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HANFORD WORKS MONTHLY REPORT

FOR

JANUARY 1951

INV SEP 12 '83

Classification reviewed for declassification but left unchanged by J. P. Corroum by M. Walker Date 5/15/73

Compiled By

Division Managers

February 16, 1951

HANFORD WORKS
RICHLAND, WASHINGTON

38058

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

INV SEP 12 '83

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GENERAL SUMMARY
JANUARY 1951

MANUFACTURING DIVISIONS

Production Divisions

A total of 66 tons of metal was discharged at the goal value and one ton was discharged at 46 percent of the goal. The special request program continued to increase in magnitude to the extent that 340 manhours were expended by the P Division on this work. Thirty tubes of special request material were charged into the piles, 20 tubes were discharged, and 15 casks containing irradiated material were shipped off site. An additional 200 manhours were utilized in the charging, discharging, and shipping of Chemical 68-56.

The average time operated efficiency of all piles was 80.5 percent. Excluding F Area, which was shut down for 21 days for Van Stone flange repair, the efficiency was 92.7 percent. Four days were lost at DR pile to remove a ruptured slug and one day at H pile for the same cause.

The maximum pile power levels achieved during the month were 395 MW, 370 MW, 463 MW, 485 MW, and 320 MW at B, D, DR, H, and F piles, respectively. Average levels were 365 MW, 329 MW, 442 MW, 469 MW, and 270 MW, respectively.

A total of 94 tons of acceptable slugs was canned at a yield of 91.2 percent. The machining yield was 89.9 percent. The melt plant produced 20 tons of billets at a record billet yield of 88.2 percent and a solid metal yield of 92.8 percent.

A total of 122 charges plus one acid wash was started in the Canyon Buildings 102 plus two acid washes were processed through the Concentration Buildings, and 115 charges were completed through the Isolation Building. The necessity of processing 18 charges of 54 MWD/T material through T Plant increased the average time cycle about 30 percent and reduced production accordingly. The average cooling time for metal processed was 85 days at B Plant and 60 at T Plant. Metal with 50 day cooling was processed at T Plant. The average purity for completed charges was 98.7 percent.

Plant Utilities and Maintenance Divisions

The nozzle replacement program for the 100-B, D, and F Areas was terminated with the completion of work at the last area, 100-F.

The water inlet temperatures approached freezing and ambient temperatures as low as 7° Fahrenheit made necessary the operation of the hot condenser water reuse system in 100-B, D, DR, and F Areas and the addition of steam to the filter plant supply at 100-H Area.

The power demands for the month were:	Process	66,300 KW
	Village	33,200 KW

The total represents a new all time high power demand.

The January area passenger volume of 143,260 surpassed the previous recorded high of 139,498 in March, 1949.

The unavailability of qualified personnel made it necessary for 80 percent of the Instrument Division personnel to go on a six day work week, effective January 29, 1951.

TECHNICAL DIVISIONS

Pile Technology Division

Measurements with the P-11 critical assembly indicate that the neutron capture cross-section of tritium is less than 40 barns and consequently no significant tritium destruction is expected during production of this material in the piles.

The irradiation of tantalum pellets to produce 30,000 curies of radioactive material for the Chemical Warfare Service has been completed and the material shipped.

A program has been started to study the effects of cooling water quality on film formation and corrosion to obtain information about the waterplant requirements at higher pile power levels.

Irradiation of graphite samples at controlled temperatures of 108°, 134°, 157°, and 216°C to determine the temperature coefficient of damage was started in the B Pile this month.

Installation of additional thermocouples for more extensive measurement of operating graphite temperatures, together with an increased uniformity of neutron flux distribution, has enabled operation of the present piles at higher power outputs.

Design of the in-pile controlled atmosphere facility is about 80 percent complete. Equipment procurement, development, and materials testing proceeded normally during the month.

Corrosion tests of bearing materials and stainless steels for separation process were continued. Corrosion resistance of various steels in molten aluminum-lithium, magnesium-aluminum, and cadmium was determined for the P-10 program.

Examination of the slug which ruptured in tube 3288-H showed that the can was split longitudinally through the cap and can wall from the welded end to the bottom of the can.

Dilatometric tests have been developed which will definitely detect slugs containing a high percentage of untransformed metal.

Installation of the first metal tritium extraction line has been completed and a second improved line has been designed. Lead or magnesium-aluminum additives to the furnace charge and also extraction of single slugs without

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additives give increased tritium yields which approach the helium yield. The additional information which has been obtained of the temperatures at whi hydrogen, tritium and helium are extracted from irradiated slugs is expected to contribute to increased separation efficiency.

Separations Technology Division

Initial results obtained in production testing the bismuth concentration in the Extraction step show no significant differences in waste loss or in decontamination for a 30 percent reduction in weight of bismuth. A production test removal of iodine from metal solution by means of air sparging during dissolving is still under way. The test elimination of Sample Can evaporation in the Isolation Building is still continuing satisfactorily. The determination of optimum cold outgassing period for the Casting operatior in Building 234-5 has proceeded to tests of 2-hour out-gassing, with no preliminary effects noticeable on casting appearance, density, radiography, and skull weight. A step-wise increase in the holding temperature in Casting has progressively decreased average skull weights.

In Redox and TBP process development, the preparation of Technical Manuals and Start-Up Operating Procedures has continued to receive primary emphasis. All arrangements have been completed to initiate the operations training program in Bldg. 321 on February 19. Engineering development studies are continuing on Production Plant pumps, feed scavenging, de-entrainment equipment, and materials of construction. The Hot Semi-Works construction bids were opened on January 4. The low bid was 18.6% above the fair cost estimate and the awarding of the construction contract is being withheld pending the authorization of additional funds required.

In the research laboratory, additional studies have been carried out on the bismuth-to-plutonium ratio in the Bismuth Phosphate Extraction step and the removal of iodine from Dissolver solution by air sparging. Methods have been found to permit the carrying out of critical mass studies with high concentrations of phosphate. Additional studies have been carried out on methods development for 234-5 slag and crucible recovery. Further promising data have also been obtained on the decontamination of uranium from combined aged and current metal wastes.

In the 234-5 process development laboratory, the effects of one, two, and three peroxide cycles on subsequent metal production are still being investigated. Favorable results have been obtained in studies of peroxide precipitations carried out at twice the usual concentration of plutonium. Methods of preparing Chemical 70-58 in a form satisfactory for introduction to process in the RM Line are being investigated.

The fourth Silver Reactor-Fiberglas filter assembly was successfully tested in mock-up and is being installed in the second Dissolver cell in B Plant. A spot check monitoring of the B Plant 4-5L Silver Reactor revealed the I^{131} removal efficiency still to be 99.9%.

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General Summary

Technical Services Division

Several improvements in P-10 mass spectrometer operations have been made or are under study by the Analytical Section. Experiments designed to determine the combined diffusion-excitation factor for tritium were initiated A motor-driven magnet scan and a chart recorder were installed to increase the ease, speed, and reliability of mass spectrometer operation. Equipment was ordered to allow replacement of the fixed magnet by a more readily controlled induced magnet, as in the G.E. mass spectrometer. Other equipment was ordered in preparation for a study of in-line operation of the instrument.

The Analytical Section placed in service an automatic recording Cary spectrophotometer that records in the ultra-violet and visible regions. It is a very useful and raliable instrument and has been used for a wide variety of work including studies of the reduction rate of plutonium in Redox IBP solutions, determination of manganese in support of Redox head-end studies, and analytical studies of methods for the determination of rare earth metals and Chemical 70-58.

Bids were opened for construction of the shell of the Mechanical Development Building for the Hanford Works Laboratory, and award of this sub-contract to the Dix Steel Company on their apparent low bid of $161,193 was recommended by D & C. Plans for having this building shell serve initially as housing for construction forces during the main phase of Works Laboratory construction were abandoned in view of plans for new pile construction which will require the Technical Shops and Design Unit to release Bldg. 101 for pile graphite fabrication. Planning for immediate completion of the Mechanical Development Building for Technical Shops and Design Unit occupancy was initiated, and Material and Equipment Lists are being revised to include essential items of shop equipment originally planned for removal from Bldg. 101 but which must now be left there for use in graphite fabrication.

In view of the outlook for rising construction costs and their effect on expenditures for the Works Laboratory program, it was decided that all related facilities not yet committed to final design should be held to a more limited basis than otherwise desirable. Accordingly, the Library and Files Building project proposal, which had been approved by the A & B Committee and forwarded to the AEC, was recalled for reissue on a reduced scope basis. AEC authorization was obtained for proceeding with the design, and by month end D & C had completed negotiation with Chas. T. Main for the A-E Sub-contract involved. Good progress was made on rescoping the building to (1) eliminate all space originally provided for the Statistics Group, (2) cut the working and vault space of the library and files, and (3) provide a few offices for Engineering Services. This plan assumes that the Statistics Group will stay in Building 3703.

Initial check prints on the Pile Technology Building were received from the Chas. T. Main Co. The design is essentially the same as submitted by our contact engineers. Check prints were also received from the Leland S. Rosener Company covering details of the Plot Plan & Utilities and the

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Radiometallurgy Building. Comments were prepared and submitted to the architect-engineers through D & C.

The bulk of the time of the new Technical Computing Laboratory to date has been devoted to complex mathematical problems. Nevertheless, progress has been made in programming routine calculations for IBM operations. Data for 300 Area uranium metal quality control are being calculated by IBM methods.

Desk calculator time approximating 20 hours per month on this metal quality computing has been reduced to two hours of key punching and fifteen minutes of IBM machine time. Programming of 300 Area slug machining and canning controls is well along. Punching and computing was begun on a backlog of routine data for the Aquatic Biology Group of the Health Instrument Divisions. Plans are under way to program analytical laboratory precision and accuracy controls for IBM computing.

HEALTH INSTRUMENT DIVISIONS

Removals and additions to the force resulted in a net gain of four employees.

One Special Hazard Incident, involving plutonium contaminated skin burns of two operators, was investigated and reported. Small deposits of plutonium in the body of the operators were found.

In the Biology Division, biological monitoring continued on a routine basis with no unusual findings. The plutonium absorption experiment was delayed due to the detection of impurities in the Pu^{238} received from the University of California. As observed in animals, botanical specimens are showing the ability to absorb and organically bind tritium. This gives an additional indication for a possible increase in the tritium hazard.

Development Division control measurements on activity density in water, soil, air, and vegetation were consistent with previous findings. Decreases in filterable beta emitters in the atmosphere and in the deposited concentration of I^{131} on vegetation were observed.

In bioassay, in addition to the two positive plutonium cases, uranium up to 19 μg/liter was found for metal fabrication workers, and tritium up to 60 μc/liter in the relevant operations.

PLANT SECURITY AND SERVICES DIVISIONS

There was one major injury during the month which establishes a frequency rate of 0.75.

One minor fire occurred during the month. No loss resulted.

Laundry volume in the 200-W Laundry increased more than 25%, by weight, due to extended 100 Area shutdowns for cleanup. The 700 Area volume increased, approximately the same due to increased work coming from the North Richland barracks.

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General Summary

Mail volume was unusually high due to special distributions.

The continuing heavy work load in the Printing Section necessitated sending $1,716 worth of printing orders to outside printers.

Work accomplished by the Office Methods Section resulted in estimated savings of $4,126, of which $3,630 will be on an annual recurring basis.

On January 15 radio station WGMB-13 was placed in service at White Bluffs. This station is used by the U. S. Army and establishes radio contact between them and Security Patrol.

Practice evacuations, blackouts, and Patrol mobilizations were continued during the month.

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

The number of applicants interviewed increased from 1,069 in December to 2,002 in January. Of these applicants, 941 were individuals who applied for employment with the Company for the first time. In addition, 381 new applications were received through the mail. Open, nonexempt, non-technical requisitions increased from 376 at the beginning of the month to 573 at the month end. Total plant roll increased from 7,896 to 7,950. Turnover rate increased from 1.13% in December to 1.48% in January. During January, 46 new requests for transfers to other type of work were received in the Employment Office, and 31 transfers were effected. Due to the increasing demand for personnel and to give people in this vicinity an opportunity to have interviews, the Employment office was kept open two Saturdays (January 20 and 27). Publicity was given to the fact that the Employment Office would be open through newspapers in the Tri-City Area, Walla Walla, Yakima, and Wenatchee, and through 32 spot radio announcements in the same localities. On these two Saturdays approximately 300 people were interviewed, of which 65 were immediately placed in process and others were considered later.

Five employee deaths occurred during January, and one employee retired. During the month 185 visits were made to employees confined at Kadlec Hospital and 53 salary checks were delivered to employees. At the end of January, there were 706 employees registered under the Selective Service Act and 621 military reservists on our rolls.

During the week of January 15, the Supervisor's 40-Hour Training Program was presented with 42 supervisors participating. A total of 80 supervisors currently enrolled in "Principles and Methods of Supervision", will complete their conferences in February. At the request of the S Division, the 17-subject, 8-hour Nonexempt Training Program was again presented with 30 employees in attendance. A group of 36 supervisors-in-training attended a special meeting to discuss the spirit and intent of the GE-HAMTC Agreement. Two issues of the Hanford Works SAGE were distributed during the month. Nine additional handbooks were distributed to new supervisors. A total of 158 employees were given Orientation during January. The entire Training and Program Development Staff was trained by R. C. Holmquist in the company-wide program, "HOBSO". Three special senior-management meetings were held at which time the appreciation version of HOBSO was presented.

General Summary

On January 30, the NLRB conducted a Hearing to determine whether or not Plant Guards and Village Patrolmen constitude an appropriate bargaining unit. The Davis Panel submitted their recommendation on January 22 on the current wage dispute between the Company and the HAMTC, recommending that the Company's offer of 3% of the rates in effect on July 2, 1950, with a minimum of 4 cents an hour, to be effective September 18, 1950, be accepted. While the Council said it would accept the Panel's recommendations, no official ratification has been received from the various locals.

Negotiations on the Master Agreement continued during January. All issues have been disposed of except the Unions' demand for an increase in isolation pay. At a meeting January 9 with a Conciliator present the Unions continued their contention that the construction duration (part of original isolation pay agreement) ended in 1949. On January 19, the Union Negotiating Committee requested the Davis Panel to take jurisdiction. We are informed the Conciliator certified to the Panel that the isolation pay question could not be settled at the local level. At present, the Contractors are considering negotiating once more locally and if no agreement results, allow Panel to place the matter on the agenda along with the Operating Engineers on February 12 and 13. Negotiations on January 10 with a Conciliator present failed to settle two controversial working rules. The Engineers did not report for work on January 15 and remained off the job until January 19 at which time they returned to work in order to be in work status when Davis Panel Intervention was requested. On January 30, the Engineers and Contractors signed a letter agreement which included Spokane rates effective January 1, 1951, continuation of the Master Agreement (excluding isolation pay), and stipulating that the two working rules would be heard by the Panel. The Laborers requested an increase of approximately 15 cents (now $1.60) on January 4, 1951 - no settlement. The Asbestos Workers requested an increase of 37 cents (now $2.55). Contractors favor Spokane increase (25 cents) - no settlement. Roofers granted 19½ cent increase (was $2) effective November 1, 1950. Ironworkers continue to insist their September 22 reopening notice is in order and request Spokane January 1, 1951, rates, viz.: structural $2.50 (now $2.30 at Hanford) and reinforcing either $2.32 or $2.35 (not yet agreed upon) (now $2.25 at Hanford)- no agreement reached. A threat on January 16 that all Teamsters would be off the job on January 17 did not materialize. The threat was based on (1) layoffs of Teamsters as a result of Engineers dispute, and (2) buses not inspected every 24 hours "as required by law". A Plumber dispute between G.E. and C.P.F.F. piping subcontractors over jurisdiction of the installation of a steam valve was settled by this office. The installation, which was interrupted, has been completed. A threatened sheet metal dispute at Willamett Iron and Steel, Portland (engaged in fabricating essential hoods, etc. for Hanford) is being watched closely, and this office has offered any possible assistance to avoid an actual work stoppage.

Work continued on the annual G.E. Northwest Area Community Wage Rate Survey. The final pay adjustment covering assignment of employees to the Auxiliary Fire Brigade was made. Meetings were held with Instrument Division supervision and members of the Instrument Guild in reference to classification of Instrument Specialist. Discussions were held with the S Division in regard to upgrading Chemical Helpers to Chemical Trainees.

General Summary

Two representatives of the Vice President in charge of Advertising and Publicity, R. W. Jackson and W. D. Haylon, visited Hanford Works. They were brought up to date on local press relations and presented with a historical report about the relationship between Hanford Works, Tri-city HERALD, and the Richland VILLAGER.

Interviews were arranged for Don Carlson of the Walla Walla UNION-BULLETIN for three stories which he plans to give to the magazine BUS TRANSPORTATION.

Bill Williams of the Tri-City HERALD interviewed the manager of Manufacturing Divisions for the first of a series of stories on all Hanford Works Divisions.

The managing editor of WESTERN BUILDING magazine interviewed the supervisor of the News Bureau and the Community Relations supervisor, and arrangements were made to send him material for a story about Richland's uptown business district.

A total of 75 news released were written and distributed by the News Bureau during January and 170 column inches were obtained in Pacific Northwest newspapers.

News stories about civil defense organization and activities were written and released through the News Bureau by the supervisor of Community Relations. Distribution of the Works News through local barber and beauty shops was arranged.

Nine speeches were made during the month for which arrangements had been made by Public Functions.

Fourteen G-E films were shown during the month, and four films from the University of Washington film library were shown. The AEC film "Bikini Survey" was booked for showings to Army personnel stationed at North Richland.

The General Manager's speech was recorded at the Supervisor's Association meeting on January 18. Portions of Charles E. Wilson's speech at the Poor Richards Club in Philadelphia, recorded the previous evening, also were presented to H.W. supervisors during the January 18 meeting.

Motion pictures were made of a special flow test in the 100 Areas. Over 500 color slides were delivered to Design Division.

Use of the G-E signature and monogram at Hanford Works was outlined in an instructions letter which established Community and Public Relations as the division where questions concerning use of the signature should be referred. Opening of the Employment Office on two Saturdays during the month was publicized via newspaper advertisements, news releases, and radio spot announcements.

Hanford Works News provided employees information on the Community House, winter recreation program, polio drive, civil defense, income tax, social security law revisions, rent increases, suggestion system, G.E. School of Nuclear Engineering, Adult Evening Classes, employment needs, and the Employee Sales Plan. A review of 1950 by the General Manager was carried in a lead story.

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General Summary

Three women's pages appeared in the Works News during the month. The new stenographers handbook, "This Way, Please--" was featured on January 26. Special features were written on women and careers at Hanford Works for the Seattle TIMES; the safety shoe bus, and Community House for the Tri-City HERALD; and on Richland church building in 1950 for the Walla Walla UNION BULLETIN.

PURCHASING AND STORES DIVISIONS

The work load in the Purchasing Division reached a new high; 4,357 purchase requisitions were received as compared to 3,230 in the previous month and 2,870 orders were placed as compared to 1,896 the previous month.

The dollar value of all orders placed during the month amounted to $2,772,690.22 of which $1,399,101.32 was for construction materials.

According to best information available at month end, 90% of the major equipment items for Redox and TBP were on order.

Difficulties were encountered in maintaining shipping schedules of bulk steel orders and at month end it appeared as though some steel originally scheduled for January shipment would not be shipped until February and March.

Shipments of stainless steel from the Pittsburgh warehouse totaled 253,000 pounds. Six additional orders for stainless steel were placed during the month.

A Resident Inspector and Expediter were established at the Southwest Welding and Manufacturing plant at Alhambra, California, for the purpose of maintaining a closer control in the scheduling of equipment on our orders placed with this company.

Arrangements were made to assume responsibility for inspection of materials upon receipt at the plant site. An engineer representative of the Inspection Section will be located in construction areas for this purpose.

Negotiations were started to increase the quantities on several essential material contracts due to accelerated production schedules.

Ten requests for priority assistance in obtaining capital equipment were receive from as many of our suppliers. The reason given by them was that the equipment was necessary to produce material on our orders.

3,987 purchase requisitions were processed through screening with the result that 2,376 items were supplied from project inventories thus obviating the necessity for purchase from outside sources.

Twenty-one items of stainless steel not immediately available on the open market were supplied to equipment fabricators from project inventories.

Materials valued at $10,206.07 were declared excess from operations inventories. This was accomplished by the discontinuance of 1,188 obsolete items.

General Summary

Materials valued at $375,010.27 were disbursed from the 10.20 Account, Construction Materials held for Possible Future Use, to construction forces. This represents a substantial increase in such disbursements over the previous month.

The project proposal for re-warehousing graphite in the 186 building was held up indefinitely due to the possibility that additional construction might be undertaken which would require the use of this material.

A letter was received from the Commission directing that all excess lists be cancelled.

A letter was received from the Commission requesting that steps be taken to prevent excessive accumulation of materials. A meeting was held with division representatives to discuss ways and means of accomplishing the objectives outlined by the Commission. Satisfactory progress was being made at month end.

The evacuation of several North Richland Warehouses to provide space for the Army Industrial Area was progressing satisfactorily at month end.

Plans and specifications for the proposed Central Warehouse Facilities together with an appropriation request for engineering funds were completed.

The work load of the Traffic Section continued to increase.

A wildcat switchmen strike throughout the nation hampered the flow of materials to the project; however, at month end there was no cause for alarm.

The Traffic Manager attended a meeting in San Francisco with Government and Motor Carrier representatives to discuss government traffic in western territory.

As a result of rate reductions obtained from the carriers a total savings in freight charges for the month amounted to $23,298.26.

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS

The new increased housing rental rates, to be effective August 1, 1951, were announced and a copy of the schedule sent to all leaseholders.

Total housing applications pending - 472.

Installation of thirteen traffic control lights has been completed. These lights have made driving safer and more expeditious since the installation.

MEDICAL DIVISION

Dr. Lloyd M. Farner, Medical Administrative Consultant for the Washington State Division of Vocational Rehabilitation, was guest speaker here at the monthly meeting of industrial physicians.

"Mental Health" was the monthly topic of the Health Activities Committee.

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General Summary

Two "S" Division employees received burns from nitric acid contaminated with plutonium. Both required special decontamination procedures. While the deposit of plutonium was small, in one case it was felt advisable to use zirconium citrate intravenously to increase the elimination rate.

Sickness absenteeism, weekly employees, increased by 0.17% to 2.17%, while total absenteeism increased by 0.03% to 2.70%.

The average daily census increased from 90.8 to 98.1 (86,9 adults, 11.2 infants) The census was 88.1 a year ago. Daily census: Maximum - 117, Minimum - 72. Nursing hours per patient day were: Mixed Services 2.90, Obstetrics 5.51.

A course in Ward Management, under the direction of the University of Washington School of Nursing is being given at Kadlec Hospital.

Communicable disease incidence decreased by 42%.

The net cost of operating the Medical Divisions, before assessments to other divisions, was $91,455., a decrease of only $136., and $2,743. below the budget figure.

There were no significant changes in salary costs. An increase in supply costs was offset by a $3000. decrease in assessments from other divisions.

Hospital net costs decreased by $459. Changes in Industrial Medicine and Public Health were small.

GENERAL ACCOUNTING DIVISION

Withholding statements for 1950, Form W-2, were delivered to Monthly Paid employees on January 5, 1951 and to Weekly Paid employees on January 12, 1951. The Collector's copies of Withholding Statements were forwarded to the General Office on January 15, 1951 for transmittal to the Collector of Internal Revenue.

Considerable overtime was required in January in the Payroll Divisions in order to complete Federal Social Security Reports, State Social Security Reports, Withholding Tax Reports, Returns of Information at the Source, Annual Report of Employee Contributions under the Pension Plan, and various other year-end reports.

In connection with the individual statements to be delivered to all employees March 9, 1951 showing their status in the principal benefit plans, Payroll Divisions prepared work sheets which are being used effectively in the accumulation of the necessary information. A schedule was also prepared showing the steps to be completed in sequence, so as to facilitate the movement of the work between the various sections of the Payroll Divisions. As a result of this advance planning and scheduling the number of overtime hours required to complete the individual statements to employees will be greatly reduced. As of January 31, 1951, it was estimated that the job of accumulating and recording the information on work sheets was 85% complete.

General Summary

Representatives from all accounting divisions met with the head of the AEC Finance Division and completion dates were established for major accounting reports for the months of January and February 1951. Dates for final transfer of billings between divisions were advanced several days as were closing dates of several accounts. As a result of this meeting, and due to the earlier closin dates established, major accounting reports will be issued earlier than in previous months.

Increased purchasing activity was reflected directly in the volume of work handled in the Accounts Payable Section where more vouchers were booked than in any month since decentralization of the Accounting Division in March, 1949. Vouchers entered increased 34% and number of checks issued increased 13% over December.

In connection with the 4th Quarter Budget Review, letters of instruction togethe with working papers were forwarded to divisions heads. Schedules were also prepared and submitted to division accountants requesting data relative to Cash Working Capital and Inventories for the Balance Sheet Budget. Instructions were received from the Atomic Energy Commission relative to the preparation of Fiscal Year 1953 and revisions of Fiscal Year 1952 budgets and considerable preliminary work was completed in connection with these budget estimates.

As a result of extensive cost studies, operations Industrial Medical costs were liquidated at standard rates this month. Flat rates were established for the various industrial medical services and assessments to other divisions were based on amount of service actually received by customer divisions.

Internal auditors together with representatives of General Accounting Office and AEC Finance Division made unannounced audits of cashiers funds on January 16, 1951. Field work was completed and reports are in process covering the audit of Hospital and Bus Revenues, Receiving and Shipping, and Timekeeping procedures. Review of procedures employed by Stores Division is continuing, especially those concerning account reconciliations and taking of physical inventories.

Advances from AEC decreased from $5 000 000 as of December 31, 1950 to $4 000 000 as of January 31, 1951. Advances are accounted for as follows:

	January	December
Cash in Bank - Contract Accounts	$3 010 724	$4 029 911
Cash in Transit	428 657	409 470
Expenditures Disallowed by A.E.C.	10 619	10 619
Cash in Bank - Salary Accounts	50 000	50 000
Travel Advance Funds	100 000	100 000
Advances to Subcontractors	400 000	400 000
Total	$4 000 000	$5 000 000

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General Summary

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Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of January 1951 as compared with December 1950 may be summarized as follows:

	January	December
Disbursements		
Material and Freight - GE	$2 510 455	$1 874 321
Payrolls - GE (Net)	1 941 262	2 336 307
Payments to Subcontractors	3 300 065	2 981 771
Other	992 187	936 383
Total	$8 743 969	$8 128 782
Receipts		
Rents	$ 145 036	$ 105 974
Hospital	41 747	43 033
Telephone	15 989	16 076
Bus Fares	10 858	9 098
Sales to AEC Contractors	62 559	-0-
Other	39 123	44 131
Total	$ 315 312	$ 218 312
Net Disbursements	$8 428 657	$7 910 470

[redacted]

HW 20161 Del

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, Municipal, Real Estate and General Services Divisions	L. F. Huck
Manager, Design and Construction Divisions	W. E. Johnson
Manager, Manufacturing Divisions	C. N. Gross
Manager, Technical Divisions	A. B. Greninger
Manager, Health Instrument Division	H. M. Parker
Manager, Medical Division	W. D. Norwood, M.D.
Manager, Employee and Community Relations Division	H. E. Callahan
Manager, Purchasing and Stores Divisions	W. A. Jeffrey

DECLASSIFIED

[redacted]

1211930

FORCE REPORT JANUARY 1951

	EXEMPT		NON EXEMPT		TOTAL	
	12-29-50	1-31-51	12-29-50	1-31-51	12-29-50	1-31-51
GENERAL	18	19	30	31	48	50
LAW	2	2	3	3	5	5
DESIGN & CONST. DIVISION						
Construction	1	1	37	36	38	37
Const. Accounting	11	11	61	58	72	69
Design	235	233	222	221	457	454
No. Richland Realty	17	17	89	95	106	112
MANUFACTURING DIVS.						
General	15	15	5	5	20	20
Mfg. Acctg.	7	7	53	53	60	60
ENGINEERING & CONTROL DIVS.						
Proj. Engr. Control	46	49	37	35	83	84
Proj. Engr. Design	50	52	79	74	129	126
OPERATING DIVISIONS						
"P"	74	75	283	291	357	366
"S"	134	137	439	457	573	594
PUBLIC UTILITIES & MAINT.						
Power	88	88	478	479	566	567
Maintenance	56	56	350	346	406	402
Electrical	54	54	252	251	306	305
Instrument	52	54	220	223	272	277
Transportation	59	60	541	546	600	606
TECHNICAL DIVISIONS						
Administrative	4	4	2	2	6	6
Pile Technology	116	115	87	89	203	204
Separations Technology	105	107	34	38	139	145
Technical Services	128	128	334	334	462	462
MEDICAL	49	49	230	233	279	282
H. I DIVISIONS						
General	5	5	4	4	9	9
Operational	57	55	175	171	232	226
Development	40	41	73	76	113	117
Biology	32	33	42	46	74	79
ACCOUNTING DIVISIONS						
Gen. Acctg. & Payroll	27	26	162	162	189	188
EMPLOYEE & COMMUNITY RELATIONS	33	36	62	62	95	98
PLANT SEC. & SERVICES						
Patrol & Sec.	56	56	535	539	591	595
Safety & Fire	38	38	104	105	142	143
Gen. & Off. Serv.	24	23	209	207	233	230
PURCHASING & STORES DIVISIONS						
Purchasing	55	58	74	77	129	135
Stores	20	20	208	206	228	226
COMMUNITY DIVISIONS	213	213	461	458	674	671
TOTAL	1921	1937	5975	6013	7896	7950

1211631

PERSONNEL DISTRIBUTION - JANUARY 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	-	-	-	-	-	-	-	-	-	-	19	19
Clerical	-	-	-	-	-	-	-	-	-	-	31	31
Total	-	-	-	-	-	-	-	-	-	-	50	50
LAW	-	-	-	-	-	-	-	-	-	-	2	2
Clerical	-	-	-	-	-	-	-	-	-	-	3	3
Total	-	-	-	-	-	-	-	-	-	-	5	5
DESIGN & CONST. DIVS.												
CONSTRUCTION												
Supervisors	-	-	-	-	-	-	-	-	-	1	-	1
Clerical	-	-	-	-	-	-	-	-	-	36	-	36
Total	-	-	-	-	-	-	-	-	-	37	-	37
CONST. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	11	-	11
Clerical	-	-	-	-	-	-	-	-	-	58	-	58
Total	-	-	-	-	-	-	-	-	-	69	-	69
DESIGN												
Supervisors	-	-	-	-	-	-	3	-	-	24	38	65
Engineers & Inspectors	-	-	-	-	-	-	35	-	-	16	102	153
Other Exempt	-	-	-	-	-	-	-	-	-	9	6	15
Draftsmen	-	-	-	-	-	-	-	-	-	-	56	56
Clerical	-	-	-	-	-	-	10	-	-	25	110	145
Others	-	-	-	-	-	-	-	-	-	9	11	20
Total	-	-	-	-	-	-	48	-	-	83	323	454

1211932

	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
NO. RICHLAND REALTY												
Supervisors	-	-	-	-	-	-	-	-	-	17	-	17
Janitors	-	-	-	-	-	-	-	-	-	52	-	52
Clerical	-	-	-	-	-	-	-	-	-	17	-	17
Others	-	-	-	-	-	-	-	-	-	26	-	26
Total	-	-	-	-	-	-	-	-	-	112	-	112
MANUFACTURING DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	11	11
Engineers	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	5	5
Total	-	-	-	-	-	-	-	-	-	-	20	20
MFG. ACCOUNTING												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Clerical	-	-	-	-	-	-	-	-	-	-	53	53
Total	-	-	-	-	-	-	-	-	-	-	60	60
ENGINEERING & CONTROL DIVS.												
PROJ. ENGR. CONTROL												
Supervisors	2	-	-	-	-	3	-	1	4	-	9	19
Engineers	7	-	-	-	-	7	-	4	-	-	12	30
Clerical	2	-	-	-	-	1	-	-	6	-	12	21
Others	2	-	-	-	-	-	-	1	3	-	8	14
Total	13	-	-	-	-	11	-	6	13	-	41	84
PROJ. ENGR. DESIGN												
Supervisors	-	-	-	-	-	2	-	-	-	-	17	19
Engineers	-	-	-	-	-	3	-	-	1	7	22	33
Draftsmen	-	-	-	-	-	3	-	-	-	7	39	49
Clerical	1	-	-	-	-	-	-	-	-	1	9	11
Others	-	-	-	-	-	-	-	-	5	1	8	14
Total	1	-	-	-	-	8	-	-	6	16	95	126

	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
OPERATIONS DIVS												
"P"												
Supervisors	7	18	7	9	-	-	-	13	-	-	2	56
Supv. In Training	2	2	1	1	-	-	-	1	-	-	-	7
Engineers	2	-	-	-	-	-	-	-	-	-	10	12
Operators	34	64	34	34	-	-	-	101	-	-	-	267
Clerical	2	4	2	2	-	-	-	5	-	-	4	19
Others	1	1	1	1	-	-	-	1	-	-	-	5
Total	48	89	45	47	-	-	-	121	-	-	16	366
"S"												
Supervisors	-	-	-	-	-	18	35	-	-	-	3	56
Supv. In Training	-	-	-	-	-	10	29	-	-	-	3	42
Engineers	-	-	-	-	-	-	21	-	-	-	18	39
Operators	-	-	-	-	-	149	256	-	-	-	1	406
Clerical	-	-	-	-	-	7	18	-	-	-	4	29
Others	-	-	-	-	-	8	14	-	-	-	-	22
Total	-	-	-	-	-	192	373	-	-	-	29	594
PUBLIC UTILITIES & MAINT.												
POWER												
Supervisors	12	18	12	12	-	6	7	7	3	-	1	78
Engineers	-	-	-	-	-	-	2	-	5	-	3	10
Operators	74	114	75	75	12	22	48	12	7	-	-	439
Clerical	1	1	1	1	-	-	1	-	6	-	2	13
Others	5	6	4	5	-	-	6	1	-	-	-	27
Total	92	139	92	93	12	28	64	20	21	-	6	567

1211935

	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	7	8	2	-	4	14	5	1	-	1	43
Engineers	-	-	2	-	-	-	2	1	-	-	8	13
Craftsmen	26	57	52	22	-	34	94	41	-	-	-	326
Clerical	-	1	3	1	-	1	3	2	2	-	1	14
Others	-	1	1	1	-	1	1	1	-	-	-	6
Total	27	66	66	26	-	40	114	50	3	-	10	402
ELECTRICAL												
Supervisors	2	1	1	3	-	1	6	2	16	-	12	44
Engineers	-	-	-	1	-	-	1	1	3	-	4	10
Craftsmen	16	18	12	14	2	10	19	10	58	-	25	184
Clerical	1	-	1	1	-	-	1	1	4	-	26	35
Operators	4	4	4	4	-	-	-	-	11	-	-	27
Others	-	-	-	1	-	-	-	-	2	-	2	5
Total	23	23	18	24	2	11	27	14	94	-	69	305
INSTRUMENT												
Supervisors	2	5	2	3	-	2	6	8	1	-	3	32
Engineers	1	1	-	-	-	-	3	10	1	-	6	22
Craftsmen	19	24	21	12	-	15	42	47	2	-	12	194
Clerical	-	2	-	1	-	1	3	7	3	-	3	20
Others	-	-	-	1	-	-	1	7	-	-	-	9
Total	22	32	23	17	-	18	55	79	7	-	24	277

	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 DIV.												
Supervisors	2	4	1	2	-	2	1	1	8	-	35	56
Engineers	-	-	-	-	-	-	-	-	-	-	4	4
Bus Drivers	-	-	-	-	-	-	-	-	-	-	159	159
Journeymen	1	9	3	11	-	1	4	-	10	-	64	103
Trainmen	-	-	-	-	-	-	-	-	25	-	-	25
Serviceman	1	7	2	1	-	3	5	3	22	-	18	62
Clerical	1	1	1	1	-	1	1	1	1	-	24	32
Equipment Operators	4	9	4	4	-	3	7	4	19	-	26	80
Others	9	10	2	5	-	10	4	2	8	-	35	85
Total	18	40	13	24	-	20	22	11	93	-	365	606
TECHNICAL DIVISIONS												
ADMINISTRATIVE												
Supervisors	-	-	-	-	-	-	-	-	-	-	4	4
Clerical	-	-	-	-	-	-	-	-	-	-	2	2
Total	-	-	-	-	-	-	-	-	-	-	6	6
PILE TECHNOLOGY												
Supervisors	3	1	1	1	3	-	-	11	-	-	-	20
Metallurgists & Engrs.	19	4	3	5	10	-	-	30	-	-	3	74
Physicists	1	1	3	3	2	-	-	11	-	-	-	21
Tech. Grads.	9	1	1	2	2	-	-	4	-	-	-	19
Technologists	5	-	-	-	-	-	-	-	-	-	-	5
Laboratory Assts.	19	4	1	6	4	-	-	11	-	-	1	46
Clerical	4	1	-	1	1	-	-	8	-	-	3	18
Engr. Assts.	-	-	-	-	-	-	-	1	-	-	-	1
Total	60	12	9	18	22	-	-	76	-	-	7	204

