Ton Power Wagon	1	Carpenters
3½ Ton Dump Trucks	.3	Labor
½ Ton Pickup	1	Labor
1½ Ton with Monerail		Millwrights
Panel	1	Sheetmetal
2/4 Walkin	1	Millwrights
½ Ton Pickup	2	Millwrights
Panels	3	Painters
1½ Ton Flatbed	1	Painters
½ Ton Pickups	5	Plumbers
3/4 Ton Pickup	4	Plumbers
Subtotal	41	

SERVICE ORDERS.

1/2 Ton Pickup	3	Plumbers
1/2 Ton Pickup	4	Electricians
1/2 Ton Pickup	1	Glazier
1/2 Ton Pickup	1	Locksmith
1/2 Ton Pickup	2	Carpenters
Subtotal	11	

RENOVATIONS

Bus	1	(Temporarily Idle.) Painters
Chev. Carryall	1	Painters & Janitresses
½ Ton Pickup	2	Carpenters
Subtotal	4	

GROUNDS MAINTENANCE

Ton Pickup	1	Servicemen

GENERAL

Sedans	2	Supervision
GRAND TOTAL	59	

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June 1951

IV. PROGRESS REPORT

A. Carpentry Section

Carpentry work in Prefab area (for interior paint program) is now 98% complete.
Repairs to the Screens (exterior rehabilitation program is now approximately 75%
Leg Cabinets to Wall (Prefabs) 100% complete complete.
54 prefab units had cabinet doors replaced.
19 side walks had black top removed and concrete placed-27 steps leading to streets were also replaced with concrete
2 houses had roofs mopped with alum
2 houses had roofs mopped with Primer
75 roofs were repaired because of leaks
Work order to repair 243 houses (conventional) prior to contractor painting (exterior is now 100% complete.
Installation of new cradles under hot water tanks in 17 Women Dorms, 100% complete.
45 window screens repaired and installed.
20 new screen doors installed
21 screen doors repaired
Misc. repair jobs completed such as weather strip prefab windows-3, repair basement floors for plumbers-2 drill weep holes prefabs-8, replace threshold with concrete-4, repair landing dock at safeway, repair floors convention houses-5.
7 Laundry tubs repaired with chempaint
128 houses had floor linolium replaced
110 houses had table top linolium replaced
74 houses had tile board installed
158 units had sink chempainted
13 K.V. Chairs upholstered
7 K.C. Chairs upholstered
5 K 1 X Chairs upholstered
1 office chair upholstered
1 daveno upholstered
2 organ and piano covers made
8 tarps made
Tension type screens were placed on 2 houses for experimental purpose.
Watering and mowing throughout residential and commercial districts continued in process.

B. Paint Section

73 units had minor carpentery repairs and was completely painted on interior
5 kitchens were enameled (A&J houses)
27 Basements were water proofed using Bondex or equal
109 misc. paint jobs throughout city completed
Spray painting of furniture and misc. shop work painting completed

A. Mechanical Section

Sheetmetal groupe installed a total of 95 Shower stalls this month.
Millwrights have inspected 20 furnaces in new houses of the 4th. housing addition
A steel form was fabricated for concrete porches of conventional type houses-
Routine inspection of furnaces in A & J houses and ranch type houses is in progress.
Inventory of tools and material have been completed this month.

B. Plumbing

From 5-24 to 6-27-51

Installed 80 bath tubs
Installed 10 water heaters
Installed 95 Prefab showers
Completed 196 Linolium repairs such as removing and replacing
Kitchen faucets, sinks, toilet bowls and water tanks in Prefab kitchens
Cleaned 8 sewers clogged with roots.
Completed 123 bath faucet repairs
completed 22 work orders on plumbing repairs Misc.
Repaired 26 water heaters at hanger
25.5 hrs. taking plumbing and steam inventory
78 hrs. on service orders.
Completed 18 work orders on steam misc.

Steam inspection once a week on Dorm hot water tanks.
Steam overhaul on part of one dorm.
Disconnected and drained 15 hot water tanks in Dorms and after carpenters finished repairing stands they were reconnected and filled.

3 men on vacation.

C. Renovatior

Total Renovation Orders received in May, 1951	111
Renovation Orders on hand to date	28
Cancelled Renovations	5
Completed Renovations	83
Complete paint jobs	42
Cleaned only	35
Painted odd combinations	8

All houses were renovated as indicated on work sheet received from housing, except where obvious errors were found. Renovation policy has changed considerably, including more cleaning and excluding some painting.

We cleaned and sealed the floors in two houses; also completed painting two occupied houses, 401 and 403 George Washington Way.

Labor Section

Made trash pickups at 105 empty houses
cleaned grease traps 5 times at 6 facilities
Hauled ashes and cleaned setting basis 5 times at 784 Building
Removed black top for all of Martin's Concrete walks and cleaned up afterwards.
Cleaned up at all concrete step installation by Martin's
Cleaned up around Paint Contractors bull pen on Stevens and Van Giesen
Excavated for plumbing repairs as needed by Mr. Burndt.

Labor Section cont.

Delivered top soil to 20 placed

Seeded grass on corner of Duane and Benham
Seeded grass on Goethals Drive
Picked up used oil at all filling stations 2 times
and spread where needed.

Watered and mowed all areas around facilities-Dorms-apartments and empty houses
Mowed Inner block areas throughout village

Service Order Group

A Total of 2,513 orders were completed by the service order group during the month of June. Approximately 88.9% being done in permanent type houses, 8.6% for dormitories, 1% for commercial facilities and the remainder for various other divisions.

The following is a status report of service orders:

On hand at beginning of the month	152
Received during the month	2,459
Completed during the month	2,513
On hand at end of month	68

COMMERCIAL AND OTHER PROPERTY DIVISION

JUNE, 1951

DIVISIONAL PERSONNEL:

Number of Employees on Payroll:	June
Beginning of month	13
End of month	13
Net difference	0

COMMERCIAL AND NONCOMMERCIAL PERSONNEL:

Number of Employees on Payrolls:

	Commercial	Noncommercial	Total
May	1,166	94	1,260
June	1,243	95	1,338
Net increase			78

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	26	4	30
Back Charges	2	1	3
Service Orders	17	0	17

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Letter of Authorization:

Richland Fuel and Lumber Company was authorized to install a bottling plant in a portion of its building located at 1306 Lyman Road.

2. Letter of Award:

Standard Oil Company of California was awarded a ground site of approximately 17,000 square feet at the southeast corner of Lee Boulevard and Gillespie Street at the intersection of Stevens Drive in the Light Industrial Area on which to construct, operate and maintain an automotive service station.

B. Noncommercial:

Contracts of Sale were executed on Government-owned equipment:

Central United Protestant Church
Redeemer Evangelical Lutheran Church

SUMMARY OF OCCUPANCY AND EXPANSION STATUS:

	May	June
A. Commercial:		
1. Number of Government-owned buildings	37	37
(a) Number of businesses operated by prime lessees	41	41
(b) Number of businesses operated by sublessees	14	15
(c) Total businesses operating in Government-owned buildings	55	56
2. Number of privately-owned buildings	40	40
(a) Number of businesses operated by prime lessees	37	38
(b) Number of businesses operated by sublessees	31	29
(c) Total businesses operating in privately-owned buildings	68	67
3. Total number of businesses in operation	123	123
4. Doctors and dentists in private practice, leasing space in Government-owned buildings	21	21
5. Privately-owned buildings under construction	1	1
B. Noncommercial:		
1. Government-owned buildings		
(a) Churches	4	4
(b) Clubs and organizations	10	9
(c) Government agencies	3	3
Total	17	16
2. Privately-owned buildings		
(a) Completed and in use	6	6
(b) Under construction	5	5
(c) Sites tentatively allocated or leases in process of negotiation	8	8
Total	19	19
3. Pasture Land Assignments	35	35

1299007

COMMERCIAL AND OTHER PROPERTY DIVISION JUNE, 1951

GENERAL:

A. Commercial:

(1) Sears, Roebuck and Company catalog order service opened for business in The Mart.

(2) Weiss, Baker and Crutcher, Accountants, terminated their sublease agreement with Spencer-Kirkpatrick Insurance.

(3) Amusement Enterprises, Inc. - Sublease agreement with Mrs. Mary S. Thompson was never made effective.

(4) Invitations to submit proposals for the construction of an automotive service station on the southeast corner of Lee Boulevard and Gillespie Street at the intersection of Stevens Drive were mailed on May 10, 1951, to prospective applicants, with bids to be opened on May 24, 1951.

(5) Invitations to submit proposals for the construction of a business building(s) on Plots 1, 2, 3, 4, 6 and 7 in the Light Industrial Area were mailed on May 10, 1951, to prospective applicants, with bids to be opened on May 25, 1951.

(6) Invitations to submit proposals for the construction of a business building(s) in Blocks 1, 2, 4, 5 and 6 in the Uptown Business District were mailed on May 10, 1951, to prospective applicants, with bids to be opened on May 28, 1951.