121936

	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
SEPARATIONS TECHNOLOGY												
Supervisors	-	-	-	-	-	1	4	17	-	-	1	23
Chemists & Chem. Engrs.		-	-	-	-	5	12	64	-	-	3	84
Tech. Grad.	-	-	-	-	-	1	1	5	-	-	-	7
Clerical	-	-	-	-	-	-	3	5	-	-	1	9
Chem. Operators	-	-	-	-	-	-	1	7	-	-	-	8
Others	-	-	-	-	-	-	2	12	-	-	-	14
Total	-	-	-	-	-	7	23	110	-	-	5	145
TECHNICAL SERVICES												
Supervisors	1	-	-	2	5	7	12	24	-	-	3	54
Chemists & Engrs.	5	1	1	3	9	2	13	36	-	-	4	74
Technologists, TechGrads	3	-	-	-	2	8	21	19	-	-	-	53
Laboratory Assts.	5	-	-	5	-	27	60	39	-	-	-	136
Clerical	-	-	-	1	3	2	3	45	-	-	38	92
Others	-	-	-	-	34	-	-	18	-	-	1	53
Total	14	1	1	11	53	46	109	181	-	-	46	462
MEDICAL												
Supervisors	-	-	-	-	-	-	-	-	-	1	28	29
Physicians	1	-	-	-	-	-	-	-	-	2	9	12
Other Exempt	-	-	-	-	-	-	-	-	-	-	8	8
Technicians	1	-	-	-	-	-	-	-	-	3	15	19
Nurses	2	4	4	1	-	4	9	2	-	2	57	85
Clerical	2	-	-	-	-	-	1	-	-	7	48	58
Others	-	-	-	-	-	-	-	-	-	1	70	71
Total	6	4	4	1	-	4	10	2	-	16	235	282
H. I. DIVISIONS												
GENERAL												
Supervisors	-	-	-	-	-	-	-	-	-	-	2	2
Engrs.	-	-	-	-	-	-	-	-	-	-	3	3
Clerical	-	-	-	-	-	-	-	-	-	-	4	4
Total	-	-	-	-	-	-	-	-	-	-	9	9

	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	9	-	-	2	22
Other Exempt	4	7	5	3	-	6	5	3	-	-	-	33
Clerical	-	-	-	1	-	-	1	1	-	-	1	4
Others	18	16	15	11	-	18	44	37	8	-	-	167
Total	23	24	21	17	-	25	55	50	8	-	3	226
DEVELOPMENT												
Supervisors	-	-	-	-	-	3	7	4	-	-	1	15
Engineers	-	-	-	-	-	1	13	11	-	-	1	26
Clerical	-	-	-	-	-	1	2	2	-	-	-	5
Others	-	-	-	-	-	17	32	11	-	-	11	71
Total	-	-	-	-	-	22	54	28	-	-	13	117
BIOLOGY												
Supervisors	-	-	7	-	-	-	-	-	-	-	-	7
Engineers	-	-	26	-	-	-	-	-	-	-	-	26
Clerical	-	-	3	-	-	-	-	-	-	-	-	3
Others	-	-	43	-	-	-	-	-	-	-	-	43
Total	-	-	79	-	-	-	-	-	-	-	-	79
ACCOUNTING DIVISIONS												
GEN. ACCTG. ACCTG.												
Supervisors	-	-	-	-	-	-	-	-	-	1	8	9
Other Exempt	-	-	-	-	-	-	-	-	-	1	8	9
Clerical	-	-	-	-	-	-	-	-	-	-	77	77
Total	-	-	-	-	-	-	-	-	-	2	93	95
GEN. ACCTG. PAYROLL												
Supervisors	-	-	-	-	-	-	-	-	-	-	7	7
Other Exempt	-	-	-	-	-	-	-	-	-	-	1	1
Clerical	-	-	-	-	-	-	-	-	-	-	85	85
Total	-	-	-	-	-	-	-	-	-	-	93	93

	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	-	-	-	-	-	-	-	-	-	-	10	10
Clerical	-	-	-	-	-	-	-	-	-	-	51	51
Others	-	-	-	-	-	-	-	-	-	-	11	11
Total	-	-	-	-	-	-	-	-	-	-	98	98
PLANT SEC. & SER. DIVISIONS												
PATROL & SECURITY												
Supervisors	5	6	6	5	-	5	7	7	7	-	4	52
Other Exempt	-	-	-	-	-	-	-	-	4	-	-	4
Patrolman	52	49	66	49	-	57	137	74	8	-	27	519
Clerical	-	-	-	-	-	-	-	-	16	-	2	18
Seamstress	-	-	-	-	-	-	-	-	2	-	-	2
Total	57	55	72	54	-	62	144	81	37	-	33	595
SAFETY & FIRE												
Supervisors	14	-	-	-	-	-	4	4	7	-	-	29
Engineers	-	2	-	1	-	2	-	2	-	-	2	9
Firemen	47	-	-	-	8	-	20	16	8	-	-	99
Clerical	-	1	-	1	-	1	-	1	-	-	2	6
Total	61	3	-	2	8	3	24	23	15	-	4	143
GEN. & OFF. SERV.												
Supervisors	-	-	1	-	-	1	-	1	1	-	19	23
Laundry Operators	-	-	-	-	-	-	1	-	-	-	1	2
Janitors & Serviceman	7	5	4	5	2	4	17	13	4	-	35	96
Clerical	-	-	-	-	-	-	-	-	-	-	29	29
Others	-	-	-	-	-	-	31	-	-	-	49	80
Total	7	5	5	5	2	5	49	14	5	-	133	230

	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 DIVISIONS												
PURCHASING												
Supervisors		-	-	-	-	-	-	-	-	-	15	15
Other Exempt	-	-	-	-	-	-	-	-	19	-	24	43
Clerical	-	-	-	-	-	-	-	-	-	-	73	73
Rotational Trainees	-	-	-	-	-	-	-	-	4	-	-	4
Total	-	-	-	-	-	-	-	-	23	-	112	135
STORES												
Supervisors	3	-	-	-	-	-	-	-	-	3	14	20
Clerical	14	-	-	-	-	-	-	-	-	30	47	91
Others	25	-	2	-	-	-	1	-	-	12	75	115
Total	42	-	2	-	-	-	1	-	-	45	136	226
MUN. REAL ESTATE GEN SERV. GEN.GOV.ACCOUNT. ENGR.												
Supervisors	-	-	-	-	-	-	-	-	-	5	105	110
Other Exempt	-	-	-	-	-	-	-	-	-	9	33	42
Fireman	-	-	-	-	-	-	-	-	-	26	35	61
Patrolmen	-	-	-	-	-	-	-	-	-	15	24	39
Journeymen	-	-	-	-	-	-	-	-	-	-	179	179
Servicemen	-	-	-	-	-	-	-	-	-	-	35	35
Trauck Drivers	-	-	-	-	-	-	-	-	-	-	39	39
Power Operators	-	-	-	-	-	-	-	-	-	-	34	34
Clerical	-	-	-	-	-	-	-	-	-	-	79	79
Others	-	-	-	-	-	-	-	-	-	-	53	53
Total	-	-	-	-	-	-	-	-	-	55	616	671
GRAND TOTAL	514	493	450	339	99	502	1172	866	325	435	2755	7950

MANUFACTURING DIVISIONS

JANUARY 1951

SUMMARY

Production Divisions

A total of 66 tons of metal was discharged at the goal value and one ton was discharged at 46 percent of the goal. The special request program continued to increase in magnitude to the extent that 340 manhours were expended by the P Division on this work. Thirty tubes of special request material were charged into the piles, 20 tubes were discharged and 15 casks containing irradiated material were shipped off site. An additional 200 manhours were utilized in the charging, discharging, and shipping of Chemical 68-56.

The average time operated efficiency of all piles was 80.5 percent. Excluding F Area, which was shut down for 21 days for Van Stone flange repair, the efficiency was 92.7 percent. Four days were lost at DR pile to remove a ruptured slug and one day at H pile for the same cause.

The maximum pile power levels achieved during the month were 395 MW, 370 MW, 463 MW, 485 MW, and 320 MW at B, D, DR, H, and F piles, respectively. Average levels were 365 MW, 329 MW, 442 MW, 469 MW, and 270 MW, respectively.

A total of 94 tons of acceptable slugs was canned at a yield of 91.2 percent. The machining yield was 89.9 percent. The melt plant produced 20 tons of billets at a record billet yield of 88.2 percent and a solid metal yield of 92.8 percent.

A total of 122 charges plus one acid wash was started in the Canyon Buildings, 102 plus two acid washes were processed through the Concentration Buildings, and 115 charges were completed through the Isolation Building. The necessity of processing 18 charges of 54 MWD/T material through T Plant increased the average time cycle about 30 percent and reduced production accordingly. The average cooling time for metal processed was 85 days at B Plant and 60 at T Plant. Metal with 50 day cooling was processed at T Plant. The average purity for completed charges was 98.7 percent.

Plant Utilities and Maintenance Divisions

The nozzle replacement program for the 100-B, D, and F Areas was terminated with the completion of work at the last area, 100-F.

The water inlet temperatures approached freezing and ambient temperatures as low as 7° Fahrenheit made necessary the operation of the hot condenser water reuse system in 100-B, D, DR, and F Areas and the addition of steam to the filter plant supply at 100-H Area.

[redacted]

Manufacturing Divisions

The power demands for the month were:

Process	66,300 KW
Village	33,200 KW

The total represents a new all time high power demand.

The January area passenger volume of 143,260 surpassed the previous recorded high of 139,498 in March, 1949.

The unavailability of qualified personnel made it necessary for 80 percent of the Instrument Division personnel to go on a six day work week, effective January 29, 1951.

C. N. Gross

C. N. GROSS, MANAGER
MANUFACTURING DIVISIONS

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MANUFACTURING DIVISIONS

PATENT REPORT SUMMARY
FOR
MONTH OF JANUARY 1951

Richland, Washington
February 12, 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
D. A. Snyder Engineering and Control Division Project Engineering Divisions	GUIDES FOR OBTAINING UNIFORM STACKING PATTERN OF CYLINDRICAL PIECES IN A RECTANGULAR CONTAINER The guides are designed to provide level rows with the same number of pieces in each row and a minimum of void space. They consist of small rods on the bottom and sides of the container and an incline at one end of the bottom, all parallel with the contained cylinder.
R. Willing Engineering and Control Division Project Engineering Divisions	REMOVAL OF SUPERFICIAL OXIDE FROM URANIUM RODS DURING STRAIGHTENING BY MECHANICAL BUFFING Preliminary tests indicate that removal of superficial oxide from uranium rods during straightening by mechanical buffing may reduce air contamination due to subsequent handling by a factor of approximately 20. The method involves inclusion of a motor driven buff within the Medart straightener housing immediately following the straightener roll.

C. N. Gross

C. N. GROSS

MANAGER, MANUFACTURING DIVISIONS

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Section 10 Approved By C J Shorten Jr
for W. K. Woods, Division Head
Pile Technology Division
Technical Divisions

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February 7, 1951

P DIVISION

JANUARY, 1951

I. GENERAL

The operation of all five piles was routine throughout the month except for a twenty-one day outage at F Pile for Van Stone flange repair and nozzle replacement, a four day outage at DR Pile to remove a ruptured slug, and a one day outage at H Pile to remove a ruptured slug. These outages are discussed in detail under Area Activities.

The average time operated efficiency for all piles was 80.5%. Exclusive of F Pile, the efficiency was 92.7%. The total number of outage hours for all piles was 724.65. Of this amount, 54.4% is chargeable to the nozzle and Van Stone flange work at F Pile; 41.9% is chargeable to plutonium production, and 3.7% is chargeable to the special request program.

Added gains in maximum operating level were achieved during the month. B Pile was raised from 375 MW to 395 MW, D Pile was raised from 335 MW to 370 MW, DR Pile was raised from 447 MW to 463 MW and H Pile was raised from 480 MW to 485 MW.

A new record billet yield of 88.2% was established in the 300 Area Melt Plant operation during the month.

The P-10-A slug fabrication facilities and operating personnel at the 108 Building in 100-B Area were transferred to the P Division from the Pile Technology Division on January 8, 1951.

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P Division

II. ORGANIZATION AND PERSONNEL

Number of Employees on Payroll - January, 1951
Beginning of Month - 357
End of Month - 369
Net Increase - 12

R. Teats, Shift Supervisor, was transferred to the P Division from the Pile Technology Division.

G. S. Spencer, Technical Graduate, was permanently assigned to the P Division as Supervisor-in-Training.

Two Technical Graduates were assigned to the P Division and one Technical Graduate transferred to the S Division.

Five new operators were hired into the 300 Area and five operators transferred to the P Division, 300 Area, from other divisions.

III. AREA ACTIVITIES

Pile Summary	Pile B	Pile D	Pile DR	Pile H	Pile F
Time Operated Efficiency (%)	93.6	96.3	87.8	93.2	31.7
Average Power Level (MW)	365	329	442	469	270
Maximum Power Level (MW)	395	370	463	485	320
*Inlet Water Temperature (°C.)	4.6	5.1	4.9	3.3	5.4
*Outlet Water Temperature (Max. °C., IO tubes, 0.240" Zone)	60.2	57.5	72.1	53.8	49.8
Number of Scrams	2	1	4	4	1
Number of Purges	2	1	2	1	1
CO_2 Consumption (cu. ft.)	57,120	95,064	59,976	24,628	66,096
Metal Discharged (tons)	29.69	13.04	0.75	12.95	10.15
Inhours Gained (this month)	-37	-18	59.2	-3	-9
*Inhours Poisoned	555	538	183.2	74	460
*Inhours in Rods	57	84	145	141	90
CO_2 Concentration (%)	97	98.2	99.2	92	94.2
Max. Graphite Temperature (°C)	379	379	288	380	380

*Month End figures.

PILE BUILDING

Outage Breakdown

Date of Outage	Scheduled: Metal Discharged	Scheduled: Maintenance	Unscheduled	Length of Outage (Hours)
(1) 1-2-51			H	0.7
(2) 1-3-51			B	0.2
1-5-51		DR		0.7
1-6-51	F	F		507.0

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P Division

Outage Breakdown (Continued)

Date of Outage	Scheduled Metal Discharged	Scheduled Maintenance	Unscheduled	Length of Outage (Hours)
(1) 1-9-51			H	0.7
(1) 1-10-51			H	0.5
1-10-51	B			24.0
(3) 1-11-51			DR	86.6
(4) 1-12-51			D	0.4
(5) 1-15-51			DR	3.2
1-16-51	D			27.1
(2) 1-18-51			DR	0.2
1-23-51	B			23.4
1-24-51	H			27.0
(1) 1-24-51			H	3.5
(6) 1-29-51			F	1.3
(3) 1-30-51			H	18.0
(2) 1-31-51			B	0.15

(1) Unscheduled outage due to operational difficulties with Production Test #105-354-P (P-13 rig).
(2) Unscheduled outage due to panellit alarm which could not be re-set.
(3) Unscheduled outage due to failure of uranium slug jacket.
(4) Unscheduled outage to investigate the possibility of a ruptured uranium slug.
(5) Unscheduled outage due to the necessity for charging additional poison columns following startup after removal of ruptured slug.
(6) Unscheduled outage to repair leak in pile circulating gas system.

Operating Experience

Production tests having operational significance are reported below:

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

1.485"	1.490"
4674-F	4566-B
4674-D	4568-B
	4579-B

105-338-P (Pile Test of Special Step Plug and Gas Seal)
In that section of vertical rod #20-D which remains inside the special gas seal during pile operation, the lead plug was replaced by a silicone plug. This stopped the minor gas leak previously detected through that section of the rod.

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P Division

105-354-P (Operation of ANL-140 With Fuel Installed)
Four unscheduled outages of the H Pile occurred during the month as a result of operation of the safety trip devices in the P-13 system. Two were caused by failure of insulation on wiring in the P-13 instrument power supply. A third was a result of gasket failure on the heat exchanger. The exact cause of the fourth trip was uncertain, but is attributed to the recirculation system. During the month, 5.4 hours of outage time at H Pile are chargeable to the P-13 project. Total production loss to date attributable to this project is 2358 MWD.

105-381-P (Irradiation Creep Tests of Annealed 2-S Aluminum)
The NEPA creep apparatus was re-installed in tube 2680-D January 16, following repairs of electrical connections in the heater circuit. The apparatus is now operating satisfactorily.

105-388-P (Power Level Increase at B, D, DR, F, and H Piles)
This production test was completed January 31. The conditions set up by the test have resulted in significant gains in operating levels of the Hanford Piles, and have been adopted as standard P Division operating procedure. This assures continued operation of all piles at the highest levels attainable under present temperature limitations.

105-414-P (Graphite Temperature - Thimble Temperature Correlation)
During the month, vertical rod #24-F was removed from service and dismantled. The thimble was removed from the #24-F position and a special temperature measuring device inserted in the channel under the provisions of this test. No operational difficulties have been experienced.

A considerable increase occurred during the month in the amount of work done in connection with the special request program. Approximately 340 manhours of time was expended by the P Division on this work. Thirty tubes of special request material were charged into the piles for irradiation. Twenty tubes of irradiated special request material were discharged and fifteen casks containing irradiated samples were shipped off site. In addition to the special request program, approximately 200 manhours were required for the charging, discharging and shipping of chemical 68-56.

A total of 66.58 tons of uranium slugs was discharged during the month, 65.53 tons at 100% of goal value and 1.05 tons at 46% of goal value.

An unscheduled outage of 86.6 hours duration occurred at the DR Pile on January 11 due to a ruptured uranium slug in tube #3188-DR.

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P Division

The piece had swelled to such an extent that removal of the rear gunbarrel was necessary in order to discharge the tube containing the ruptured piece. An attempt to replace the rear gunbarrel was unsuccessful and channel #3188-DR was removed from service until replacement of the gunbarrel can be attempted during a subsequent outage. Contamination in the effluent water was confined to one side of the 107-DR retention basin permitting startup of the pile immediately after the necessary work in connection with removal of the ruptured piece was completed. A detailed report of this incident will be issued separately.

An unscheduled outage occurred at the H Pile on January 30 due to a ruptured uranium slug in tube #3270-H, which contained an H-10 loading. The piece which failed, however, was not associated with the H-10 loading, being one of the downstream uranium slugs. Discharge of the ruptured piece was effected without the necessity of removing the tube since the piece had not swelled and could be discharged in the normal manner. All contamination resulting from the failure was confined to one side of the 107-H retention basin and the pile was started again after an outage of only 18 hours duration.

Due to the apparent increasing frequency of slug jacket failures during pile operation, considerable effort is being made to isolate and remedy the cause of the failures. Pending determination of the exact cause and remedy, emphasis is being placed on more rigid fabrication standards and improved testing and inspection methods. Meanwhile, the improvement of equipment for the early detection of a ruptured slug in a process tube is being actively pursued and development of specialized tools for removal of the ruptured pieces after failure is being continued.

Mechanical Experience

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

a. Vertical safety rod 24-F is out of service under the provisions of production test 105-414-P, as noted previously.

b. Horizontal rod A at 100-D Area gives indications of binding when twenty-six inches out, but is in operable condition.

During the extended outage at F Area, the following work was completed on the F Pile rod system:

1. Horizontal rod #2-F, previously reported out of service, was removed from the pile; the first fourteen feet of track was removed, and a traverse of the thimble made. On the basis of information obtained by the traverse, a cut-down track was fabricated to provide sufficient

clearance for the rod. Both track and rod were reinstalled and at month end the rod is operating satisfactorily.

2. Horizontal rod #5-F was given the same treatment as #2-F in order to relieve a binding condition. Present operation is satisfactory.

3. The track was removed from horizontal rod #6-F and a complete traverse of the channel was made. The traverse indicated binding at the tip. Necessary work to relieve this condition will be done at a subsequent outage. Following the traverse, the rod was returned to service.

Repairs and adjustments to the horizontal rod hydraulic system at the DR Pile appear to have remedied the occasional failure of horizontal rods #6 and #9. Both rods are operating satisfactorily at month end.

The program for replacement of stainless steel nozzles with aluminum nozzles and Van Stone flange repairs on the F Pile was started on January 6 and completed on January 27. A summary of the Van Stone flange repairs made during the outage is given below:

Front flanges below 0.30" residual thickness	14.5%
Rear flanges below 0.30" residual thickness	21.4%
Tubes requiring additional sum clearance (3/8" minimum	4.9%

During the extended outage required for nozzle replacement at F Area, the following additional items of work were accomplished:

1. The 105-F storage basin was pumped down and cleaned; the chute liners and gates were repaired.

2. The leaking thimble in the A test hole facility (reported in December) was replaced.

3. The installation of a sump in the west basin of 107-F was begun. The work is 70% complete at month end.

4. The 105-107 effluent line was drained and a broken 12" drain valve replaced.

During the back seating of all tube charges at F Pile in connection with the nozzle replacement program, the charge in tube #0263-F was found to be stuck. In order to discharge the tube, it was necessary to remove all pieces downstream from the stuck piece, cut away the tube ribs and rotate the tube 180 degrees. After this had been done, the piece was discharged using forces up to 6,000 pounds. When examined, the offending piece revealed a typical "banana" type of distortion. The piece has been transferred to the Metallurgical Section of the Pile Technology Division for analysis. Tube #0263-F has been taken out of service pending replacement.

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P Division

In the course of leak testing following the completion of the nozzle replacement work at F Area, it was discovered that tube #1662-F leaked water into the pile. The tube was discharged and removed from service pending replacement.

A general program to obtain more complete information on the central pile graphite temperatures and thus achieve maximum operating levels possible under temperature limitations has been undertaken. In line with this, the following work was done during the month.

1. At F Pile, seven vertical safety rod thimbles were removed and replaced by thimbles fitted with thermocouples.

2. At D Pile, the vertical thimble in position D-23 was replaced by a thimble fitted with thermocouples.

3. At B Pile, a stringer of graphite containing twelve thermocouples was installed in the C test hole facility.

4. At F Pile, a similar stringer fitted with thermocouples was installed in the C test hole facility.

Further investigation of the water leak in the B test hole facility at B Pile (reported in December) revealed that the sample holes #1 and #2 in the assembly were ruptured and that the central water supply tube was badly corroded. A new assembly is being fabricated to replace the present one.

Repairs to the B test hole facility at D Pile are essentially complete; however, when the facility was pressure tested, a small leak in the supply piping was found which will be repaired during the next outage. Water will not be supplied to the facility until reactivity considerations will permit.

Increased leakage from the 107-H east retention basin was noted during the month. An inspection showed considerable deterioration of the packing in the expansion joints. This had been anticipated on the basis of experience with the 107-H west basin. Repairs will be made as soon as milder weather conditions permit.

Temporary repairs to the west 107-DR basin were completed during the month and repairs on the east 107-DR basin were commenced. Completion of repairs was postponed until the contamination resulting from the ruptured slug in tube #3188-DR has been successfully removed from the basin.

The excavation of an earth crib near the 107-B basin was started during the month, and a pipe was installed from both 107-B basin pumps to the crib. Water may now be pumped from either side of the retention basin to the crib.

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Pile Development

In the 105-B Building, the controls for the discharge area doors

and the recorder for the rear face Beckman radiation monitoring device were moved from the monitor room to the control room. This arrangement will allow the monitor room operator to be available for other work during a pile outage.

Improvements in the construction of the tip-offs and the discharge area oil trough at 100-F Area were made during the January extended outage. Experience to date indicates significant redution in personnel exposure and contamination will be realized from this change.

Gas Processing Building

Operation was normal.

Special Hazards

Radioactive vapors have been discovered coming from the ground in the vicinity of the #3 drain at the 105-B storage basin. The sewer line from this drain flows into the main pile effluent line at a point where considerable surging vapor pressure is known to exist. Excavation of the line and repair will be undertaken during an early outage.

During discharge operations at 100-F Area during January, two irradiated uranium slugs became lodged on the ten foot cat-walk in the discharge area. The discharge operation was under observation from the fly's eye at the time, and it was evident that the pieces struck the discharge oil trough as they fell and were deflected onto the cat-walk. The pieces were pushed into the basin without over-exposure of personnel. Adjustments were made to the trough to prevent re-occurrence of the incident.

No unexpected special hazards resulted from the removal of the ruptured slug at 100-H Area. This incident will be covered in a separate report.

At DR Pile during the removal of the slugs from the front of tube #3188-DR preparatory to removal of the ruptured piece, two of the irradiated slugs fell into the front elevator pit while being transferred to an adjacent tube on the front face. In order to permit continuance of the work, the pieces were covered with sand until effectively shielded and subsequently recovered without over-exposure of personnel.

The contamination of the east 107-DR basin resulting from oxides carried into the effluent water from the ruptured slug has proven very difficult to clean up. The most recent samples of scum scraped from the walls gave readings of 400 d/m/g plutonium and 1.5 μc/g fission products. Tolerance limits are 5 d/m/g plutonium and 10^{-2} μc/g fission products. A thorough scrubbing of all basin surfaces is in progress at month end in an effort to bring these readings within tolerance limits.

Surveys on the far side of the DR Pile have shown neutron leakage along the T seams of the biological shield. Beam size and in-

tensity have not been accurately determined, but are not at present considered serious. Plans are being made for the installation of shielding to eliminate this condition.

PROJECT STATUS - 100 AND 300 AREAS

The status of P Division projects which are currently active is summarized below:

C-306 (Front Face Shielding Caps)
This project was completed during the month with the the installation of front face shielding caps at F Pile.

C-330 (Improved Ventilation - Building 313-314)
Measurements have shown definite reductions in airborne contamination as a result of new ventilation improvement installations. Development work is being continued.

C-347-R (Nozzle Replacement)
This project was completed during the month with the installation of new nozzles on the F Pile.

M-713 (Flexible Vertical Rod)
Design is complete. A full scale rod will be fabricated and tested in the D Pile.

C-411 (J Slug Storage and Shipping Facilities)
Some preliminary work on procurement and construction phases is being done on a work release pending submission of a formal project proposal in the near future. Current studies indicate the possiblity that the present shipping equipment may be adequate to handle this program. Consequently, purchase of well cars has been suspended until factors affecting the matter have been further resolved.

C-412 (P-10X Extraction Facilities)
Partial design, partial procurement and necessary development work are being accomplished on a work release prior to submission of a project proposal. Run-in of the first metal extraction line was completed during the month. Certain desirable improvements will be incorporated into the second metal extraction line as a result of this experience.

C-420 (CO_2 Bulk Handling Facilities)
Atomic Energy Commission Directive No. HW-218 approving funds for this project was received January 18, 1951. A field release is being issued for construction.

B-803 (High Tank Control Valves, 100-B, D, F and H Areas)
Scope of this project is being reduced in line with contemplated changes in operating procedure.

P Division

C-321 (Effluent Diversionary Outlet)
The project proposal is being re-drafted as a result of recent developments which reduced the scope.

B-544-R (Steel Process Sewer, 105-107-B)
Recommendations for repair or replacement are being prepared by the Project Engineering Divisions.

B-1841 (Ball 3X System)
Preliminary scoping of the project has been completed. Project preparation has begun.

M-829 (D-DR Safety Circuit Interlock)
A work order has been issued to provide for the interconnection of the D and DR Pile Beckman safety circuits in such a way that a high level trip on one pile will automatically shut down both piles.

300 AREA - METAL FABRICATION

OPERATING SUMMARY

Uranium Fabrication	December	January
Billets Produced (Tons)	15	20
Bare Pieces Machined (Tons)	91	99
Briquettes Produced (Tons)	15	14
Oxides Burned (Weight Out-Tons)	3	4
Acceptable Pieces Canned (Tons)	82	94
Melt Plant (Billet Yield (%)	83.7	88.2
Melt Plant Solid Yield (%)	93.2	92.8
Machining Yield (%)	82.7	81.9
Chip Recovery Yield (%)	88.3	88.4
Canning Yield (%)	90.7	91.2
Autoclave Failure Frequency (No./M)	0.22	0.19

P-10-A Fabrication		
Billets Produced (pounds)	*	945.0
Slugs Processed (No. of pieces)	*	1,517
Billet Yield (%)	*	89.2
Machining Yield (%)	*	81.8
Canning Yield (%)	*	98.5

*Not reported since P-10-A fabrication was under the Pile Technology Division prior to January 8, 1951.

OPERATING EXPERIENCE

Canning

Although the canning yield improved slightly, the major causes for

rejects remained relatively unchanged. From a total of 48,152 canned slugs inspected, 1.9% was rejected for non-seating, 2.8% for marred surface, 1.2% for poorly bonded caps and 3.1% for miscellaneous reasons.

A significant number of marred surface rejects (0.5%) continued to result from fabrication defects in cans supplied by the Victor Corporation which were not evident until the cans had been processed. Initial shipment of cans received from Alcoa showed similar defects after processing. This condition has been reported to the vendor's representative for correction. The remainder of the marred surface rejects resulted from dents and scratches incurred during the finishing and testing of canned slugs.

Beginning in January, bad weld rejects were separated into two categories for control purposes. Rejects resulting from caps being poorly bonded have been called "poor bond", and only inferior weld beads being classified as "bad welds". Stringent precautions are being exercised to assure that slugs are rejected if the cap is not completely bonded to the can. In addition, cap wetting is being followed closely on the canning lines to reduce this type of reject.

Inspection

There were eight autoclave failures in the 48,152 slugs tested during the month. Four of these failures resulted from minute pinholes in the weld bead and bonding layer between the cap and can. Two failures were caused by very small cracks through the cap. Microscopic examination of these caps indicated that the cracks probably originated in the extruded bar stock from which the caps were fabricated. Two failures showed a slight swelling of the can side wall near the base of the cap. The cause for these failures could not be determined.

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

305 Test Pile

The following tests were run during the month:

Description	No. of Tests
Regular Metal	29
Billet Eggs	24
P-10-A Slugs (Lithium Aluminum Alloy)	119
J Slugs (U_{235} Aluminum Alloy)	153
Bare and Canned Slug Reactivity Study	120
Test Reactivity of Victor and Scovill Cans	52
Measure Purity of Graphite Bars	29
Irradiate Gold Foil for Flux Monitoring	3
Test Aluminum Used for Alcoa Can Fabrication	16
Test Boron Steel Balls for Proposed 105 Bldg. Third Safety	8

P Division

Special Fabrication Work

Five hundred thirty uranium slugs, 8.090" ± 0.010" long by 0.988" + 0.001" - 0.002" in diameter, were machined, canned and finished on a development basis, for the duPont Company. The triple dip canning process was used and the work was accomplished without incident. This work was performed on an overtime basis and did not interfere with normal slug production.

Three hundred sixty J slugs were canned using the single Al-Si dip process. The canning yield for this run was approximately 96%.

Three thousand one hundred ten poison pieces were canned.

In addition to the above, approximately 144 manhours were devoted to the following special fabrication requests:

Triple dip canning of 150 receptacle slugs.

Triple dip canning of 894 slugs in accordance with PT-313-113-M, (Fabrication Related to Low Temperature Rolling Tests),

Triple dip canning of 20 pieces varying the bronze dip time for Statistical Study of Transformation.

Fabrication of 60 four inch lead pieces for technical studies.

Material Handling

One hundred seventy-six tons of alpha rolled rods were received from the Simonds Saw and Steel Company.

Fifty-two tons of billets were shipped to the Simonds Saw and Steel Company for rolling. Sixty-eight tons of normal canned slugs were shipped to the 100 Areas. In addition, approximately eight manhours were devoted to receiving and shipping miscellaneous special process material.

Three reject U_{235} alloy slugs were returned from the 100 Areas during the month. This reduces the total number of canned slugs transferred to the 100 Areas to 7,504. At month end, there were 375 acceptable canned pieces and 830 acceptable bare pieces in the 300 Area.

P-10-A Operation

On January 8, 1951, the P-10-A fabrication facilities, as well as operating personnel at 108-B, were transferred from the Pile Technology Division to the P Division. Billet casting and slug fabrication operations were continued throughout the month without incident.

P Division.

A General Electric leak detector was received and installed. The vacuum system was tested and several small leaks were located. A vacuum of approximately 30 microns is currently being maintained on the casting furnaces.

Approximately 1800 pounds of rods were received from the extrusion of 42 billets at the Reynolds Metals Company. These rods are of unusually good quality.

Special Hazards

No unusual conditions developed during the month.

Development

A reduction in the depth of pipes and voids in the top end of uranium billets has been accomplished by developing a new capping procedure. This procedure involves double capping. The billets are initially capped 30 seconds after casting and three minutes later are capped a second time. This procedure contributed favorably to the record billet yield of 88.2% established this month.

To establish surface standards for billets, a comparison study of billet surface versus rod surface was started during the month. Thirty-eight billets were selected as being borderline in surface quality. The surface characteristics of these billets were recorded and the billets were shipped off plant for rolling. When they are returned to Hanford as rods, they will be processed through machining as a group to determine the effect on machining yield. Depending upon the results of this study, it may be possible to reduce the amount of machining necessary on some Hanford billets to meet existing surface standards.

A trial run was made on the bronze furnace lock-out device which will be used to control the immersion time and temperature of slugs dipped in the bronze bath within the necessary ranges to assure complete alpha-beta transformation. Although several minor modifications remain to be made, the equipment functioned satisfactorily. It is expected that this installation will be completed shortly.

Work was continued during the month to determine if the autoclave test can be made more severe, and thus reduce or eliminate the possibility of slug failures in the 100 Area piles. Further tests were made under the following conditions:

a. After normal testing, slugs were autoclaved for an additional 40 hours.

b. After normal testing, slugs were thermally cycled at 8 and 16 hour intervals during an additional 40 hours.

c. After normal testing under steam pressure of 90 psi, slugs were tested 40 hours under 100-110 psi steam pressure.

P Division

To date no autoclave failures have occurred due to the additional testing after normal testing. It is planned to continue extended tests under various conditions until sufficient information is available for statistical evaluation. All testing is being done at full line steam pressure.

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Richland, Washington
February 7, 1951

S DIVISION

JANUARY, 1951

I. RESPONSIBILITY

There were no changes in S Division responsibilities during January.

II. ACHIEVEMENT

A. Operating Experience

1. Production Statistics

a. Over-all Performance - Canyon, Concentration and Isolation Buildings (1-1-51 thru 1-31-51, inclusive)

	B Plant		T Plant		Combined	
	Normal	Acid Wash	Normal	Acid Wash	Normal	Acid Wash
Charges started in 221	69	1	53	0	122	1
Charges completed thru 224	70	1	32	1	102	2
Charges completed thru 231	76	1	32	2	108	3
Special charges thru 231	--	-	--	-	4	
Average purity completed charges	--	-	--	-	98.7	
Avg. elapsed cooling time metal processed (days)	85		60			
Yield through process	97.8		91.2		96.1	
Material Balance through process	98.3		102.0		99.3	

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b. Canyon and Concentration Building Performance Data for Completed Charges (1-1-51 thru 1-31-51, inclusive)

	B Plant	T Plant	Combined
Percentage of starting product in waste:			
This month	3.3 (a)	3.7 (a)	3.4
Last month	3.4 (b)	4.4 (b)	3.9
Cumulative to date	3.9 (c)	3.8 (c)	3.9
Percentage of starting product recovered:			
This month	96.4	101.2	97.8
Last month	95.9	92.6	94.2
Cumulative to date	96.8	95.7	96.3
Percentage of starting product accounted for:			
This month	99.7	104.9	101.2
Last month	99.3	97.0	98.1
Cumulative to date	100.7	99.5	100.2
Gamma decontamination factor (Log):			
This month	7.11	7.35	7.20
Last month	7.15	7.25	7.20
Cumulative to date	7.30	7.34	7.32

(a), (b), and (c): Includes waste from processing recycle. The recycle wastes are estimated as: (a) 0.022%, B Plant; 0.0002%, T Plant. (b) 0.019%, B Plant; 0.011%, T Plant. (c) 0.010%, B Plant; 0.069%, T Plant.

c. Isolation Building Performance Data (1-1-51 thru 1-31-51, inclusive)

	Prepared for Shipment	Recycle	Waste	Retained Samples	Material Balance
Average for this month	93.15	4.98	-0.01	0.01	98.1
Average for last month	92.6	5.07	-0.06	0.01	97.6
Average to date	95.25	4.84	0.04	0.01	100.1

d. Depleted Uranium and Waste Storage Status

200 East Area

Tank Farm	Gallons (10^3) in Storage B	C	BX	BY	Total	Reserve Capacity in Batches to Process B	C	BX	BY	Total
Depleted Uranium	1574	3374	3180	2146	10279	0	0	0	1110	1110
1st Cycle	2645	3170	2645	354	8814	0	0	152	546	698
2nd Cycle	1294*	0	0	0	1294*	Cribbed as necessary				
TBP Reserve				-	-	-	-	-	-	109BY (758,000 gal)

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*119,000 gallons of supernatant cribbed during January.

Tank Farm	200 West Area Gallons (10^3) in Storage T	U	TX	Total	Reserve Capacity in Batches to Process T	U	TX	Total
Depleted Uranium	1579	4737	2800	9116	0	0	926	926
1st Cycle	3170	1585	3260	8015	0	0	797	797
2nd Cycle	1297	0	0	1297	Cribbed as necessary			
TBP Reserve	-	-	-	-	-	-	115TX (758,000 gals)	
Waste Evap. Reserve	-	-	-	-	-	-	116TX (758,000 gals)	

2. Production Activities

a. General

An over-all time cycle of 11.6 hours, counting standard charges and acid washes started through extraction, was maintained during January. In B Plant, where 400 g/t material was processed throughout the month, the average time cycle was 10.4 hours, while through T Plant it was 13.6 hours. The longer cycle in T Plant was the result of two factors which retarded production rates: 1) eighteen charges of special request material, from uranium with an enrichment level of 55 MWD/T, were processed through extraction, combined in the first decontamination cycle step to form nine charges and processed through each succeeding step as 100% volume runs, and 2) forty-eight hours lost time resulted from unplugging of the underground line to the depleted uranium storage tanks.

b. Extraction Waste Losses - B and T Plants

Significant data on extraction waste losses are tabulated below:

	B Plant January	B Plant December	T Plant January*	T Plant December
Analyses before rework	1.75	1.76	1.83	2.80
Analyses after rework (throw-away)	1.38	1.35	1.62	2.21
Average MWD/Ton	405	391	405	547

*Eighteen charges processed through T Plant extraction during the month were special request material from metal which was irradiated in the DR Pile to 55 MWD/Ton. The waste from these

charges was not reworked; however, the throw-away losses for these charges averaged only 0.51%. Data for these charges have been excluded from the averages shown in the above table.

c. Acid Washes - B and T Plants

An acid wash was completed through one parallel line of the Canyon Building and through the Concentration Building at B Plant. Recovery from the 12-7 tank and the first decontamination cycle tanks was 35.28%, approximately twice normal for this equipment. About half of this material was recovered from solution heels in the 12-7 tank while the other half was recovered from Section 14 equipment. Subsequent investigation, including a check of the 14-1 tank spray-distributor, gave no indication of specific causes for high product retention in Section 14 equipment. One acid wash, started in T Plant Canyon late in December but which was not completed through the Concentration Building at month end, was completed early in January. The following data detail as percentages of standard charges the product recovery by the regular acid washes and Concentration Building pre-flushes:

Run	Extraction	Sect. 12 & 2nd 1st Cycle	Cycle	221 Bldg.	224 Bldg.	Total thru Process	Preflush B E&F Cells
B-10-12-AW-1	11.67	35.28	3.53	50.48	-13.28*	37.2	27.44
T-10-12-AW-2	6.90	17.29	10.29	34.48	0.24	34.72	15.50

*41% of a standard charge in the form of recycle from the Isolation Building process was added to this Acid wash in the lanthanum fluoride byproduct precipitator. Apparently 13% of a charge was retained in E and F Cell tanks to replace the normal heels which had been removed by special flushes prior to processing of the acid wash.

d. Retention of Product in F Cell Equipment - T Plant

With the installation of a longer shaft on the agitator for the T Plant Concentration Building F Cell precipitator, agitation has been provided for slurry in the tank to a minimum level of approximately 100 pounds. Since the new shaft has been in service, product retention in this vessel has been reduced from approximately 15% of a standard charge to approximately 3%. This is in line with the experience for the F Cell precipitator at B Plant where a larger-shaft agitator has been in service for several months. Visual inspections of the inside of the tank carried out on two different occasions after the agitator change disclosed that only a very thin film of precipitate is now being retained over 30% of the bottom of the tank as compared to the heavy film which formerly covered 90% of the tank bottom.

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e. High loss from First Cycle Byproduct Precipitation - T Plant

The first cycle byproduct cake solution for run T-11-01-B-32 processed in T Plant analyzed 19.68% product content. The first attempt at reworking this waste solution yielded no appreciable recovery of product and a second rework reduced the loss only to 8.35%. At this point, because of the large volume to which the charge was diluted during rework operations and the poor recovery which was experienced from the two reworks, the material was sent to waste with the approval of the AEC. Thorough investigation of this occurrence disclosed no positive reason for the high loss, but it is speculated that the oxidizing chemicals became contaminated somewhere in the process by the inadvertant addition of a reducing chemical.

3. Process Control

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

The fourth dissolver off-gas filter-reactor was completed and installed in cell 3-R at B Plant during the month. All units have been operating satisfactorily with a 99.9% removal of both iodine and particulate matter being achieved. A request has been made to the AEC to revise the directive for these projects to allow a fifth unit to be fabricated. This unit, when built, will be held in the mock-up cell as a spare.

b. First Decontamination Cycle Waste Evaporator (Project C-396)

The over-all construction phase of the project at the site in the 200 West Area is proceeding on schedule; however, the fabrication and alteration of cell equipment in the A & J shops was held up as a result of a temporary work stoppage by the Operating Engineers and by delays incurred in the receipt of equipment items fabricated off the site and in the Hanford (A&J) White Bluffs Shops. Appropriate steps have been taken to expedite this construction to assure completion by May 1, 1951 since it is imperative that this evaporator be in operation by this date to provide sufficient storage space to permit start up of the Metal Recovery Plant (TBP).

A directive was received January 30, 1951, from the AEC authorizing the expenditure of $150,000 to purchase materials and equipment for a second waste evaporator to be installed in the 200 East Area. A project proposal for the second evaporator will be submitted for approval early in February.

c. Additional Waste Storage Facilities - 241 BZ (Project 417) and 241 TY (Project 418)

The design for two additional six tank, waste storage areas, one each for the 200 East and 200 West Areas, is now 75% complete. The scope drawings and rough draft project proposals were submitted to the Manufacturing Divisions for approval on January 31, 1951 and the formal proposals will be submitted to the Appropriations and Budget Committee in February.

d. Cell Drain Conductivity Meters (Project C-397)

Installation in each of the Canyon Buildings of six additional leak detection devices known as "Cell Drainage Conductivity Meters" progressed rapidly during the month with four being installed and placed in operation at T Plant and two at B Plant. This project will be completed in February.

e. Spraylat Testing

Testing of Spraylat, a strippable protective coating which is supplied in water as a suspension media, was completed during the month. It was determined that this material is of very limited usefulness to the S Division, since it cannot be successfully applied to rough surfaces and is not resistant to nitric acid fumes or solution.

f. Special Samples

The following special samples were obtained and delivered to the Separations Technology Divisions:

50 ml of C-4P product solution from 224-B Plant
500 ml of 15-8 waste solution from 221-B Plant.

4. Investigation and Development

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

With the increased enrichment of metal supplied to the Separations Process in recent months, significantly lower volumes have resulted in the extraction step due to a reduction in the quantity of metal needed to supply required amounts of plutonium for each batch. As the enrichment of the metal was increased no attempt was made to lower the amounts of phosphoric and bismuth ions added during the extraction precipitation until a 400 MWD/T enrichment became constant. In January

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under Production Test 221-B-10, an investigation of the effect of reduced concentration of the bismuth ion was undertaken at B Plant and the bismuth concentration had been successfully reduced from 4.5 g/l to 2.5 g/l with no apparent deleterious effect on extraction waste losses.

b. Elimination of Radio-iodine from Stack Effluent-Production Test 221-B-9

It is estimated that approximately 50% of the radio-iodine associated with irradiated metal from the pile is released with the dissolver off-gases and is, therefore, trapped by the silver nitrate reactors recently installed in the dissolver off-gas systems in both plants. The remaining 50% of the iodine appears to be carried on to succeeding steps of the process where at least a portion of it is released to the cell ventilation system from whence it is discharged with the stack gases. During January tests were started in B Plant using air sparging of the metal solution during dissolving in an attempt to drive more of the iodine out at this step so that it will be trapped in the silver reactor. No results have been reported from these tests to date.

B. Equipment Experience

1. Operating Continuity

In B Plant there were no equipment failures which affected the continuity of operations. Forty-eight hours operating time was lost in T Plant due to plugging of the underground line to the depleted uranium storage tanks. Since successive attempts to remove the plug, using 10% sodium bicarbonate solution, were unsuccessful, the neutralized depleted uranium solutions were rerouted through a spare line. Attempts will be made at a later date to remove the obstruction from the former routing. The increased frequency of partial plugs in the depleted uranium system in recent months is being investigated by the Separations Technology Division.

2. Inspection, Maintenance and Replacements

a. Canyon Equipment Failures - B and T Plants

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

1. In B Plant the precipitator to Centrifuge B jet assemblies in Sections 13, 16 and 18 developed leaks and were replaced. Repairs were successfully completed on the assembly from Section 18 and it was used to replace the

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failed assembly in Section 16. High radiation levels precluded repairs to the other two assemblies.

2. In B Plant the Section 17 centrifuge catch tank to waste section jet assembly developed a leak and was replaced. The failed assembly was repaired and is being held as a spare.

3. In B Plant after all attempts failed to remove a plug from the dip tubes for the Section 16 cake dissolution tank sampler, the assembly was replaced.

4. In T Plant the jet assembly for transfer of cake solution from the 8-4 tank to the 12-7 tank developed a leak and was replaced. The jet assembly for transfer of solution from the 12-7 to 12-8 tank, also, developed a leak and will be replaced as soon as a new assembly is fabricated. Radiation levels prohibit repairs to this equipment.

5. In conjunction with the rerouting of neutralized, depleted uranium solution from the T Plant Canyon, a leak developed in the pipe trench on the jumper from nozzle 42, Section 10, to nozzle 101, Section 11. This jumper was replaced.

b. Concentration Building Mechanical Difficulties - B & T Plants

Mechanical difficulties experienced in B and T Plant Concentration Buildings are described below:

1. In B Plant it was necessary to replace the precipitator to centrifuge jet in B cell when inspection following errativ operation revealed that the throat of the jet was severely corroded.

2. In T Plant it was found necessary to replace the motor and drive-head assembly for the B cell centrifuge when considerable noise developed in the machine. Examination of the failed unit revealed that the spacer in a ball bearing had fractured and allowed the balls to jam, rotate the inner race and gall the rotating spindle. This machine has been successfully repaired and is being held as a spare.

3. During the month several severe leaks developed in the bottom welded seams of the steel heating-cooling jackets on the precipitators in A and D cells in T Plant. Repairs were made to the A cell precipitator by welding, but the jacket on the D cell precipitator was found to be severely corroded at the bottom edge after several attempts at welding had failed. To correct this condition a band is being welded around the bottom edge of the jacket.

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4. An inspection was made of the bowl of the A cell centrifuge when noisy operation occurred during the normal wobble which is experienced in cake removal operations. Two of the dip tubes were found to be bent and were replaced. It is believed that the tubes were bent by inadvertent, reverse rotation of the bowl.

5. The sparger in the A cell precipitator at T Plant became plugged and could not be opened due to the design peculiar to this piece of equipment. It was replaced. The thermowell for the E cell precipitator failed after only one month service and was replaced.

c. N-1 Tank Filter Block, Cell 2 - Isolation Building

Because of excessive time required to filter process charges through the N-1 neutsche filter in Cell 2 at the Isolation Building, a special leach and hot water flush were made of the filter block. Preliminary results indicate that the hot water flush aided the removal of a portion of the grease and solids deposited on the block; however, the results were not entirely satisfactory, and the possibility of using steam as a cleaning agent will be investigated.

C. Improvements

1. Adoptions

a. Thermal Decomposition of Peroxide - Production Test 231-11 (Isolation Building)

With successful completion of Production Test 231-11 at the Isolation Building, thermal decomposition as a means of destroying the peroxide in the supernatants from product precipitations was adopted as standard procedure for the three operating cells. The decomposition is carried out by raising the temperature of the supernatant to 70°C over a period of 40 minutes, holding until gas evolution ceases and then adding potassium permanganate solution until the end point is passed. This innovation has resulted in reducing the recycle solution volumes approximately 30 per cent which means that there are now one-third less recycle cans to be handled than when the oxalate "kill" was standard practice.

b. Concentration of Isolation Building Final Product Solutions

Under Production Test 231-10, it was established 1) that plutonium nitrate solutions concentrated to 350 g/liter can be satisfactorily processed through the purification step in the 234 Building with very little increase in plutonium in

the supernatants, and 2) that the final plutonium nitrate in the Isolation Building can be concentrated, with no difficulty, to 350 g/liter in the stills, thus eliminating the need for final drying. With process charges B-11-1-H20 and T-11-1-B19 the above steps were adopted as standard processing procedure for all plutonium nitrate designated for the 234 Building. Material for off plant shipments will continue to be dried in accordance with past practice.

2. Inventions and Discoveries

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

III. FINANCIAL STATEMENT

This section of the S Division Monthly Report will be started in February.

IV. PERSONNEL EXPERIENCE

A. Organization Changes

P. G. Rhoades, Area Supervisor of the 234-5 facility, resigned January 31.

C. T. Groswith was promoted to Chief Supervisor and Assigned to the Waste Metal Recovery Plant (TBP) effective January 1.

G. A. Halseth was promoted to Senior Supervisor in 234-5 Operations, January 1.

F. R. Lewis was promoted to Senior Supervisor in 224-T Operations, January 1.

M. M. Wall was transferred from the weekly roll to the monthly roll as Supervisor-in-Training, January 1.

C. F. Falk and A. J. Andersen were promoted to Shift Supervisors, Operations, January 1.

J. D. Duncan was transferred from H.I. Development to the S Division as a Shift Supervisor, Operations, January 1.

R. V. Haedt, Supervisor-in-Training, was transferred to the Separations Technology Division, January 1.

B. Force Changes

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1. Number of Employees on Payroll:

	Monthly Roll	Weekly Roll	Total Employees
Beginning of month	134	441	575
End of month	136	459	595
Net Increase (Decrease)	2	18	20

2. Personnel Changes

	Monthly Roll	Weekly Roll	Total Changes
Transfer from another division	1	16	17
Transfer to another division	-1	-3	-4
Reactivated	0	1	1
New hires	2	7	9
Resigned	-1	-2	-3
Transferred from Weekly to Monthly Roll	1	-1	0
	2	18	20

C. Safety Experience

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

D. Radiation Protection

1. Contamination of Operating Gallery Instrument - B Plant

The Ring-Balance instrument and the copper lines from the cell wall to the instrument for the first cycle waste neutralization tank in B Plant became contaminated during attempts to remove a plug from the dip tubes in the tank by introduction of steam to the lines. Apparently vacuum formed in the unvented lines after the steam was turned off drew contaminated vapors up to the instrument. It was necessary to replace the instrument and the lines. Procedures for adding steam to Ring-Balance systems have been altered to prevent a recurrence of the incident.

2. Contamination of 75 Ton Crane Cab - T Plant

While remote maintenance was being carried out in the T Plant Canyon cells with the 75 ton crane, low level contamination was spread to many of the surfaces in the cab and on operating personnel. Personnel left the cab when the air monitoring device gave warning of the condition. The cab was easily cleaned and

personnel contamination, which was of low levels, was readily removed. Subsequent investigation disclosed that during a change which was completed a few days before involving the CWS filter cartridge in the air supply duct to the crane cab, the gasket under the filter frame buckled, permitting inlet air to bypass the filter. This condition has been corrected.

V. EXPANSION SECTION

A. TBP Project (C-362)

1. General

The Project status at month end was as follows:

a. 64% of the detail design is complete comparing favorably with the accelerated design schedule of 64% completion as of this date.

b. Approximately 95% of the requisitions have been received and approved for Phases I, III, IV and VI, and approximately 65% of the total required requisitions approved to date are covered by purchase orders. As a general rule, the promised dates are 30 days later than the required dates.

c. Construction is an estimated 10% complete. The completion figure is lagging due to delay in delivery of some of the engineered items.

d. Design and purchase order costs are estimated to be running within the project proposal cost estimates. No reasonable estimate can be made at this date for the construction cost status.

e. Acceptance Test Procedures being prepared by Kellex started arriving this month. The first copies of these tests will be reviewed by the Design and Construction and the Manufacturing Divisions and the comments incorporated into a final procedure.

2. Essential Materials

Manufacturing Divisions representatives met with General Chemical people on January 10, 1950 to discuss specific items on truck delivery of Nitric Acid. Information which affected design was agreed upon and transmitted to Kellex for inclusion of the 211-AU tank farm design.

General Chemical Company Salt Cake (Na_2SO_4) being considered for use based on its potential savings was rejected based on its high NaCl content.

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A list of the required materials handling equipment for moving dry chemicals was forwarded to the Project Engineer to be supplied by the project.

3. Design

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

Because the work in these phases is becoming identical due to the progress of the respective phases, the comments in the weekly and monthly reports have been consolidated starting this month.

G. E. Design, Kellex Corporation, and Eastern Industries representatives agreed to eliminate the proposed tank bottom bearings on the agitators of the W R acidified feed storage tanks. Horsepower requirements of these units introduced the possibility of serious damage to the tank bottoms in the case of freezing of the bearing. Possibility of misalignment of bearings due to tank expansion with resultant damage was also considered.

It was agreed that Phase I and II agitators would be of the torque tube bearing housing type with positive air purge to prevent the possibility of process solution getting into the lower bearing.

It was decided to eliminate the agitators from the 244 CR and 244 BXR Process Pump Tanks. The resulting savings are estimated to be $90,000. Removal of these units was justified after careful consideration in which it was felt they were not a necessity to the over-all process function. The tank will be designed for agitator installation so that an available spare agitator can be installed if the need arises. A recirculation line from the tank discharge pump is provided for each tank for routine clean out use.

Originally it was planned to incorporate a rubber sleeve around the 241 waste storage tank periscopes for contamination control of this equipment while in the tank. This proposal was abandoned this month and the current plan is to lower the periscope into a light aluminum expendable shield provided with a viewing window and mounted in the tank riser. This method will allow periscope construction to be of black iron pipe. This should result in significant savings over the originally scoped stainless steel equipment and should eliminate any possibility of contamination during periscope operation.

S Division

The Separations Design Division prepared a letter to Kellex this month outlining the requirements for shielding sleeves to be used in moving slurry pumps and sludge sluicing nozzle equipment from tank to tank. The original proposal for this equipment was considered inadequate.

By Work Authority C-362 (2) Release No. 12 the Kellex Corporation was authorized on January 31, 1951 to proceed with the design for the Metal Waste Facilities for Tanks BY-111 and BY-112 located in the 241-BY Waste Tank Farm. These tanks were not included in the original design scope.

Document HW-19718 issued by the Separations Technology Division was received this month covering laboratory investigations of control procedures for operation of the blend tanks at the 244-UR Waste Removal Vault.

The inclusion of specific gravity, turbidimeter, and strain gauge instruments for the accumulator and blend tanks should provide adequate data for the control of the acidification operation.

b. Phase III - Design of Underground Pipe Lines

Crib well specifications were altered this month by the Health Instrument Divisions and a letter was forwarded to Design and Construction outlining the change to the 216 ER 216 WR, and the 361-U cribs. Wells will be drilled 50 feet below crib bottom instead of 150 feet below grade. Those wells already drilled will be filled with sand to comply with the 50 foot specification.

A four line encasement was agreed on for carrying UNH from the 221-U Building to the 203-U UNH storage area. Original scope plans made use of existing overhead chemical lines between the 221-U and 224-U Buildings. This change was made for the following reasons: 1) It would be necessary to lag and trace the overhead lines, 2) Differences in elevation make it impossible to drain the line at any one point, and 3) The overhead thermally hot solution under pressure was considered unsafe.

Existing diversion boxes in the 200 W Area have been used to advantage where possible in routing process materials. The catch tanks at 154U and 155TX diversion boxes will be converted to withstand corrosion from acid streams. Acidified feed from the 244 TXR installation and nitric acid will be routed through two buried lines direct from 155 TX to 244 TXR, by-passing box 153 TX in order to avoid the necessity for installing a corrosion resistant catch tank at this point.

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c. Phase IV - Reactivation and Conversion of 221-U for TBP

Work Authority C-362 (15) issued January 3 authorized the Atkinson and Jones Construction Company to proceed with the construction of the balance of the Waste Metal Removal and Recovery Facilities, namely, Phases II, IV, and VI.

Following considerable discussion between the Manufacturing Divisions, the Design Separations Division, and the Kellex Corporation, agreement was reached during the month to orient the lubrication and electrical male connector ends on canyon pumps and agitators to permit a greater degree of standardization of this equipment. The following table indicates the degree of equipment standardization effected:

	Types Kellex Proposal	Types Final Agreement
Agitators	11	4
Pump-agitator (common mount)	6	6
Pumps	20	8

Discrepancy between Section 14 - four way lube connector orientation and the remaining cell connectors of the same type was resolved this month. The Section 14 connectors were changed to comply with the others. These connectors will deviate from those in 221 B and 221 T as shown below.

Line	B & T Plant	221-U
A	Oil	Spare
B	Spare	Grease
C	Grease	Oil
D	Grease	Grease

Operating gallery piping prints have been reviewed and it is indicated that existing design provides considerable congestion of equipment mainly pipes, gang valves, control valves, and transmitters behind panel boards. Manufacturing Divisions comments on these prints were forwarded to the Design and Construction Divisions. A Design and Construction Divisions engineer is scheduled to contact Kellex in New York early in February on this problem.

4. Construction

Progress statistics at month end are tabulated below:

Phase	% Construction Completion
I	12.4
II	0

Phase	% Construction Completion
III	27.4
IV	2.1
V	97.0
VI	0.1
Total	9.4

a. Phase I - During the past month, the 244-UR Blend Tank Building has progressed to a 35% completion point, the present work consisting of form setting, concrete pouring, and backfilling. The 241-WR Diversion Vault is now approximately 8.7% complete. The work this month has been the completion of the excavation, the setting of forms and the concrete pouring of the foundation slabs. The 241-UR construction, which includes the master diversion box, the cascade diversion boxes and the various pits on the U-farm waste metal tanks, has progressed to a point of 9.7% completion. The work underway on this facility at the present time includes the placement of reinforcing steel and pouring of concrete for all boxes, pits, and pipe trenches.

b. Phase II - Construction is just under way for this phase and the work accomplished to date includes the layout for the 244-CR Blend tank vault for which excavation was started at month end.

c. Phase III - The Phase III construction work is now 27.4% complete and the work accomplished to date includes the complete excavation, the pouring of the encasement in the vicinity of the hot semi-works together with the installation of piping in this 2,000 ft. section, and the painting of this portion of the encasement. A total of 9,000 ft. of encasement has been poured to date.

The drilling of wells for cribs in the West Area is approximately 95% complete.

d. Phase IV - The 277-U Building is the only active portion of this phase. It is approximately 46% complete, representing 2.1% of the total phase completion. This month, the sides of the Building have been completely sheathed and the asbestos siding installed.

The work on Phase IV has been, and is continuing to be delayed because of a lack of sufficient number of welders and pipe fitters.

e. Phase V - The stripping and general clean-up of the 221-U and 224-U Buildings is approximately 97% completed and is continuing.

f. Phase VI - Work has just begun for the construction of Phase VI. The work now in progress consists of the placement of the foundation for the pump and motor in the 282-W Building.

B. UO_3 Project (C-361)

At month end Project C-361 design, scheduled for completion at this date, is 91% complete and completion is contemplated for February 20.

Document HDC-1985, Conclusion Report-Continuous Conversion of UNH to UO_3, written by J. M. Frame, was received and reviewed during this month. This document summarizes the study of continuous UO_3 conversion. Because it was not definitely shown that the oxide produced would be suitable for end use requirements; it was deemed advisable to drop this process for consideration in original project C-361 installations.

Work Authority C-361 (7) authorizing Atkinson and Jones to construct the metal conversion facilities was issued this month.

Information was received verbally from the AEC at month end that the installation of facilities to permit the segregation of the UO_3 produced from the Redox Plant from that produced from the TBP Plant will definitely be requested.

Inspection of the first of the cast Type 309 stainless steel decomposition pots has indicated the possibility that satisfactory castings for this service cannot be produced. The Purchasing and Stores Divisions are now investigating and it is possible that a portion of the pots will have to be fabricated from plate.

C. Redox (Project C-187-D)

1. General

The following major alterations and deletions of process equipment were approved during the past month by the Separations Scope Committee:

a. Deletion of TK 187, the Super-filtrol slurry hold up tank, and its associated auxiliaries due to recent technical advances in metal feed preparation steps which eliminate Super-filtrol as a scavenging agent.

b. Substitution of an air sparge for the previously contemplated ozone sparge of metal solution for ruthenium removal. The installation of the ozone generating equipment has been cancelled.

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c. Substitution of silver reactors for the previously planned caustic off-gas scrubbers for dissolver off-gas treatment. While design and procurement of the silver reactors is being expedited, caustic scrubber installation will be made by construction forces because of an anticipated delay in delivery of the silver units.

A recommendation to by-pass the cross-over oxidizer in favor of continuous cold oxidation of the 1BP plutonium stream prior to introduction into the 2A reactor is currently being considered along with those factors which, under accepted operating philosophy, limit production capacity of the plant. A report of these factors and the methods of dealing with them is currently being prepared by the S Division and the Separations Technology Division and will be available for review shortly.

Agreement has been reached with members of the Health Instrument Division on the methods and equipment which will be employed in the continuous monitoring of retention basin (cooling water) flow. The recommended instrumentation will require among other things the installation of a 20' x 20' x 5' deep pool at the basin inlet. This work will be delayed until the completion of the present contract in order to avoid renegotiations.

An evaluation of the bids received for the installation of a liner in the three large ANN storage tanks of the 211-S Area has led to the selection of Tygon as the material to be applied to the interior of these tanks. The approved tank construction and lining schedule indicates that the first of the three storage units will be available for the initial ANN shipment on 5-1-51.

Work was received from the Purchasing and Stores Division of the failure of nozzle locations atop vessel EU-122 (ICU concentration pot) to meet the tolerance specifications. Since it was determined to be impractical to attempt repair and since off tolerance measured 1/8" maximum for nozzle location, the vessel was accepted for installation in the 202-S Building.

The question of the suitability and desirability of the presently designed pen-and-plate type of equipment guide for remote tank installation has again been raised by the Manufacturing Divisions. Since mock-up facilities are now available, arrangements have been made with construction forces to demonstrate the suitability of the system with available tankage at an early date to determine what, if any, changes are desirable in the guide arrangement.

2. Construction

a. 202-S Building

The building structure is estimated to be 85% complete. Following the completion of the canyon roof pours in late

December, work continued thru the month on the silo crane gallery floor. Some delay in structural work was experienced while reactor U frames were corrected to specified tolerances prior to installation. Alignment of the first U frame (Top, 1A reactor) in the silo area is in progress at month end. The outer walls of all service areas have been poured and roof beams and columns are now being installed. Y frame pad plate installation has started in some cells and painting of A, B, C, and J, cells is in progress.

The piping installation is estimated to be 35% complete. Installation of the troublesome utility outlet header in the pipe tunnel has been completed and approximately 75% of the remaining headers have been delivered at the building site for installation. Piping work is in progress in the sample galleries and pipe galleries and has included installation of some gang valve piping in the north pipe gallery.

Instrumentation is estimated to be 8% complete. Large quantities of copper tubing have been installed in the galleries during the past month. The first panel board units (P.R. room panel) were set in place late in the month.

Process equipment installation is estimated to be 30% complete. Five compressors have been delivered to the south service area for installation and two additional units have been placed in the south sample gallery.

Over-all building completion is estimated at 46%. The 291-S Building is estimated to be 64% complete. Placement of sand in the sand filter continued during the month and was halted by a shortage of type G sand when approximately 60% of this layer had been placed. Additional G sand is scheduled for delivery on 2-10-51 and 2-17-51. Off-gas lines from the 202-S Building to the stack jet pit have been installed and successfully tested.

b. 241-S Waste Facilities (including 207-S retention basins and 216-S cribs)

The subject facilities are estimated to be 38% complete. All repair welding on the 101 line has been completed; however, painting and lowering of the liner into position is being delayed pending more ideal weather conditions. X-ray work, both initial and repair, is in progress on Tks 104 and 111. Tk 107 has been set on the base pad and grouted in. Side sections have been placed for the 105 Tk and knuckles set for Tk 103. Work on the remaining tanks is of a routine welding and repair nature.

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Work on the 241-S diversion box progressed slowly during the month. Gravel backfill is being placed around the 216-S crib.

c. 211-S Chemical Storage

This facility is estimated to be 47% complete. Chemical sewers have been placed and backfilled and concrete work on tank pads is now in progress.

d. 276-S Organic Treatment Building

The 276-S Organic Treatment building is estimated to be 17% complete. In addition to process side pit walls, the foundations for the three large process tanks have been poured. Forms and reinforcing steel are being placed on the operating side of the building.

Outside lines and facilities completion at month end is estimated as follows:

Railroad	51%
Gate House	100% (accepted)
Propane Storage	17%
Steam Lines	75%
Water Lines	75%
Sanitary and Process Sewers	75%
Land Improvement (fences, etc.)	10%

e. Pipe Shop

A total of 333 jumpers have been fabricated to date. Pipe work on five upper U frames has been completed to date and work is currently in progress on the sixth frame.

f. 277-S Mock-up Building

Mock-up work in the 277-S Building has been erratic during the month due to the lack of special equipment (agitators, pumps, etc.) for the tanks on hand, a lack of a full complement of jumpers for a given tank, and a noticeable lack of direction of the work with apparently no specific working plan to follow. Balancing of four tanks has been completed and the "mock-up" of Tk 135 with its available jumpers is understood to be completed. Tks 159, 163, 147, 148 and 138 are at present in place on the Y frames and fitting of these vessels is progressing slowly.

Efforts are being made by responsible sub-contractor representatives to establish a workable plan for mock-up, cleaning, storing, and transporting activities for the cell equipment.

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A written procedure should be available for comment during the week of 2-5-51.

g. White Bluffs Pickling Bath

The addition of 1400# of HF to the White Bluffs pickling bath was successfully completed by S Division Expansion Section personnel on 2-1-51 without incident. However, a large crack subsequently developed in the vat resulting in the subterranean loss of the entire volume of solution. The vat failure was attributed to inferior lining material, adverse weather conditions, and heavy equipment operation in the area. Repairs are being made and additional pickling solution will be made up immediately.

D. Training & Procedures

1. Training

The second cycle of the Training Lecture series ended on January 30. These lectures are now 50% completed. The fourth and last cycle of lectures will end on April 25, 1951. Redox and TBP-UO_3 Introductory Manuals are in the hands of S Division field supervision for study and reference in connection with the Training Lecture series.

Preparations have been completed for the start of operational training on February 19. Building 321 will be activated on a shift basis on February 5, at which time a force of operator-instructors and supervisory instructors will form a shift training organization. This organization will devote two weeks to familiarizing themselves with training procedures and recent process equipment changes before the first group of S Division trainees (operators and supervisors) report on February 19. Twenty-four S Division process operators and eight S Division supervisors are being loaned to the Chemical Development section to assist in this training. Approximately 160 operators and 100 supervisors will be trained in solvent extraction column operation, aqueous make-up, solvent handling, and other aspects of Redox and TBP operation in this training school, to be conducted during the period February 19, 1951 to September 17, 1951.

2. Procedures

a. Redox

A rough draft procedure has been issued for comment on the calibration of process vessels, centrifuges, cell sprays and other process equipment.

A rough draft procedure has been issued for comment on Special Hazards procedures. A separate procedure has been issued

detailing the control of personnel at the SWP lobby entrance to building Danger Zones, with a lay-out of clothes hampers, step-off mats, etc.

A rough draft procedure has been issued for comment on communications procedures involving the use of the two telephone systems, and the building intercom and call systems.

Purchasing and Stores Division has initialed procurement of operating supplies required for plant start-up.

b. TBP and UO_3

The binding and distribution of the training manual "An Introduction to the TBP-UO_3 Plant" has been completed. Preliminary work on Special Hazards procedures for the UO_3 plant has begun. Essential Material control procedures for the TBP plant consisting of material receipt, storage, analytical and accounting control has been written and distributed for comment.

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INSTRUMENT DIVISION MONTHLY REPORT

JANUARY, 1951

GENERAL

Since forecast force requirements are 15% greater than actual force, it was necessary to increase the work week to six days for 80% of the Division effective January 29, 1951. Personnel relieved from established area facilities will be applied to training for work in new facilities, to bring the routine maintenance up to established standards and conversion of excess equipment to meet new facility requirements.

Normal progress is being made on the construction of the 300 Area Instrument Maintenance and Development Shop, building 3717-B. It now stands approximately 75% complete. Final completion date has not yet been established.

100 AREAS (Reference: HW-20206)

100-B Area

Four mass spectrometer leak detectors were received and put in service on P-10 work in building 108-B. Preliminary work has been done on hooking up one detector for the experimental metal line. Acceptance testing of all instrument and control phases of the metal line is progressing normally.

100-D Area

The resistance thermometer well on the exit water temperature of the power calculator, building 105, was modified to decrease response time caused by poor thermal transfer.

Eight thermocouples were installed in vertical safety rod thimble No. 23 and connected to a recorder on the 0' level, far side.

100-DR Area

Process water exit temperature thermocouple on tube No. 3188 was cut during the removal of a ruptured slug. It was not replaced as this is presently an air tube.

The pile gas analysis system has shown improved stability, since sampling has been accomplished by utilizing the system pressure difference instead of pumping the sample.

100-F Area

Seven vertical safety rod thimbles with thermocouples were installed but have not been connected to recorders due to lack of proper lead wire.

Saran tubing encasing the thermocouple leads on the back face has become exceedingly brittle, the insulation on the wire deteriorating and the enamel on the wire is flaking off. Near the edges of the unit this condition is not noticeable, indicating the damage to be caused by radiation flux fields. Bids have been requested for wire extruded in plastic insulation for test as replacement.

One of the motor driven process water pumps in building 190 was tested for performance with and without a flywheel. Instruments gave satisfactory performance.

100-H Area

Process water pressure was raised to 395 psi, requiring readjustment of pump controls and changing of pile pressure monitor gauges in the 0.140 inch and 0.175 inch orifice zones.

The stainless steel thermocouple well on tube No. 2168 failed, allowing process water to leak down Saran tubing into the control room. The conduit tube was pinched off until the well can be replaced on the next regular shut-down. This problem is considered serious as it is the fourth such failure in this area.

Shutdown Experience

100-B Area - Unit scrammed at 6:09 A.M. January 3, 1951 due to defective switch on pressure monitor gauge. Repaired and unit started up at 6:22 A.M. On January 31, 1951 at 1:45 A.M. the unit was shut down manually due to a defective relay on the pressure monitor alarm circuit. Repairs were made and the unit started up at 1:54 A.M. Reactivity time allowed: 17 minutes.

100-D Area - Unit manually shut down at 1:04 P.M. January 12, 1951 because of high activity indication on the water activity monitor. Subsequent checks revealed no evidence of a ruptured slug and unit was again started at 1:25 P.M. An isolation transformer was later installed in the activity monitor amplifier power leads, eliminating erratic indications.

100-DR Area - Unit manually shut down on January 11, 1951 due to high indications on the water activity monitor. A ruptured slug was located in tube No. 3188. On January 18, at 8:44 A.M. the unit was manually shut down because of a leaking pressure monitor gauge. Gauge was replaced and unit was again started at 8:57 P.M.

100-F Area - No shut-downs due to instrument failure.

100-H Area - There were four unscheduled shut-downs due to alarms from P-13 equipment. None were traceable to instrument failure. On January 30, 1951 at 1:18 A.M. the unit was manually shut down due to a high reading on the water activity monitor. Survey revealed a ruptured slug in tube No. 3270. Unit was started up at 7:20 P.M. after removal of the slug.

200 AREAS (Reference: HW-20207)

T & B Plant Production Instruments

The Ring Balance liquid level recorder, section 15-9 in building 221-B was grossly contaminated during attempt to remove an obstruction from the sensing line. The instrument was discarded and replaced with a spare.

Projects C-378 and C-337

Three silver reactor units have been put in service. The fourth has been run through mock-up tests and will be installed in section 3-5L, building 221-B upon receipt of the heater element.

Project C-397

Primary elements have been fabricated for the cell drain conductivity meters and will be installed as soon as production schedules permit.

Z Plant Production Instruments

Mounting supports for the diaphragm motor valve control of Variacs on hood 8 furnace temperature control system, building 234-5, were re-designed to provide greater rigidity and freedom from binding. Much smoother temperature control has been experienced.

Improved operation of the high vacuum systems in building 234-5 is reflected in the decrease of replacement of Miller ion-gauge tubes from 16 last month to eight in January. Of these, 25% were reclaimed by cleaning.

Due to a process change, titration recorders have been removed from two cells in building 231-W and replaced by temperature recorders.

A study of building 234-5 ventilation system exhaust pressure control indicated the Johnson Service valve positioners to lack proper sensitivity to give smooth control when certain fan operating sequences cause turbulence in the duct. Installation of Moore positioners corrected the condition.

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300 AREA (Reference: HW-20208)

MANUFACTURING SECTION

Project C-397 - Conductivity Meter Electrodes

Fabrication of electrodes for cell drain conductivity meters was completed and the units delivered to 200 West Area for installation.

Project C-399 - Toeppler Pump Control Units (P-10)

Balance of material for this project has been received. Ten units are scheduled for delivery early in February.

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

No additional work was received during the month and the project is now being closed.

DEVELOPMENT SECTION

Project C-340 (P-11)

Machine shop work on the detector unit for the Liquid Level Indicator has been completed and fabrication is nearing completion.

Process Tube Temperature Mapping Display

Mercury jet switches have been synchronized and tested. Detector and alarm circuits for abnormal and rapidly changing temperatures are being prepared for operation.

DESIGN AND CONSTRUCTION GROUP - 760 BUILDING (Referenee: HW-20199)

Project C-300 (100-G Area)

Design specifications have been established for a 16-point automatic dew-point recorder and a purchase requisition issued.

Project C-187 (Redox)

Tubing bundles for instrument sensing lines are being installed in building 202-S. Panel boards are arriving and assembly of the filter cell panel has started.

Procurement and fabrication of the 241 tank periscope has been stopped for redesign. Tentative redesign procedure has been established.

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

Approximately 85% of the instrumentation has been requisitioned. A very large number of vendor bids are yet to be received and reviewed.

Electro-magnetic strain gauges for weighing tanks in 244-UR waste storage areas are critical delivery items. Special arrangement was made with the Atomic Energy Commission to expedite delivery of these items.

Project C-361 (Metal Conversion Facilities)

All instrument drawings have been approved. Vendor information has been received and drawings will be issued early in February.