(7) Invitations to submit proposals for the construction of a business building at the intersection of Lee Boulevard and Goethals Drive in the Downtown Business District were mailed on May 10, 1951, to prospective applicants, with bids to be opened on May 29, 1951.

B. Noncommercial:

Tract House L-936, formerly occupied by the Association of U. S. Employees, Inc. was transferred to the Atomic Energy Commission Property Management Branch for disposition.

COMMERCIAL PROSPECTS:

A number of applicants, the majority of whom were not interested in constructing privately-owned buildings, expressed an interest during the month in establishing and operating businesses in Richland. Inquiries were received concerning the following types of commercial enterprises:

Book Store
Dairy Queen
Multiple Business Building

COMMERCIAL AND OTHER PROPERTY DIVISION JUNE, 1951

NONCOMMERCIAL PROSPECTS:

An inquiry was received during the month concerning the establishment of the following type of nonprofit organization:

Church

MONTHLY REPORT
GENERAL SERVICES DIVISIONS
JUNE, 1951

STEAM AND GENERAL MAINTENANCE

General Maintenance:

Building 69-X was renovated for use by the Public Services and Functions Group and is now considered a maintenance responsibility of General Services Divisions.

Several offices were rearranged in 700 Area for convenience of occupying personnel and to provide space for additional personnel.

Minor revisions were made in 712-B Hutment for Stores Acid Storage.

Progress was made on fluorescent lighting in 705 Building. Work will be completed in July.

Floor in 722-A Building was resurfaced.

Sign painters gave a new face to the Security road-side poster signs on area roads and completed various additional signs and name plates.

Miscellaneous routine maintenance included repair of 16 refrigerators and rebuilding of 9 home ranges.

Steam Operation and Maintenance:

Only one boiler was required for the June load.

Coal receipts were increased in the latter part of the month to provide a stock-pile close to the track hopper and thus required a minimum of bulldozing. This is in preparation for the traditional three-week Miner's Holiday occurring in July.

Condensate meters have been installed at Dormitories M-1 and W-2 to record the amount of steam used in heating water.

Thirty-nine boiler tubes were replaced in No. 2 boiler at the 784 Building during the summer overhaul of this unit, which is now complete.

Maintenance overhaul of other steam plant equipment and boilers 1, 3 and 4 is continuing.

Valves and traps are being repaired on sections of main steam lines that have been shut off for the summer.

The painting contractor has completed a considerable portion of the exterior painting at 784 and 784-A Buildings.

Steam generated - 9,576.3 M. lbs.: steam leaving plant - 8,139.9 M. lbs.; steam delivered - 6,701.9 M. lbs.: coal consumed - 736.7 net tons; water softened - 1,198,700 gallons.

NORTH RICHLAND FIRE DIVISION

General:

Four Safety and Security meetings were held; 6 inside and 52 outside drills were conducted; 72 fire alarm boxes were tested; and 7 fire extinguishers were refilled.

Union negotiation meeting was attended by C. L. Olson and C. A. McCoy.

Auxiliary boxes in Barracks 239 and 6 boxes in the hospital were tested and repaired on our order.

A demonstration in the handling of fire extinguishers was made for Steam Plant personnel.

Broken circuits #4 and #2 Gamewell alarm system were repaired.

Smoke ejector and all light generators were tested.

Stand-by tanker protection for controlled burning was provided at Babe Ruth Ball Park.

Twenty 2-hour classes in American Red Cross First Aid were held in connection with the Civil Defense program.

Fire Alarms:

Alarm No.	Location of Fire	Cause of Fire	How Received
59	Hospital at 5th & "M"	Accidental Alarm	Box
60	Hospital at 5th & "M"	Default in Electrical System	Box
61	Barracks 210-A	Accidental Alarm	Box
62	12th St & "C" Ave.	Unknown	Box
63	6th St. & "W" Ave.	Unnecessary Alarm	Box
64	Hospital at 5th & "M"	Accidental Alarm	Box
65	Spangler Rd. east of Gay Rd.	Unknown	Verbal
66	Trailer at 624 "I"	Probable Smoker's Carelessness	Box
67	Bath House at 8th & "Q"	Children Playing With Matches	Visual
68	7th St. & Stevens Drive	Unnecessary Alarm	Verbal
69	Trailer at 718 "I"	Faulty Butane Gas Oven	Box
70	North of Spangler Road	Spilled Acid	Phone
71	F. F. Of A. School	Burning Out of Control	Phone
72	518th Motor Pool	Welding Ignited Oil in Grease Pit	Phone
73	Trailer at 1205 "C"	Short in Wiring	Phone
74	Barracks at 4th & Stevens	Accidental Alarm	Box
75	Hand's Drug, 6th & "M"	Short Circuit in Plug-in Box	Box

Losses Due to Fires:

Alarm No.	Hanford Works Loss	Personal Loss	Total Loss
66	$ 60.00	$650.00	$710.00
67	75.00		75.00
69		85.00	85.00
Total Loss	$135.00	$735.00	$870.00

Investigations:

Date	Location and Cause	Personal Loss	H. W. Loss	Total Loss
6-8-51	Bks. 228-B, Rm. 20, Smoker's Carelessness	$ 17.33		$ 17.33
6-12-51	Bks. 224-A, Rm. 6, Smoker's Carelessness	5.15		5.15
6-20-51	Bks. 218-D, Rm. 21, Smoker's Carelessness	18.54		18.54
6-28-51	Bks. 236-B, Cause Unknown			
6-30-51	Auto at 1st & "W", Gas Leaking From Fuel Line			
	Total Loss	$ 41.02	$ 0.00	$ 41.02
	Sub-Grand Total	735.00	135.00	870.00
	Grand Total	$776.02	$135.00	$911.02

NORTH RICHLAND PATROL DIVISION

General:

Forty-two inquiries were received from U. S. Navy, U. S. Army, Civil Service Commission and du Pont Company regarding formerly employed General Electric and construction personnel.

There were 17 traffic violations and 12 automobile accidents in North Richland.

Sixteen persons from North Richland were incarcerated in the Richland jail in June.

All facilities, warehouses, buildings and John Ball School were checked on No. 1 and 3 shifts daily and on all shifts on Sundays.

Ten hours monthly payroll and 30 hours weekly payroll were spent on Pasco escort service in June.

All fire, safety and traffic hazards observed by Patrol were reported to proper authorities.

An Appearance Officer was assigned to Judge Brown's court in Richland each Thursday to appear against persons cited to court by North Richland Patrol.

Seven members of Patrol attended the "In Service Training" police school in Pasco on each Thursday during the month.

. Staff Meeting was held on June 13.

Three wide and high loads were escorted.

Ambulance drivers were assisted on three different occasions in June.

All traffic control points in the North Richland Area were covered during hours of heaviest traffic.

Eight firearms belonging to persons living in North Richland were registered with the Arsenal Officer.

Population is as follows: Bremerton Houses - 649; Trailer Camp - 3572; Barracks (Men) - 1556; Barracks (Women) - 52. Total population - 5629. There are 1197 trailer lots occupied and 190 Bremerton Houses.

NORTH RICHLAND PATROL
COURT CASES

VIOLATION	NO. OF CASES	NO. OF CONV.	NO. OF FORF.	CASES CONT'D.	CASES PEND.	SENT. SUSP.	LIC. REVK.	TOTAL FINES	TOTAL BAIL FORF.
Speeding	8	2	4	1	1		1	$ 21.00	$ 55.00
Ran Stop Sign	2		1	1	1				5.00
Negligent Driving	1	1						27.50	
Reckless Driving	1	1						37.50	
Failure to Yield Right of Way	1								12.50
Drunken Driving	2	2					2	155.00	
No Operator's License	4					4			
Illegal Parking	4	2	2					8.50	7.00
Grand Larceny	1	Pre-sentence investigation being made by Court							
Public Intoxication	11	7	3			1		147.50	37.50
TOTALS	35	15	10	2	2	5	3	$397.00	$117.00

Special Services Performed:

Emergency Messages Delivered	38	Bicycles Reported Missing or Stolen	1
Emergency Long Distance Calls	112	Children Lost	1
Western Union Telegrams	7	Children Returned to Parents	1
Pacific Telegraph Telegrams	8	Dogs Reported Lost	5
Fires (Sign. 12)	7	Dogs Found & Returned to Owners	2
False Fire Alarms	6	Billfolds Turned In To Patrol	1
Conditions Reported to Maintenance	4	Billfolds Returned to Owners	1
Escorts to First Aid	3	Disturbances Investigated	5
Bicycles Found	1	Suspicious Persons Investigated	7
Bicycles Returned to Owner	1	Personnel Locked out of Rooms	9

Unusual Incident Reports:

Public Intoxication	9	Grand Larceny	1
Drunk & Disorderly Conduct	2	Assault & Possible Raps	1
Possible Breaking & Entering	1	Motor Cycle Accident	1
Auto Accident (Weapons Carrier)	1	Reckless Driving	1
Mock Murder (Bks. 246-C, Rm. 15)	1	Public Nuisance	1
Auto Accident (2 Private Autos)	1	Drunken Driving	2
Negligent Driving	1	Auto Accident (Car Ran into Pole)	1
Petit Larceny	1		

ORGANIZATION AND PERSONNEL

	Beginning of Month			End of Month		
No. Of Employees on Roll:	Exempt	Non-Exempt	Total	Exempt	Non-Exempt	Total
North Richland Patrol Division	5	17	22	5	14	19
North Richland Fire Division	32		32	32		32
Maintenance & Operation Division	8	58	66	8	55	63
Total	45	75	120	45	69	114

Personnel Changes During Month:

	Non-Exempt
North Richland Patrol Division	
Terminations	3
Maintenance & Operation Division	
Transfer to Plant Security & Services	1
Terminations	2

ENGINEERING AND CONSTRUCTION DIVISIONS

I. SUMMARY

A. DIVISIONAL ORGANIZATION

Staff and Line Divisions Personnel changes occurring this moth are: Mr. J. S. McMahon appointed Manager, vice Mr. R. E. Davison, assigned other duties. Mr. J. S. Parker appointed Assistant Manager, vice Mr. J. S. McMahon. Mr. J. M. Frame appointed Principal Chemical Engineer. Mr. G. C. Gabler appointed Manager, Separations Division, vicemMr. J. S. Parker.

B. FUNCTIONS

The Engineering and Construction Divisions are currently working on 122 Projects; 62 of these projects have authorized funds in excess of $20,000 each. The 60 other projects have been authorized funds of from $5000 to $20,000.

C. ACHIEVEMENT

Four projects, having a total estimated cost of $25,690,000, were completed this month. They were:

C-198 - 234-5 Facility - For advantages gained by this construction see Document HM 254.

C-291 - Installation of Security Fences - Advantages gained by this construction provide adequate security fence protection around exclusion areas, and reduction of excessive maintenance cost due to failure of the original fence which had been supported on 4x4 untreated posts.

C-330 - Increased Ventilation, 313 and 314 Buildings - This construction will permit operating personnel to perform their duties in the melt plant, chip recovery and rod straightening areas in an atmosphere with greatly reduced concentration of contamination and may make it possible for them to perform most, if not all, operations, without respirators; and thus, increase the efficiency of the workmen, as well as their safety. It will also permit recovery of valuable metal and oxides now escaping.

C-377 - New Instrument Maintenance and Development Building, 300 Area - The advantage gained by this construction is in the concentration of, and providing for, adequate facilities required by the Instrument Division for the repair, calibration and general maintenance of process and analytical instruments used at Hanford Works. This will enable more economical and efficient operation, improve employee morale as well as protect the large investment in instrument equipment.

Contract negotiations were concluded June 29 with Atkinson-Jones Construction Company for the construction of the 100-C Facility and the contract was ratified by the Commission as Modification 37 to G-133. Excavation for certain facilities had been previously carried on under letter Modification #3.

A Study was made to provide the A.E.C. with data for two new Reactor Areas.

This information included design and construction schedules, cost estimates and critical materials list. For details see Document HDC.2245.

Several major projects are nearing completion and will be more detailed in Part II of this report.

Completed during June were 16 contract items (8 lump sum contracts, 7 lump sum modifications and 1 CPFF modification) totaling an increase in business of $49,347,828.00 over the preceding month. Also completed one modification decreasing a lump sum contract by $9,993.00 and three CPFF letter orders.

Reproduction of Prints, Documents and Instructions continues at a very heavy rate with 645,820 sq. ft. being processed this month. A further increase is expected due to work for new projects.

The Drafting Training School began work June 11 with thirteen (13) Student Draftsmen in attendance. Their progress has been much greater than anticipated. Undoubtedly, this is due to the proper selection of students and the modern methods of instructions, including the use of still and motion pictures. This first class will be available for assignment on September 10, 1951.

An Administrative office has been set up under the direction of Mr. H. F. Scott for the purpose of maintaining adequate records.

All drafting, except on Project C-361, is on schedule. The C-361 delay will be picked up within two weeks.

D. MATERIAL PROCUREMENT AND FABRICATION

Material procurement and fabrication have slowed up somewhat this month, particularly in the case of certain pipe and vessels. A strike in a fabricator's plant has held up certain vital equipment for TBP. Regarding Critical Materials Control: As a result of receipt during June of the initial allotments of controlled materials, reconciliation of allotments, forecasts and orders placed for controlled materials was made. This required some changes in the forecasts. These reconciliations indicate that additional controls are necessary to assure complete and accurate forecasts and such controls will be established. Owing to the fact that operation of the Controlled Materials Plan during the three months beginning July 1 will, of necessity, be a "trial-run", it is anticipated that adjustments of allocations during this period may be obtained if required.

E. CRAFT LABOR

The current trend indicates a relatively normal labor supply. A few open requisitions remained for Fitters and, to a lesser degree, other classifications. According to the exit interviews held, voluntary terminations from the Principal Construction Subcontractor operating on the plant site

E. CRAFT LABOR (Cont'd)
were primarily for the reason of, in order, to seek job improvement and personal reasons. Voluntary terminations of this subcontractor's manual employees averaged 3.55% of total manual forces.

F. SAFETY
A decrease in major injuries to construction workers is noted this month. This is accounted for by increased safety instruction and inspection. Of the five major injuries occurring this month, two were fractures of the great toe because the injured were not wearing safety shoes; another one, the injured claimed exposure to tri-chlor ethylene fumes. In this case, proper safety equipment had been provided.

Ten inspections were made by the Senior Safety Committee. Three Safety meetings were conducted for Sub-Contractors and two for Engineering and Construction Divisions personnel.

MONTHLY REPORT OF INVENTIONS OR DISCOVERIES

All persons in Engineering 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 inventions or discoveries.

No Inventions or Discoveries were reported this month.

PERIOD COVERED BY THIS REPORT June 1 through June 30 1951.

J. S. Parker
J. S. PARKER (Date)

ASSISTANT MANAGER, E&C DIVISIONS

II. STATISTICAL AND GENERAL

A. STATISTICAL:

C-187-D - Redox Production Plant
Separations Division - Kellex work, including field inspection and design, is 98% complete and essentially on schedule.

Construction is 95.7% complete and will be turned over to operations in July. Procurement for this project is essentially complete.

The installation of process equipment and jumpers in E and F cells was continued and is nearing completion. It is planned to release these cells to the Manufacturing Division during the week of July 1.

The installation of process equipment and jumpers in D and G cells was started and is progressing at a satisfactory rate.

The 202-S silo has been cleaned of scaffolding and made ready for equipment installation. It has been made a restricted area. Tower ET-127 has been installed in place in the 'U' frames. The remaining towers are completed, or in progress, through mock-up operations in 277-S and should be installed in the 202-S silo starting early in July.

Reworking of pumps and agitators for canyon equipment to correct minor faults in design is progressing at a satisfactory rate with major emphasis on those units required for completion of D, E, F and G. Cells.

Machining of the viewing window frames was completed during the month, and sixteen (16) windows have had the glass and oil installed and are ready for installation in the Silo Shield wall. Glass for the last window will be shipped about July 15, and the window will be completed on receipt of the glass.

C-187-E - Redox Analytical & Plant Assistance Laboratory & Associated Waste Disposal Facilities
Separations Division - All hoods have been installed and the only exception to be removed is TK-103 in the Waste Disposal System which will be completed and installed by July 10.

C-198 - 234-5 Building Program
Separations Division - Project C-198 was closed out effective June 30, 1951 with construction completion at 99.8% complete. The balance of the cleanup work will be accomplished on work order.

Progress statistics for the month of June are as follows:

	Percent Complete		
	Basic Design	Overall Design	Construction
Richland (Phases II & III)	100	99	93.5
Schenectady	-	-	99.0
Phase I	100	100	100

C-198 - cont'd
Estimates have been prepared of the clean-up work required for Project C-198 after June 30, 1951 for the completion of work orders, unitization of property, completion report, reproduction, field follow-up of construction clean-up work, and the freight for additional shipments of material from Schenectady.

C-199 - Expansion of 300 Area Sanitary Sewage Disposal System
Power and Mechanical Division - Design progress remains stationary at 10% of completion owing to pressure of other work having higher priority.

C-204 A&B Public Health Unit and Addition to Hospital and Medical Arts Building
Power and Mechanical Division - Construction on Kadlec Hospital alterations and additions is approximately 62% complete. Interior finish work is in progress and is of a very satisfactory quality.

C-257 - H. I. Control & Development Laboratory
Power and Mechanical Division - Construction is approximately 22% complete and is about 13% behind schedule, owing to delay in steel delivery. All structural steel erection was completed during June and metal siding and roof deck is approximately 85% finished.

C-295 - Enlarging 251 Substation & Additional 13.8 KV Feeders to 200 E&W Areas
Power and Mechanical Division - Construction of the first phase under Montgomery Electric's subcontract G-359, will be completed July 16th. On that date, approximately 65% of the Montgomery Electric Company Contract will have been completed, and construction will stop pending the placing of the newly-built portion in operation and deenergizing of the older section of the station.