Project C-289 (Additional Laundry Facilities - 200 West Area)

Completion of this project has been delayed by the delay in delivery of poppy alpha survey meters and parts for fabrication of beta-gamma clothing monitors. The laundry is now operating with borrowed equipment.

Project C-198 (234-5 Additional Facilities)

Preliminary drawings of control panels for the Development Laboratory are approximately 70% complete. All instruments have been procured and approximately 20% have been received.

Project C-413 (234-5 RMB Line - Expansion Program)

A purchase order has been placed with the Mine Safety Appliance Co. for an infra-red absorption type carbon-monoxide recording and alarming system. This will serve part of the requirements of the RMA Line.

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MAINTENANCE DIVISION

January, 1951

GENERAL:

The divisions backlog of work as of January 31 was 6,774 mandays, which represents twenty-one days of work for the present force.

100 AREAS

100 B Area

Project M-816 - Retention Basin Sumps - 100-B and F Areas

The installation of drainage sumps in the east retention basin of "B" Area and in the west retention basin of "F" Area was completed this month.

Project C-399 - P 10-B Building - Revision of Five Glass Lines

Revisions to glass production lines #1 and #5 were completed during the month.

100-D Area

The "DR" pile experienced an emergency shutdown on January 11, 1951 because of a ruptured slug in process tube #3188. The slugs on either side of the ruptured piece were removed by means of spline However, in the process of transferring the slugs to tube #3187, two of the irradiated slugs were inadvertently dropped in the C elevator pit. Shielding for personnel working in this area was provided by covering these slugs with five feet of sand. To facilitate the removal of the aluminum tube, together with the ruptured slug, the rear gun barrel was removed and attempts to replace it were not successful within the allowable short time limits. The opening was then sealed off by inserting a solid steel plug The unit resumed operation on January 14,1951. The removal of the two irradiated slugs in the C elevator pit was accomplished on January 30 by constructing dikes and flooding the area with water This precaution provided adequate shielding to permit transferring the slugs to a lead cask which was lowered into the water.

100-F Area

During the scheduled shutdown of the "F" pile, further investigations were conducted to ascertain the cause of #2 and #5 horizontal safety rods binding. An accurate traverse measurement was taken for a length of fourteen feet within these thimbles. This measurement indicated that the thimbles were offset at the inside edge of the biological shielding By machining 7/16" from the graphite track, adequate clearance was then provided for smooth

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rod operation in both of these thimbles.

The corroded arsenical copper tubes in the deaerator vent condensor located in the 184-F Building were replaced with Scoville aluminum brass tubes, as recommended by the Technical Services Division, because of having better corrosion resistance to local water.

Projects C-347 and C-306 - Nozzle Replacement-Increased Shielding Nozzle Caps

During a planned extended shutdown of the "F" pile the stainless steel nozzles were replaced with aluminum and increased shielding was provided in the front nozzle caps. This completes the work authorized for both of these projects

Project M-823 - Thermocouple Equipped Vertical Safety Rod Thimbles

During the planned shutdown this month of the "F" pile, vertical safety rod thimbles #19, 20, 22, 23, 25, 30 and 31 were replaced with thimbles equipped with thermocouples.

100-H Area

A ruptured slug in process tube #3270 caused an emergency shutdown of the "H" pile at 1:18 a.m. on January 30 1951. No difficulities were experienced in removing the contents of the tube with the regular charging machine. The unit resumed operation at 7:50 p.m., January 30.

200 AREAS

An exact scale model of the 2-R cell including the key block located in the Canyon Building was constructed in the maintenance shop for the purpose of conducting further studies of a method of regasketing cell pipe connectors remotely.

To reduce the creeping of steam lines entering the cells in the "T" Canyon Building, six inch sleeves were placed around these lines between the flange of the connector and the canyon wall on the gallery side

Project C-289 - Building 2724-W-Additional Area Laundry Facilities

The moving and installation of six driers two extractors and one washer from the old laundry into the new building was accomplished this month. This completes the work which maintenance forces have been requested to perform

Projects C-337 and C-378-Off-Gas Filters and Silver Nitrate Reactor

The assembly of the fourth unit in the mock up facility was substantially completed during the early part of the month but material deliveries have delayed completion of these units.

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Project C-397 - Conductivity Meters for Cell Drains-Buildings 221-T&B

The fabrication and installation of nine assemblies required on this project were completed during the month.

Metal Fabrication

A twenty inch plastic bag port and electrical welding outlet was installed on the Zone 3 side of Hood #8. These installations will facilitate repairs to the furnaces and reaction tubes within the hood.

Project M-739 - Auxiliary Ventilation for Dry Box Hoods

Fabrication of the stainless steel duct work for Hood #4 through #8 has been completed and delivered to the building. However, installation can not be made until the auxiliary hood enclosures (C-366) has been erected.

300 AREA

Tong baskets used in the bronze furnace dipping operation in the 313 Building are being procured with extended cast handles as operating experience has shown that these repetitive failures occur at the weld where the handle is joined to the basket.

A review was made, covering a three months period, of repetitive routine maintenance work performed on the fourteen Gisholt lathes in Building 313. This review disclosed twenty-nine items requiring frequent repairs or adjustments and, if these conditions were permitted to continue would result in an approximate repair cost of $6,780.00. Immediate action has been initiated to alter and correct these repetitive maintenance items

Tests conducted, using SAE 1010 steel, for thermocouple welds in the bronze dipping furnace in 313 Building, have indicated that they will give 50% longer service than the stainless steel thermocouple weld which was formerly used.

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ELECTRICAL DIVISION

JANUARY, 1951

GENERAL

At month end the schedule of work assignments for the ensuing month was 6,676 mandays, or 26.5 mandays per non-exempt employee. A net reduction of 143 mandays reflects general decreases in all sections, partially offset by increase of scheduled work for the line crews.

The power demands for the month were:

	Date	January KW Demand	Comparative Dec. Demand
Process Load	1-29-51 (9-10:00 a.m.)	66,300	67,000
Village Load	1-29-51 (7-8:00 a.m.)	33,200	30,000

The peaks were not quite coincidental, but the total represents a new all-time high with slightly colder weather than in December. A chart is attached showing th 24 hour load for the peak day of the month.

The requirements for the fourth housing addition of 300 houses at various locations in the Village of Richland were reviewed with the Atomic Energy Commission for the purpose of co-ordinating electric and telephone service requirements with the present system, and of developing work assignments.

Project C-295 (Expand 251 Substation, 200 East-West Areas) - Special critical power arrangements have been established for February 25 and March 7 to permit tie-in of the temporary by-pass line prior to erection of steel for the second transformer and bay.

A further review was made of Army requirements for 13.8 KV power supply from work areas to seven camp sites.

At the request of the Community Divisions, estimate of peak demands and annual consumption for 47 churches, non-profit institutions, and commercial facilities were prepared.

Final telephone standards were recommended to the Electrical Standards Committee.

In continuation of studies made for the 100 Areas and the Telephone Section, a study was made of 200 Area unit maintenance which over a five year period indicated a gradual but substantial reduction of 56 percent.

AREA ACTIVITIES

Unit heater motor circuits in the 183-DR Filter Room were modified to permit one heater to remain on the line continuously and the other four heaters to be controlled by a thermostat. The former connections with five heaters controlled by one thermostat overloaded the feeder, caused repeated fuse failures and excessive operation of the contactor.

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In the 105-F Pile Building, the "C" elevator feeder was transferred from the Saflex panel in the electrical equipment room to the No. 2 rack in the valve pit. This change permitted the operation of "C" elevator when the "non-process" power is off.

The 105-H Reactor was scrammed on January 2 when the Bailey instrument wiring jammed against copper tubing of the P-13 project. The unit was re-started quickly after temporary repairs. During the first scheduled shut down, the entire P-13 electrical installation was inspected and asbestos tape used where necessary to prevent heat damage. On the afternoon of January 24, two additional scrams of the 105-H Reactor occurred. Despite extensive investigation and system electrical tests, the cause was not determined. There has been no later recurrence.

A near serious incident occurred in Guard Tower No. 14, 231 Area, January 19. A Patrolman received an electric shock from a heater improperly connected with green equipment ground wire on one side of the line. All heaters in the 200 Areas have since been checked for improper connection. The incorrect connections did not appear to have been made by an Electrician although Electrical Division responsibil: is involved.

The number of night trouble calls to the 200 Areas has increased considerably due to the increased pressure of production. It is anticipated that Electrical Division shift coverage for the 200 Areas will be re-established in the near future.

In the 300 Area, past practice has been to bury nichrome scrap from Building 313 furnace heating elements. Permission has been received from H. I. to release unconditionally and arrangements have been made to sell the scrap at current quotations of $2.00 per pound. An initial saving of $1,450 plus $125 per month thereafter is realized.

TRANSMISSION AND DISTRIBUTION

High winds on January 15 caused local power outages in the 200 Areas by whipping lines together and blowing primary fuses. The lines have been re-sagged. The winds also further aggravated the weak condition of many substation fences which were braced temporarily pending replacement with cyclone fencing (Project C-403). In addition, 30 poles at scattered locations through the plant required replacement and ten broken 66 KV poles were stubbed in the stand-by 300 Area-Hanford line.

In Richland, 32 transformers were changed to larger sizes to correct over-loaded conditions. This increased the installed capacity by 510 KVA.

On the morning of January 10, a mobile crane operating at the Chief Joseph School job site in Richland contacted a 7.2 KV tap line. A laborer working with the crane was hospitalized after receiving severe electric shock.

TELEPHONE SECTION

Five additional groups of Western Electric composite signaling sets were installed in the Richland Exchange to increase the number of trunks to the 300 Area from 18 to 33.

Project C-276 covering extensions to the area telephone plant was completed according to schedule. Acceptance of the North Electric equipment is awaiting

their satisfactory solution of the pulse correction problem at the 200 E-W exchange. The new 300 Area exchange was cut into service on January 11.

A 26 pair cable terminal was installed in the new building at the Atomic Energy Commission Airport and necessary telephones were installed.

Layout drawings and work order were prepared for a new cable to Building 134-D in North Richland to serve the U. S. Army Headquarters telephone unit.

Terminations, sickness and the additional work resulting from the prefab rehabilitation project have thrown a very heavy load on the section, making it difficult to maintain satisfactory customer service. Five open requisitions for Telephone Trainees and Journeymen have not yet been filled.

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

	Lines in Service	Stations in Service	Vacant Lines
Richland	3,774	5,994	226
Project	5,227	7,542	527

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POWER STATISTICS - ELECTRICAL DIVISION
FOR MONTH ENDING JANUARY 31, 1951

ITEM	ENERGY - MW HRS. Dec.	ENERGY - MW HRS. Jan.	MAX. DEMAND - KW Dec.	MAX. DEMAND - KW Jan.	LOAD FACTOR - % Dec.	LOAD FACTOR - % Jan.
230 KV SYSTEM						
A-2 Out (100-B)	7,750	7,720	12,200	11,700	85.4	88.7
A-4 Out (100-D)	13,660	13,280	21,800	20,600	84.2	86.6
A-5 Out (100-H)	8,280	8,748	17,800	14,550	62.5	81.0
A-6 Out (100-F)	6,570	3,340	11,200	10,300	78.8	43.6
A-8 Out (200 Areas)	4,500	4,608	7,560	7,200	80.0	86.0
TOTAL OUT	40,760	37,696	70,560**	64,350**	77.7	78.7
MIDWAY IN	41,575	38,314	61,200*	61,200*	91.3	84.1
Transm. Loss	815	618				
Percent Loss	210	1.6				
115 KV SYSTEM						
B1-S4 Out (N.Richland)	2,554	1,723	3,513	3,802	97.7	60.9
BB1-S1 Out (Richland)	7,402	8,208	14,760	16,320	67.4	67.6
BB1-S2 Out "	7,576	8,336	15,390	16,920	66.2	66.2
BB3-S4 Out (300 Area)	784	824	1,840	1,840	57.3	60.2
TOTAL OUT	18,316	19,091	35,503**	35,080**	69.3	73.1
Benton In	800	2,090	33,000*	36,400*	3.3	77.2
S. Richland In	17,690	17,520	34,800*	38,100*	68.3	61.8
TOTAL IN	18,490	19,610	67,800**	74,500**	36.7	35.4
Transm. Loss	174	519				
Percent Loss	.9	2.6				
66 KV SYSTEM						
B7-S10 Out (W.Bluffs)	351	450	1,125	1,237	41.9	48.9
Hanford Out	318	372	600	600	71.2	83.3
TOTAL OUT	669	822	1,725**	1,837**	52.1	60.2
HANFORD IN	672	825	1,700*	1,800*	53.1	61.6
Transm. Loss	3	3				
Percent Loss	.4	.4				
PROJECT TOTAL						
230 KV Out	40,760	37,696	70,560**	64,350**	77.7	78.7
115 KV Out	18,316	19,091	35,503**	35,080**	69.3	73.1
66 KV Out	669	822	1,725**	1,837**	52.1	60.2
TOTAL OUT	59,745	57,609	107,788**	101,267**	75.0	76.5
230 KV In	41,575	38,314	61,200*	61,200*	91.3	84.1
115 KV In	18,490	19,610	67,800**	74,500**	36.7	35.7
66 KV In	672	825	1,700**	1,800**	53.1	61.6
TOTAL IN	60,737	58,749				
Transm. Loss	992	1,140				
Percent Loss	1.6	1.9				

* Coincidental Demand
** Non-Coincidental Demand

Average Power Factor - 230 KV System--95.0
Average Power Factor - 115 KV System--95.9
Average Power Factor - 66 KV System--88.0

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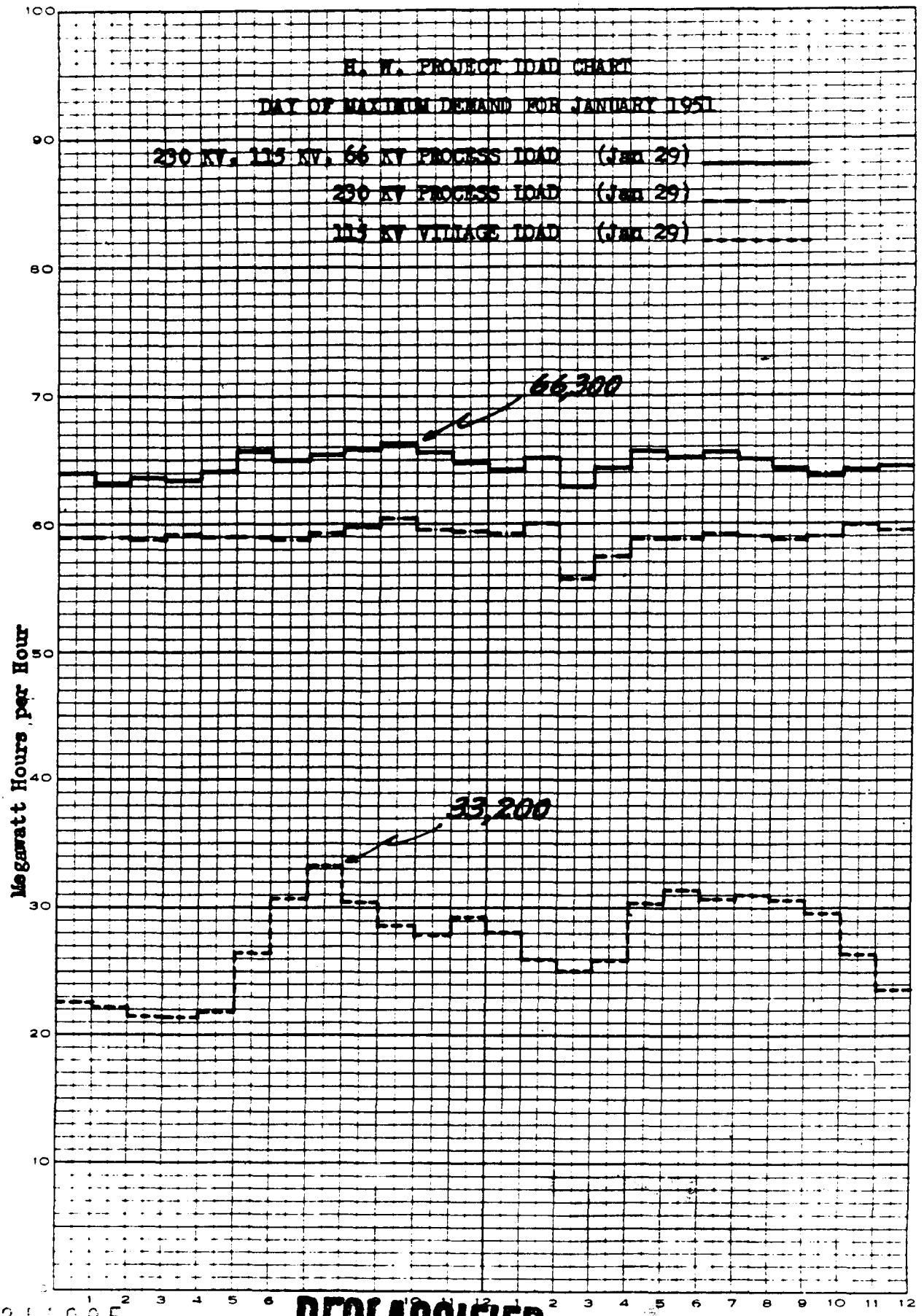

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Classification Cancelled or Changed to [redacted]

By Authority of [redacted]

VIEW BOARD. [redacted]

Date: [redacted]

TRANSPORTATION DIVISION
MONTHLY REPORT
JANUARY 1951

GENERAL

The Transportation Division issued a Summary Report of the GE-AEC 1950 Conference on Bus Operations at Hanford Works to the Atomic Energy Commission. This reportcontained a brief historical record as to the purpose and scope of bus operations at Hanford Works and factual data developed by the Transportation Division with regard to operational and policy matters in connection with the Richland Local and the Plant Area Bus Systems.

Transportation Division personnel forces increased by 1 exempt and 9 non exempt employees during the month from 601 to 611 by 10 new hires, ten transfers in, 7 transfers out and 3 terminations.

RAILROAD ACTIVITIES

Commercial cars handled during January decreased 22.3% over December as coal receipts were greatly reduced and the volume of other materials was normal.

Process service was rendered on an abnormally high level with all movements being completed as scheduled. The temporary decrease in commercial tonnage made it possible to assign a third train crew on a part time basis to process movements which enabled the handling of the existing backlog and will permit future movements to be handled on a relatively current basis.

Cars handled in January including process movements totaled 2,625 compared to 3,242 in December.

The following recapitulation indicates the number of commercial cars handled:

	Carload Movements - General Electric Company			
	Loads In	Empties In	Loads Out	Empties Out
	891	54	52	909
	Carload Movements - Subcontractors and Others			
	Loads In	Empties In	Loads Out	Empties Out
Atkinson & Jones Co.	65	-	-	67
Baldwin & Dunham Co.	5	-	-	5
F. J. Early	8	-	-	8
Hagen & Wolfe Co.	2	-	-	2
J. P. Head Co.	1	-	-	3
Morrison-Knudsen Co.	-	-	1	-
S. S. Mullen Co.	1	-	-	1
Northern School Supply	1	-	-	1
Richland Fuel & Lumber Co.	23	-	-	21
L. W. Vail Co.	1	-	-	1
Waale Camplan Co.	9	-	-	9
U.S.Army 519th Anti-Aircraft Btln.	-	1	1	-
Corps of Engineers	1	-	-	1

Installed wiring on transition indicating light circuit on locomotive 39-3729 completing the equipping of all 120-ton Diesel-electric locomotives with indicating lights.

Completed a thorough inspection and made the following repairs on the Government owned off-Plant railroad car; center casting bolts and shock pads were replaced on both ends, air brake equipment inspected and tested, journal boxes checked and repacked, and worn brake shoes were replaced.

Routine engine inspection disclosed that the No. 4 main bearing in locomotives 39-3729 and 39-3732 were flaking. New bearings were installed. A close inspection of the other two 120-ton Diesel-electric locomotive engines was made and all bearings were found to be in good condition.

Railroad track maintenance and rehabilitation work continued on a near normal basis throughout the five sections. Removal of ice and snow from crossings and switches required 488 man-hours. Surfacing was in progress on the 105-B track and turnout, 183-B lead between the 110-B turnout and the 190-B turnout, turnout in the upper yard at Riverland, "E" line between Mile Posts E-1 and E-2, 200-North Area leads and wyes, "B" line near Mile Post B-12, 272-W, 183-D track, 100-D coal track, 14,200 feet of track on the "B" line east of Willa, turnout at Edna, and spot surfacing between Mile Posts B-38 and B-46 requiring 4,278 man-hours. Replaced 398 cross ties and 74 switch ties on the 110-B, 190-B, 183-B, 105-B and the coal tracks in the 100-B Area requiring 484 man-hours; 58 switch ties at Riverland requiring 210 man-hours: and 692 cross ties in 100-D Area on the 151-D, 183-D and the coal tracks requiring 801 man-hours. Loading and disposal of salvage and scrap materials required 200 man-hours. Sand blow work near the 300 Area required 659 man-hours.

AUTOMOTIVE ACTIVITIES

The Area Bus System transported approximately 8% more passengers in January than in December. The January Area passenger volume of 143,260 surpassed the previous recorded high for Hanford Works of 139,498 in March 1949. The following tabulation indicates the January passenger volume by shifts and the total revenue received:

No. 1 outbound and No. 3 inbound	27,265
No. 2 outbound and No. 1 inbound	58,501
No. 3 outbound and No. 2 inbound	57,494
Total	143,260
Revenue	$ 7,177.00

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

Passenger busses - 100-B	11
Passenger busses - 100-D	12
Passenger busses - 100-F	11
Passenger busses - 100-H	11
Passenger busses - Hanford	1
Passenger busses - 200-West	19
Passenger busses - 200-East	12
Passenger busses - 300 Area	7
Passenger busses - Riverland	3

Classification Cancelled or Changed to [redacted]
By Authority [redacted]
REVIEW BOARD. [redacted]
Date [redacted]

[redacted]

HW-20161 Del

Transportation Division

Passenger busses - Pistol Range	1
Passenger busses - White Bluffs	2
Passenger busses - North Richland	3
700-300 Area Shuttle	26
Inter-Area Passenger Service	3
Inter-Area Express Service	1
Inter-Area Mail Service	1

Classification [redacted] to [redacted]
By Authority of [redacted] NON-FOREIGN DOCUMENT [redacted] Chairman.
Date: 12-18-57

Effective January 5, Intra-Area shuttles for Minor Construction in 200-West Area were discontinued because of decreased activity.

Effective January 17, bus service from North Richland to Richland at 7:35 a.m. and return at 5:00 p.m. was rerouted within Richland via Goethals, Swift and Stevens to better serve Kadlec Hospital and the 1131 Area.

Effective January 30, special bus service was established for 200-West Laundry workers to Richland at 8:48 p.m. Monday through Saturday except Friday.

The Richland Local Bus System transported approximately 8% more passengers in January than in December. Volume of service rendered is indicated in the following statistics:

Total passengers, including transfers	48,158
Total bus trips	3,732
Total bus miles	20,526
Total revenue	$ 3,337.65

Effective January 12, bus stops were established at all intersections in the Richland Uptown Business District.

Off-Plant automobile trips (Company business and/or official visitors) totaled 205.

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

Applicants:	Male	89	Number retested	0
	Female	11	Number rejected	0
		100	Number tests given	100

Permits issued:	Limited to driving with glasses	24
	Unlimited	76
		100
Permits reissued	23	

The following tabulation indicates the Plantwide usage of automotive equipment:

Code	Type	No. of Units	Total Mileage
1A	Sedans	320	523,359
1B	Busses	155	226,984
1C	Pickup trucks	474	260,449
1D	Station Wagons	111	117,788
1E	Armored Cars	12	275
1G	Jeeps	2	324
68 Series	Trucks	319	82,696
		1,393	1,211,875

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Transportation Division

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	42,990	16,165	10,415	3,415	170
Received during month	120,604	24,830	28,891	4,390	212
Total	163,594	40,995	39,306	7,805	382
Delivered to Areas	119,194	22,944	30,443	5,857	182
Stock at end of month	44,400	18,051	8,863	1,948	200

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 over-hauls, 112 Class A Inspections and Repairs, 1,355 Class B Inspections and Lubrications, 2,753 other routine maintenance repairs and service calls, 657 tire repairs, and 571 wash jobs.

Effective January 22, operating hours of service stations in the 100 Areas were reduced from 7:48 a.m thru 4:18 p.m. to 8:00 a.m. to 10:00 a.m. and 2:00 p.m. to 4:00 p.m. This arrangement permits effective servicing of equipment and allows servicing personnel approximately four hours of uninterrupted time each day for maintenance and lubrication of the assigned Area equipment.

Initiated a survey to determine General Purpose Vehicle requirements throughout the Plant with a view toward reassignment where utilization can be improved.

Nine K-7 International 37-passenger busses are being retired from Plant Area Bus Service and held for evacuation service. These busses will be replaced by a like number of White 41-passenger busses from Design and Construction Divisions' excess.

Initiated an A&B request for the replacement of twenty high mileage sedans assigned to the Security Patrol Division.

Twenty-three pickup trucks were assigned to Divisions during January exhausting the available supply. Twenty of these assignments were for additional equipment and three were in exchange for 1½ ton trucks.

Estimate of $836 for the repair of Buick sedan 1A 6107 damaged in an off-Plant accident has been accepted by the insurance company involved and Hanford Works will be reimbursed accordingly.

All equipment assigned to the Richland, Pasco and Kennewick Post Offices for the holiday season has been returned.

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Transportation Division

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	1,521	0	0
Received during month	0	0	0	0
Dispensed during month	0	486	0	0
Stock at end of month	0	1,035	0	0

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	136	200	134	130	87	38	0	725
Cars other material	2	2	0	2	14	5	0	25
Cars loaded out	0	4	0	0	0	0	1	5

Crushed and stockpiled 548 cubic yards of 5/8" crushed rock and 244 cubic yards of 1/4" crushed rock requiring 490 man-hours. Maintenance of Area roads required 375 man-hours. Unloading of 28 railroad cars at the Hanford Coal Dock and delivery of 552 tons to the 101 Building required 128 man-hours.

Handling and hauling of miscellaneous materials for the Stores Division in the 700, 1100, 3000 Areas and Pasco required 609 man-hours.

Handling of miscellaneous materials for the Stores Division at White Bluffs required 1,915 man-hours.

Handling of Area deliveries required 1,300 man-hours, Stores deliveries 290 man-hours and moving office furniture 841 man-hours.

Handling of 46 carloads of equipment, 3 carloads of material, 5 carloads of scrap, 1 carload of steel, 51 truckloads of equipment and 50 truckloads of material required 2,577 man-hours.

Routine Area maintenance was performed in all Operating Areas. Approximately 2,850 man-hours were required in connection with the 105 Buildings and the 107 Basins. Labor and transportation equipment was furnished for Projects P-172, P-192, P-276, P-289, P-290, P-291, P-300, P-330, P-346, P-347, P-349, P-355, P-363, P-366, P-369, P-378, P-382, P-396, P-399, P-411, P-412, P-415, M-738, M-816, M-823, and M-824.

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POWER DIVISION
JANUARY 1951

GENERAL

Water treatment for the month was satisfactory, with average coagulant feed rates of four to eight ppm in all areas.

PERSONNEL AND ORGANIZATION

No. of Employees on Payroll - January	
Beginning of Month	567
End of Month	568
Net Increase	1

The indicated net increase is the result of the transfer into the Division of three employees, including one Technical Graduate, while two left the Division. Those leaving the Division included one termination due to induction into the Armed Forces, and one death.

100 AREAS

Process water flow and pressure was reduced in the 100-F Area, during the period January 6 to 27, in connection with the P Division nozzle replacement program.

The two remaining deaerators were removed from the F Area, 185 Deaeration Building during the first of the month. By month's end, work was started on the removal of deaerators from the 185 Deaeration Building in the D Area, on the Deaerator Removal Project C-172. On January 22, in connection with the work in D Area, a 6-inch steel beam, 40 feet in length, was accidently dropped on the 185 Deaerator Building roof. The beam pierced the roof, but was prevented from falling by a structural steel cross-member which supports the roof.

On January 22 and 23, in the F Area, 190 Process Pump House, tests were run on the No. 10 secondary process water pump, with and without a flywheel, to determine the decay and recovery of pump pressure.

Because of long experienced difficulties with the plugging of the 50 mesh solids strainer screens and the resultant low concentration of solids during purges of the pile, a trial purge was made in the 100-B Area on January 9, using a 40 mesh screen. Results indicate a considerable improvement over previous purges.

In the 100-DR Area, the No. 1 clearwell water storage tank was out of service January 9 and 10, in order to replace a leaking 12-inch drain valve.

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Power Division

In the 100-F Area, 184 Power House, the re-tubing of the deaerating feedwater heater was accomplished during the period January 16 through 19, using a new aluminum-brass composition metal of technically superior corrosion resisting properties.

Eighty-six percent of the work orders written by Construction to complete the Project C-342, DR Waterworks, were completed by month's end.

The fifth boiler was placed in service in the 100-D Area, 184 Power House on January 31, in order to make available sufficient steam for emergency purposes.

Raw water temperatures below one degree centigrade made necessary the operation of the hot condenser water reuse system in the B, D, DR, and F Areas, and the addition of steam to the filter plant supply pump suction well in H Area at month's end.

200 AREAS

Steam and water services to the 2723 Laundry Building, replaced by the 2724 Building in the West Area, were discontinued on January 8.

The 3-inch auxiliary steam loop to the new 2724 Laundry Building, and 277-S Mock-Up Shop in the West Area was put into service on January 25.

On January 10, the turbo-generator at the West Area, 284 Power House, was taken out of service for five hours to tie-in the steam line to the new turbo-generator being installed by construction forces, in connection with Project C-187-D.

Tests were run on January 11 and 19, on the West Area 234-5 Facility ventilation system to determine the feasibility of equalizing pressures in Zones 1 and 2 in connection with Phase II construction plans. A decision on the practicability of such a change will follow an analysis of test results.

A steam shutdown of the entire East Area was in effect for five hours on January 18 to replace a 10-inch valve in the 284 Power House, and the 6-inch valve to the "C" Area connection. Ventilation equipment in all process buildings was out of service during the outage.

A three hour outage of the West Area, 234-5 Facility sanitary water system was in effect January 20 while construction forces made the connection at the elevated water tank for the 4-inch service line to the Army Camp, situated west of the area. Ventilation services in the 234-5 Facility were shut down during this period.

300 AREA

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

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Power Division

GENERAL PLANT AREAS

On January 7, a five hour electrical outage for service changes necessitated a shut down of ventilation equipment in the 101 Shops, and a shut down of the sanitary water system serving White Bluffs.

POWER DIVISION ENGINEERING SECTION

Preparation of the Part III, Project Proposal of Project C-394, covering the construction of major additions to the 384 Power House to service existing 300 Area Facilities and the new Hanford Works Laboratory Areas is in progress.

Directive No. HW-8, Modification No. 2, dated January 17, 1951, was issued by the Atomic Energy Commission authorizing General Electric Company to proceed with the design and construction of sanitary sewage disposal facilities to serve both the 300 Area and the Hanford Works Laboratory Area, as described in Project Proposal No. C-199, Part II.

A program for the evaluation of the use of calgon to prevent scale formation on main supply fan wet filters at the 200 West Area, 234-5 Facility, was in progress during the month.

The inspection of a boiler in the 101 Shops, Boiler House, showing it to be relatively free from scale and corrosion in comparison to conditions a year ago, indicated considerable improvement as a result of the use of softened water and closer control of chemical additions to the drum.

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HW-20161 Del

POWER DIVISION STATISTICS

From January 1, 1951

Through January 31, 1951

AREAS

RIVER PUMP HOUSE (Building 181)		100-B	100-D	100-DR	100-F	100-H
River Elevation (msl ft.)	(max)	391.8	383.1		369.6	375.2
	(min)	387.8	380.1		366.7	372.1
	(avg)	389.5	381.2		367.8	373.4
River Temperature	avg. °F.	40.1	41.0		41.2	41.4
Water to Reservoir	gpm avg. rate	40,520	53,434		17,317	47,842
Water to 183 DR	gpm avg. rate		26,926			
RESERVOIR (Building 182)						
Flow to Filter Plant	gpm avg.rate	35,186	45,326		15,703	43,249
Flow to Cond. System	gpm avg.rate	3,781	3,377		1,026	3,919
Flow to Cond. System (DR)	gpm avg.rate		3,261			
Flow to Export System	gpm avg.rate	1,553	1,470		588	674
Flow to Export System	gpm nor.rate	4,285	4,285		4,285	4,285
Chlorine, Added(#1 Inlet)	Pounds	7,487	13,400		3,000	12,000
FILTERED WATER (Building 183)						
Flow to Power House	gpm avg.rate	287	512		172	271
Flow to Process (190)	gpm avg.rate	31,524	32,006	33,963	12,815	39,770
Flow to DR	gpm avg.rate		7,503			
Flow to Fire & Sanitary	gpm avg.rate	175	192		222	100
WATER TREATMENT (Building 183)						
Chlorine - Consumed	pounds	4,213	2,100	7,700	1,000	3,000
	ppm avg.	.82	.79	.77	.64	.86
Lime - Consumed	pounds	16,800	38,850	21,900	10,000	25,500
	ppm avg.	1.3	2.3	2.2	1.7	1.6
Coag - Consumed	pounds	76,800	101,000	62,400	50,000	92,100
	ppm avg.	5.9	6.0	6.2	8.6	5.7
Raw Water pH	pH	8.06	7.93	8.14	8.10	8.10
Finished Water pH	pH	7.68	7.72	7.67	7.70	7.78
Alkalinity, M.O. - Raw	ppm avg.	64	62	61	60	60
Finished	ppm avg.	61	59	58	60	56
Residual Chl. - Settled	ppm avg.	.20	.15	No Anal.	.14	.19
Finished	ppm avg.	.14	.09	.15	.12	.16
Iron - Raw	ppm avg.	.06	.07	.07	.10	.08
North Clearwell	ppm avg.	.017	.018	.011	.017	.017
South Clearwell	ppm avg.	.017	.017	.010	.015	.018
Hardness - Finished	ppm avg.	73	70	72	74	74
Turbidity - Raw	ppm avg.	3	4	4	3	4
Filtered	ppm avg.	0	0	0	0	0

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Power Division

From January 1, 1951

Through January 31, 1951

POWER HOUSE (Building 184)		100-B	100-D	100-DR	100-F	100-H
Maximum Steam Generated	lbs/hr.	176,000	312,000		173,000	164,000
Total Steam Generated	M lbs.	108,550	192,773		65,909	99,252
Steam Load - Avg. Rate	lbs./hr.	145,901	259,103		88,588	133,404
225 psi Steam to Plant(est)	M lbs.	91,058	162,480		54,898	83,173
15 psi Steam to Plant(est)	M lbs.	992	992		992	992
Coal Consumed	Tons	7,173	12,224		5,155	7,120
Coal in Storage (est)	Tons	43,517	44,636		42,641	42,345
TANKS (190 Building)						
Flow to 190	gpm avg.rate	31,274	31,756	33,963	12,565	39,520
Dichromate-Consumed	pounds	22,500	22,550	24,800	9,000	29,400
Chemical Analysis:						
pH	pH avg.	7.63	7.66	7.67	7.64	7.68
Dichromate	ppm avg.	1.8	1.9	1.9	1.8	1.9
PROCESS PUMP ROOM (Building 190)						
Flow to 105	gpm avg.rate	31,099	31,581	33,080	12,390	39,345
	gpm nor.rate	33,400	32,800	36,600	31,500	41,600
Water Temperature	Avg. °F.	43.2	43.3	43.0	43.5	43.0
VALVE PIT (Building 105)						
Solids Consumed	pounds	2,900	2,000	4,500	1,850	3,000
Chemical analysis: A, B, C, & D Headers						
Standard limits						
pH 7.5 - 7.8	pH (max)	7.65	7.70	7.70	7.65	7.70
	(min)	7.60	7.60	7.60	7.60	7.60
	(avg)	7.62	7.65	7.68	7.60	7.60
$Na_2Cr_2O_7$ 1.8 - 2.2 ppm	(max)	1.9	2.0	2.1	2.0	2.0
	(min)	1.7	1.7	1.7	1.7	1.8
	(avg)	1.8	1.9	1.9	1.9	1.9
Iron ppm	(max)	.030	.025	.020	.047	.025
	(min)	.010	.010	.010	.010	.005
	(avg)	.014	.013	.012	.017	.015
Chlorides ppm	(avg)	1.2	1.1	1.1	1.2	1.2

Power Division

From January 1, 1951

Through January 31, 1951

		200 AREAS	
		200-E	200-W
RESERVOIR (Building 282)			
Raw Water Pumped	gpm avg. rate	2,074	2,211
FILTER PLANT (Building 283)			
Filtered Water Pumped	gpm avg. rate	307	738
Chlorine Consumed	lb.	126	214
Alum Consumed	lb.	637	2,587
Chlorine Residual - Sanitary Water	ppm	.48	.45
POWER HOUSE (Building 284)			
Maximum Steam Generated	lbs./hr.	40,300	121,000
Steam Generated - Total	M lb.	25,704	77,025
Steam Generated - Ave. Rate	lb./hr.	34,548	103,528
Coal Consumed (Est.)	Tons	1,737	4,627
Coal in Storage (est.)	Tons	10,322	22,604