C-341 - Additions to the Richland Village Electrical Distribution System
Project Engineering Division - The Moscow Electric Company has work 62% completed on their subcontract. Work to be performed by plant forces is complete except for the final tie-ins to subcontractor work. CPFF subcontract forces portion of this job is now complete.

C-349 - Hot Semiworks Parts I & II
Project Engineering Division - Construction is proceeding under the subcontract with the second major concrete pour completed during June on the Hot Process Building. Over-all job is 22% complete and the Hoffman subcontract is 14%. Services to Subcontractor and procurement of Engineered material 80%.

C-353 - Richland Water Study
Power and Mechanical Division - The initiation of the second phase of this project is still awaiting the action and recommendations of the Municipal Division.

C-361 - UO_3 Plant (Metal Sweetening and Conversion Facilities)
Separations Division - Progress statistics as of June 30 are:

C-361 - cont'd

	Part A	Part B	Overall
Design - Scope	100	99.5	99.9
Design - Detailed Plans	100	40	92.2
Construction	34	0	30.6

Part "B" Design
Work on detailed plans for Part "B" has been delayed by other work in the Power & Mechanical Division. Seventy-five percent of engineered items have been requisitioned. Of the 15 new drawings and 40 revisions to Part "A" drawings required for Part "B", one new drawing and 13 revisions have been approved.

Construction
Construction completion percentages as of June 30 are as follows:

Structure	% Complete (Labor and Material)
Part "A" Composite	34
2714-W Warehouse	98.9
224-U Process Building	27.6
Outside Facilities	73.5
Part "B"	0
Overall Project	30.6

A construction schedule revised to include Part "B" and to reflect a September 1, beneficial occupancy, and October 1 completion, is in preparation by Atkinson-Jones and should be issued by July 5.

C-362 - Waste Metal Recovery Facilities (TBP)
Separations Division - Progress statistics for the month of June are as follows:

PHASE:	I	II	III	IV	V	VI	TOTAL
% Scope	100	100	100	100	100	100	100
% Design	100	89	100	99.8	100	96	96.6
% Construction:							
Actual:	53.9	11.4	86.3	24.3	100	36.1	31.3
Scheduled:	81.4	31.6	87.7	45.0	100	47.5	50.4

As of June 22, the C-362 Project is 29.6% complete on a labor and materials basis, or 33.4% on a labor only basis. This compares to scheduled 50.4% complete on a labor and materials basis. To-date, 28,790 cu. yds. of concrete have been poured. Estimated required amount is 36,160.

Minor Construction Division - Work is progressing at 241-UR and 241-TX, Phase I, and 241-C, BY and B, Phase II. A new completion date for the first cascade has been agreed upon as August 1, contingent upon prompt receipt of equipment. Valve pits, slabs, and pipe encasement are being poured.

C-364 - Aquatic Biology Laboratory
Power and Mechanical Division - Notice of intent to invite bids were mailed to approximately 80 firms on June 15th. Bid invitations for construction were mailed June 22nd with opening scheduled for July 23. This date may

C-364 - cont'd
have to be delayed because the AEC has requested, as of June 21, that bidders include an alternate, using poured concrete walls.

C-371 - Meteorological Field Stations
Minor Construction Division - Field installation has been completed.

C-380 - Electricity Metering Village of Richland
Project Engineering Division - Installation work began on June 13. Conduit assemblies for A and B houses have been fabricated.

C-381 - Radiochemistry Building for Hanford Works Laboratory Area
Power and Mechanical Division - Excavation was started on June 25 by Sound Construction & Engineering Company and work is progressing satisfactorily.

C-385 - Radiometallurgy Building for Hanford Works Laboratory Area
Power and Mechanical Division - Detailed review of plans and specifications indicates that certain minor modifications and revisions must be made. This work will be done by General Electric Company, and it is expected that bid invitations will be issued about August 1. Under date of June 21, Technical Divisions placed a hold on the purchase of engineered equipment pending clarification of the amount of funds available for constructing and equipping the building. Other work on the project is proceeding to a point where it may be advertised for construction bids.

C-394 - Plot Plan & Utilities for Hanford Works Laboratory Area
Power & Mechanical Division - Certain modifications and revisions in the plans and specifications will be made by the General Electric Company and, it is expected that invitations to bid the construction will be issued about August 1st.

C-399 - P-10 C & D Part II
Project Engineering Division - There was no design activity during the month with the exception of routine follow-up on items being installed during the shutdown the latter part of the month. Spectrometer #1, Hoods and exhaust duct system have been installed in the analytical room, and the Instrument development room is completed. Fabrication has started on the Metal transfer system.

Minor Construction Division - This project has been completed with minor exceptions.

C-404 - Primary Electric Power Lines for Hanford Works Laboratory Area
Project Engineering Division - Aerial cable and switch gear partially delivered, balance being expedited.

C-406-R - Mechanical Development Building - Hanford Works Laboratory Area
Power & Mechanical Division - Dix Steel Building Company presented a proposal for the design and construction of Phase II on June 23. The proposal appears satisfactory, but recommendation for award to Dix is being delayed pending authorization of additional funds. The necessary funds were requested in a letter dated June 30 to Technical Divisions.

C-411 - P-10-X "J" Slug Storage and Shipping Facilities
Project Engineering Division - Design phases are complete except for follow-up in connection with heat transfer tests presently scheduled during July. Work is progressing on buckets and casks.

C-412 - P-10-X Extraction Facilities
Project Engineering Division - Detailed design and material ordering are now in progress covering the metallurgical facility. The construction schedule is being developed.

Essentially all drawings have been released to the field on the other phase of the 108-B work with the exception of the following items:

1. Product Container Outgassing
2. Alterations to #2 Glass Line
3. Stripper Installation

Design on the first two items is in progress. Work on the latter item is expected to start shortly.

C-413 - Expansion of 234-5 Capacity
Separations Division - Progress statistics for the month of June are as follows:

	Percent Complete		
	Basic Design	Overall Design	Construction
Richland	52.3	51.5	11.2
Schenectady	-	60.0	55.8

A review of the Project Proposal cost estimate was made by GEL, and the E&C Divisions. Due to the model change and minor design changes, the cost estimate for GEL was increased $117,703, but with the additional design information available at this time, the cost estimate for Richland's portion was decreased. No additional funds will be requested since there is enough allotted to contingencies to take care of the overall increase in funds of $85,171.

Construction work on the following C-413 modifications is continuing.

1. The storage hoods under Modification C-413-12S3 are being installed.
2. Additional access ports in the process equipment are being cut.
3. Modifications on the boat loading station and the weighing station in Task II are progressing. H-9F and H-9P were received and the stands for these hoods are now being fabricated.
4. The various tools and adaptors being made in Maintenance Shop 'D' are scheduled to be completed by August 1, 1951.

C-414 - Pile Technology Building
Power and Mechanical Division - Complete plans and specifications will be mailed from Boston by Chas. T. Main, Inc., on July 6, and it is expected that an invitation for construction bids may be issued during July.

C-416 - Construction Division E&C Combined Shops
Minor Construction Division - The Project Proposal for Part II is being written.

C-418 - Additional Waste Storage Facilities for 200-W Area 241-TY
Separations Division - As of June 1, the design progress on this project is 95%, and on schedule.

Design work is in progress on revisions to the tank tops for tanks 101 and 102. These revisions will make the pits on top of these tanks identical to those designed for Project C-362 and allow the use of pumps, periscopes and nozzles procured for the TBP process, if required, to remove wastes stored in the TY tank farm. It is expected that drawings covering these revisions will be forwarded to the Fred J. Early, Jr. Company early next month.

A construction schedule was received from the Early Company during the month but was returned for additional information. It is expected that it will be resubmitted early next month.

The excavation for the tanks, diversion box, catch tanks, and encasements was completed June 26 on schedule. Forms are being set and reinforcing steel placed for the base slabs and diversion box. First pour of concrete in base slabs was made late in the month.

As of June 30 the construction progress was 10% and on schedule.

The possibility of late delivery of reinforcing steel mentioned last month has failed to materialize. The subcontractor now states that there will be no delay due to delivery problems related to re-steel.

C-420 - CO_2 Bulk Storage Facilities, 105 BDF & DR
Minor Construction Division - Electrical and piping work has been started after delay due to lack of materials; special valves are still not available.

C-421 - Library and Files Building - Hanford Works Laboratory Area
Power & Mechanical Division - The temporary hold placed upon advertising for construction bids was released by Technical Divisions on June 22, and it is expected that bids will be advertised during July.

C-423 - Additional Waste Evaporation Facilities 200-W Area
Project Engineering Division - The project proposal has been approved by the Atomic Energy Commission, the drawings are revised, and specifications are complete. Bids were opened on June 29, 1951 with L. H. Hoffman apparently the low bidder.

C-424 - Water Quality Experimental Program
Minor Construction Division - This work has been retarded because critical materials are not available - these are being expedited.

C-431 - New Reactor - 100-C Plant
Design Completion Summary:

A. Water Works
Chas. T. Main Company - Scheduled 45% - Actual 45%.

C-431 - cont'd

B. Reactor

G. E.	- Scheduled 47%	- Actual 47%.
Kellex Corporation	- Scheduled 45.9	" 42.6%.
Total Weighted	- Scheduled 44%	" 43.7%.

Power and Mechanical Division - Temporary construction on water facilities started June 6, and excavation for permanent structures June 16. The major portion of the engineered equipment for all buildings has been requisitioned and delivery promises appear satisfactory.

Reactor Division - Site preparation for the Reactor Area began June 6, and excavation on a limited scale began June 18. All material delivery dates appear satisfactory at the present time. A resume of correlated factual data follows:

(a) Moderator
It has been proposed to alter the coring pattern of the moderator to permit the use of large amounts of enrichment. The present drawings incorporating the original coring pattern will be completed and approved, and then duplicate reproducibles will be made from the tracings. The original drawings will be changed to incorporate the new coring pattern.

(b) Horizontal Control Rods
A graphic stress analysis was made on the horizontal rods with the coring pattern and anticipated graphite growth for the slight enrichment presently planned. A restudy of the horizontal rod stresses and configurations will have to be made for the conditions that may be encountered with the design changed to full enrichment. Drafting and requisitions are on schedule.

(c) Vertical Safety Rods
The design was changed at the request of the Working Committee to permit incorporation of the Technical Division's rubbing seal, as well as the use of the inverted thimble so that either configuration can be used with minimum changes. This modification to the program resulted in a delay of approximately three weeks.

The design of the vertical rod assembly will be reviewed for the graphite growth anticipated with the moderator cored for enrichment.

(d) Ball 3X Systems
The basic control system to be used has been worked out and approved by the Design Sections. Considerable effort was spent to relocate the ball hopper in the top shield to reduce the activity induced in the balls. This change is desired to facilitate maintenance on the ball removal system. A model of the new configuration will be built and tested.

(e) Radiation Problems
The H. I. Division has raised several questions regarding operating conditions of the reactor. These problems include the reduction in activity of the balls stored in the Ball 3X hoppers, shielding requirements of the

Radiation Problems - cont'd
nozzles, the radiation life of the back face due to higher activity of the effluent water, the activity of the shield testing facility, and others pertaining to the shielding within the 105 Building. These problems have been submitted to the Technical Division for review to obtain the necessary data required for a final design analysis.

(f) Ball 3X Tests
The prototype ball 3X system was tested at the White Bluffs' tower with a full length graphite rod slot. The actual time required for the first balls to reach the bottom of the slot was 1.59 seconds after the controls were energized and with the vertical rod out of the slot. This time increased to 1.77 seconds with the rod fully inserted. The test set-up will be altered to duplicate conditions with the relocated hopper and modified chute to reduce ball activity.

(g) Horizontal Rod Seal Test
A test will be performed using a section of the horizontal rod, to check the characteristics of the gland seal proposed for "C". Several parts have been received and the tests should start next month.

(h) Ion Chamber Tests
In-pile tests of the new KAPL chamber have been successful and therefore it will be used in the "C" facility.

(i) All thermal shields and "B" block drawings have been completed and requisitioned. The side lamination drawings are in the drafting and checking stages. The side shield has been changed extensively to incorporate the experimental facilities for the Technical Divisions.

(j) Building 115-B Conversion
The design of the changes for the 115-B building and piping to accommodate the 105-C gas system is on schedule. The basic flow diagrams have received all necessary approvals.

C-432 - Air Raid Warning System - Richland - North Richland
Project Engineering Division - Plant forces are fabricating the control equipment. Award of contract has been recommended to A.E.C. for Northwest Bridge and Tank Company, Yakima, to furnish three siren towers. Original sites for two towers are under consideration for change.

C-433 - Expansion of 300 Area Power House and Pumping Station Facilities
Power and Mechanical Division - An award for the construction of this project was made during June and notice to proceed issued July 2 to the low bidder, Bumstead & Woolford Company of Seattle at $563,380.

C-434-R - New Bio-Assay Laboratory
Project Engineering Division - The proposed site, 100 feet east of the Public Health Building has been approved. Complete designs and specifications for lump sum subcontract are in the final stages. Drawings and specifications are complete. Preparation of bid advertising to be initiated upon receipt of Directive.

C-438 - Ball 3X Facilities for 105-D, DR, F AND H
Project Engineering Division - Discussions have determined that the proposed designs for the Ball Third Safety System hopper and stop-plug can be cast, employing standard foundry equipment and practices. Tests are under way to verify the proposed automatic tripping circuit and the permanent magnet rod location indicator.

The Industrial Tectonics, Inc. of Chicago, Illinois was low bidder on 190,000 lbs of boron steel balls at a bid price of $2.45 per lb. This price does not include plating and bids for the plating are being reviewed. Other critical items are being placed upon order as rapidly as bids and design data are firm.

C-441 - Solvents Building
Project Engineering Division - This project has been approved by the A&B Committee and is awaiting action by the Atomic Energy Commission.

C-442 - X-Ray Machine - Building 3745-A
Project Engineering Division - The purchase order for the Electrostatic Particle Accelerator (Van De Greaff) has been placed. Design work will not be required until vendor's shop drawings of the machine have been received.

Delivery date for this unit is approximately five months after receipt of order. No change in status of order since last report.

C-444 - Additional Unit to Supplement Operation Hood #26, 235 Building
Project Engineering Division - Field work is progressing on this project.

C-445 - B-Y Telephone Exchange Additions and Changes
Project Engineering Division - Construction drawings approved by the Atomic Energy Commission, June 20, 1951.

C-446 - Additional Effluent Disposal Facilities for Building 234-5
Project Engineering Division - The project proposal has been approved by the Atomic Energy Commission and a Work Release was issued June 5, 1951.

C-447-Portable Meteorological Mast
C-452-Meteorology Tower Elevator
Project Engineering Division - Directives received from A.E.C. Design and specifications under way.

C-451 - Extension of 300 Area Underground Electrical Power Distribution System
Project Engineering Division - Indications are that approval will be held until July 1, 1951.

C-457 - A-647 - Pile Technology Office Building - 100-D Area
Project Engineering Division - A project proposal has been transmitted to the A.E.C. Designs and specifications are being completed as rapidly as possible.

C-468 - Horizontal Rod Mockup
Project Engineering Division - A project proposal has been prepared and submitted to the Atomic Energy Commission on 6-27-51 to construct a horizontal rod mockup to verify the C pile horizontal rod designs. The mockup will be retained after 'C' pile tests are completed for additional development work on the existing pile rod problems.

C-469 - Front Tube Corrosion Mockup
Project Engineering Division - A project proposal has been prepared and submitted to the Appropriations and Budget Committee for design and construction of a 50 tube mockup to study the effect of various factors on front tube corrosion rates. The mockup will study the effect of PH, chemical additives and tolerances upon aluminum corrosion.

ER E-459 - Electrical Service - New 703 Building Wing
Project Engineering Division - Informal request in preparation. Design is 95% complete.

ER A-460 - Telephone Line - Benton Switching Station
Project Engineering Division - Informal request held by Electrical Division until FY '52 Budget. The design is complete.

ER A-3094 - Mechanization of 313 Building
Project Engineering Division - A Scope Committee has been formed to consider the Proposed facilities to mechanize the canning and finishing lines in the 313 Building. It has been tentatively agreed that the facilities will be designed for the maximum production rate of 200 tons per month. The designs will be based upon the present product specifications with installed flexibility for process alterations when such are found desirable at a later date. Preliminary economic evaluations based on a spot survey by the Industrial Engineering Group now indicate the greatest savings can be realized from the least capital investment by designing the facilities for a two-shift operation.

ER E-457 - Telephone Cable, White Bluffs to Minor Construction Division Shop Area
Project Engineering Division - Informal request to the Atomic Energy Commission. Design 100% complete.

ER 2503 - Duct Level Floor for Building 234-5
Project Engineering Division - The design and estimate for this project are complete, and the project proposal is now being prepared.

ER 2577 - Additional Casting Unit for Hood 13, Building 234-5
Project Engineering Division - Design for this project is complete and an estimate is being prepared.

ER 2588 - Installation of Steam Boiler for 200-W Area
Project Engineering Division - Preliminary drawings have been prepared for the boiler setting and building plans. Drawings are being prepared in sufficient detail for estimating purposes and estimates are now in process.

ER 6002 - Contract Labor Controls and Escalation Clause Study
Project Engineering Division - Study is nearing completion on merits of removing wage controls and escalation clauses from future sub-contracts.

M-805 - Transformer and Circuit Breaker Oil Reprocessing Facilities
Project Engineering Division - Equipment has been assembled and unit is being used by the Electrical Division. Minor modifications will be accomplished shortly.

Serv. 30 - 200-W Badge House Addition
Project Engineering Division - Designs and specifications for the construction of this addition have been completed. Bids were opened and low bid $22,995 exceeded authorized funds as well as $20,000 informal request limitation. Project proposal being expedited to permit acceptance of low bid.