		300 AREA
POWER HOUSE (Building 384)		
Maximum Steam Generated	lbs./hr.	34,000
Steam Generated - Total	M lb.	17,636
Steam Generated - Avg. Rate	lb./hr.	23,704
Coal Consumed - Total (Est.)	Tons	1,155
Coal in Storage (est.)	Tons	1,882
SANITARY AND FIRE SYSTEM (300)		
Sanitary Water from 3000 Area	gal.	20,132,640
Well Water Pumped - Total	gal.	0
Total Water Per Day	gal/day	649,440
Total Water	gpm avg. rate	451
Chlorine Residual	ppm	.35
MISCELLANEOUS AREAS		
WHITE BLUFFS		
Ice Manufactured	lbs.	2,400
101 SHOPS		
Coal Consumed	Tons	520

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PROJECT ENGINEERING

MID-MONTH STATUS REPORT

100 AREA PROJECTS

DATE JANUARY 15

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00,000) HIGH SPOT ESTIMATE ONLY
WORK PROGRESS DURING PERIOD
WORK PREVIOUSLY DONE

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A1034	5-29	185BDF	DISMANTLING OF EQUIPMENT IN THE DEMINERALIZING AND DEAERATING PLANTS	POWER	C-172	360,200		7-11-47	-	-	7-11	3-31-48	4-4	4-7		SUBCONTRACT WORK PROGRESSING
A532	1-7	108F	BIOLOGICAL LABORATORY, PARTS I, II, & III — AUTH I & II / EST. ENTIRE COST	H.I.	C-192	1,121,000 / 1,200,000		PT. III 1-2-51	1-2	1-9	1-12	MOD. 4 12-20-50	12-26	12-29		PART III ($79,000 NEW FUNDS) AWTG. AUTHORIZATION
A1046	6-14	105D	NEUTRON SPECTROMETER	PILE TECH.	C-290	17,400		9-5-48	9-9	9-14	9-14	10-14	10-11	10-11		WORK PROGRESSING
A1060	7-29	100BDF	INCREASED SHIELDING - FRONT NOZZLE CAPS	P	C-306	88,000		10-6-48	10-11	11-10	11-10	MOD. 2 1-2-51	1-9	ADD. 4 1-11		FURTHER WORK AWAITING SHUTDOWN
A1057	4-20	105BF	EFFLUENT DIVERSIONARY OUTLET (105-107 B & F)	P	C-321	138,000										PROJECT RETURNED FOR RESCOPING
A1093	3-17	TRACT HOUSE	P-11 PROJECT PARTS I, II	PILE TECH.	C-340	328,000		5-23-49	5-20	6-1	6-1	MOD. 2 10-12-50	10-16	ADD. 4 10-23		WORK PROGRESSING
A1093	3-17	TRACT HOUSE	P-11 PROJECT PART III — AUTH. SUSP. CODE / EST. ENTIRE COST	PILE TECH.	M-774 / C-340	10,000 / 18,500		12-12-50	12-12	1-9-51	1-12-51			M-774 1-15		HIGH PRIORITY MATERIAL BEING ORDERED ON SUSPENSE CODE
A1097	4-27	101	FACILITIES FOR EXPONENTIAL EXPERIMENTS	PILE TECH.	C-346	391,000		8-1-49	8-16	8-17	8-17	10-31	11-3	ADD. 3 11-29-50		PROJECT REACTIVATED
A1100	5-27	105BDF	NOZZLE GALVANIZING AND REPLACEMENT	P	C-347	775,000		8-15-49	8-15	10-12	10-12	12-28	4-50	1-13		INSTALLATION BEING SCHED. FOR 105F DURING EXTENDED SHUTDOWN IN JAN.
A1110	7-21	105BDF	PILE CLEARANCE - INNER ROD ROOM WALLS 105BDF	P	C-355	40,600		9-26-49	9-26	12-13	12-14	1-18-50	1-19	2-8		PROJECT TO BE TERMINATED
A1129	2-2	108B	P-10-B (COLD FACILITIES)	PILE TECH.	C-368	95,000		3-1-50	3-21	3-21	3-22	4-24	5-1	5-23		PROJ. COMPLETED 12-29-50. CONSTR. COMPL. NOTICE ISSUED 1-15-51
A1125	11-23	105H	P-13 - FIRST HANFORD PILOT CHANNEL TEST RIG (ANL #140)	PILE TECH.	C-379	130,000		3-31-50	3-31	4-11	4-12	MOD. 1 10-12	10-17	ADD. 2 10-24		UNIT PLACED IN OPERATION
A1130	2-3	108B	P-10-A EXPANSION	PILE TECH.	C-383	300,000		4-12-50	4-13	4-20	4-20	5-29	6-1	6-9		WORK PROGRESSING ON EXCEPTIONS
A1141	6-25	108D	P-10-X PRODUCTION PLANT (ONLY SCOPING WORK AUTHORIZED)	P	C-388	100,000										PROJECT TO BE CLOSED. ENGRG. WORK BEING CONTD. ORDER PROJ. C-411 AND C-412
-	-	108D	REMOVAL OF EQUIPMENT FROM BLDG. 108-D	P	C-396	109,000		7-13-50	7-14	7-14	7-14	MOD. 1 10-19	10-25	7-20		WORK PROGRESSING
A1135	3-13	108B	P-10-C, PART I (METAL PROTOTYPE UNIT) P-10-D ("HOT" DEVELOPMENT FACILITIES)	PILE TECH.	C-399	1,216,500		8-7-50	8-17	8-30	8-31	MOD. 1 9-29	9-28	ADD. 1 10-18		DESIGNS PROGRESSING. PROJECT IN ROUGH DRAFT FORM. FIELD WORK IN PROGRESS
A1142	6-20	105DR	IN-PILE CONTROLLED ATMOSPHERE - EXPERIMENTAL FACILITIES	PILE TECH.	C-410	140,000		10-17-50	10-17	10-30	10-31	11-13	11-17	12-7		G.E. & C.L. FABRICATING FURNACE TUBE. WORK PROGRESSING
A1141	6-25	212-N	U-238 STUD STORAGE AND SHIPPING FACILITIES (ENGRG. & PROCUREMENT OF CRITICAL ITEMS) — AUTHORIZED / EST. ENTIRE COST	P	C-411	700,000 / (850,000)		11-22-50	11-22	11-22	11-22	12-5	12-7	12-22		DETAILED DESIGN & MATERIAL ORDERING IN PROGRESS
A1141	6-25	108B	P-10-X EXTRACTION FACILITIES (ENGRG. & PROCUREMENT OF CRITICAL ITEMS) — AUTHORIZED / EST. ENTIRE COST	P	C-412	615,000 / (3,550,000)		11-20-50	11-20	11-20	11-21	11-24	11-24	12-6		DETAILED DESIGN & MATERIAL ORDERING IN PROGRESS
A1138	2-4	100B,F, D-DR	CO_2 BULK STORAGE FACILITIES, 105 B, F & D-DR AREAS	P	C-420	45,000		11-3-50	11-3	12-27	12-27	1-12-51				WORK RELEASE SCHEDULED
A1068	10-29	105	DEVELOPMENT OF FLEXIBLE VERTICAL SAFETY RODS	P	M-713	18,500		5-18-49	5-18	5-27	5-27	7-19	7-22	9-26		TEST SATISFACTORY; FULL ROD TEST BEING SCHEDULED
A1104	6-7	107B	REPAIRS TO 107 BASIN (IMMEDIATE PROGRAM ONLY)	P	M-723	18,100		9-15-49	9-15	10-12	10-12	10-25	10-27	12-2		WORK PROGRESSING
A1116	9-30	111B	HEALTH MONITORING AND STORAGE FACILITIES	PILE TECH.	M-769	16,100		3-20-50	3-20	4-28	4-28	5-23	5-23	8-7		WORK PROGRESSING
A1150	11-10	101	GRAPHITE LABORATORY — AUTH. SUSP. CODE / EST. ENTIRE COST	PILE TECH.	M-773	3,000 / (25,000)								M-773 1-4-51		DESIGN INITIATED PROJECT BEING PREPARED
A1149	12-13	107	EMERGENCY REPAIRS TO 107-DR AND 107-H RETENTION BASINS	P	M-824	(20,000)								ADD. 2 12-28-50		TEMPORARY REPAIRS PROGRESSING
A575	5-1	105DR	PILE TECHNOLOGY STORAGE & TEST BUILDING	PILE TECH.		(95,000)										AWAITING INFORMATION FROM TECH. DIVISION
A588	7-31	105F	HOT MAINTENANCE MACHINE SHOP	MAINT.		41,000										DESIGN TO PROCEED FOR BLDG. 108-D
A1059	6-29	100B	INSTALL STEEL PROCESS SEWER 105B - 107B	P		(550,000)										REC. REPORT IN ROUGH DRAFT FORM
A1086	2-4	100BDF	HIGH TANK CONTROL VALVES	P		40,000										PROJECT RETURNED FOR RESCOPING
A1118	10-14	105F	DOWNCOMER REPLACEMENT	P		(100,000)										HELD UP FOR HIGHER PRIORITY WORK
A1119	10-17	100 200 300	COAL METERING FACILITIES	POWER		31,400										TEMPORARILY HELD IN ABEYANCE
A1122	11-9	100	DEVELOPMENT OF FLEXIBLE HORIZONTAL CONTROL RODS	P		(50,000)										DESIGN IN PROGRESS. ROUGH DRAFT OF PROJECT BEING REVIEWED
A1151	11-24	105H	CONTROLLED TEMPERATURE TEST FACILITIES	PILE TECH.		(200,000)										SCOPE BEING DETERMINED
A619	1-8	186D	GRAPHITE STORAGE - 186-D CLEAR WELL	STORES		(53,000)										PROJECT IN PREPARATION
						[redacted]										COMBINED TOTAL OF AUTHORIZED AND PENDING 100 AREA WORK $11,055,200

PROJECT ENGINEERING DIVISIONS
MID-MONTHLY STATUS REPORT
200 AREA PROJECTS

DATE JANUARY 15, 19 51

DECLASSIFIED

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

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
2469	12-30	200	UNDERGROUND GEOLOGICAL & HYDROLOGICAL INVESTIGATION PROGRAM INCLUDING TEST WELLS & OTHER FACILITIES	H.I.	C-326 REV.2	36,800		5-25-50	5-25	6-13	6-14	MOD.2 11-2	11-10	ADD.2 11-21		DESIGN COMPLETE; FIELD TO FABRICATE LIFTING DEVICE
2460	12-23	221TB	EQUIPMENT FOR DISSOLVER OFF-GAS FILTRATION PART II	S	C-337 REV.	158,000		12-14-49	12-13	12-20	12-23	1-30-50	2-9	2-16		APPROVAL REQUESTED TO REDUCE PROJ. FROM $158,000 TO $79,000
A546	7-19	200E	HOT SEMIWORKS COMPLETE PLANS & SPECS. PARTS I & II	SEP. TECH.	C-349	150,000		2-1-50	2-8	2-8	2-15	3-9	3-16	3-24		DESIGN COMPLETE
A546	7-19	200E	HOT SEMIWORKS PART III	SEP. TECH.	C-349	2,540,000		5-31-50	5-31	6-13	6-14	MOD.4 12-18	12-20	ADD.4 11-28		PREP. OF SITE IN PROGRESS
A546	7-19	200E	HOT SEMIWORKS PART IV	SEP. TECH.	C-349	645,000		1-8-51	1-8	1-9	1-9					AWAITING AUTHORIZATION
2513	8-30	234-5	AUXILIARY HOOD ENCLOSURE FOR PART I, BLDG. 234	S	C-366	49,000		2-20-50	3-6	3-21	3-22	4-11	4-14	4-26		FABRICATION OF ENCLOSURE BEING PERFORMED BY OUTSIDE VENDOR
2491	5-13	200W	EVAPORATION FACILITIES FOR WASTE SOLUTIONS (200W)	S	C-369 REV.	489,000		6-23-50	6-23	7-11	7-12	8-18	8-24	9-1		WORK PROGRESSING
2490	5-13	221TB	IODINE REMOVAL FACILITIES FOR DISSOLVER OFF-GAS (200EW)	S	C-378	149,000		3-9-50	3-9	3-31	4-12	5-9	5-12	5-23		APPROVAL REQUESTED TO REDUCE PROJ. FROM $149,000 TO $128,000
2501	9-2	224TB	REARRANGEMENT OF F CELL EQPT. BLDGS. 224 T & B	S	C-384	30,000		4-12-50	4-12	4-25	5-10	6-9	6-15	6-20		PROJ. COMPLETED 11-30-50. CONSTR. COMPL. NOTICE ISSUED 1-15-51
2540	5-11	234-5	ADDITIONAL UNIT TO SUPPLEMENT THE OPERATION OF HOOD #25, BLDG. 235	S	C-392	25,500		6-1-50	6-1	6-17	6-28	MOD.1 1-5-51	1-12	7-25-50		WORK PROGRESSING
2501	9-2	221TB	PARALLEL OPERATION, SECTIONS 19 & 20, BLDGS. 221 T & B	S	C-395	91,165		6-26-50	6-26	7-20	7-20	8-4	8-8	8-15		PROJ. COMPLETED 11-30-50. CONSTR. COMPL. NOTICE ISSUED 1-15-51
2544	6-2	221TB	CONDUCTIVITY METERS FOR CELL DRAINS, BLDG. 221 T&B	S	C-397	21,700		7-12-50	7-12	8-9	8-10	8-28	8-31	9-5		WORK PROGRESSING
2543	6-1	231	EXPERIMENTAL COATING HOOD, BLDG. 231, 200W AREA	SEP. TECH.	C-398	53,000		8-8-50	8-8	8-9	8-9	9-12	9-14	10-5		NEW PROJECT PROPOSAL BEING PREPARED
2546	7-28	221TB	SETTLING TANKS FOR SECTION 5 WASTES, BLDGS. 221-B AND T	S	C-415	35,000		10-23-50	10-23	11-28	11-28	12-11	12-14	12-29		WORK BEING SCHEDULED
2554	11-3	241B	ADDITIONAL WASTE EVAPORATION FACILITIES, 200 EAST AREA — AUTHORIZED / EST. ENTIRE COST	S	C-423	150,000 / (500,000)		1-9-51	1-9	1-9	1-11					AWAITING AUTHORIZATION
A554	12-23	222U	OFFICE AND STORAGE ANNEX TO BLDG. 222U	H.I.	M-755	9,700		10-26-49	10-26	11-22	11-25	12-7	12-7	2-21-50		AWAITING CONSTRUCTION COMPLETION NOTICE
2520	1-16	234-5	LOADING FACILITIES FOR RECYCLED MATERIAL, BLDG. 234	S	M-802	19,000		4-24-50	4-24	5-9	5-10	6-5	6-5	7-14		WORK STOPPED PENDING SUBMISSION OF PROJECT PROPOSAL
A570	3-15	200W	CONSOLIDATED MAINTENANCE SHOPS, 200W — DESIGN / ENTIRE COST	MAINT.	M-813	15,000 / (310,000)		9-12-50	9-12	9-12	9-12	10-19	10-26	M-813 11-13		DESIGN WORK PROGRESSING
A571	4-7	200W	ANIMAL EXPOSURE CHAMBER	H.I.		(45,000)										WORK PROGRESSING
2503	7-22	234-5	DUCT LEVEL FLOOR COVERING AND SAFETY SHOWERS	S		(150,000)										DESIGNS POSTPONED BY S-DIVISION
2547	8-15	235	PROJECT FOR COATING UNIT HOOD #26	S		(25,000)										DESIGN IN PROGRESS
2552	10-25	234	SKULL RECOVERY FACILITIES FOR BLDG. 234-5	S		44,300		12-1-50	12-20							PROJECT PROPOSAL ROUTED FOR APPROVAL
2562	12-27	234-5	DESIGN OXIDATION & FLUORINATION EQUIPMENT HOOD #8	S		(25,000)										NOT STARTED
2565	1-8	234-5	PREPARE PROJECT FOR LIRA GAS DETECTOR	S		(21,000)										PRELIMINARY WORK BEING PERFORMED BY INSTRUMENT DIVISION
																COMBINED TOTAL OF AUTHORIZED AND PENDING 200 AREA WORK $5,501,000

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PROJECT ENGINEERING DIVISIONS
MID-MONTHLY STATUS REPORT
300 AREA PROJECTS

DATE JANUARY 15, 19 51

DECLASSIFIED

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

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A3061	8-14	313-314	IMPROVED VENTILATION - BLDGS. 313-314	P	C-330	200,000		12-8-49	12-8	12-28	12-18	MOD.2 11-10-50	11-17	ADD.7 12-13		INVESTIG. WORK ON BAG FILTER RESUMED. DESIGN PROGRESSING
A3062	2-9	314	ENGINEERING DESIGN FOR ROLLING MILL	P	C-339	60,000		5-23-49	5-23	5-27	6-1	12-13	12-23	12-23		PROJECT TERMINATED REPORT TO BE SUBMITTED APRIL 1951
A550	9-15	300	ADDITION TO BLDG. 3745	H.I.	C-354	20,300		11-8-49	11-8	12-1	12-1	MOD.2 12-20-50	12-26	ADD.2 11-2-50		PROJECT COMPLETED 12-29-50. CONSTR COMPL. NOTICE ISSUED 1-15-51
A528	11-14	300	NEW INSTRUMENT MAINTENANCE & DEVELOPMENT BLDG. 3717-B	INST.	C-377 REV.2	154,000		4-26-50	3-25	4-28	5-10	6-6	6-8	6-19		SUBCONTRACT WORK PROGRESSING
E432	1-11	300	PRIMARY ELECTRIC POWER LINES FOR HANFORD WORKS LABORATORY	ELECT	C-404	39,000		8-24-50	8-24	9-12	9-12	10-11	10-26	12-12		DESIGN PROGRESSING WORK BEING SCHEDULED
A3085	6-28	RIVER.	RIVERLAND ELEVATED WATER TANK	TRAN.	C-409	46,000		10-2-50	10-2	10-30	10-31	11-28	12-4	12-20		SPECIFICATIONS COMPLETE
A510R	10-10	3701	300 AREA BADGE HOUSE ADDITION	SERV.		14,500		12-14-48	12-10	12-14	12-31	1-3-50	1-6			SCOPE TO BE REVISED & INFORMAL REQ. TO BE CANCELLED
A510R	10-10	3701	URANIUM DETECTORS, 300 AREA BADGE HOUSE	SERV.		19,400		9-8-50	9-8							INFORMAL REQUEST RELEASED NOT APPROVED
A548	8-29	300	SOLVENT STORAGE FACILITIES - BLDG. 3706	TECH. SERV.		(60,000)										AWAITING INFORMATION FROM TECHNICAL DIVISION
A582	6-9	300	MFG. DIVISION ADMINISTRATION BLDG.	ALL MFG.		140,000										PROJECT IN PREPARATION
A600	10-20	300	SOLVENT STUDIES BLDG.	SEP. TECH.		(25,000)										PRELIMINARY DESIGNS STARTED
A602	10-27	300	METAL FABRICATION BLDG. 3730 (ADDITION)	PILE TECH.		(200,000)										PRELIMINARY DESIGNS STARTED
E434	1-13	300	EXPERIMENTAL INDUCTION HEATING FACILITIES BLDG. 3732	PILE TECH.		52,800		11-28-50								PROJECT REWRITTEN
A3083	7-21	313	SEGREGATION OF FLUORIDE SLUDGE	P		(40,000)										DESIGNS HELD PENDING FURTHER DECISIONS ON WORK TO BE DONE
A3093	10-9	305	305 BLDG. MODIFICATION AND TEST BLOCK	PILE TECH.		150,000										DESIGN HELD PENDING DECISION ON WORK TO BE PERFORMED
																COMBINED TOTAL OF AUTHORIZED AND PENDING 300 AREA WORK $1,200,700

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

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THE MONTH OF 15 19 51

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

ENG. REQ. NO.	DATE RECEIVED	BLDG. OR AREA	DESCRIPTION OF WORK	DIVISION RESPONSIBLE	PROJECT NO.	ESTIMATED COST	ENGINEERING STATUS PER CENT COMPLETE	PROJECT DATE	APPROPRIATION REQUEST DATE	APPROVED A & B COMMITTEE	ROUTED TO GOVERNMENT	DIRECTIVE DATE	AUTHORIZATION RECEIVED	WORK RELEASE	FIELD WORK PER CENT COMPLETE	REMARKS
A452	2-17	ALL	INSTALLATION OF OVERALL PLANT TELEPHONE FACILITIES	ELECT.	C-276	1,548,600		9-8-48	7-13	9-8	9-9	10-3	10-6	10-6		WORK PROGRESSING COMPLETION DATE REV. TO 2-1-51
990	6-28	ALL	INSTALLATION OF NEW SECURITY FENCES - ALL AREAS	SERV.	C-291	424,000		8-31-48	9-9	9-9	9-15	MOD.4 10-19-50	10-25	ADD.6 11-2		WORK PROGRESSING COMPLETION DATE REV. TO 7-1-51
2480	3-15	ALL	H.I. OPERATIONAL DIVISION SURVEY INSTRUMENTS	H.I.	C-333	85,000		3-30-49	4-1	4-1	4-1	MOD.4 10-3-50	10-4	ADD.5 10-10		AWAITING CONSTRUCTION COMPLETION NOTICE
E406	5-16	1100	ADDITIONS TO RICHLAND ELECT. DISTRIBUTION SYSTEM	ELECT.	C-341-R	155,000		5-29-49	5-29	6-6	6-16	MOD.2 12-15-50	12-19	ADD.3 1-4-51		DESIGN COMPLETED WORK BEING SCHEDULED
A543	7-14	HANF.	ARSENAL BLDG., FIRE PROTECTION & SANITARY FACILITIES PATROL PISTOL RANGE	SERV.	C-360	(54,000)										PROJECT BEING RE-ESTIMATED NEW PROPOSAL TO BE SUBMITTED
A542	7-8	200	ADDITION TO METEOROLOGY BLDG. 622	H.I.	C-365	23,100		3-2-50	2-25	3-9	3-10	4-3	4-5	4-12		PROJ. COMPLETED 12-29-50. CONSTR. COMPL. NOTICE ISSUED 1-15-51
A563	12-22	ALL	METEOROLOGICAL FIELD STATIONS	H.I.	C-371	30,800		3-25-50	3-25	4-11	4-12	5-9	5-11	ADD.1 12-21		INST. OUT FOR PURCHASE
E435	2-10	1100	ELECTRICITY METERING - COMMUNITY OF RICHLAND	ELECT.	C-380-R	331,000		6-15-50	6-15	6-26	6-27	MOD.1 10-11	10-16	10-18		WORK BEING SCHEDULED WORK TO BE SCHEDULED
E426	11-11	ALL	SALVAGE AND RECOVERY OF TELEPHONE CABLE AND EXCHANGE EQUIPMENT (WRITE PROJECT)	ELECT.	C-402-R	33,000		8-21-50	8-21	10-30	11-2	12-11	12-14	12-29		BID OPENING JANUARY 16, 1951
A557	11-11	ALL	NEW FENCES FOR DISTRIBUTION AND 230 KV SUBSTATIONS (PART I)	ELECT.	C-403	40,000		8-19-50	8-19	10-2	10-3	10-20	10-25	11-7		PART II TO BE SUBMITTED ON 7-1-51
A562	11-1	3000	CENTRAL STORES WAREHOUSE IN 3000 AREA — PRELIM. ENGRG. / EST. ENTIRE COST	STORES	M-770 / C-390	17,000 / (1,800,000)		7-11-50	7-11	7-11	7-11	8-1	8-1	M-770 8-16		DESIGN SCOPING IN PROGRESS
A565	1-16	1100	NEW BIO-ASSAY LABORATORY — ENGRG. DESIGN / EST. ENTIRE COST	H.I.	M-771	14,000 / (216,000)		9-22-50	9-22	9-26	9-27	10-6	10-13	M-771 10-18		DESIGN IN PROGRESS
A558	11-11	500	TRANSFORMER & CIRCUIT BREAKER OIL REPROCESSING FACILITIES	ELECT.	M-805	13,300		6-13-50	6-13	6-13	6-14	7-11	7-11	8-14		DESIGN FOR TRAILER HOUSING IN PROGRESS
A480R	5-25	3000	CONSOLIDATION OF TRANSPORTATION FACILITIES — PRELIM. ENGRG. / EST. ENTIRE COST	TRAN.	M-811 / C-284-R	19,000 / (2,300,000)		8-8-50	8-8	8-8	8-8	8-16	8-16	M-811 8-28		DESIGN SCOPING IN PROGRESS
A560	11-11	1100	RELOCATION OF RICHLAND LINE CREW HEADQUARTERS	ELECT.		(30,000)										AWAITING INFORMATION FROM ELECTRICAL DIVISION
A601	10-25	ALL	PORTABLE METEOROLOGICAL MAST	H.I.		(90,000)										PRELIMINARY DESIGN IN PROGRESS
																COMBINED TOTAL OF AUTHORIZED AND PENDING GENERAL PLANT AREA WORK $7,150,700

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MONTHLY REPORT FOR JANUARY 1951
ENGINEERING & CONTROL DIVISION

I. Responsibility

As of January 1, 1951 the responsibility for providing lubrication engineering services to the Hanford Works was transferred from this division to the Manager of the P. U. & M. Divisions. As a result of this transfer of responsibility, one engineer in the Industrial Engineering Section who has been in charge of the lubrication engineering service was transferred to the P. U. & M. Divisions.

II. Achievements

A summary of the major or significant activities of the division is presented in the following:

A. Industrial Engineering Activities

100 Areas (P-10 Studies)

Work was completed on railway crew and equipment requirements for inter-area transportation of P-10 and uranium slugs. It was found that by modifications to present shipping schedules and by addition of one railway engine crew, it would be possible to handle required shipments without purchase of additional cask cars.

Work was essentially completed on analysis of bucket and storage requirements and capacity available in 105-H and 212-N and the determination of cask handling equipment necessary.

"P" Division Studies

Charge-Discharge Studies, directed toward establishment of optimum discharge method, were reactivated in January. It was found that about twenty minutes reduction per shutdown in standard procedure time requirements could be effected if front and rear face water headers could be returned to normal simultaneously. This proposed procedure appears feasible and is now being reviewed with the "P" Division.

200 Areas

Manpower and Facility Requirements for R.G. Line at Various Production Rates

This study was initiated to determine immediately, manpower needs and facility utilization of the R.G. line at four production rates ranging from present output to roughly three times present.

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Based on time study and process data accumulated to date, schedules of material flow through the entire line were prepared for each production rate, manpower determined and equipment utilization noted. Shift schedules were prepared for five-day and six-day work weeks and total force requirements estimated for each rate. Maximum output of present facilities and required additional equipment for the increased rates were also estimated.

300 Area

Canning Line Mechanization

Work has been initiated on necessary mechanization of the canning line to assure controlled reproducible cap pre-heat operation in accordance with specified operating procedures. "P" Division feels that establishment of such control will materially improve subsequent welding operation and reduce the possibility of slug failures at the welds.

Dilatometer Development

Work was essentially completed on establishment of process and pre-design of dilatometer equipment for inspection of all canned slugs. A final report is in preparation.

700 Area

Proposed Utilization of Natural Gas Fuel in Hanford Works Boiler Houses

This study was completed and the following conclusions were drawn:

1. Use of natural gas at Hanford Works would be impractical except in conjunction with coal, since unusual reliability requirements must be met. A combination of natural gas and coal firing was disclosed by simulated operating test conditions to afford suitable reliability.

2. Basing computations on current gas price quotations, it was found that annual savings of approximately $350,000 may be effected on an investment of about $3,000,000, reflecting an amortization period of about nine years. These conclusions are based on use of natural gas only at 200-West and 100-B, D, F and H Areas.

Manufacturing Divisions Report

Report on activities (engineering) within the Manufacturing

Divisions was completed during the month.

B. Project Construction and Installation

Project C-172 - Dismantling Equipment Demineralizing and Deaerator Plant

This work is being performed by lump sum subcontract. The dismantling and removing of the deaerator tanks at the 185-F Building was completed early in January and the equipment for lowering the tanks was moved to 100-D Area. At the end of the month there still remained removal of some structural steel and repairs to the 185-F and 190 Buildings to be done.

Project C-306 - Installation of Front Face Shielded Nozzle Caps
Project C-347 - Replacement of Process Tube Nozzles

Installation of the shielded nozzle caps and replacement process tube nozzles was completed in 100-F Area during the month. This completed the work on this project with a few minor exceptions.

Project C-399 - P-10-D

The metal line in Cell 2 is nearing completion and has been turned over to the Pile Technology Division for beneficial use. The air mask system is complete and tested.

Plant forces have completed changes to Line 1 during the month; changes to Line 3 will begin early in February.

Beneficial occupancy of the 1703-B Building was given the Technical Division on January 24. A preliminary inspection of the building was made on January 31. Several exceptions were noted, but these will be completed early in February.

Satisfactory progress was made by both CPFF and plant forces this month.

Project C-337 - Dissolver Off-Gas Filtration - Bldg. 221-T & B
Project C-378 - Iodine Removal Facilities - Bldg. 221-T & B

Installation of the fourth unit was completed by the Maintenance Division forces during the last week of January. This completed the work as originally authorized with the exception of the installation of jets on the units. Temporary jets are now being used until the permanent ones are received.

Project C-349 - Hot Semiworks - 200-East Area

Lump sum bids for the construction of this work were opened

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January 4, 1951, and the apparent low bid was $2,473,000. Award of the subcontract has been held up pending approval of additional funds for this project. During the month the CPFF subcontractor performing work under the direction of the D & C Divisions expedited the construction of the underground transfer line piping which is located adjacent to the construction site of the Hot Semiworks. Due to the delay in award of the contract and the satisfactory progress that was made on this work, there will be no interference between this work and that of the construction of the Hot Semiworks.

Project C-369 - Evaporation Facilities for Waste Solutions

Progress on this work was delayed somewhat due to delays in delivery of equipment being fabricated in the CPFF subcontractor's shops and materials and equipment ordered from outside vendors. Strong efforts to expedite outside orders are being put forth.

Project C-403 - New Fences for Distribution Substations

Lump sum bids for this work were opened January 16, 1951. Due to some indicated irregularity in the bidding it was recommended to the Atomic Energy Commission that all bids be rejected and that new bids be called for.

Project C-341 - Additions to Richland Village Electrical Distribution System

Invitations for lump sum bids for the major part of the work on this project were made available January 19, 1951. Bid opening was originally scheduled for February 7, but upon request of several bidders and material suppliers the bid opening was rescheduled for February 14, 1951.

Electrical Division forces have started work on the Swift Street portion of the project.

Project C-380-R - Electricity Metering - Village of Richland

The bid assembly for this work was completed in December and originally scheduled for release for bids December 28, but has been held up upon instructions from management.

Project M-822 - Water Lines and Electric Service Extensions for the Army

The underground water line work is complete in 200-West Area, and work in 100-D and 100-H Areas is in progress.

III. Financial Statement

Expenditures of the division for the first six months of fiscal year 1951 were $8,350 less than the budget. For the three month period ending March 31, 1951 forecasted expenditures total $147,700, indicating an underrun of budgeted funds amounting to $23,300 for the first nine months of the fiscal year. This underrun of budgeted funds results primarily from a less than anticipated increase in the number of employees in the division.

IV. Personnel Experience

During the month of January there was a net increase of two employees in the division. The number of exempt personnel increased from forty-six to fifty while the non-exempt force decreased from thirty-seven to thirty-five, resulting in a total of eighty-five people as of the end of the month. Four employees were transferred into the division, one transferred out, and one employee removed from the roll on leave of absence.

Four employees of the division participated in the Principles and Methods of Supervision course which is being conducted by the Supervisor Training and Development Group. Two employees attended the Supervisors' 40-hour Training Program. Four rotational trainees were kept on assignments in this division.

Since the Hanford Area, which includes the Hanford School and the 101 Building, is geographically separated from the process areas, an area committee was established with representatives of 101 Building Technical Services Division and Hanford School to formulate plans to cover both disaster evacuation and civil defense and coordinate them with other area plans.

During January a subcontractor performing the dismantling of the deaerator tanks in the 100 Areas experienced several minor accidents in which no serious injuries to personnel occurred. However, in view of the near-serious accident which occurred on this subcontractor's work last October, positive action was taken to assure improvement in the safety operations on this work. The subcontractor's safety engineer and job superintendent met with representatives of this division to review the subcontractor's safety experience on this job and develop a program that would assure safety for not only the subcontractor's employees but General Electric Company employees adjacent to the scene of operations. As a result of these meetings, the subcontractor presented in writing the steps which would be taken to improve safety performance. A General Electric Company safety engineer was assigned full-time to this project.

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MONTHLY REPORT FOR JANUARY 1951
DESIGN DIVISION

I. Responsibility

The responsibilities and assignments of the Division have not changed during January, 1951.

II. Achievements

A. Division Experience

1. Output statistics

Six projects and five letter requests have been presented for authorization. Design work has progressed on six other write-ups which are out for approval in rough draft form.

2. Division Activities

A summary of important items of design work now in progress is as follows: (listed by Areas).

100 AREAS

C-340 - Critical Mass Experimental Facilities (P-11 Project)

Design work is fully complete on Part IV of this project. Bremerton shipyards will fabricate some of the remaining equipment.

C-410 - Inpile Experiments

Design is complete except for a special Bellows type reservoir, but this is not expected to cause delay. Material is arriving on schedule.

C-424 - Water Quality Experimental Program

Equipment is being designed to provide for tests to determine the minimum treatment necessary for the Columbia River water in order to render it safe for use in the pile tubes. General design and layout of equipment has been determined and detail drawings are now being made.

ER A-1157 - Ball Type 3X Safety System

Design work was started on facilities for 105-DR Pile and the design principles have been frozen on the basis of the test work at 105-D. Important problems include a specified rate of ball flow and the shielding around the top of the unit.

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C-399 - P-10-D Program, Part II

Several items are being reviewed in connection with possible changes in the P-10-X program, although the P-10-D phases are progressing to completion. Scoping for production facilities in the B Area is essentially complete.

C-411 - P-10-X J Slug Storage and Shipping Facilities

Two important possibilities of changes have now entered the program. It appears that the number of J slugs permissible in one spot may be considerably increased without approaching critical mass, and the second pile charging program at the 100-H Area is being held in abeyance. Scoping for storage and shipping facilities is essentially complete.

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

Major architectural design revisions in 108-B are approximately 50% complete. The revisions to the P-10 program have made necessary a review to eliminate certain items not consistent with the presently anticipated program.

200 AREAS

C-337 and C-378 - Off-Gas Filter and Silver Nitrate Reactor

The fourth unit has been installed, and the fifth unit has been authorized

C-369 and C-423 - Evaporation Facilities, 200 Areas

The West Area Evaporator is being fabricated, and the project is progressing on schedule. $150,000 has been authorized for the purchase of materials for 200-E and the formal project proposal is in preparation.

C-398 - Experimental Coating Hood

It has been decided to move this hood to Building 234-5 instead of installing it in 231, and the redesign has progressed to the point where a revised project proposal has been submitted.

300 AREA

C-339 - Rolling Mill

Compilation of the Rolling Mill data in report form is progressing on schedule and final dittos are already being typed for certain data sheets.

C-330 - Increased Ventilation - 313-314 Bldg., Part II

The Chip Recovery Area has received current attention with emphasis on the preparation of chips for briquetting press and flow sequence for continuous operation. Two test runs have been completed on the bag filter, and the sample evaluation method has been proven acceptable. Further changes to the experimental setup are scheduled for February.

GENERAL

M-770 - Central Stores Warehouse and M-811 Consolidation of Transportation

Study models have been prepared, and the project proposals have been submitted for management approval.

M-771 - Bio-Assay Laboratory

Final design and specifications for lump sum bids are rapidly nearing completion. The building will be a single story concrete block structure to serve the expanded Bio Assay facilities of the Health Instrument Division. It is anticipated the completed project proposal will be ready for the March A & B Committee meeting.

ELECTRICAL

C-404 - Primary Electrical Power Lines for Hanford Works Laboratory Area

Designs for this project are essentially complete, and material ordering has been started. It is anticipated that one of the feeders will be run through the central part of the 300 Area underground, and a proposal is also being considered to extend the underground system of the 300 Area. Construction power has been provided by temporary line extension.

C-380 - Electricity Metering - Village of Richland

Design work for this project is essentially complete, but action on the subcontract phase has been deferred temporarily by management.

M-822 - Electrical Service Extensions for Army Camps

Design work is essentially complete. Construction is proceeding on the first three lines. Metering equipment has been ordered.

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ER A-453 - Intercommunication System, Building 234-5

This project provides for installation of a 100 line Dial Exchange for local service within the building. Exchange equipment is available on the plant and a project proposal is now in preparation.

B. Improvements

1. Inventions and Discoveries

Patent write-ups were submitted during the month on a Rotary Tube Cutter and a Remotely Operable Fusible Link Release Device.

III. Financial Statement

Costs are running within the budget although it has been found desirable to increase the I.M.E. liquidation rate to 60% until the effect of increased charges for general supervision, vacation and holiday benefits, and continuity of service assessments can be fully evaluated.

IV. Personnel Experience

A. Organization Changes

No changes were made in the organization during the month. However, a revised Organization Chart was issued showing the new titles for various members of supervision.

B. Force Changes

The Design Division started the month with 128 people and ended the period with 124. There were 2 terminations, 4 transfers from the Division and 2 new weekly personnel were added.

The Employment Division is still trying to engage additional Draftsmen and Designers

C. Safety Experience

There were no major, submajor, nor minor injuries reported.

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TECHNICAL DIVISIONS

January 1951 2-9-51

SUMMARY

Pile Technology Division

Measurements with the P-11 critical assembly indicate that the neutron capture cross-section of tritium is less than 40 barns and consequently no significant tritium destruction is expected during production of this material in the piles.