B. GENERAL

Engineering and Construction Services Division - Engineering Services Division
DRAFTING SECTION

Drafting Production:	
New Drawings	238
Miscellaneous	7
Drawing Revisions	175
Drawings efficiency index, man-days/drawing	5.8

Estimating and Unit Cost Section	
Estimating:	
Estimates Scheduled	60
Estimates Completed	42
Estimates Cancelled	0
Estimates to be Completed	18
Total Estimated Value	$30,000,000.00

Unit Costs:
Studies continued on C.F.F.F., Lump Sum and Minor Construction Work.

REPRODUCTION SECTION	
Production Group Activity	
Originals Handled	19,111
Prints Produced	283,306
Square Feet of Paper	645,820
Average Square Feet Per Employee	29,785

Control Group Activity	
Number of Orders Processed	3,098
Number of Prints Carded	54,357
Number of Tracings Handled	9,822
Number of Prints Returned	49,912

Personnel, Records and History Section	
Security Clearances Processed:	
Requests for Area Badges, Cancellations, Access Authorizations and Material and Package Passes	493

E & C Payroll Additions, Terminations, and Transfers:	
Additions	98
Terminations	27
Transfers within E&C Divisions	11
Transfers out of E&C Divisions	5

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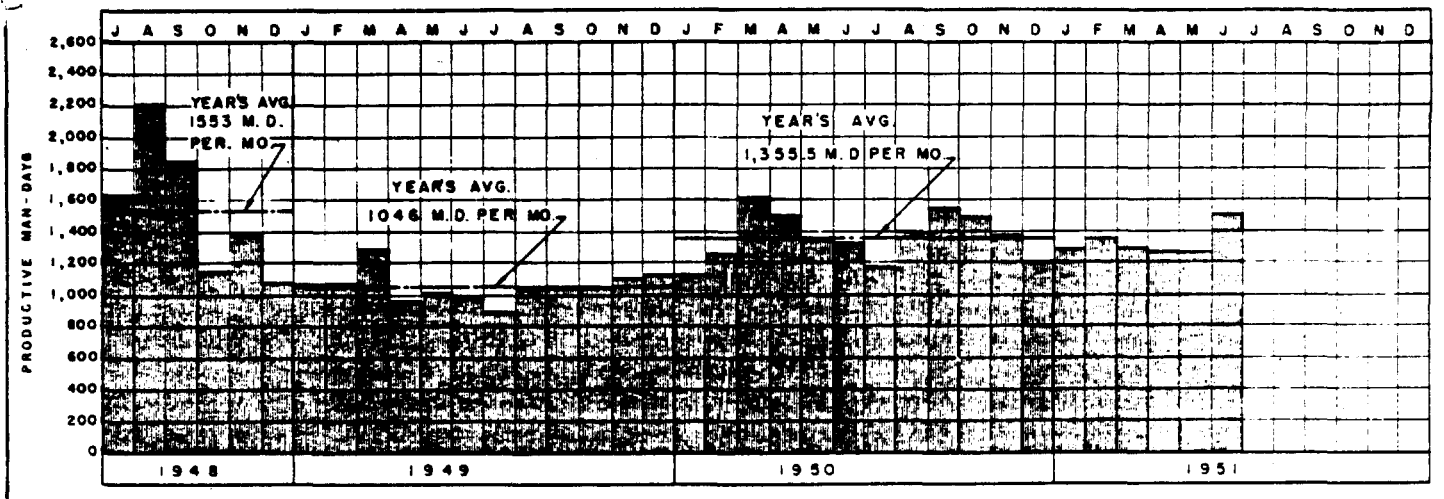
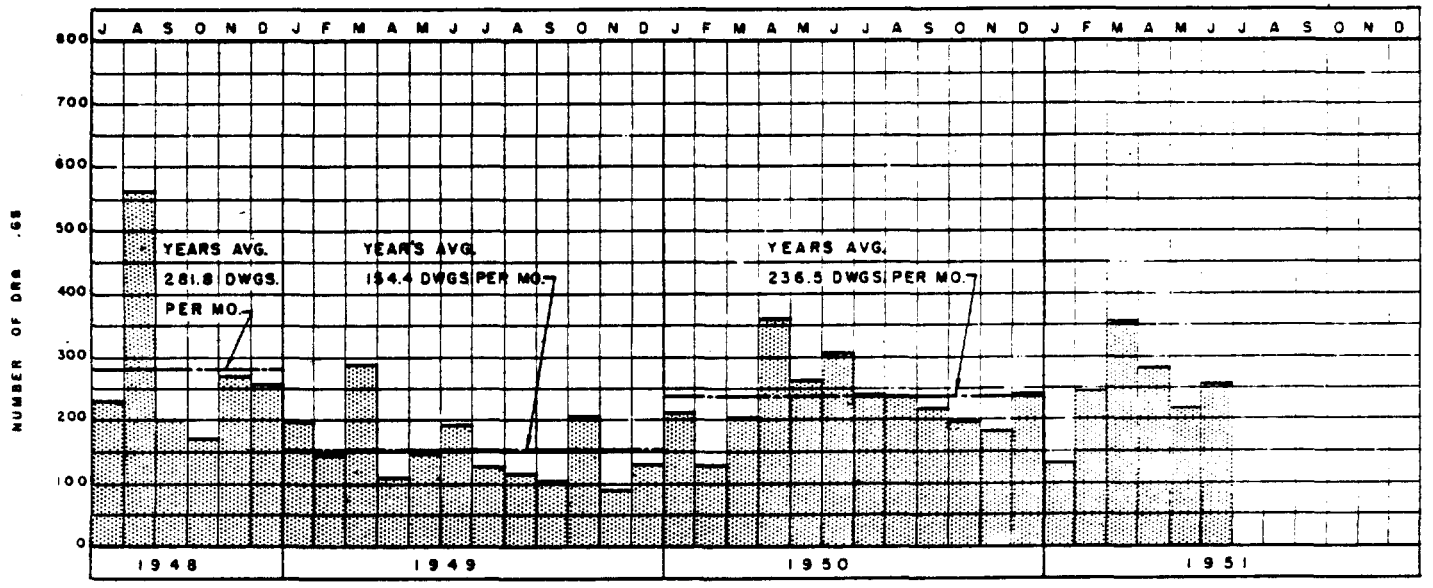
ENGINEERING & CONSTRUCTION SERVICES DIVISION [redacted]