The irradiation of tantalum pellets to produce 30,000 curies of radioactive material for the Chemical Warfare Service has been completed and the material shipped.

A program has been started to study the effects of cooling water quality on film formation and corrosion to obtain information about the waterplant requirements at higher pile power levels.

Irradiation of graphite samples at controlled temperatures of 108°, 134°, 157°, and 216°C to determine the temperature coefficient of damage was started in the B Pile this month.

Installation of additional thermocouples for more extensive measurement of operating graphite temperatures together with an increased uniformity of neutron flux distribution has enabled operation of the present piles at higher power outputs.

Design of the in-pile controlled atmosphere facility is about 80 per cent complete. Equipment procurement, development, and materials testing proceeded normally during the month.

Corrosion tests of bearing materials and stainless steels for separation process were continued. Corrosion resistance of various steels in molten aluminum-lithium, magnesium-aluminum and cadmium was determined for the P-10 program.

Examination of the slug which ruptured in tube 3288-H showed that the can was split longitudinally through the cap and can wall from the welded end to the bottom of the can.

Dilatometric tests have been developed which will definitely detect slugs containing a high percentage of untransformed metal.

Installation of the first metal tritium extraction line has been completed and a second improved line has been designed.

The additional informatic which has been obtained of the temperatures at which hydrogen, tritium and helium are extracted from irradiated slugs is expected to contribute to increased separation efficien

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Separations Technology Division

Initial results obtained in production testing the bismuth concentration in the Extraction step show no significant differences in waste loss or in decontamination for a 30% reduction in weight of bismuth. A production test removal of iodine from metal solution by means of air sparging during dissolving is still under way. The test elimination of Sample Can evaporation in the Isolation Building is still continuing satisfactorily. The determination of optimum cold outgassing period for the Casting operation in Building 234-5 has proceeded to tests of 2-hour outgassing with no preliminary effects noticeable on casting appearance, density, radiography, and skull weight. A step-wise increase in the holding temperature in Casting has progressively decreased average skull weights.

In Redox and TBP process development, the preparation of Technical Manuals and Start-Up Operating Procedures has continued to receive primary emphasis. All arrangements have been completed to initiate the operations training program in Bldg. 321 on February 19. Engineering development studies are continuing on Production Plant pumps, feed scavenging, de-entrainment equipment, and materials of construction. The Hot Semi-Works construction bids were opened on January 4. The low bid was 18.6% above the fair cost estimate and the awarding of the construction contract is being withheld pending the authorization of additional funds required.

In the research laboratory, additional studies have been carried out on the bismuth-to-plutonium ratio in the Bismuth Phosphate Extraction step and the removal of iodine from Dissolver solution by air sparging. Methods have been found to permit the carrying out of critical mass studies with high concentrations of phosphate. Additional studies have been carried out on methods development for 234-5 slag and crucible recovery. Further promising data have also been obtained on the decontamination of uranium from combined aged and current metal wastes.

In the 234-5 process development laboratory, the effects of one. two, and three peroxide cycles on subsequent metal production are still being investigated. Favorable results have been obtained in studies of peroxide precipitations carried out at twice the usual concentration of plutonium. Methods of preparing Chemical 70-58 in a form satisfactory for introduction to process in the RM Line are being investigated.

The fourth Silver Reactor-Fiberglas filter assembly was successfully tested in mock-up and is being installed in the second Dissolver cell in B Plant. A spot check monitoring of the B Plant 4-5L Silver Reactor revealed the I^{131} removal efficiency still to be 99.9%.

Technical Services Division

Several improvements in P-10 mass spectrometer operations have been made or are under study by the Analytical Section. Experiments designed to determine the combined diffusion-excitation factor for tritium were initiated. A motor-driven magnet scan and a chart recorder were installed to increase the ease, speed, and reliability of mass spectrometer operation. Equipment was ordered to allow replacement of the fixed magnet by a more readily controlled induced magnet, as in the G.E. mass spectrometer. Other equipment was ordered in preparation for a study of in-line operation of the instrument.

The Analytical Section placed in service an automatic recording Cary spectrophotometer that records in the ultra-violet and visible regions. It is a very useful and reliable instrument, and has been used for a wide variety of work including studies of the reduction rate of plutonium in Redox IBP solutions,

determination of manganese in support of Redox head-end studies, and analytical studies of methods for the determination of rare earth metals and Chemical 70-58.

Bids were opened for construction of the shell of the Mechanical Development Bldg. for the Hanford Works Laboratory, and award of this sub-contract to the Dix Steel Co. on their apparent low bid of $161,193 was recommended by D & C. Plans for having this building shell serve initially as housing for construction forces durin the main phase of Works Laboratory construction were abandoned in view of plans for new pile construction which will require the Technical Shops and Design Unit to release Bldg. 101 for pile graphite fabrication. Planning for immediate completion of the Mechanical Development Bldg. for Technical Shops and Design Unit occupancy was initiated, and Material and Equipment Lists are being revised to include essential items of shop equipment originally planned for removal from Bldg. 101, but which must now be left there for use in graphite fabrication.

In view of the outlook for rising construction costs and their effect on expenditures for the Works Laboratory program, it was decided that all related facilities not yet committed to final design should be held to a more limited basis than otherwise desirable. Accordingly, the Library and Files Bldg. project proposal which had been approved by the A & B Committee and forwarded to the A.E.C., was recalled for reissue on a reduced scope basis. A.E.C. authorization was obtained for proceeding with the design, and by month-end D & C had completed negotiation with Chas. T. Main for the A-E sub-contract involved. Good progress was made on rescoping the building to (1) eliminate all space originally provided for the Statistics Group, (2) cut the working and vault space of the Library and Files, and (3) provide a few offices for Engineering Services. This plan assumes that the Statistics Group will stay in Bldg. 3703.

Initial check prints on the Pile Technology Bldg. were received from the Chas. T. Main Co. The design is essentially the same as submitted by our contact engineers. Check prints were also received from the Leland S. Rosener Co. covering details of the Plot Plan & Utilities and the Radiometallurgy Bldg. Comments were prepared and submitted to the architect-engineers through D & C.

The bulk of the time of the new Technical Computing Laboratory to date has been devoted to complex mathematical problems. Nevertheless, progress has been made in programming routine calculations for IBM operations. Data for 300 Area uranium metal quality control are being calculated by IBM methods.

Desk calculator time approximating 20 hours per month on this metal quality computing has been reduced to two hours of key punching and fifteen minutes of IBM machine time. Programming of 300 Area slug machining and canning controls is well along. Punching and computing was begun on a backlog of routine data for the Aquatic Biology Group of the Health Instrument Divisions. Plans are under way to program analytical laboratory precision and accuracy controls for IBM computing.

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PILE TECHNOLOGY DIVISION

JANUARY, 1951

VISITORS AND BUSINESS REPORTS

H. Robertson, N.E.P.A. Division, Oak Ridge National Laboratory, was here January 5 through 22 to consult and work on the in-pile creep test.

C. E. Stilson, N.E.P.A. Division, Oak Ridge National Laboratory, was here from January 1 through 20 to consult and work on the in-pile creep test.

P. C. Bogiages, General Engineering and Consulting Laboratory, was here January 3 through 13 for P-10 consultation.

George Monk, Argonne National Laboratory, was here January 8 and 9 for consultation on glass and remote control mechanisms.

C. D. Carroll, R. H. Koelher, and H. W. Bousman, General Engineering and Consulting Laboratory, were here January 29 through 31 for P-10 consultation.

R. McCrosky, E. I. DuPont DeNemours Company, was here January 17 through 31 to follow canning of special pieces.

F. A. Damewood, E. I. DuPont DeNemours Company, was here January 29 through 31 to follow canning of special pieces.

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K. W. Millet, E. I. DuPont DeNemours Company, was here January 23 through 29 to follow canning of special pieces.

Business Trips of Pile Technology Division Personnel During January were as follows:

A. R. Matheson visited Knolls Atomic Power Laboratory on January 2 and 3 for P-10 consultation. On January 4 he visited the Bell Telephone Laboratory for technical discussions, and January 5 he visited the National Bureau of Standards for technical discussions.

E. A. Eschbach visited Argonne National Laboratory on January 8 and 9 for technical liaison and the A. O. Smith Corporation on January 10 for consultation on furnace pots.

W. L. Schalliol visited the Argonne National Laboratory on January 8 and 9 for technical liaison and the A. O. Smith Corporation on January 10 for consultation on furnace pots.

H. F. Zuhr visited the Knolls Atomic Power Laboratory and the General Engineering and Consulting Laboratory on January 3 through 12 for P-10 consultation.

J. B. Lambert visited Argonne National Laboratory on January 23 and 24 for consultation on ANL-140, and Oak Ridge National Laboratory on January 25 and 26 for consultation on new experimental work.

ORGANIZATION AND PERSONNEL

	December	January
Physics Section	45	50
Engineering Section	58	58
Metallurgy Section	38	39
P-10 Project	56	51
Administration	3	4
	200	202

A steno-typist and four laboratory assistants were hired for the Physics Section. The steno-typist is working in the 700 Area until she receives her Q clearance. One of the laboratory assistants is on loan to the D & C Division until she receives her Q clearance. A steno-typist transferred in from Office Services. One laboratory assistant transferred to Electrical Division.

In the Engineering Section, a chemical engineer and a laboratory assistant were hired. A technical graduate on the Rotational Training Program transferred in from the D & C Division, and a steno-typist from Office Services. One laboratory assistant transferred to Technical Services, while a chemical engineer and a laboratory assistant terminated.

A steno-typist, working in the 700 Area while awaiting a Q clearance, was hired for the Metallurgy Section.

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A steno-typist was hired for the P-10 Section. She is in the 700 Area awaiting a Q clearance. Four technical workers and one metallurgist transferred to P Division from the P-10 Section. One field clerk terminated to obtain a better job.

W. R. Lewis transferred from the Engineering Section as Technical Assistant to the Division Head in the Administrative Section.

PHYSICS

Area Physics Work

Increases in the power levels in all the Piles were made during the month and a portion of these increases was again due to the improved distribution of the neutron flux in the pile. A measure of the effectiveness in flattening the neutron flux is given by the number of effective central tubes. This number is obtained by dividing the total pile power by the output of the most productive tube in the pile. Where the neutron distribution is undistorted by the presence of rods, poison columns, special requests, etc., there are 971 effective central tubes. The optimum, unattainable in practice, would be the operation of 2,000 tubes at the maximum permissible output. The following table gives the number of effective central tubes in the operating piles at the end of the month.

B Pile	1361
D Pile	1331
DR Pile	1168
F Pile	1404
H Pile	1307

The values for the B, D, DR, and F Piles are larger than at the beginning of the month. The exact increase is not known in each case but particularly noteworthy is F Pile where there were approximately 1240 effective central tubes at the beginning of the month. At the DR Pile, the first loading of poison columns was carried out during the month resulting in a substantial increase in this pile also.

A reactivity coefficient test was performed at the H Pile and a rod calibration was carried out in connection with this test. Analysis of the data was in progress at the end of the month.

Some difficulty has been experienced in obtaining a satisfactory operation of the IBM installation at DR Pile and several revisions of the apparatus are being discussed with the Instrument Division.

Estimates have been obtained on the accuracy and cost of a slide rule suitable for calculation for xenon poisoning. Accurate rules may be obtained at a reasonable price if the master drawings of the design scales are prepared here by qualified draftsmen and then sent to the manufacturer for photo-lithography and assembly.

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Plutonium Critical Mass

Critical mass determinations were completed in the fifteen inch stainless steel spherical reactor and measurements were also made in the fourteen inch sphere with fuel of 55 MWD/ton exposure. This work in the fourteen inch sphere completed the experimental study of the effect of plutonium 240 on the critical mass. Analysis of this data will be carried out when the results of the chemical assays are available.

Exponential Experiments

A set of foils have been carefully standardized after mounting in graphite foil holders discussed in a previous monthly report. This standardization has made it possible to carry out a detailed mapping of the thermal neutron flux in a single lattice cell of the standard Hanford lattice. The result of this mapping will be used to calculate more accurately than is possible at present, the fractions of the neutrons which are captured in the uranium, graphite, and other pile components.

The first pile which deviates from the present Hanford lattice is being erected. This pile will contain the present uranium slugs and aluminum tubes but will have an eight inch lattice spacing as compared with the standard eight and three-eighth inch spacing in the present piles.

It was discovered that the pressure build-up in water filled aluminum tubes in the exponential piles can be adequately accounted for by the increased aluminum content of the stagnant water.

Development work is being carried out on the use of small BF_3 counters in place of foil activation. A set of counters has been fabricated, but some difficulty has been experienced in the operation. Work to correct these difficulties was in progress at the month end.

In order to correlate the results of exponential experiments with the observed critical size of production piles, a study has been made of the errors in determining the critical size of the production pile. A calculation has been made of the effective critical size of a pile whose last layer is not fully loaded. This is a situation which has occurred in the loading of all the piles to their critical condition. The result of this calculation indicates that the approximate methods in use for calculating the effectiveness of the partly loaded layer are sufficiently accurate for all practical purposes. Further study has also indicated that the largest source of error in determining a critical buckling comes from a possible error in the assumed reflector effectiveness. Errors in determination of the critical height are somewhat less important than errors in the reflector effectiveness.

Tritium Production

A measurement of the neutron capture cross section of tritium was carried out in one of the critical assemblies at the P-11 Site. No measurable neutron capture was observed and this indicates that the cross section is less than forty barns. This result is consistent with observations at Los Alamos that there is no radioactivity production in tritium by neutron irradiation. As a consequence, no tritium destruction by neutron capture is expected to reduce the production rate of this material.

Several production forecasts were made by the IBM group at the request of the Physics Section for the purpose of planning schedules in the extraction facility.

At the request of the P-10 Development Group, a survey was made of the radioactivity arising from impurities in the P-10 slugs. This was done in a effort to identify the activity found on the interior of the glass equipment of extraction facility.

Shielding

Additional measurements have been made of the neutron flux in various positions in the biological and thermal shields. The results were in agreement with previous measurements. Analysis of the data was continuing at month end.

Special Request Program

A total of 378 P-10-A slugs and five other special requests were charged during the month, while 408 P-10-A slugs and nine other special requests were discharged.

Twenty-seven special requests are now on hand awaiting charging.

The irradiation of tantalum pellets to produce 30,000 curies of radioactive material for the Chemical Warfare Service has been completed and this material has been shipped.

Because of contamination spread by a leaking test hole sample, it has been necessary to notify all requesting laboratories that such samples will be required to pass a bubble test in the future.

Due to frequent changes in the power levels, the accounting of special request exposures in the piles has been complicated. At H Pile a procedure has been set up for doing this accounting with the IBM equipment. The IBM Calculation Group carries out the actual calculations on cards punched by the H Pile installation. When the IBM installation at the DR Pile is in routine operation, a similar procedure will be used there. Exposure accounting at the other piles will have to be carried out manually.

The B test hole facility at B Pile has been completely removed from service due to a water leak. Consideration is being given to replacing the facility by one of a revised design. Repair work continues on the B test hole facility at D Pile. Extensive decontamination work is in progress on the B test hole at H Pile. This decontamination was required by the leaking test hole sample mentioned above.

Test Pile

A special work request measured the reactivity effect of a sample of zirconium. Results show that a gram of zirconium has about 1/3 the reactivity loss of a gram of aluminum. This indicates that the zirconium atomic cross section is about sixteen per cent larger than the cross section of aluminum and thus approximately 0.3 barns.

A special work request was carried out to determine the reactivity effect of leaving a few boron balls of the proposed third safety system in the pile.

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At the request of the British [redacted] extensive testing was carried out to determine the cause of the low reactivity of Scovil cans.

Several samples of graphite produced by Great Lakes Graphite Company were tested at the request of the Hanford Works Office of Atomic Energy Commission.

Xenon Cross Section Measurements

A temporary shielding device has been designed for use with a low intensity neutron beam emitted from the pile for neutron spectrometer work. Design work is in progress on the permanent beam catcher for use with a higher intensity beam. New shielding has been installed around the special plug which is used to emit the neutron beams from the pile.

Further progress has been made in assembling and adjusting in the laboratory, the equipment which will be used for the production of xenon gas.

Instrument Development Section

The first model of the proton range counter has been calibrated. This instrument is intended to measure the energy distribution of a fast neutron beam. It has been found that the present instrument can determine energies from 1 Mev. up. Design is proceeding on an improved model which should extend the range to approximately 0.1 Mev.

The vacuum chamber of the magnetic spectrometer has been slightly redesigned to allow for the introduction of source samples and detector tubes.

The components of the low cost pulse relay, whose invention was previously reported, have been constructed and operating tests' have been successfully completed.

Reactivity

During the latest period of operation under equilibrium conditions the reactivity status of the five production piles was as follows:

	B Pile	D Pile	DR Pile	F Pile	H Pile
In rods	57 ih	84 ih	145 ih	90 ih	141 ih
In xenon poison	564	550	663	536	706
In Special Requests					
In lead-cadmium columns	0	0	0	0	0
In bismuth	100	94	15	109	0
In plant assistance	15	36	0	17	9
In dummy columns	5	21	11	29	25
In overall coefficient	-300	-351	-137	-312	-172
Total cold, clean reactivity	876	820	855	803	749

The reactivity loss at B and D Piles was due to the unusually large discharge of irradiated material during the month. The B Pile lost thirty-seven inhours during the month, the D Pile lost seventeen and the F Pile lost eleven. The DR Pile gained eight and the H Pile nine inhours during the month.

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PILE ENGINEERING

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Ball Third Safety Program

An experimental lot of boron steel balls was received from the Universal Ball Company of Willow Grove, Pennsylvania. Analysis showed a 1.42 per cent boron content which is satisfactory, but slightly lower than desired. Tests on these balls in the 305 Test Pile indicates a reactivity of 1/40 ih/ball in the center of an operating pile. This is in close agreement with the previously calculated value of 1/45 ih/ball. These balls were parkerized as a rust inhibiting measure and to increase their emissivity. It has been demonstrated that these balls will still rust if submerged in water. Tests are under way to determine if they will rust in moist air. Investigations are in progress to determine whether these balls could be chrome or nickel plated or if they could be made from boron stainless steel.

The air filters used in the ball removal vacuum line during the ball safety feasibility test on December 6 were inspected for graphite particles. Two cubic centimeters of graphite chips were found in the cyclone separator with the balls and only a trace of graphite dust was found on the filters. It was concluded that damage to the graphite by the balls was negligible.

Magnesium Front Dummies

Considerable difficulty has been experienced in preparing magnesium dummy slugs for experimental charges. The only available stock was 1.30 inches x 24 inch rods. It has been necessary to perfect a technique for upsetting this stock to 1.440 inch diameter. This is being done locally and these dummies should be ready for installation in about twenty pile tubes during February.

Process Water Study

The first phase of the process water study, water quality, has been scoped and the preliminary work of this phase is in progress. The experimental program will consist of a correlated series of flow laboratory and in-pile experiments. The scope, objective, procedure, and experimental facilities for this program are outlined in Document HW-19815.

The design and layout of equipment for Part I, the 105-D Flow Laboratory facility, which is being handled by the Project Engineering Division, is approximately seventy per cent complete. Fabrication and installation of equipment will begin upon receipt of the necessary A.E.C. directive, which is expected about February 1.

The Metallurgy Section, in conjunction with this project, is investigating the metallurgical and corrosion aspects of water quality. Suitable test slug specifications and special measurements to determine loss are under study.

The Analytical Research Group has investigated various methods for determining the amount and composition of the film on laboratory slugs. The investigations have produced two apparently satisfactory methods, one chemical and one mechanical, for removing the film for these determinations.

Experiments have been designed and the experimental equipment is being fabricated to study the effect of heat transfer and temperature on film formation. A steam jacketed Flow Laboratory tube loaded with electrically heated and aluminum dummy slugs will be used to establish the relationship between the variable in question.

Irradiation Effects of Graphite RDA #TP-10

An experiment to irradiate graphite samples at various controlled temperatures was installed in the B Pile on January 23. This test will permit the determination of the temperature coefficient of damage in the temperature region corresponding to that of the critical expansion regions of the piles. Temperatures of the four heater slugs in the train reached equilibrium at 108°, 134°, 157°, and 215°, with a drift of less than 5°C. The initial exposure is planned for a six month period provided no operational difficulties are encountered.

Surface area measurements were continued on a highly damaged graphite sample mined from D Pile. An adsorption-desorption hysteresis was observed which usually is indicative of fine pore structure. No difficulties were encountered with the helium free-space determination in contrast to previous difficulties with solid samples of irradiated graphite.

Preliminary measurements of annealing of physical expansion by the interferometric technique indicate that irradiation produces changes in the thermal expansion coefficient. Samples with measured thermal expansion coefficients were charged for exposure to allow the accurate determination of the annealing spectrum.

Measurements of physical properties were completed on two samples of KC graphite for exposure as part of the general monitoring program.

Interim reports on the pile annealing phenomenon and on x-ray diffraction studies were prepared.

A survey has been undertaken of pile unit motion studies, pile measurements, and pile sampling with the aim of outlining a coordinated program for the future. It is planned to summarize the present knowledge of the pile graphite, indicate the information needed, and outline the required program of pile measurement and sampling.

The graphite core borer has successfully cut solid samples from the tube channels of the 305-A test mock-up which is distorted to similate F Pile. A production test has been approved for removing samples from a pile.

Design of the in-pile controlled atmosphere facility, Project C-410, is about eighty per cent complete. Equipment procurement, development, and materials testing proceeded normally during the month.

Pile Power Levels

Significant increases in maximum pile power levels were made at all piles during the month. This is due in part to Technical Division assistance in better pile flattening and improved temperature control resulting from optimum positioning of control rods and more accurate determinations of graphite temperature from additional graphite thermocouples. It has been observed that ineffective film removal has limited power levels in the H and DR Piles because of the boiling restrictions.

Listed below are the maximum power levels which were attained during December, 1950, and January, 1951.

Pile	December	January	
B	370	395	
D	330	370	
DR	445	460	
F	315	320	(Operated at 325 for a short period.)
H	480	485	

Thermocouple Installation for Graphite Temperature Monitoring

Excellent progress has been made toward the completion of a program for the installation of additional graphite temperature indicating thermocouples in the D, B, and F Piles. P Division and Technical Division are cooperating on this program. A vertical safety rod thimble containing six thermocouples has been installed in the D Pile and six similar thimbles have been installed in the F Pile. A thermocouple assembly containing six thermocouples was installed in a bare vertical safety rod channel in the F Pile. This device will measure graphite temperatures at the points where thermocouples mounted on a vertical safety rod thimble will later be located and should provide means for obtaining a better correlation between thimble temperatures and graphite temperatures. The gas thermometer assemblies in the C sample holes of the B and F Piles have been removed and were replaced with a graphite train containing eight thermocouples.

These additional thermocouples reduce the amount of extrapolation necessary in calculations of maximum graphite temperatures. Areas of high conductivity graphite have been revealed which operate at lower graphite temperatures at given power generations. This additional information will allow more of the graphite temperature to be maintained closer to the 380°C maximum permitted at this time.

Ruptured Slugs

Ruptured slugs occurred during the month at both DR and H Piles. Within a two month's period a total of four ruptured slugs have been experienced. Three of these, two in the DR Pile and one in the H Pile, have been located in the central portions of high-power generation tubes. The second slug in H Pile was located in the downstream portion of a tube with an H-10 loading. The central slugs were all seriously distorted and swelled the tube necessitating tube and rear face gun barrel removal and replacement. In the last instance at H Pile it is believed that the rapid shutdown of the pile after the first indication of activity in the water monitoring system and the continued cooling of the tube permitted nearly normal discharge of the offending slug. Continued emphasis on increasing the sensitivity of the effluent water monitoring system should produce more reliable evidence of activity from a ruptured slug and promote rapid shutdowns on receipt of this information.

Nozzle Replacement Program

With the installation of aluminum alloy nozzles in the F Pile, the program for replacing stainless steel nozzles to inhibit corrosion of tube flanges has been completed.

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

The influence of Hanford flux on the behavior of fuel elements in contact with sodium is being determined. The filter unit on the slug R-5 was altered to accommodate increased helium gas flow rates necessary for slug cooling at the higher power levels planned for the F Pile.

High Pressure Water Channel (P-13, ANIM-140, P.T.-105-354-P)

The behavior of water, prototype fuel, and structural materials is being determined under conditions simulating those of the Westinghouse Pile as nearly as is possible in the Hanford Piles. Operation during January was routine on recirculating water until the 23rd. Electrical difficulties during start-up on the 24th necessitated switchover to process water. On January 30, recirculation was established, and the equipment was in normal operation at the end of January, except for a 500 cc/hr leak which could not be located.*

Five scrams of the H Pile during January were caused by this experiment:

Date	Cause	Type Scram
January 2	Electrical short between hot pipe and wire.	Automatic
January 9	Rupture of neoprene gasket in dowtherm flowmeter.	Manual by Request
January 10	Electrical short between hot tubing and wire.	Automatic
January 24 (two scrams)	Unknown	Automatic

Differential Transformer Calibration (WARD-M-103, P.T.-105-379-P)

The differential transformer (LVDT) is continuing to show erratic output, and a low resistance (about 20,000 ohms) between ground and the output windings.

Creep of Aluminum (P.T.-105-381-P)

An attempt is being made to use the NEPA equipment to determine the influence of Hanford flux on the creep rate of aluminum. The secon slug was discharged January 16 and the data have been sent to Oak Ridge for analysis. No creep data were obtained because of heater failure, but there is information on self-heating and temperature distribution which is valuable for design purposes. The third slug was charged January 16 and appears to be operating properly at 450°C. No significant effect of pile flux on creep rate has yet been established.

* NOTE: Leak repaired February 3, 1951.

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

This experiment is to determine the creep rate of KAPL pins subjected to internal pressure, heat and pile irradiation. The first slug was charged January 24 and no difficulties were encountered. The instruments appeared to be operating properly.

Dielectric Properties of Insulators (P.T.-105-367-P, RDA-PT-11-IV)

The dielectric properties of insulating materials which have been irradiated in the pile are being determined. Three slugs containing insulated wires which had been subjected to maximum pile flux for five weeks were opened this month. Slug #367-1 had been improperly assembled and a leak had developed, therefore, no data were obtainable. The resistance of twelve wire samples exposed in the other two slugs was measured.

Design of Material Tested Experiments

Engineering work was continued on the following experiments and facilities which are planned for future pile installation:

Creep of Zirconium (Pneumatic Loading)(Ward-M-106)
Creep of Zirconium (Weight Load)(ANLM-159)
Thermal Conductivity of U-Zr Alloys (ANLM-172)
Fission Gas Experiment (KAPL)
Controlled Temperature Facility

METALLURGY

Uranium Billet Casting and Rod Fabrication

During the past month procedures recommended by Technical for capping billets have resulted in a 1.5% drop in cropping loss, and an accompanying improvement in billet soundness.

Tests to evaluate slower rates of pouring from crucible to molds indicate that improved billet tops, but poorer surface quality result from reducing the pouring rate. The present pouring rate appears to represent the best compromise between these two opposing factors.

A sample of drawn uranium rod was examined for structure in the as received and after beta heat treated conditions. The structure was found to be normal in both cases. In addition, the surface quality of these samples was good; hence, drawing, in addition to swaging, shows promise as a method of sizing Hanford rod to slug diameter.

Uranium Canning

To give greater assurance that slugs sent to the 100 Areas for charging are of satisfactory quality, efforts have been made (a) to increase the rigor of the autocalve test, and (b) to intensify inspection at the welding operation. There is some evidence that poor brazes may be more easily detected at welding if the

slugs, after facing, are dipped in kerosene and wiped dry before beginning welding. The welding of sound slugs appears to be unaffected by the kerosene treatment, while the kerosene which penetrates into a defective braze causes a smoky flame when that section of the braze is heated by the arc.

With the cooperation of the P Division a development-production program involving the canning of about 500 one inch diameter eight inch slugs for DuPont was in progress at the month's end. Present indications are that the Hanford process is feasible for canning and testing these special-sized slugs.

Uranium Metallurgy

A report on the variation of orientation in standard production rod was completed and is currently being processed.

Experimental work on the rods rolled at 300 to 600°C at BMI was completed and a final report is now in preparation.

Tests are being initiated to determine the most feasible method of x-ray analysis for irradiated uranium and other radioactive materials.

Dilatometry

The dilatometric tests required to establish the degree of transformation versus expansion curve for the production dilatometer were completed on the "as canned" slugs, and tests on the bare slugs, after stripping, are in progress. There is a spread in the curve for canned pieces; hence, slugs which are nearly transformed and completely transformed cannot be entirely separated. However, the test will definitely reject slugs containing a high percentage of untransformed metal.

A number of slug expansion measurements were made for the rod quality study, and design work on the 234-5 dilatometer continued.

KAPL Assistance to Hanford

Additional work on swaging has shown that reductions as high as twenty per cent at 300°C were required to give the desired surface quality on the rods used. It appears that the surface quality of the rolled rod might have to be improved to make swaging to size, using a small reduction, feasible.

Successful extrusion experiments were made on the ternary magnesium-aluminum 4.75% Li alloy (65:30) at 380°C. Except for the lead ends, the rods obtained had smooth surfaces and were uniform. Earlier experimens carried out on this alloy showed it to be about ten times superior to the standard aluminum-lithium alloy from the standpoint of hydrogen pick-up.

Additional work on extrusion of the aluminum-uranium dioxide alloy showed that, from a recovery standpoint, the best results could be obtained by omitting the use of back-up plugs.

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Radiometallurgy

The preliminary examination of the slug that failed in process tube 3288-H on December 6, 1950, has been completed and an interim report is in progress. Visual observation of this ruptured piece revealed that the can was split longitudinally through the cap and can wall from the welded end to the bottom of the can. The splits appeared to have resulted from the formation of uranium corrosion products along a transverse defect in the slug, but the origin of the failure was not apparent. The slug and its surrounding process tube has been segregated and retained for a more detailed examination.

Analysis of the foreign material that was found in the rear face pigtail of process tube 2452-H in December, 1950, has indicated that it is not of Hanford Works origin. The piece was 0.375" x 0.25" x .01" thick with the larger dimension parallel to the axis of a cylinder 1.0" in diameter and visible tool marks had a pitch of .014" normal to the axis of a cylinder. Spectrochemical analyses showed that the major constituents were iron, lead and antimony in a ratio of 1:1:2. A more complete analyses is now in progress and an investigation into the methods used in forming the pigtails is being made.

Daily consultations on the design of the radio-metallurgy building are being held with the contact engineer. Progress by the architect engineer is satisfactory and it appears that ideas that he has will improve the mechanical design of the building and equipment.

P-10 Alloy

Known hydrogen samples introduced into a hot extraction furnace on Metallurgy's modified P-10 analytical line have been recovered partially as water. It is possible that a metal oxide film formed on the extraction thimbles during vacuum degassing may be reduced by the hydrogen. The stainless steel thimbles are used as containers for the aluminum-lithium slugs inside the vacuum enclosed stainless steel extraction tube. That the hydrogen would reduce these oxides in the presence of aluminum-lithium alloy is doubtful, but such a reaction is another possible source of error in the P-10 analytical procedure. Further, it was found that the presence of lithium in the vacuum system made it impossible to attain proper vacuum.

Construction of a second analytical line in which the samples will be heated in a quartz or Vycor chamber is in progress. It is hoped that this procedure will eliminate many of the problems attendant with the use of a metal heating chamber.

The aluminum-lithium rods which were previously checked for segregation along the axis were analyzed for radial segregation. The results did not correlate with the previous data; the analyses are being rechecked.

It was proven that the corrosion resistance of Type 304 stainless steel in molten aluminum-lithium alloy is equal to that of Type 347 stainless steel; hence, from a corrosion standpoint, Type 304 may be used as an extraction tube or extraction pot material for the P-10 lines. Brief data indicate that the corrosion resistance of plain carbon steel is also equal to Type 347 stainless steel for this application.

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A test was run to determine the rate of corrosion of Types 304, 321, and 347 stainless and 0.14 carbon steel in a molten mixture of aluminum-lithium, magnesium-aluminum, and cadmium. This mixture is one being considered for a low temperature P-10 extraction procedure. No measurable corrosion of any of the materials occurred during a twenty hour run at 500°C. Distillation of cadmium, which would serve as a heat transfer medium, did not prove to be a problem because alloying with the magnesium-aluminum at low temperatures decreased the vapor pressure of the cadmium.

Corrosion

Three materials, Carboloy #44A, Stoody #2, and Stoody #8 are currently being corrosion tested in synthetic 200 Area waste solutions in order to evaluate their use as a bearing material. After 240 hours exposure in static tests at 90°C, Carboloy #44A failed as a result of the formation of a soft, orange. surface deposit. Stoody #2 and Stoody #8 have shown very low weight losses after 192 hours exposure but there is some indication that local attack may occur on Stoody #8.

Stainless steels types 304 ELC, 347 CbTa, 321 and 347 are currently being corrosion tested in a selected group of separations process solutions as well as by means of standard acceptance tests. Laboratory work has been completed on the RAF stream Huey tests, and will be completed on the RAW stream within two weeks. Tests in $BiPO_4$ process streams have now been started. Laboratory work has been completed on the Huey tests, HNO_3-HF intergranular corrosion tests and, except for bend testing, has also been completed for the Strauss tests.

A study of the effect of $Hg(NO_3)_2$ present in a concentration of 10^{-3} molar in 200 Area dissolver solution has been started. A synthetic solution is being used to test T-309 SCb at boiling temperatures.

Special Requests

The following pieces were inspected, processed, and/or bubble-tested in preparation for pile loading:

ORNL 137	6 pieces
ANL 178X	6 pieces
MIT 101	2 pieces
ANL 182	6 pieces
Special Receptacle Slugs (PT 105-269-P)	8 pieces

A technique was developed for effecting water-tight closures on 1/2" diameter test casings. This procedure, involved spinning the casing against a suitably grooved end plug.

Miscellaneous

Examination of pinch welds on copper and aluminum indicated that good bonding was obtained on both metals; however, the bonded area in the aluminum was confined to the tip of the pinchoff.

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Back reflection x-ray patterns were made on irradiated aluminum specimens having an activity of 500-600 mr per hour. The photograms were not fogged excessively by the sample even though exposed to the sample at a distance of 5 cm for five hours.

Crushing tests were made on some nickel-boron carbide balls and tensile and compression tests were run on aluminum and graphite samples.

Battelle ran two stress rupture tests on 2S-0 aluminum at 500°C and 330 psi. One broke after 290 hours with seven per cent total deformation; the other broke after 282.9 hours with five per cent elongation. These times were shorter than expected. To permit extrapolation of the data to one year, additional tests at low stresses are required to clarify the lower stress end of the design curves.

Battelle has found that uranium in waste aluminum-silicon alloy can be reduced to 0.18 per cent by a liquation process; however, neither liquation, preferential oxidation, nor partition removed tin satisfactorily. They are doubtful whether the tin can be removed by simple metallurgical refining methods.

TRITIUM DEVELOPMENT

Metal Line Developments

Installation of the first metal separation line has been completed. The associated extraction furnace nears completion; a second extraction furnace is under construction to prevent the long cycle time of the furnace from dictating the production output of the line. The Toepler actuating system was shipped from Schenectady on January 31, 1951. Three extraction furnace pots have been received from the vendor. Although these three have been neither hydrogen fired nor vacuum tested, they are still satisfactory for preliminary metallurgical investigations and for mechanical manipulations of the transfer cask, dollies, slug loading facilities, and outgassing and extraction furnaces.

Extraction Developments

Experimental extraction experiments continue apace in the glass production equipment since no production quota exists.

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Metal Stripper Line Developments

A rough draft of the feasibility report on the development, design, construction, and operation of a metal stripper line to be used to recover residual amounts of tritium from the by-product streams of the process has been received from the General Engineering Laboratory and is being studied. Detailed design of a prototype metal sorption vessel for this line is under way at G.E.C.L.

Project P-10-A (Expansion of Slug Fabrication Facilities) and Project P-10-B (Cold Development Facilities)

Projects P-10-A (Expansion of Slug Fabrication Facilities) and P-10-B (Cold Development Facilities) have been closed out.

Project P-10-D

During January the design requests on Project P-10-D, Part II, were completed. Design requests submitted include:

1. A Second Extraction Furnace.
2. A Warehouse.
3. Metallurgical Equipment.
4. Funds for Work Being Done by the General Engineering Laboratory.

Preparation of a project proposal is in progress.

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Beneficial occupancy of the 1703-B Office Building was effected during the month. An additional three helium leak detectors have been received. The motor generator set and vital power supply to the fresh air mask system have been completed.

Project P-10-X

Design of the second metal line to be purchased under Project P-10-X has been frozen. Major changes between the first and second lines include an inverted separator and the substitution of Sprengel pumps for Toepler pumps.

Sampling

Preliminary data indicate that additional by-product circulation will be necessary to obtain uniform gas composition before sampling.

Comparable results are being obtained using glass, aluminum, and stainless steel sample containers. No noticeable improvement of glass break-seal sample bulbs over stopcock containing sample bulbs has been observed.

Product analyses with the mass spectrometer indicate a satisfactory isotopic purity but CO_2 and N_2 contaminants exceed desired purities by an order of magnitude. Whether the CO_2 and N_2 contaminants are present in the production stream or are introduced in the sampling procedure or in the mass spectrometer analysis remains to be evaluated. Nitrogen may be working through the mercury from the air actuation side of the Toepler pumps.

Miscellaneous Developments

A cold furnace tube, cap and gasket have been forwarded to the Knolls Atomic Power Laboratory for experimentation on the diffusion coefficients of hydrogen, tritium, and helium through gasketing material. A spent, "hot" furnace tube has also been sent to KAPL to determine the quantities of tritium and helium dissolved in the spent melt and the stainless steel furnace walls.

The third glass production line has been revised and acceptance tests are in progress. This line includes all the currently developed revisions except the metal product transfer system and the stripper-sorption system.

A sample of tritium was sealed in an aluminum capsule and delivered to the P-11 Reactor for a determination of the cross section of tritium.

The purchase of a gas-tight circulating pump for Kanne chamber calibration was cancelled as a result of excessive cost. A shop-made gas stirrer is being fabricated.

Good agreement has been obtained between the buoyancy balance and the mass spectrometer on the analysis of a common sample of tritium.

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P-10 OPERATIONS

Extraction Operations

The extraction facilities were employed during the month as follows:

Line 1 - Construction revision.
Line 2 - Reprocessing air contaminated batches. Operated by Production personnel.
Line 3 - Research and development. Operated by Development personnel.
Line 4)- Research and development. Operated by Production personnel
Line 5) according to Production Tests planned by Development Groups.

A similar program is planned for February.

Two men (one glassblower, and one operator) were removed from product work during the month because of excessive tritium body contamination. Neither man was found to be contaminated in excess of the MPC.

Slug Manufacturing Operations.

Responsibility for future slug manufacturing activities was transferred from the Pile Technology Division to the P Division effective January 8, 1951. The status of the operation at time of transfer was reported in document HW-20148.

INVENTIONS

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

Inventor	Title
R. D. McGreal	Solenoid Lock

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

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February 9, 1951

SEPARATIONS TECHNOLOGY DIVISION

MONTHLY REPORT
JANUARY, 1951

VISITORS AND BUSINESS TRIPS

G. W. Watt, Consultant from the University of Texas, visited the Hanford Works from January 8 through 12 for research and development consultations.

B. Weidenbaum attended a meeting of the Northern California Section of the A.I.Ch.E. at Oakland, Calif., on January 8 to present a paper on waste gas treatment.

P. E. Collins visited the Los Alamos Scientific Laboratory from January 22 through 25 for 234-5 Project consultations.

F. J. Leitz, C. A. Rohrmann, R. E. Smith, and B. Weidenbaum visited the du Pont Co. at Wilmington, Del., on January 22 and 23; the Oak Ridge National Laboratory on January 24; and the Argonne National Laboratory on January 25, for Stack Gas Treatment consultations.

ORGANIZATION AND PERSONNEL

Personnel totals are as follows:

	December	January
Administration	2	2
Special Assignment	1	2
Research Section	37	37
Development Section	71	74
Process Section	29	31
	140	146

Special Assignment: C. A. Rohrmann was transferred from the Technical Services Division to this Division as Technical Assistant to the Division Head.

Separations Technology Division

Research Section: One Chemist was transferred to the Project Engineering Division and one Tech. Grad. was transferred from the Technical Services Division.

Development Section: Two Chemical Engineers were transferred from KAPL. Two Tech. Grads. were transferred in, one from the Pile Technology Division and one from the D&C Reactor Division. One Steno-Typist B was granted a leave of absence.

Process Section: One Metallurgical Engineer was transferred from the "S" Division, one Technologist C was transferred from the H.I. Divisions, and one Steno-Typist B was transferred from the Services Division. One Steno-Typist A was granted a leave of absence.

200 AREAS PLANT ASSISTANCE

Canyon Buildings

Production Test 221-B-9, testing removal of iodine from metal solution by means of air sparging during dissolving, has been started at B Plant. No data are available at this time.

Runs have been processed under Production Test 221-B-10 at B Plant with the bismuth concentration in extraction reduced to 3.5 grams per liter from approximately 4.5 grams per liter. No significant differences in waste losses or in decontamination were observed. Runs are currently being processed with bismuth at 2.5 grams per liter.

The metal irradiated to a nominal level of 55 MWD/ton was processed without incident.

The underground metal waste line at T Plant became plugged during the disposal of the waste of Run T-11-01-B-30. A sample of this neutralized metal waste did not contain an abnormal amount of solid material. An alternate line was put into service.

Concentration Buildings

The agitator was recently lowered in the T Plant Metathesis centrifugation tank (F-1) in an attempt to lower product hold-up at this point. A recent acid flush of the cell indicates that this has been accomplished to some extent. The amount of product hold-up is not definite, however, since the runs preceding the flush originated from the 55 MWD/ton material and contained only approximately two-thirds of the amount of product usually processed.

Isolation Building

The nominal 55 grams per ton product was processed without incident. The total amount isolated was 125% of the commitment, but further losses are expected when the material is reprocessed after use in P-11 studies.

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The equipment in all production cells has been revised for thermal decompositio of hydrogen peroxide in supernatant solutions. All runs are being processed under procedures developed during Production Test 231-11.

Runs transferred to the Purification Building are being evaporated to a product concentration of 350 g/l for processing without further drying. This condition was found satisfactory under Production Test 231-10, Supplement B.

Purification and Fabrication Building

Production Test 234-2, "Recycle of Skull Solution to the Isolation Process," has been completed. Conclusions drawn from the test are (1) skulls dissolved in 16 M HNO_3-0.04 M HF solution may be recycled through 231-234 Building processes, and (2) skull recycle material purity should be satisfactory for direct hydrofluorination of P-2 cake, if this is found to be satisfactory on normal material.

Production Test 231-10, Supplement B, "Elimination of Sample Can Evaporation," has been completed. On the basis of preliminary results, the "S" Division has decided to start processing undried AT solution at a concentration of 350 ± 50 g/l beginning February 1.

A porous aluminum oxide filter unit for SN-1 solution has been built and tested. The filter medium is currently being tested for possible dissolution in supernate solution.

Stand-in materials for product oxalate were evaluated to choose one suitable for R.M. Line testing. Settling rates of lanthanum oxalate precipitates, though shorter than for product oxalates by a factor of 3 or more, were the best of the materials tested.

Correlation of Reduction yields with (1) percentage conversion to fluoride, (2) amount of recycle, (3) amount of fluoride (4) duration of reduction cycle, and (5) temperature of reduction cycle is being determined in co-operation with the 300 Area Statistics Group.

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DOX AND METAL WASTE RECOVERY DEVELOPMENT

Technical Manuals

Preparation of the Redox Technical Manual has been continued. On January 25, the preparation of this manual was about 49% complete. The following chapters, the first five to be finished, were completed during the month (except for reproduction):

II. Irradiated Slugs and Fission-Product Decay

VIII. Aqueous Make-Up

IX. Solvent Treatment

XX. Analytical Methods

XXI. Health Protection from Radiations

A small amount of effort has been initiated on the preparation of the Uranium Recovery Technical Manual. On January 25, the preparation of this manual was about 6% complete.

Process Studies

A feasibility study of the adaptation of the Redox Plant to several modificatic of the Purex-type "saltless" process was completed. A separate report on this study is in preparation. Work was started on a survey of the status of "saltless" solvent-extraction process development. A study of the effects of (a) production rate and (b) pile discharge level on Redox Plant plutonium and uranium processing costs, conducted jointly with the "S" Division, was initiatc

321 Building Construction and Maintenance

The equipment revisions originally planned to simulate Redox Plant operations in the Demonstration Unit for training purposes have been completed. Additionc revisions planned to increase the value of the unit for training purposes, which should be completed by month end, are (1) installation of static and differential pressure indicators on the IA and IB Columns, and (2) moving the B-4 tank temperature element to the B-1 concentrator stripping column. Work on revisions to the Scale-Up equipment to permit RA-RC-RO Column cascade operation for training purposes is progressing favorably, following completion of the feasibility and cost studies on these revisions. It is anticipated tha all revisions will be completed and the equipment ready for operation during the first week of February.

321 Building Operations

Completion of 649 additional hours of life-test on the 8-in. column pulse generator resulted in a total of 4745 hours of nearly continuous trouble-free operation. It is planned to terminate this life-test prior to the start of training runs, to check present operating performance on this unit compared to performance during its early testing, and to dismantle the unit to take wear measurements and generally prepare the pulse piston for additional trouble-free operation during the training program.

Separations Technology Division

Activities of the group were principally devoted to the preparation of Redox and TBP Technical Manual material and to the preparation of the Redox and TBP training manuals for the 321 Building operational training.

Arrangements have been completed with the "S" Division for the transfer on February 5 of the weekly roll employees to act as trainer-operators, and for the transfer of the first group of trainees on February 19. An "S" Division contact man for the training program has been assigned office space in the 321 Building. Schedule sheets for rotation of trainees on various training jobs have been prepared. Column and concentrator battery log sheets for continuous operation have been approved and are currently in the process of being reproduced. General building accomodations have been readied for the increase in personnel.

Equipment Development Studies

Summary of De-entrainment Studies

New information from de-entrainment studies carried out in a 5-in. column (including comparisons with data reported last month) is summarized below:

1. De-entrainment data using ICU solutions (based on detecting the amount of uranium entrained overhead with the condensate) appear to be reliable and bear out the following:

   a. With no packing in the column the decontamination factor (D.F.) of the condensate with respect to uranium varied from 6×10^6 down to 2×10^5 as the vapor velocity in the column increased from 0.2 to 13 ft./sec.

   b. Packing the column with 2 ft. of 1/2-in. Raschig rings effected a 4 to 10-fold improvement in D.F. over operation with the column unpacke

   c. Returning 25% of the condensate to the top of the packing (above) as reflux effected a further 2 to 10-fold improvement in D.F. over operation without reflux to the packing.

2. De-entrainment data using neutralized RAW solution spiked with 1 g./l. fluorescein for detection of entrainment are still somewhat in doubt as to whether or not the 100 to 1000-fold lower D.F.'s (compared with the ICU studies above) are real and due to differences between the physical properties of the two liquid systems, or whether or not the fluorescein is giving a true measure of entrainment (perhaps due to vapor pressure of the fluorescein). Assuming these data are correct, the following tentative conclusions are drawn:

   a. D.F.'s without any packing in the column range from 10^4 to 10^2 over a range of vapor velocity in the column from 3 to 12 ft./sec.

   b. Neither combination of York mesh (see above), with or without reflux, effected a significant improvement in de-entrainment at a vapor velocit of 6 ft./sec. in the column.

   c. At 3 ft./sec. vapor velocity, the York mesh effected approximately a 2-fold improvement in D.F.

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Submerged Pump No. 2, a development unit for submerged regenerative turbine pump studies now employed as a bearing evaluation device, completed 38 days of uneventful operation in RAX solution. Disassembly revealed that the single process fluid-lubricated Stellite No. 12 journal and Stellite No. 12 bushing were lightly scored and that the maximum wear of 2 mils (diametrical) occurred in the upper third of the bushing.

Submerged Pump No. 4, a Roth 147 turbine pump driven by a 10-ft. vertical stainless steel shaft supported on two Graphitar No. 2 bushings operating in static reservoir of water retained in the torque tube by a Sealol Co. rotary seal employing Stellite to carbon faces, was examined for wear after 30 days of operation circulating 1.67% Superfiltrol suspended in water. Maximum wear occurred at the inboard and outboard head dams (11 to 12 mils) and the lower static seal carbon face (56 mils). Scoring was evident on both wearing rings, the dam, and on the Stellite seal faces.

Peerless 4" - IA Transfer Pump, a four-stage deepwell turbine pump, completed 13 days of scheduled 30-day test operation to evaluate Graphitar No. 2 bushings and stainless steel journals when operating with simple flooded-type process fluid lubrication. The operation in neutralized and concentrated RAW (contains suspended $Fe(OH)_3$) at 82 ±2°C. at a speed of 1750 rev./min., discharge head of 15 ft., and a flow rate of 45 gal./min., has been smooth and uneventful.

Peerless TD-423-50, the Redox prototype double-volute turbine pump with forced-pressure process fluid-lubricated Graphitar bushings, stainless steel journals and a water-flooded (25 ft. head) double seal with boron carbide static and rotary elements, completed 66 days of smooth and uneventful operation at 1750 rev./min. circulating neutral hexone at a flow rate of 5.5 gal./min. and a discharge head of 147 ft. During the test interval seal leakage was 3.0 ml./hr. Dimensional and qualitative inspections showed that the maximum wear (5 to 6 mils) occurred at the bearings within the pump heads in a zone adjacent to the impeller.

Peerless 8"-LA TBP Prototype, a six-stage deepwell turbine pump employing process fluid-lubricated Graphitar No. 2 bearings, was completely dismantled after 36 days of operation in RAX. Maximum wear occurred on (1) the top liquid bearing (liquid throttle bushing), (2) the middle guide bearing, and (3) the bearing just above the top impeller. Maximum wear did not exceed 2 mils and averaged less than 1 mil (0.9 mils). Maximum journal wear of 1.1 mils occurred near the top of the top liquid bearing. No wear of the impeller or impeller wearing rings was noted. The pump was reassembled and stored in the 3000 Area.

Johnston 8" TBP Prototype Pump, consisting of an 8-stage deepwell turbine pump driven by a 1-3/16 in. diam. stainless steel shaft 15-ft. long guided between stages and at the middle by graphite 41 bearings, has completed 6 days pumping water at a discharge pressure of 125 ft. (55 psig) and flow rate of 137 gal./min., and 30 days pumping RAX at 125 ft. (44 psig) discharge head and 147 gal./min. The shut-off head has remained constant at 212 ft. Operation has been uneventful. Measurements of fluid leakage at the bearings and throttle bushing are in progress.

Peerless (P-124) Production Redox Pump, consisting of a single-volute turbine pump mounted on the lower end of a 10'-6" vertical torque tube containing a stainless steel drive-shaft coated with Stellite at the area of journal contact with the boron carbide bushings located at an intermediate position in the torque tube and in each pump head, has completed 17 days of smooth and uneventful operation at 1750 rev./min. in neutral hexone at a discharge rate of 13.9 gal./min. and a discharge head of 117 ft. Seal leakage has been less than 5 ml./hr. Measurement of the performance characteristics with water revealed good adherence to the vendor's performance curve. Local measurements gave 10 ft. greater head at all flow rates than reported by the vendor.

Hexone - HNO_3 Proportioning System, consisting of a Proportioneer's, Inc. air-operated, single-acting, plunger pump with adjustable frequency and displacement characteristics, has been revised for hexone operation (previous operation has been with water and HNO_3). Revisions include inert gas blanketing, provisions for washing HNO_3 from hexone, and revision to the sampler. No tests have been made with HNO_3 and hexone as yet.

Feed Scavenging

Two runs (Mn-6, Mn-7) were made in the Bird 12-in. solid bowl centrifuge employing conditions permissible in the Redox plant - 1750 x gravity and 30 minute hold-up time. Run Mn-6 contained 0.075 M $KMnO_4$, which was digested at 100°C. for 30 minutes, followed by the addition of the stoichiometric amount of Cr(III) and further digestion at 100°C. Run Mn-7 contained 0.03 M $KMnO_4$, to which a stoichiometric amount of Cr(III) was added after one minute, followed by a 30-minute digestion period. A further quantity of Cr(III), 5% of theoretical, was added to the latter run, followed by 30-minute digestion period.

The clarity of effluent from Mn-6 averaged 80% while Mn-7 gave 19%. The untreated solution clarity was 84%. Approximately 17% of the Mn from Mn-6 was found in the effluent stream and 30% from Mn-7.

Materials of Construction

Duralon 36 (3 spray coats, 1 finish brush coat), air-dried for 7 days at 40°F. and 10 days at 95°F., exhibited no change after (1) immersion in concentrated and neutralized RAW for 7 days at 157 ±9°F., followed by (2) 10 days of immersion in RAX at 70°F., and (3) 1-day immersion in hexone at 70°F. The latter exposure is being continued.

Process Chemistry

An experimental study of the freezing point and boiling point variation with the degree of concentration of acidic concentrated Redox wastes and neutralized concentrated wastes per flowsheets HW-4 and ORNL has been completed. A comparison of the volumes obtained by the present waste treatment flowsheet (SK-2-5312) and that obtaining by concentrating the acidic waste to a freezing point of 40°C., which results in a neutralized waste with a freezing point of 29°C., shows that the volume of the acidic waste is reduced to 90% of the flowsheet volume and the neutralized waste to 78% of the flowsheet volume.

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Hot Semi-Works

The Hot Semi-Works bids were opened on January 4, 1951. The low bid by L. H. Hoffman Co. was 18.6% above the fair cost estimate of the Project Engineering Division. Consequently, a request for addition funds ($645,000.00) was submitted to the Atomic Energy Commission. Awarding of the construction contract is being withheld pending the authorization of these additional funds.

SEPARATIONS PROCESS RESEARCH

Bismuth-to-Plutonium Ratio at Extraction Step

Recent studies of plutonium loss versus MWD level at constant but greatly reduced bismuth concentration (1.8 g/l) in the Bismuth Phosphate Extraction Process do not confirm the previously reported low plutonium losses in the 570 to 1430 g/t range. Losses in this range have been high and erratic. These results indicate that 500 g/t is about the maximum plutonium concentration for adequate carrying by precipitation of 1.8 g/l bismuth in the Extraction step. This corresponds to a Bi/Pu ration of about 30. Earlier studies have shown tha when 2.5 g/l bismuth is precipitated in the Extraction step adequate plutonium carrying is obtained with Bi/Pu ratios as low as 15.

Studies of plutonium loss as a function of Bi/Pu ratio in the first cycle product precipitation have shown that when 1.8 g/l bismuth is precipitated (present process) adequate plutonium recovery is obtained at Bi/Pu ratios as low as 15.

Iodine in Dissolver Solution

The effect of the presence of mercury in Dissolver solution on the carrying of plutonium by bismuth phosphate in the Extraction step has been studied as a function of mercury concentration and of the oxidation state of the iodine. With the iodine as iodide or iodine, plutonium losses to the Extraction supernatant and two washes were not appreciably influenced by the presence of mercury in a concentration range of 0 - 10^{-3} M (referred to Dissolver solution). With the iodine present as iodate, plutonium losses were higher by a factor of about three in the presence of mercury as compared to its absence. Even in the absence of mercury, losses were higher when the iodine was present as iodate than when present as iodide or iodine. These results were unexpected and further studies are being made. However, since no known difficulties are encountered in present operations which might be attributable to iodate, it seems hopeful that no difficulties might be met in the presence of mercury.

Recent studies indicate that air-sparging for three hours at 95 - 100°C. and at a flow rate of about 115 CFM plant-scale will remove ca. 90% of either iodide or iodate from simulated Dissolver solution in contact with metallic uranium. Removal for both oxidation states was markedly reduced by reduction in the spargant flow rate and temperature. In the absence of a metallic uranium heel, iodide removal by sparging was slightly improved over that obtained in the presence of metallic uranium. On the other hand, in the absence of metal, iodate removal was nil.

Corrosion studies involving contact of boiling simulated dissolver solution, 10^{-3} M in mercury, with Type-309 stainless steel showed penetration rates of <0.00004 in./month.

Aged First Cycle Supernatants

Scavenging of activities, particularly plutonium and strontium, from a typical aged first cycle supernatant (104-T) by the addition of iron, barium, strontium lead and tannic acid has been studied. Best results were obtained by the addition of 0.01 M tannic acid. Decontamination factors of 53 for plutonium and 14 for strontium were obtained. Samples of soils representative of those adjacent to cribs in the two 200 Areas have been obtained. Studies of the effectiveness of these soils in removing activities from aged first cycle wastes have been started.

P-11 Assistance

Critical mass experiments in the presence of phosphoric acid can be performed providing the plutonium is first oxidized to plutonium(VI) to prevent the precipitation of plutonium(IV) phosphate. It has been found that plutonium(IV) nitrate solutions (50 g/l) in 1.5 M HNO_3 are completely oxidized after one hour at 90°C. by 0.1 M $H_2Cr_2O_7$ and are stable with respect to precipitation for at least five weeks in the presence of 60, 125, 190, or 250 g PO_4^{-3}/l. The oxidation process at room temperature is extremely slow. All experiments were performed in vessels fabricated of 347 stainless steel. Experiments carried out simulating the high temperature evaporation of AT material as performed in the 231 Building in the presence of excess $H_2Cr_2O_7$, however, show that only 90-95% of the plutonium is oxidized after six hours.

The oxidation of plutonium (50 g/l) in 1.5 M HNO_3 by $KMnO_4$ at 25°C. is 98.3% complete after one hour; however, some manganese dioxide is formed which may have to be removed before the solution is used for critical mass experiments.

Critical mass measurements in the presence of bismuth nitrate require that conditions be found to prevent the hydrolysis and subsequent precipitation of basic bismuth nitrate compounds. It has been found that plutonium solutions (50 g/l) in 1.5 M HNO_3 containing 100, 215, 330, or 450 g Bi^{+3}/l are stable with respect to precipitation for at least one week providing Baker and Adamson bismuth nitrate salt ($Bi(NO_3)_3 \cdot 5H_2O$) is used for solution make-up.

234-5 Slag and Crucible Dissolution

Experiments have been initiated to determine the feasibility of dissolving slag and crucible materials (from the 234-5 operations) in the dissolver of either the Bismuth Phosphate or Redox plants. Introduction of the slag and crucible as recycle material at this step should result in satisfactory recovery of the product without the necessity of installing other equipment for dissolution or leaching and for introduction of the recycle solution to process streams. Preliminary results indicate that when the nitric acid is initially 8 M, 20 hours are needed to dissolve completely slag and crucible as received while only ca. 7 minutes are needed when the material is first ground to pass through a 20-mesh screen. Uranium nitrate up to 0.5 M had little effect.

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Recovery of Plutonium from Slag and Crucibles

Calcium nitrate has proven to be a satisfactory salting agent for the TBP extraction of plutonium from nitric acid leaches of slag and crucible materials Three extractions of the leach solution (ca. 1 M HNO_3) with 30% TBP in AMSCO 125 (volume aqueous/volume organic = 10) remove greater than 99% of the plutonium when ca. 3 M $Ca(NO_3)_2$ is used as the salting agent. Emulsion formation has not occurred in this system. The large quantity of nitric acid extracted by the TBP phase at high salting strength is believed to be responsible for difficulties encountered in completely stripping the plutonium from the organic phase into a small volume of 0.01 M HNO_3 - 0.1 M $NH_2OH \cdot HCl$. The feasibility of employing a water scrub (mainly to remove nitric acid) prior to the stripping operation is being investigated.

Redox Head-End Treatment

Experiments performed in the Junior Cave equipment have shown that the use of 0.04 M $KMnO_4$ (instead of 0.08 M) in the ruthenium volatilization step has two definite deleterious effects. First, in the presence of three weight per cent ozone, the ruthenium decontamination factor is lowered from ca. 100-300 to ca. 30. Second, when this amount of permanganate is reduced to MnO_2 by chromic ion, the zirconium decontamination factor decreases from ca. 80-100 to ca. 30. The niobium decontamination factor (ca. 1000) is not appreciably affected, however, by the two-fold decrease in the amount of MnO_2 formed.

The deposition of ruthenium on the Junior Cave stainless steel equipment has been found to be virtually quantitative (ca. 95%) when an air sparge is used during the ruthenium volatilization. Tentatively, it is believed that 60 to 65% of the ruthenium is deposited in the volatilization vessel when either an air sparge or an ozone sparge is used and that the deposition of ruthenium on stainless steel from a gas stream containing ozone is negligible, whereas the deposition from an inert gas stream is nearly quantitative.

Redox feed resulting from the complete dissolution of MnO_2 to Mn^{++} has produced virtually the same extraction-scrub performance data, with respect to the decontamination of zirconium, niobium and ruthenium, as does untreated dissolver solution. If manganese dioxide is precipitated and removed by centrifugation, the over-all decontamination factors through extraction and scrub steps for zirconium and niobium are increased by at least 14-fold and 3-fold, respectively. These improvement factors must be regarded as lower limits only, since the zirconium and niobium activities in the final stream in these studies were near background.

Kinetics of Plutonium Reduction in the Redox IBP Column

Recent KAPL pilot plant Redox investigations employing Head-End scavenging have shown that it may be nearly possible to obtain the required beta and gamma decontamination of uranium in one cycle. Adequate plutonium decontamination in a single cycle is less certain. It was, therefore, considered of importance to study the rate of reduction and stripping of plutonium in the IB Column, particularly since some investigators suggest that Pu(V) is an intermediate in the reduction of Pu(VI) to Pu(III) and that considerable concentrations of Pu(V) may be formed in the IB Column.

Experiments showed that Pu(VI), present in a synthetic IBP solution, was completely reduced to Pu(III) in 15 seconds or less even when ferrous sulfamate was present to only one-fifth of flowsheet concentration. The reduction was followed by means of a Cary Recording Spectrophotometer. No trace of Pu(V) was found. To test the rate of transfer between phases, a hexone phase containing Pu(VI) was contacted with a synthetic, plutonium-free IBP solution. When agitation was by means of a motor-driven stirrer, E_a^o varied from 0.075 at 15 seconds to 0.006 at 5 minutes and 0.005 at 10 minutes stirring time. However, with more vigorous agitation, as obtained by manually shaking the contacting vessel, the E_a^o had reached a constant value of 0.002 within 15 seconds. These results indicate that the reduction of Pu(VI) to Pu(III) is practically instantaneous under IB Column conditions but that agitation must be vigorous if a correspondingly rapid phase transfer is to occur.

Decontamination of Uranium from Combined Aged and Current Metal Wastes

In the previous month's report, a scheme was proposed in which current metal waste (CMW) might be blended with aged metal waste (AMW) as feed to the TBP Metal Recovery Plant. Batch countercurrent equilibrium decontamination studies with two extraction and three scrub stages showed promising results.

Further studies with only one scrub and four extraction stages give uranium losses of less than 0.2% and total beta and total gamma decontamination factors of 7×10^4 and 1×10^5, respectively. The beta activity in the recovered uranium is 46% of that associated with natural uranium. The added decontamination generally observed in the stripping column should further reduce the activity and should give a product that is well within the required specifications for the number of column stages available.

234-5 PROCESS DEVELOPMENT

Because peroxide precipitations have been carried out in the laboratory in starting solutions containing 40 g/l of plutonium without difficulty or a high plutonium concentration in the supernatant solution, a plutonium peroxide precipitate was made with a solution containing 80 g/l of plutonium. The concentration of plutonium in the supernatant solution was comparable to that obtained when more dilute plutonium solutions were used. The plutonium loss, however, was smaller, because there was a relatively smaller volume of waste solution.

A memorandum, HW-19882, which described the laboratory work on the filtration of plutonium peroxide on a sintered platinum filter was issued.

Additional P-1 solution was obtained late in this period to get further information regarding the number of peroxide cycles required for final purification to insure the necessary purity of the final metal. At present, the data are too inconclusive to determine whether or not two peroxide cycles would be adequate. One peroxide cycle in which the 231 Building flowsheet was used did not appear to give metal of acceptable purity. A program has been initiated to determine whether P-1 solution can be purified sufficiently with a single peroxide cycle. Process variables and the effect of impurities will be studied systematically. It has been found that the plutonium tetrafluoride obtained from peroxides struck in solutions spiked with iron and lanthanum had a lower bulk density than normal.

Separations Technology Division

The wettability of various materials by Chemical 70-58 was determined for the Design Division to assist them in developing a method for introducing this material into the RM Line. Stainless steel, lusteroid, polythene, glass, paper, rubber, and painted surfaces were readily wetted by 70-58; lucite only slightly wetted; teflon and paraffin were not wetted. Chemical 70-58 can be supercooled to room temperature and held at this temperature for an extended period without crystallization.

The iodide of 70-58 has been prepared by the reaction of liquid 70-58 with iodine vapor. If liquid iodine is used with the 70-58, the reaction is too violent to control. The suitability of adding the iodide to plutonium tetrafluoride in the reduction step will be determined.

There has been considerably more variation in the gaps between the matching surfaces of the Model 110 pieces than was observed on the previous model. The gauging data proved useful to the "S" Division in designing a new punch for the die. The initial Model 110 parts also did not fit the profile gauge too well. Improvement has been observed as production has continued.

The attempt to establish a plateau for alpha counts as a function of discriminator setting on the ionization chamber counter with uranium as an alpha source was not successful. A faulty switch in the circuit may have been responsible for the failure to obtain a plateau. Autoradiographs were made of four complete assemblies. The coatings on these pieces would appear to be very uniform on the basis of these autoradiographs. Templates to evaluate the radii at the edges of each of the surfaces have been designed and are being fabricated. Equipment to handle the Ra-Be source for neutron counting is being designed.

STACK GAS DISPOSAL

The fourth silver reactor-Fiberglas filter assembly was placed in mock-up test in the 272-B Building. The equipment operated satisfactorily and is in the process of installation in the 3-5R Cell at B Plant.

A spot check monitoring determination was made on the B Plant 4-5L silver reactor. The I^{131} removal efficiency was 99.9%.

The Kellex prints for the Fiberglas filters to be incorporated into the ventilation system servicing the TBP solution preparation tanks and the hatchways from the underground metal storage tanks were received. Comments and recommendations concerning these installations were forwarded to the Design Division.

INVENTIONS

None for the month of January.

R. H. Beaton
Separations Technology Division

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TECHNICAL SERVICES DIVISION

JANUARY 1951

VISITORS & BUSINESS TRIPS

J. F. Flagg from KAPL spent January 22-24 consulting with members of the Analytical Section and inspecting the 234-5 and 3706 Laboratories.

Business trips of Technical Services Division personnel were as follows:

E. M. Kinderman spent January 25-26 at the Oak Ridge National Laboratory discussing recent analytical developments at that site. He attended the Fourth Annual Symposium on Modern Methods of Analytical Chemistry at the Louisiana State University on January 29-31.

R. J. Brouns visited KAPL on January 2-4 conferring on P-10 analytical chemistry. He consulted on the same subject with personnel of the Bureau of Standards at Washington, D. C., on January 5. He discussed P-10 analytical sample transfer with the Atomic Energy Commission, Washington, D. C., on January 5.

ORGANIZATION AND PERSONNEL

Personnel totals in the several subdivisions are summarized as follows:

	December 31	January 31
Analytical Section	291	292
Engineering Section	78	75
Information Group	70	72
Statistics Group	19	19
Administrative	3	3
Division Totals	461	461

Effective January 22, C. A. Rohrmann, Section Chief of the Engineering Section, was transferred to the Separations Technology Division and was replaced by W. A. Briggs of the Administrative Group. J. M. Fouts of the Engineering Section replaced Mr. Briggs as Technical Assistant to the Division Head, and P.F.X. Dunigan was transferred from the Analytical Section to the Engineering Section as a Contact Engineer, vice Mr. Fouts.

There were seven Rotational Trainees in the Division at month-end, all in the Analytical Section.

ANALYTICAL CONTROL

Work Volume Statistics

The following tabulation shows the source and volume statistics for samples

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on which analyses were completed:

	December		January	
	Samples	Determinations	Samples	Determinations
Process Control - 200	4,770	12,305	3,532	9,206
Process Control - 300	447	797	468	1,005
Water Control - 100, 700	1,059	3,642	712	2,597
Research & Dev. Programs	4,413	7,297	5,671	9,424
Process Reagents	2,323	2,738	1,593	1,878
Essential Materials	176	855	176	1,001
Special Samples	1,491	9,359	1,091	9,188
Stack Gas Filters	9	18	1	1
Naval Reactor Project	53	212	40	176
Totals	14,741	37,223	13,284	34,476

The processing of 50 MWD material in the Separations Process resulted in a decrease in the number of 200 Area Control and Process Reagent samples taken and analyzed.

100 Areas Water Control

A cotton plug filter apparatus used to catch solids, manganese, and iron from large measured volumes of water was installed on a pile effluent water line at 105-B Bldg. in assistance to the Analytical Research Groups in their study of tube film formation and effluent water activity. (Reference: Doc. HW-19661, Analytical Investigations of Pile Cooling Water Deposits on Pile Tubes, December 11, 1950.)

Six twenty-liter make-up water samples were received from the D & C Divisions, T.P.A.-20 Project (Recirculation of coolant water through a single process tube). Complete impurity analyses by spectrographic and colorimetric methods will provide data to follow corrosion products pickup, and activity build-up trends during the recirculation cycle.

The permanganate reduction method used as a test for traces of organic matter in make-up water for the Naval Reactor Project (P-13) was replaced by a ferrous sulfate-hydrogen peroxide method developed at the Brookhaven National Laboratory (AECU-864) who reported greater sensitivity with the new method. Simplified manipulation with the new method resulted in a saving of fifteen minutes per analyses, or three to four hours per month.

200 Areas Control

The precision of the analyses of the Canyon Bldgs. starting solution (6-3-MS), and the Isolation Bldg. starting and final solutions (P-1 and AT, respectively) may be summarized as follows:

	Precision (±%)		
Samples	Expected	December Average	January Average
6-3-MS	1.58	1.56	1.80
P-1	1.51	1.49	1.70

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AT (Chem. Assay)	1.57	1.78	2.00
AT (Radio Assay)	-	-	1.18

As noted in the December Monthly Report, sampling of the 234-5 Building starting solution (P-4) was discontinued on December 1, 1950.

The procedure for the determination of plutonium in caustic metathesis wastes (Method CA-9b) was modified to eliminate the 1N NH_4OH wash of the lanthanum hydroxide precipitate. This change in procedure saves 10 man-hours/month and tests proved that the analytical results are not affected.

Routine sampling of the T Plant cell and trench drainage tanks (5-6 and 5-9) before neutralization has been eliminated since installation of the dissolver off-gas silver reactor units which replaced the dissolver off-gas water scrubbers. This change in sampling procedure has resulted in a saving of 54 man-hours/month of analytical time. The same saving is expected to be realized in the B Plant after their silver reactor units have been installed.

Modification of the standard colorimetric procedure (method PSI-1a) for the determination of iron in the P-1 and AT samples has resulted in a time saving of approximately 30 minutes per determination and no significant sacrifice in precision and accuracy. It is estimated that 60 man-hours/month of analytical time will be saved as a result of this change in procedure.

In the 234-5 Bldg. Laboratory, personnel are being trained on the fluori-photometric method for determining Chemical 70-58. This new procedure will be used concurrently with the ferrocyanide method until a sufficient number of personnel are trained. Other details are included in the Methods Adaptation portion of this report.

300 Area Control

The lithium concentration in P-10 alloy as determined by the flame photometric method was corroborated by using the 305 test pile. Results agreed within 0.01% absolute.

A special laboratory study is being made to correlate the effects of build-up of Cu, Fe, Ni, Cr and U in the aluminum-silicon bath of the canning operation. This study is being made concurrently with one in which the P Division is allowing the tin content to build up to 3%.

Chemical Research Service Laboratory

Operations in this laboratory continued on a routine basis.

Chemical Development Service Laboratory

Project Engineering's efficiency study of Hershey Bag Filters at Bldg. 314 has resulted in an increase in the number of uranium determinations by the fluorimetric method.

Fluorescein was used as a tracer to study de-entrainment in an evaporation

step of the TBP Process. Details of the procedure were developed by the Methods Adaptation Group and are presented in their portion of this report.

Counting Standards

Standard sample cross checks made during the month between Alpha Simpson Vacuum Proportional counters and Alpha Simpson Proportional counters showed the instruments to be agreeing within 1%. Crosschecks between pie plate and geometry standards calibrated in February 1950, and those calibrated in January 1951, showed no significant deviations in the geometry values obtained on the ASP counters.

Miscellaneous Service Analyses

Several samples of dry chemical extinguisher compounds were analyzed for the Fire Department and found to contain NaCl and $NaCO_3$ coated with an organic material. Spectrographic analysis showed that the extinguisher compounds did not contain any material which would contaminate the uranium slugs and subsequently poison the pile.

Two chemists experienced in gas analyses are assisting the Pile Engineering Section in organizing a production test to evaluate gas reactions in the H Area pile. A Burrel gas analyzer is being assembled in the 105-H Bldg. in preparation for the start of this test.

Methods Adaptation

The fluorophotometric method for the determination of Chemical 70-58 in plant samples was adopted for the analysis of production samples. This method requires only half the analytical time needed by the ferrocyanide method, improves the precision by a factor of three, and requires considerably less training time, with reliable determinations being obtained during the training period. The method is empirical and is based on standards analyzed with each set of samples. A literature review and laboratory tests indicate that other elements will cause errors of less than 1% at from 10 to 100 times the concentrations present in plant samples. The analysis of plant samples by both methods indicates good agreement between the two.

To determine the de-entrainment efficiency of the process equipment used in the concentration of the RAW stream of the TBP Process, fluorescein was added to the neutralized RAW and traces of this compound were measured in the condensate sample. The use of the Beckman Model DU spectrophotometer with the ultra-violet attachment was satisfactory for direct measurements at concentrations above 10 parts per billion. In the range 1-10 parts per billion, concentration of the fluorescein by extraction from an acidified solution with ether and back extraction into 0.16 N ammonium hydroxide was satisfactory.

The equipment necessary for plutonium assay of the SN samples (Plutonium Fabrication Process) by hydrogen peroxide dissolution of the entire sample prior to aliquoting was installed in the 234-5 Bldg. Laboratory, and two analysts on each shift were trained in the method. The high oxalate content of the SN-3 samples required the maximum amount of hydrogen peroxide allowed

by flask volume, and in some cases addition of potassium permanganate as well. The effect of the revised procedure will be the reporting of higher plutonium concentrations since low results are now being obtained due to poor sampling. The exact amount of this increase could not be accurately determined since the samples are now received by the laboratory in lusteroid cones, necessitating aliquoting prior to the peroxide dissolution step. The following table gives a rough approximation of the increase in measured plutonium concentration expected:

Type of Sample	Number Analyzed	Ratio $\frac{\text{Revised Method}}{\text{Present Method}}$
SN-1	6	2.7
SN-2	3	1.1
SN-3	8	1.6

The time required for the revised method is approximately equal to that for the present method for individual samples, with some saving of time when multiple samples are analyzed.