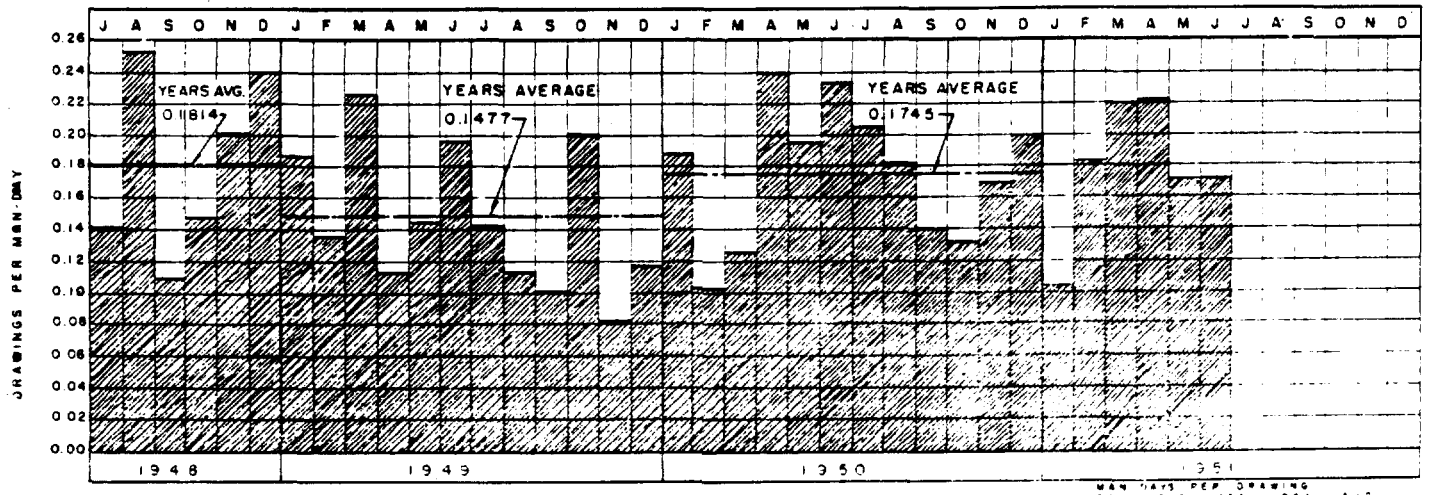
Drafting Section



MAN POWER



DRAWINGS PRODUCED

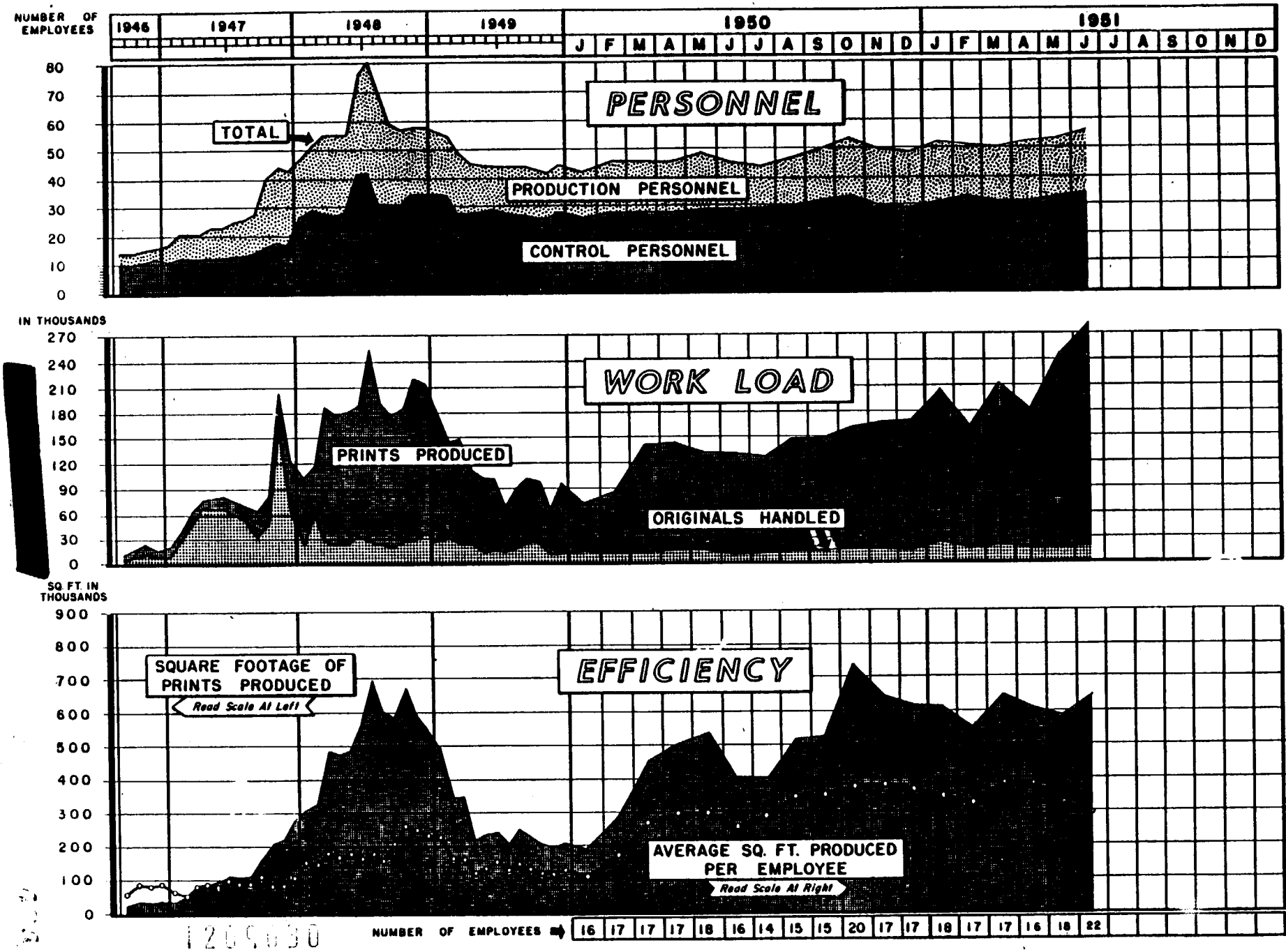


EFFICIENCY

	MAN DAYS PER DRAWING				
	1948	1949	1950	1951	AVG
BAKER	4.48	6.42	6.33		5.83
DESIGNER	5.34	7.74	4.99		5.73
NICHOLS	5.46	4.91	8.11		6.22
WILLIAMSON	6.51	5.85	5.70		5.66
DR ROOM	5.27	5.77	5.73		5.59

ENGINEERING & CONSTRUCTION SERVICES DIVISION

REPRODUCTION SECTION STATISTICS



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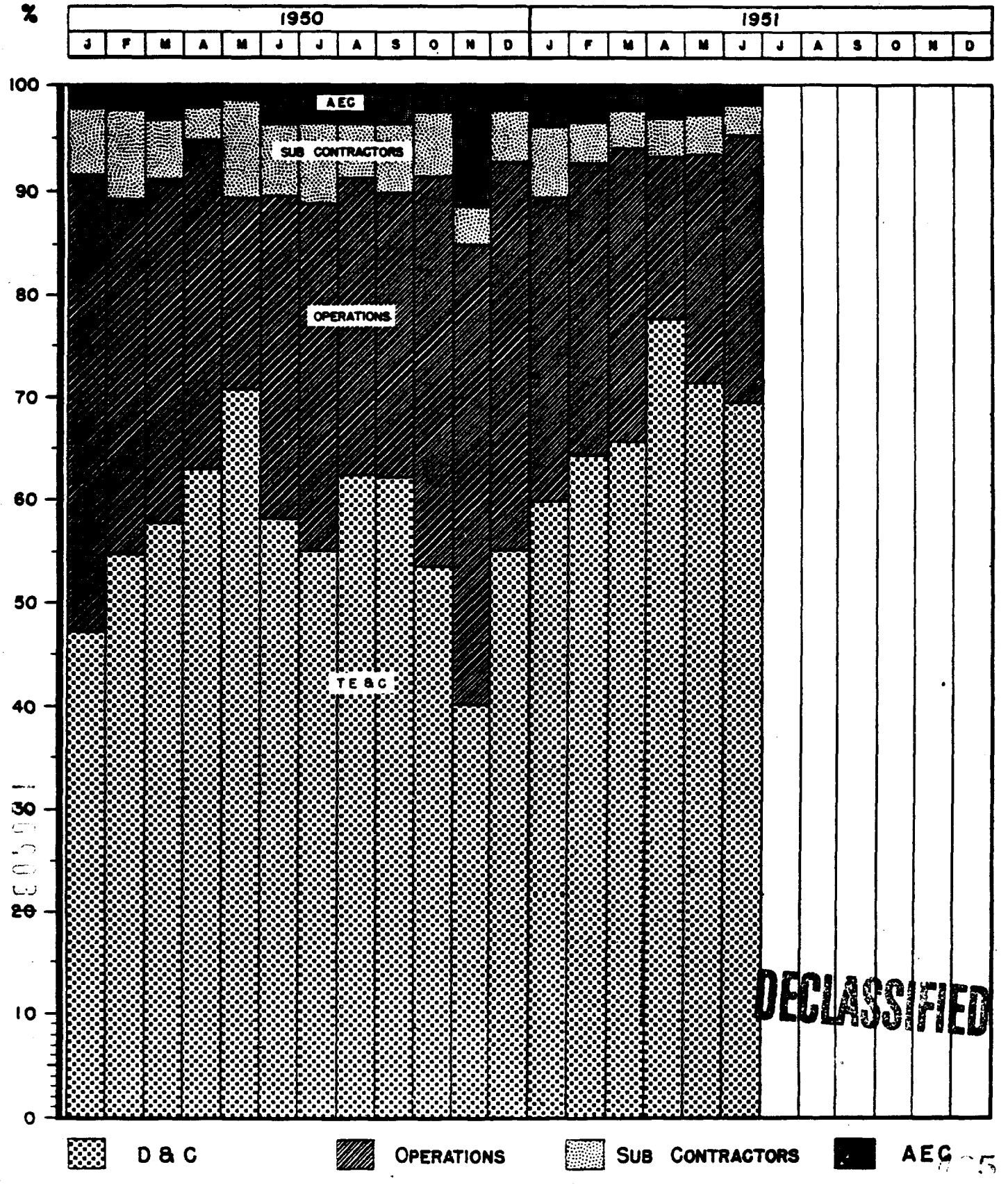
ENGINEERING & CONSTRUCTION SERVICES DIVISION

REPRODUCTION SECTION

DISTRIBUTION OF WORK LOAD



Secret and Confidential Documents Processed	
Documents Issued, Routed or Destroyed	2653
Procedures Issued:	
E & C Instructions Issued	28
Status of Histories	
Histories Issued	14
Ready for Issue	20
Others in Process	87
Office Services:	
Number of Teletypes Sent	393
Number of Teletypes Received	448
Number of Copies of Ditto Reproduced	76,439
Number of Copies of Stencils Reproduced	40,679
Number of Pieces of Incoming Mail	279,900
Number of Pieces of Registered and Insured Mail (Outgoing)	96
Amount of Postage Used	$557.11
Number of Store Orders Written (Stationery)	218
Number of Special Messenger Deliveries	279

Reports Issued:
Ten - covering Weekly and Monthly Forces, Visitors, Destroyed and Classified Documents.

PROJECT COST AND PROGRESS ANALYSIS SECTION
Forecasts, charts, analyses and reports were developed and issued to show progress status of E&C Projects.

Miscellaneous:
A booklet of "Funds Charts" covering the Hanford Works Laboratory Area was prepared and distributed. We will continue to issue this group of charts once a month as requested by the Technical Services Division.

Construction Services Division

North Richland Camp
Population*

Trailers	-	3,366		
Barracks	-	1,622		
Houses	-	646	Net Increase -	193

*Note: This does not include U. S. Army personnel.

General

A survey of the coal storage pile was completed on June 27 to determine our fiscal year end inventory.

General - cont'd

Field checks were made to determine the electrical load at each of the Army contractor's temporary services. An estimate of the load at Building 178 was completed. This information will be used in connection with monthly billings.

An estimate of the amount of railroad trackage to be built in North Richland was obtained from the Army Engineers.

The unitized cost report for North Richland Camp and the Contractor's Yard was reviewed, and our comments were forwarded to the Accounting Division regarding the units that should be retained and the units transferred to the Atomic Energy Commission and the Army.

Liaison with U. S. Army Engineers

Considerable activity developed during the month necessitating street closures and utility outages for the convenience of the Army contractors. In most cases, the normal operation of the Camp was not affected. When these outages are scheduled, interested parties are notified by letter of the scheduled interruption of service.

We have noted that the Army contractors do not, in general, come up to General Electric's standards of safe construction practices, and it has been necessary, in some instances, to insist that the Army contractors eliminate unsafe conditions where the General Electric forces, or the public might be affected.

Maintenance

Repairs have been completed on the coal elevator, silo, and conveyor system damaged by the explosion on February 27, 1951.

Replaced steam line support at First and "W" Streets which was knocked down by Army weapons carrier.

A large quantity of roof leaks developed during the rains early in the month. Patching and repairing of these leaks is in progress.

The first semi-annual switchgear inspection has been completed. Several near serious conditions were found and eliminated.

Steam Generating Plant

Steam generated, M lbs.		21,594.00
Oil consumed, gallons		6,836.00
Coal consumed, tons		1,436.21
Boiler efficiency, average %		75.00
*Steam cost, per M lbs.	- $1,235	

*Computation of unit cost of steam is based on estimated cost of coal and indirect costs applicable to Steam Plant.

Water consumption for the month was 64,734,600 gallons, or an average daily consumption of 2,088,212 gallons.

Commercial Facilities
There were fifteen commercial facilities operating in North Richland during June.

Community Activities
The Community Playground is now in its third week and we are having as much daily participation as our best days of last year. We have additional equipment, plus the services of two temporary playground directors, who are very competent.

The Teenagers have been holding their meetings in the park in order that they may participate in the evening program. Special programs are held in their club rooms.

Sunday afternoon baseball has been in operation for the past two weeks. Soft-ball is in full swing with a lot of enthusiam being shown by this group. There were 83 social and 79 religious meetings held during the month.

Office Services
Reproductions and communications continue to increase.

Assistance was given Project Engineering in making a survey for a two-week period on pool cars located at the 101 Building.

Arrangements were made and co-ordinated to move the P & M employees from Building 87 to Hutment 92.

Security
Statistical Information
During the month, 389 meetings were held at which Security topics were discussed. These meetings were attended by 11,300 employees.

The following Security Bulletins were issued:

No. 154 - Selfishness
No. 155 - Our Sacred Trust

Major Construction Equipment
Total Construction equipment units assigned to AJ and E&C Divisions of GE, 2108.

Total Shop equipment units assigned to AJ and E&C Divisions of GE, 789. The Supervisor of the Equipment Control Section attended the Inter-Departmental Motor Equipment Conference in Portland on June 11 and 12.

Safety - Construction Sub-Contractor Forces
(Excluding Minor Construction Division CPFF Subcontractor's Forces)

	June	To-date
Major Injuries	5	25
Sub-major Injuries	13	554
Minor Injuries	986	3816
Frequency Rate	5.185	4.44
Severity Rate	.115	.174

[redacted]
DECLASSIFIED

Small Tools

Arrangements have been made to route Excess Declarations covering small tools through this section in order that tool records may be kept up to-date.

The tool control procedure is still in process of revision and we hope will be issued in the near future.

MINOR CONSTRUCTION DIVISION

This Division is currently working on 14 Projects and 49 Work Assignments; one project and 19 work assignments were completed in June.

26 new work assignments were received in June.

A total of 41 partial and complete estimates were prepared during the month.

Safety	June	Total This Yr.	Total To-date
Lost Time Injuries	0	2	2
Minor Injuries	95	340	376
Accidents Automotive	0	3	4
Injury Frequency	0	325	1.23
Severity Rate		0.12	0.10

Personnel Subcontractor	Beginning of Month	End of Month	Net Change
Non Manual	51	54	+ 3
Manual	729	691	- 38

III. ORGANIZATION AND PERSONNEL

Significant changes in personnel for the month are: J. W. Scoggin appointed Construction Engineer in charge of C-361. T. H. Niemi is assigned to the Administrative Section as Staff Assistant, vice J. C. Manderscheid, resigned. T. Williams is appointed Development Engineer, vice J. M. Frame. H. W. Huntley is appointed Project Engineer for Projects C-187-D and C-418, Separations Division. D. I. Bates appointed Supervisor, Drafting Trainees. D. D. Taylor appointed Supervisor, Reproduction Section, vice C. W. Buchanan, transferred to other duties. G. F. Ouren appointed Supervisor History Section, vice D. D. Taylor.

Certain other intra-divisional transfers of personnel was effected this month.

	Beginning of Month	End of Month	Net Change
Employees on Payroll	799	833	+ 34
Employees on Loan from Purchasing and Stores Division	2	2	
Instrument Division	10	10	
Technical Division	1	1	
Schenectady	4	4	
Total Engineering and Construction Divisions	816	850	+ 34

JUNE 1951

PROJECT & RELATED PERSONNEL

	5-31-51		6-29-51	
GOVERNMENT EMPLOYEES				
Civilian Personnel--Atomic Energy Comm.	335		346	
Civilian Personnel--G. A. O.	7		7	
Total		342		353
RICHLAND VILLAGE PERSONNEL				
Comm. Facilities (Inc. No. Richland)	1166		1243	
Goven. Agency, Churches, Clubs, etc.	94		95	
Schools	387		382	
Organizations	11		11	
Total		1658		1731
CONSTRUCTION SUB CONTRACTORS				
Atkinson &Jones	4010		4145	
Newberry Neon	362		385	
Urban Smyth Warren Co.	410		456	
Hanley & Co.	445		449	
Kellex Corp.	321		272	
No. Elect. Mfg. Co.	2		2	
J. Gordon Turnbull	4		4	
Erwin Const. Co.	7		7	
J. P. Head	9		21	
Royal Co. Inc.	113		11	
Fred J. Early, Jr.	139		124	
Steel Const. Co. & Gilmore Fab. Inc.	30		45	
V. S. Jenkins	36		60	
Empire Electric Co.	3		2	
Associated Engrs. Inc.	16		11	
Johnson Service	2		2	
Monterey Co. Plumbing Co.	18		18	
Thorgaard Plumbing & Heating Co.	2		2	
L. E. Baldwin & Frank Dunham Co.	76		75	
X-Ray Products	2		7	
Judd Co. Inc.	3		6	
Chicago Bridge & Iron	10		7	
A. J. Patton & Cecil C. Hill	[illegible]		0	
Malarkey & Mocre	14		14	
Dix Steel Bldg. Co.	8		13	
Montgomery Electric Co.	22		25	
Commercial Painting & Dec. Co.	15		0	
Sound Const. & Engr. Co	16		36	
Montgomery Elevator	[illegible]		0	
J. G. Shotwell	8		7	
Lewis & Queen	6		2	
J. C. Whitacre Decorating Co.	13		19	
West Coast Heating & Plumbing Co.	1		7	
Electric Smith Inc.	[illegible]		6	
Roof Service Inc.	11		13	
L. H. Hoffman	39		55	
Stier, Shelton & Schick	0		1	
Leland S. Rosener	13		0	
Charles T. Main	196		196	
Minneapolis Honeywell Reg. Co.	3		3	

Continued Page # 2

HW-21504 - DEL

	5-31-51	6-29-51
Chem. Proof Const. Co.	11	11
F. O. Repine	42	55
The Bay Co.	20	16
J. A. Brunzell	7	20
Sowle Steel Co.	2	0
Acme Elect. Co. Inc.	2	2
Paul Berg	1	0
Collins & Babcock	7	0
Olympic Pipe Fabricators Co.	1	1
Bethlehem Pacific Coast Steel Co.	11	0
Day Brother	4	5
I. W. Vail	2	0
Witzig Electric	5	0
Cyclone Fence	1	7
Peter Kiewett Sons Co.	36	36
Weston Plumbing Co.	11	8
R. [illegible] Neuman & Sons Co.	67	9
Puget Sound Sheetmetal Works	0	15
Valley Roofing	0	3
Cement Gun Const. Co.	0	5
Packard Pipe & Pump	0	2
Home Electric & Appliance Co.	0	1
National Blower Sheetmetal Co.	0	5
Holliday & Edworthy	0	3
Northwest Painting & Roofing Co.	0	5
Elliot Bay Lumber Co.	0	2
Builders Service	0	5
Industrial Electric Co.	0	3
Total	6622	6727
General Electric Total	8336	8674
GRAND TOTAL	16,958	17,485