The spectrophotometric methods for the determination of phosphate and iron in essential material peroxide were revised. The heating step was slowed down and stannous chloride employed as a reductant in the phosphate determination. For the iron determination the acetate buffer was replaced with phosphate. Standard curves were prepared and personnel in the 231 Bldg. Laboratory were trained. The revised methods gave good recoveries of added iron and phosphate, and will result in saving of analytical time.

Data obtained to date on LaF_3 carrying procedures for determining plutonium indicates the addition of hydroxylamine to the dilution flask instead of to the individual aliquots in centrifuge cones does not affect the analytical results. It is anticipated that this revision will be acceptable for control use and result in a saving of ten minutes per analysis.

The 100,000 stainless steel discs recently received for use in plutonium assays were scratched slightly in transit. A test, using analytical method CA-6b, indicated these scratches will not have any effect on the analytical results.

In support of critical mass studies (P-11 Project) the determination of bismuth ion concentration in plutonium solution by potentiometric titration with chromous sulfate was investigated. To simplify hazard control, iron was used as a chemical stand-in for the plutonium. Five titrations on a test sample gave a precision of $\pm 2.4\%$ for an individual titration, and an average recovery of 99.3%.

The recovery of plutonium from analytical wastes from Chemical 70-58 and silica determinations in the 234-5 Bldg. was studied. These wastes have a total volume of 45 liters and contain 21.3 grams of plutonium. Experiments on the microgram scale indicate the use of hydroxide separation with aluminum as a carrier will permit concentration of this waste to one liter with

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negligible loss of plutonium.

Remote Control Equipment Development

An apparatus for safe cleaning of the removable tip of the sampling burette on the falling drop apparatus was designed and is being constructed by the Technical Shops. A special attachment for initial filling of Gilmont Type burettes with mercury was designed and fabricated. Tests indicate this attachment provides a convenient means of filling the burette. After results on a test model of a brass block heater using calrod units were satisfactory, cartridge type heater units were ordered to be used in the construction of heating blocks for the cupferron spectrographic and fluorimeter methods. To decrease the time required in heating fluorimeter dishes in the induction heater, a special three-pronged platinum support was designed and constructed. The interchangeable plastic tops for A.H.T. type magnetic stirrers have been redesigned to fit in a 3-5/8" diameter hole cut in the aluminum cover. This design permits better control of the stirring and requires less machine shop time in construction of the plastic tops. A special 15 ml. pipet, similar in design to the 5 ml. pycnometers, was designed and constructed for use in the fluorophotometric determination of Chemical 70-58.

Special Hazards Control

As provided in Special Hazards Bulletin No. 5, an Inter-area Transmittal Procedure for transporting routine 5-6 and 5-9-NW weekly composites from the 222-T & B Laboratories to Bldg. 3706 was approved and placed in effect on January 5. This procedure makes it unnecessary to issue transmittal forms each week for these composites.

The gloved box-enclosed high voltage spark stand for the 234-5 Laboratory spectrograph was installed. This unit has enabled laboratory personnel to discontinue the use of fresh air masks when sparking active samples.

Gamma radiation levels in the various 234-5 Laboratory gloved boxes were checked by Health Instrument Operational Division personnel in December 1950 and January 1951. Levels greater than 1 mr/hr were detected only at the sample arcing box in Room 132. A maximum of 3 mr/hr was detected on the outside of the box, and 7 mr/hr was detected at the residual plutonium oxide container inside the box. More frequent removal of this container from the box has been instituted as a result of the survey check.

ANALYTICAL RESEARCH

P-10 Analytical Studies

Mass spectrometric analyses of gaseous P-10 materials were made on 355 samples, many of which were special materials resulting from P-10 process development work. About 20% of the instrument time has been devoted to analytical research and development. A motor-driven magnet scan and chart recorder, intended to increase the speed and ease of operation, were installed, tested, and calibrated. Work was initiated to determine the combined diffusion and excitation factor to be applied in the calculation of the tritium content. An indirect approach must be used on this study because no pure

tritium is available for experimental purposes.

Work planned on the construction of an electrical instrument for the calculation of mass spectrometric results was canceled. The calculator was designed to multiply automatically the mass spectrometer voltage output by the appropriate factor for each of the ten sample components and then normalize these products to 100%. Installation of the chart recorder suggested a less expensive method for accomplishing this purpose. This involves simply measuring the height of each peak on the chart record with a ruler that is scaled to include the appropriate factor so that the only calculation required is that of normalizing the value so obtained.

A new mass spectrometer head and a 20-foot section of leak tubing were ordered to allow determination of the characteristic behavior of the latter. The information so gained is necessary before consideration can be given to a direct installation of the mass spectrometer in the process line. A G. E. Magnetometer was ordered with the intent of using it to supply power to an induced magnet to be installed on the present mass spectrometer. The instrument at present contains a mechanical magnet scanning mechanism that is somewhat slow in operation and does not yield a linear response; the proposed alteration will be an improvement in both respects.

Separate hot and cold experimental lines were constructed and tested for use with the P-10 emission spectrometer after some difficulty due to breakage. An uranium trap, used on the cold line as a pump to keep the pressure low on the exhaust side of the excitation tube, broke during its first use. Since it is characteristic of the uranium chips in this trap to swell as they absorb hydrogen, the uranium trap was replaced with a palladium trap.

Operation of the line for determination of gas in cold lithium-aluminum slugs was maintained on a current basis, with 60 samples analyzed during the month. A series of special tests were conducted for the Metallurgy Section in order to determine the relative rate of hydrogen diffusion through hot 304 and 347 stainless steel tubes. After an adequate outgassing period, it was observed that there was little difference between the two types of materials.

The difficulty encountered with the gas density balance due to building vibration was corrected by mounting the building exhaust fan and the balance on vibration dampening devices. The balance is now in operating condition and four gas density measurements were made during the month.

Radiochemical Methods (RDA #TC-1)

An investigation, continuing over the past several months, has involved the substitution of disposable stainless steel counting discs for platinum discs in the radioassay for plutonium. It was found that this substitution may be made in the analysis of dissolver solution and in the majority of waste streams analyses, and the practice has been adopted as a routine procedure.

This substitution is not yet practicable in the analysis of several waste streams, notably uranium metal waste, because of the interference of fluoride that is present as a result of a preliminary lanthanum-fluoride separation. Experience has shown that counting results obtained with product cake solution samples on stainless steel discs are about 2% lower than those obtained

according to present practice. These limitations on the use of stainless discs are being investigated further.

The variables affecting the operation of the spontaneous fission counter were further tested and evaluated. Alpha pile-up studies were completed to provide necessary information for avoiding counting errors due to this cause. A solution of plutonium that had been analyzed for Pu^{240} by mass spectrometric means at Argonne was used to prepare a series of counting discs containing 0.1 to 10 mg. of plutonium. These discs are being employed to determine the quantity of plutonium that is optimum for spontaneous fission counting. It is desirable to use a large sample to obtain the greatest feasible number of counts per minute, but it is necessary to avoid errors due to alpha pile-up and to absorption of fission fragments in the sample itself.

An adsorption column, containing Dowex 50, was assembled in order to study methods for the separation of rare earth fission products. Use of this column with a solution containing radioyttrium, radiopromethium, and radiocerium provided a separation of the cerium but not of the other two components. The radio components are adsorbed from a 1N mineral acid solution and are eluted with a buffered citric acid solution. It was found that the pH of the latter is critical; a pH of 3.10 is effective, but a value of 3.05 is not.

Work continued on a long range investigation of the application of the standard qualitative analysis procedure to the analyses of fission products, the immediate objective being to determine what carriers are necessary in order to bring down all possible radio components in each group. It was found that strontium or calcium, but not barium, will serve as carriers for the precipitation of all Group IV oxalates.

Spectrochemical Methods (RDA #TC-2)

Installation of the Cary Spectrophotometer and re-arrangement of office facilities allowed the use of this instrument in a variety of problems. The instrument automatically records spectrophotometric absorption patterns in both the visible and ultraviolet regions; previously, only instruments employing manual scanning in the ultraviolet region were available.

In conjunction with the Chemical Research Section, a study was carried out to determine the rate of reduction of plutonium in Redox IBP solutions using ferrous sulfamate and hydroxylamine as reductants. Absorption patterns were determined for a group of rare earth oxinates and for the salts of Chemical 70-58, plutonium, and iron with oxine, bromoxine, and quinalizarin; these patterns were obtained in order to provide information valuable in the establishment of analytical methods for the determination of rare earth elements and of Chemical 70-58.

A series of analyses for permanganate, manganese dioxide, and manganous ion were completed in support of Redox head-end studies of ruthenium oxidation and solution scavenging. The instrument was also employed in proving the applicability of a previously established spectrophotometric method for the determination of plutonium in its various valence states to similar determinations in specially treated process solutions to be used for critical mass studies; it was found that dichromate, which is added to the solution as an

oxidant for plutonium, can be readily determined by means of the spectrophotometric measurements.

The exceptional stability of the instrument indicated that it might be applied to solutions of higher than normal concentration, and work has been initiated to find if the instrument can be employed for analyses heretofore not made by this means. It was found that relatively high concentrations of manganese can be determined by this technique but that the extinction coefficient for uranium varies with the optical density.

Analytical research at Los Alamos has led to the development of an improved spectrographic procedure for the determinations of impurities in plutonium metal. The method is similar to the presently used one in that it involves a separation with cupferron and subsequent determination by means of the spectrograph. It differs in that a strong oxidation treatment with perchloric acid is proposed as a means of destroying the last trace of organic matter before exciting the sample on the copper electrodes. To evaluate this method prior to its use at Hanford, standard solutions of impurity elements have been prepared, and working curves have been established to allow quantitative determinations. It was observed that the temperature at which the perchloric acid is removed from the sample is a critical factor. Low heating does not completely destroy the organic matter, whereas more intense heating fixes some of the elements, notably aluminum and beryllium, so that they are not washed from the dish to the electrode. Since the report describing the Los Alamos procedure has not yet been received, arrangements have been made for a chemist to visit the Los Alamos laboratories.

Studies directed toward the determination of carbon monoxide in pile atmosphere by means of infrared absorption techniques continued. The apparatus for preparing standard gas mixtures was revised, and provision was made to allow for simultaneous measurement of gas density and infrared absorption. The density measurements have shown that the gas mixing techniques are adequate and have proven that the relationship between optical density and carbon monoxide content are not linear in the presence of carbon dioxide. The optical measurements are adequately reproducible except that occasional shifts in absorption values occur as a result of some unexplained behavior of the infrared spectrometer.

A subject report titled "Analytical Procedures For the Metal Fabrication Process -- XI. The Determination of Fluoride," was issued during the month as document HW-20036.

Electrochemical Methods (RDA #TC-3)

The constant current source presently used in the study of coulometric titrations is constructed to allow pre-setting of the desired current and includes a standard cell which monitors and controls the current value. The procedure presently proposed for the determination of uranium with this instrument involves preliminary treatment with hydrobromic acid to destroy nitrate, treatment in a lead reductor to reduce the uranium, and titration at 90° C. An automatic unit was incorporated in the instrument to heat the solution to 90° before titration and to maintain it at that temperature during the titration.

Samples containing 0.004 mg. of uranium have been titrated with good accuracy and with a precision of about ± 15%. This quantity of uranium is equivalent to that present in 12 mg. of aluminum-silicon alloy containing 0.03% uranium.

An integrating coulometer, involving a feed-back system, was designed and constructed. This unit does not require a constant current because of the integrating feature and is designed so that the coulometric titration proceeds rapidly during the initial step and slowly during the approach to the end point. Consideration is being given to means whereby this unit could be employed for in-line analyses, whereby the sample flows past the coulometric electrodes at a constant rate and the titration rate, as controlled by the indicating electrodes, is maintained at such a value so as to completely titrate the flowing solution.

Conventional Chemical Methods (RDA #TC-4)

Canning of aluminum-uranium^{235} slugs (J slugs) at the Hanford Works will make necessary the use of an accurate and precise method for the determination of U^{235} in this material. The principal difficulties in the development of such a method by coulometric or other means are those of dissolving the sample and preparing a relatively concentrated solution. Dissolution with acid fluoride solutions or with caustic solutions is not suitable. Consequently, a unit was prepared in which sample turnings can be treated at elevated temperature in a stream of pure chlorine. Under these conditions, aluminum, silicon, and uranium are converted to the chlorides and are distilled from the container. Dissolution of these chloride salts in water will allow preparation of a solution of the desired concentration. One 800 mg. sample was treated for one-half hour at 350° C in this manner and yielded a non-volatile residue of 2.1 mg. that contained no uranium.

Apparatus for the determination of sulfide in metallic plutonium was assembled, tested, and made available for routine use. The proposed method includes distillation of the sulfide from an acid solution, followed by a spectrophotometric determination of the sulfur; it is sensitive to 0.2 µg. of sulfur and has a precision of about ± 30%. One product sample was analyzed in multiple according to the method and was found to contain no sulfur within the indicated sensitivity limit, which corresponds to 10 p.p.m. Other portions of the same sample were spiked with sulfur, in which case good recovery was obtained.

A subject report titled "A Volumetric Method For the Determination of Lithium," was issued during the month as document HW-19834.

The following table summarizes results obtained in the control laboratories on standard solutions prepared as part of the continuing standards program.

Sample	Constituent	Laboratory	Method	Concentration (d/m/ml)	Found (d/m/ml)	No.
6-3-MR	Pu + Am	222-B	CA-6b	2.00×10^5	2.014×10^5	12
	Pu + Am	222-T	CA-6b	2.00×10^5	2.002×10^5	23
	Am	222-B	--	3.94×10^3	4.05×10^3	14
	Am	222-T	--	3.94×10^3	3.96×10^3	21

P-1	Pu	231	CA-6a	15.080×10^8	15.426×10^8	19

Miscellaneous

The project proposed by the Pile Technology Division to study methods for increasing the rate of water flow through pile process tubes will introduce a number of complex analytical problems. Present studies of methods for determination of fission products and rare earth metals are directed partly toward this end. Since analyses of film material deposited on the pile tubes will be necessary, brief studies were made to determine the most suitable method for removing these films for analysis. Five percent oxalic acid was found to dissolve the film with the minimum amount of attack on the aluminum. Use of a small "Vibra Tool" was found to be convenient for removing solid samples for x-ray diffraction studies.

ENGINEERING SERVICES

Mechanical Shops (Bldgs. 101 and 3706)

Work volume statistics for the Mechanical Shops are as follows:

	Customer Division or Program	December 1950 No. of Jobs	December 1950 Man-Hours	January 1951 No. of Jobs	January 1951 Man-Hours
Work Done on Jobs Completed	P-10	14	287	20	406
	Pile Tech. (Incl. P-12) (a)	37	339	54	1,085
	Separations Tech.	37	394	43	407
	Technical Services	36	490	47	446
	Other Divisions	1	2	2	24
	Sub-Total	125	1,512	166	2,368
Work Done on Jobs Not Completed	P-10	2	507	2	377
	Pile Tech. (Incl. P-12)	11	506	13	292
	Separations Tech.	8	79	9	36
	Technical Services	4	19	9	173
	Other Divisions	1	28	3	8
	Sub-Total	26	1,139	36	886
Total Work Done			2,652		3,254

Work Backlog:					Man-Hours To Complete
Jobs Started	P-10	2	1,549	2	1,168
	Pile Tech. (Incl. P-12)	11	4,327	13	3,926
	Separations Tech.	8	94	9	86
	Technical Services	4	69	9	101
	Other Divisions	1	-(b)	3(c)	66
	Sub-Total	26	6,040	36	5,347

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Jobs Not Yet Started	P-10	2	98	5	1,281
	Pile Tech. (Incl. P-12)	15	311	12(d)	233
	Separations Tech.	12	255	7	61
	Technical Services	28	870	28(e)	673
	Other Divisions	4	444	3	374
	Sub-Total	61	1,978	55	2,622
Total Backlog			8,018(f)		7,969(g)

Preliminary man-hour estimate on the nine unestimated jobs (d & e)	500
Design Unit "R.D.A." requests	1,000
Total	9,469

(a) P-12 designates the Exponential Pile Project.
(b) Unestimated routine work.
(c) Includes one order that is unestimated due to the work being of a routine nature.
(d) Plus two jobs that are as yet unestimated.
(e) Plus seven jobs that are as yet unestimated.
(f) Does not include 352 man-hours that were transferred to Instrument during December.
(g) Does not include 923 man-hours transferred to Instrument and 8 man-hours transferred to Maintenance during January.

The apparent increase in January work volume from the December level is due to the adjustment resulting from the December 25 month-end cut-off.

The six-day work week was discontinued in the Bldg. 101 shops as of January 15.

Graphite sample shipments continued to be received from Great Lakes Carbon Co. Machining and testing of these samples was conducted.

Two Toepler pump units for P-10 were delivered to Bldg. 108-B on January 21 as scheduled. Test results continue to indicate that all the units fabricated to date will meet the rigid requirements specified.

Fabrication work on the fourth set of mercury pots for P-10 is nearing completion and will be delivered to 108-B on schedule. A total of 36 has been completed.

Two special lead shipping casks were fabricated and delivered to the P-10 operation for use at 108-B.

Experimental work on welding of fittings to stainless steel bellows was successfully completed for the P-10 group. The fittings were welded to the bellows using Heliarc equipment, and met the rigid requirements specified.

Test work on a cut-off box for the Metallurgy Section is being conducted in the Bldg. 101 mockup area. Shop support is being rendered, as required.

Fabrication work on exponential pile graphite was completed. All graphite fabrication required for exponential piles planned in the first phase of this program is now complete. This does not include the specialty graphite items, but will give the details necessary for erection of the exponential piles. Technical Shops personnel are assisting in erection of the piles.

Fabrication work was completed on the thermocouple installation for Pile Engineering for use in the "C" test hole, 100-B Area. Installation involved the fabrication of numerous short lengths of graphite and steel, aluminum flanges and special spiral grooved steel slugs, after which the thermocouple assembly was installed in the steel and graphite. The finished item will be used for measuring pile graphite temperatures at 16 different locations in the test hole.

Special dies were fabricated for use in upsetting magnesium slugs for the Pile Engineering Section. These slugs are being upset to a 1.440" diameter from 1.300" stock, because magnesium is not available in the required size or in a larger diameter which may be machinedto the required diameter.

Special sintered stainless steel filters were fabricated for use by the Chemical Research Section on the inlet stream to the Zenith metering pumps in the Junior Cave installation. The fabrication of the filters was difficult due to the hour-glass shape of the filter, and the necessity for avoiding obstruction of the filter passage by welding. This welding was successfully accomplished with the Heliarc method.

Finger tongs for use in Redox Laboratory cubicles were fabricated from aluminum using a flexible shaft and thrust bearings in order to give the necessary rotatability and remote control operation. Special cable tilt tongs were also fabricated for use in these cubicles, using aluminum tubing and lucite together with the necessary flexible shafting and thrust bearings. The cable tilt tongs, which can be remotely controlled, are for use in handling larger objects than those handled by the finger tongs.

A special vacuum trap for use in the waste disposal unit was fabricated. This trap consists of a plastic float operating in a glass chamber with a minimum clearance to allow the float to rise with a minimum liquid.

A large number of small jobs were completed in the Bldg. 3706 shop, principally in support of the Chemical Research, Analytical and Metallurgy Sections. Special assistance was rendered in the setting-up and fabrication of special equipment items for the nine-foot gloved box. Work is being conducted in setting up a line for Metallurgy's use in gas analysis, and for the revamping of a hood interior for the Chemical Research Section.

Several small jobs in progress in this shop for P-10 include work in support of the glass shop and the work being carried on in Bldg. 3706 by Analytical and Metallurgy for the P-10 program.

Glass Shop

Work volume statistics for the Glass Shop (exclusive of P-10 service) are as follows:

	December	January
Jobs Completed		
New	48	65
Repairs	15	9
Revisions	7	10
Total	70	84
Job Backlog	29	22

At various times during the month, seven glass blowers were assigned full time to P-10 work at Bldg. 108-B. Three of these men were working shifts on production lines, and the other four were lending assistance in development work and the installation of Line 1. Installation work on Line 1 was completed during the month, although further work will probably be necessary after testing has been completed. The trainees are increasingly valuable due to their ability to fabricate some of the less complicated parts.

One glass blower had to be removed from P-10 production line work due to being above the working limit for contamination. Personnel contamination continues to be troublesome, and attempts to determine how this contamination is contracted are continuing.

The six-day work week for glass blower assistance to P-10 was discontinued as of January 31.

One glass blower was transferred from KAPL to Hanford on January 15.

The Glass Shop foreman is assisting the H. I. Divisions in the development and improvement of the present Vibrating Reed Chambers. One Glass Shop trainee continued on assignment to the H. I. Biology Division in Bldg. 108-F.

Equipment Design

Work volume statistics for the Equipment Design Group, expressed as man-hours, are summarized as follows:

	December 1950		January 1951	
	Engineering	Drafting	Engineering	Drafting
Pile Technology				
Engineering Section	192	250	124	540
Physics Section	-	-	45	6
Metallurgy Section	168	8	231	-
Separations Technology				
Chemical Research Section	428	136	366	253
Chemical Development Section	40	200	77	152

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Technical Services				
Engineering Sect. (Tech. Shops)	-	8	-	-
Analytical Section	120	108	108	76
Statistics Group	4	44	-	-
Laboratory Equipment Development (RDA #TC-5)	484	244	296	247
Totals	1,436	998	1,247	1,274

The following work was done for the various Technical Sections as indicated:

Pile Engineering Section

1. The underwater slug weighing device was installed in a test pit at 100-F Area.

2. The underwater slug scrubber was tested after completion of shop work.

3. Layouts and sketches were made for the "W Hole" mock-up to be built at Bldg. 101.

4. Design was in progress on a monorail system for disposal of a pressure tube from Bldg. 105-H.

5. A pit monitor assembly was being drafted.

6. Test nozzle drawings were made.

7. An air calmp was drafted and numerous charts and graphs were drawn.

Physics Section

1. Additions and alterations were made to the thermo-conductivity apparatus.

2. Drawings of the beta spectrometer were revised.

Metallurgy Section

1. The "slice and dice" box was assembled in collaboration with the Technical shops. A coolant system was devised.

2. Scoping of the metallurgical polisher continued.

3. Tube furnace accessories and a crystal diffraction test set-up were designed.

4. Scoping was in progress for adaptation of a high temperature, high vacuum dilatometer to gloved box use.

5. A sample holder was made for a corrosion testing apparatus.

Chemical Research Section

1. The installation and stripcoating of the fitted gloved box in Rm. 4A, Bldg. 3706, was completed.

2. The nine-foot high level gloved hood in Rm. 95, Bldg. 3706, was completed and stripcoated.

3. A multiple motor mount and a tube rack were designed.

4. A cone holder was made.

5. Two hoods and a stone sink were stripcoated with "D-1000."

6. The metal recovery apparatus was tested and installed in a Junior Cave in Rm. 55, Bldg. 3706.

7. Assembly of the pulse column apparatus for Junior Cave use continued. Final completion will depend on specifications to be determined by laboratory operation of the metal recovery apparatus.

8. Scoping of laboratory remote handling accessories required for the Bldg. 222-S was in progress.

9. An arrangement drawing of the nine-foot gloved hood apparatus was made.

10. Several graphs and some flow diagrams were made.

Chemical Development Section

1. Assistance was given in scoping and cost estimating of remote handling apparatus for Bldg. 222-S laboratories.

2. One draftsman remained on direct assignment in Bldg. 3702.

Analytical Section

1. A vessel adapter was designed for a magnetic stirrer.

2. A polystyrene centrifuge cone and a slug rack were made.

3. Alterations were made in a bellows needle valve used for gas flow.

4. Minor alterations were made on the chromium assay panel.

5. Layouts were made for the six most crucial gloved box assemblies for Bldg. 222-S.

6. The chromotography gloved box was installed.

7. The Lucoflex canopies for the primary samplers in the Bldg. 222-B & T laboratories were completed in the Technical Shops.

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8. A search was underway for suppliers of components for the temperature-regulated chromotography box.

9. A survey was made of remote handling accessories and methods needed for the Analytical laboratories of Bldg. 222-S. Procurement of accessories and development of methods has started.

10. Drawings of a quartz dropping bottle and a process flow diagram were made.

11. A quartz still was drafted.

Laboratory Equipment Development (RDA #TC-5)

The following work was done under this RDA:

1. The General Mills manipulator was put into operation for demonstration and study.

2. A three-gallon hot waste concreting set-up was devised. The purpose of the device is to permit solidification of high level plutonium wastes directly in a laboratory hood to allow safe transport from the laboratory. The device is not yet in actual use.

3. Miniature sandblasting equipment adaptable for decontamination use in a decontamination chamber or gloved box was studied.

4. Cell mechanical finger tongs and cell swivel jaw tongs were designed for multicure cell use, and were fabricated by the Technical Shops.

5. Geared hydraulic tongs were designed and were being built. Adaptations of the "master-slave" type manipulator were being designed. Lighting plugs for the Bldg. 222-S cubicles were designed and ordered after tests were made in the wood mock-up.

New Laboratory Planning

Redox Analytical and Plant Assistance Laboratory, Proj. C-187-E

Construction work on Bldg. 222-S, the Redox Analytical & Plant Assistance Laboratory in the 200-W Area, proceeded satisfactorily. Although procurement of critical items is still difficult, the overall schedule has not yet been affected. A change order requesting the reversal of laboratory doors (to make them open outward) was issued on Jan. 25; the estimated cost of this alteration is $1,070. Considerable contact engineer liaison was required on minor details of installation and finish.

The overall Waste Disposal Project is approximately 80% complete. The Dry Waste and Crib Facilities are essentially 100% complete. The outstanding items at present are the Retention Basin, which is 82% complete, and the 219-S Bldg. which is 60% complete.

Radiochemistry Bldg., Proj. C-381

Relatively little contact engineer liaison was required during January on the design of this major building for the new Hanford Works Laboratory Area. A draft of a Part II Project Proposal covering the construction of this building was completed. Modification #1 to Directive No. HW-174, extending the authorized design completion date to March 12, 1951 (the Rosener sub-contract completion date) was received from the A.E.C.

Plot Plan & Utilities, Proj. C-394

The design of these facilities was estimated to be 40% complete at month end. The Leland S. Rosener Co. submitted three check prints during the month, one showing the proposed location of the Retention & Neutralization Bldg. and slope of the waste lines, another showing the proposed arrangement of water supply, and the third showing the proposed parking area outside the new South Gate. The first two were checked and contact engineer comments were transmitted through the D & C Divisions; the third was considered unsatisfactory by the Technical Divisions and the Safety Division. A new parking area design has been submitted to D & C for transmittal to the architect-engineer.

Radiometallurgy Bldg., Proj. C-385

Check prints on the manipulator positioner and the decontamination cell have been received from the Leland S. Rosener Co. These prints have been carefully studied and all comments have been sent to the architect-engineer. Some design changes were recommended in the bearing supports for the manipulator positioner.

An A.E.C. directive modification was obtained, extending to June 2, 1951, the completion date for this design project.

Mechanical Development Bldg., Proj. C-406

Bids were opened for construction of the shell of the Mechanical Development Bldg. for the Hanford Works Laboratory, and award of this sub-contract to the Dix Steel Co. on their apparent low bid of $161,193 was recommended by D & C. Plans for having this building shell serve initially as housing for construction forces during the main phase of Works Laboratory construction were abandoned in view of plans for new pile construction which will require the Technical Shops and Design Unit to release Bldg. 101 for pile graphite fabrication. Planning for immediate completion of the Mechanical Development Bldg. for Technical Shops and Design Unit occupancy was initiated, and Material and Equipment Lists are being revised to include essential items of shop equipment originally planned for removal from Bldg. 101, but which must now be left there for use in graphite fabrication.

Pile Technology Bldg., Proj. C-414

D & C completed sub-contract arrangements with the Chas. T. Main Co. for the design of this building, and the first check prints have been received. Their design is essentially the same as that suggested by the Technical Services Division. Five engineers from the Chas. T. Main Co. arrived on

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January 31 to discuss all phases of this design project.

Library & Files Bldg., Proj. C-421.

In view of the outlook for rising construction costs and their effect on expenditures for the Works Laboratory program, it was decided that all related facilities not yet committed to final design should be held to a more limited basis than otherwise desirable. Accordingly, the Library & Files Bldg. project proposal, which had been approved by the A & B Committee and forwarded to the A.E.C., was recalled for reissue on a reduced scope basis. A.E.C. authorization was obtained for proceeding with the design, and by month-end D & C had completed negotiation with Chas. T. Main for the A-E sub-contract involved. Good progress was made on rescoping the building to (1) eliminate all space originally provided for the Statistics Group, (2) cut the working and vault space of the Library and Files, and (3) provide a few offices for Engineering Services. This plan assumes that the Statistics Group will stay in Bldg. 3703.

Bldg. 3730 Extension

All work on plans for the extension or replacement of this Experimental Metal Forming Building was stopped, in view of the necessity for reserving the Works Laboratory Area funds for more essential facilities.

Laboratory Supply Bldg.

Contact engineer study of this building was temporarily suspended, pending a decision regarding the availability and suitability of the present building for this purpose. The Purchasing and Stores Division agreed that Bldg. 3702 would be of satisfactory size for Caption 10 stores (chemicals and laboratory equipment), but would require considerable floor reinforcement.

300 Area Services

Normal Bldg. 3706 services continued routinely. Material control, stockroom and work order activity is summarized as follows:

	December 1950	January 1951
Purchase Requisitions		
Total number processed	75	73
Number requiring special expediting	6	12
Number requiring emergency handling	2	3
Stores Stock Requests Processed	2	1
Store Orders		
Total number processed	979	1,180
Number requiring emergency pick-ups & deliveries	7	11
Work Orders Processed	54	34

Possible methods of increasing the volume of heated air to Bldg. 3706 during winter weather by modifying the control of the air supply units were studied.

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It was determined that changing drive ratios to reduce the "high" speed was the easiest method, but this would also necessitate elimination of the present automatic control and revision of the steam controls. The expense, and questionable value of these changes in eliminating the negative pressure experienced in the building, made it impractical. Present procedure is to operate attic exhausts in locations required to provide ventilation for maintenance personnel, leaving them all off overnight to minimize the pressure differential.

The dispensing window of the Bldg. 3706 stockroom was enlarged to increase the efficiency in dispensing supplies. The new metal food lockers in Bldg. 3707-C lunchroom have been anchored and numbered in preparation for assignment.

STATISTICAL & COMPUTING SERVICES

Statistical Services

The following work was done in support of P Division operations in the 300 Area: (1) Data were analyzed from the statistically designed experiment to gain further Test Pile reactivity information on seven batches of Scovill aluminum cans on hand; (2) an upward trend in reactivity for uranium slugs produced from Mallinckrodt billets and canned from mid-October to mid-December was reported in Document HW-19880; (3) additional data are being analyzed to obtain information on the relationship between TDS reactivity values and the weights of uranium billet eggs; (4) an analysis was made of the relationship between uranium turning scrap etching losses and Melt Plant yield; (5) an experiment was designed for the 300 Area Plant Assistance Group to evaluate the effects of temperature, silicon content, and tin content on the viscosity of aluminum-silicon canning baths in Bldg. 313; (6) a graph was furnished to illustrate possible sampling plans for frost testing 1000 special slugs; (7) a report (Doc. HW-20111) was issued showing canned uranium slug autoclave failures by months from September 1944 through December 1950; (8) daily, weekly, and monthly statistical controls were reported on P Division operational results at Machining, Pickling, Canning, Test Pile, Autoclave, and Melt Plant (for monthly report see Doc. HW-20225); and (9) preparations were begun for the Uranium Metal Quality Meeting to be held during February at the Mallinckrodt Chemical Works, in St. Louis.

During June 1950, statistical recommendations (Doc. HW-18106) were made to obtain, under routine operating conditions for a considerable period of time, sufficient data to evaluate errors in sampling and analysis of 300 Area uranium oxide for total metal content. The estimate of these errors was used to determine optimum procedures of sampling, analysis, and precision control to be adopted on February 1, 1951, for S. F. accountability purposes (Doc. HW-20007 to the P Division and Doc. HW-20010 to the General Chemical Laboratory).

At the request of the General Chemical Laboratory, a statistical comparison was made of the accuracy and precision of the volumetric method and x-ray photometer method for the analysis of 300 Area uranium oxides. Assistance

was given in the design of an experiment to study a new method for determination of uranium in aluminum-silicon alloy. The precision of P-10 analytical determinations using the mass spectrograph was estimated for the Analytical Section.

At the request of the Pile Technology Division, (1) additional mathematical relationships obtained from x-ray diffraction data and expansion data were calculated for the Metallurgy Section; (2) a list of P-10-A heats, totaling approximately 3,500 slugs within a range of 0.4 inhours, was prepared for the Experimental Physics Group; (3) cosine curves were fitted to pile flux data and algebraic verification of some theoretical formulae was performed for the Theoretical Physics Group, and (4) an exponential curve was fitted to bowing, exposure and tube block temperature data for the Pile Engineering Section.

For the Process Section of the Separations Technology Division, a study is underway to determine the effects of several operating variables on the yield of the reduction step in the Bldg. 234-5 process. The control limits for uranium and plutonium losses in coating waste solutions were estimated.

The statistical results of the experiment, mentioned last month, on the paper chromotographic treatment of Chemical 70-58 were reported to the Analytical Section (Doc. HW-19950). A study of recent radio and chemical assays of AT solutions indicate a random error of ± 3% in the ratio of chemical assay to radio assay proposed for isotope correction factor, compared to the random error of ± 0.8% for the isotope correction factor currently in use (Doc. HW-19164). Weekly and monthly statistical controls were reported on the precision and accuracy of analyses made on uranium solutions, plutonium solutions, and process wastes by control laboratories in Bldg. 222-B, 222-T, 231, and 234-5. The monthly report (Doc. HW-20226) also includes the AT Specific Gravity Relationship; 231-234 plutonium assay differences; and Hanford-Los Alamos plutonium assay differences.

The regular semi-monthly reports of certain Kr-85 computations for the A.E.C. were completed and forwarded.

For the H. I. Operational Division, the previously reported sequential plan for testing radioactivity in human thyroid was revised to provide for possible changes in permissible tolerance level. A routine control on the accuracy of pencil readings is to be developed from data submitted. For the Zoology Group, comparisons were made of the relative precision of an ionization chamber and the usual counter used for obtaining the thyroid activities in ewes. An experiment was designed to determine the optimum background to be used in determining thyroid counts.

Analysis is being made for the Community Divisions of the results of observations on ten electricity consumption meters which were read in Richland during the months March through October 1950. An attempt is being made to predict the distribution of electricity consumption for houses in Richland.

Computing Services

A second study of the exposure characteristics of the H-10 loading at Bldg.

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105-H was made. In this study the tubes were assumed to be recharged with natural uranium after their H-10 discharges. Predicted weekly discharge schedules were continued until the discharge of the last tube containing H-10 material. Calculations were made on a tube-by-tube basis, with each tube represented by an IBM card. The operation on each card involved a multiplication, two additions, and a comparison. This was done at the rate of 100 cards per minute. Approximately 200,000 cards were used in the first study, and 50,000 in the second. A total of five days IBM machine time was required for both studies, as compared to an estimated two man years using a desk calculator.

Using data taken from the H pile IBM temperature punch on September 28 and November 24, 1950, the power generated in each process tube was computed. The power developed in the pile from normal loading and H-10 loading was computed, and the power production rate factor was developed (the factor is unity for the average tube). The square and cube of this factor for each tube were calculated to permit estimates of the effects of relative flux densities in the pile. From 105-H IBM temperature punch data obtained before and after the power change in the coefficient test of January 23, 1951, an independent estimate was made of the total pile power. Nine temperature maps from the 105-DR pile were punched into IBM cards for the P Division. These cards will be used in calculating the individual tube exposure until the IBM temperature punch unit is in operation.

A table of values of thermal utilization and pile multiplication constants was computed.

Programming was completed for fitting exponential series to experimental data. This is similar to the least squares fitting of a cosine series reported last month. In each case, a series that previously took four hours to fit by desk calculator is completed in 6 minutes on computing laboratory equipment.

Three special logarithm tables were computed for use in the design and construction of circular slide rules for evaluating transients in xenon, iodine, and graphite.

A method of keeping a running account of the exposure of special request samples, presently done by a time consuming hand process, has been developed for IBM machine operation. Work is scheduled to begin in February on "H" pile where the temperatures are recorded automatically.

The bulk of the time of the new technical computing laboratory to date has been devoted to complex mathematical problems. Nevertheless, progress is being made in programming routine calculations for IBM operations. Data for metal quality control have been calculated by IBM methods for the months of October, November, and December. Twenty hours desk calculator time per month on metal quality has been reduced to two hours of key punching and fifteen minutes IBM machine time. Programming of 300 Area machine and canning controls is expected to be completed during February. Punching and computing was begun on a backlog of routine data for the Aquatic Biology Group of the Health Instrument Divisions. Plans are now under way to program Analytical Laboratory precision and accuracy controls for IBM computing.

Although it was expected that the present facilities of the computing laboratory would be utilized completely, the extent to which services are being used so promptly was not anticipated. To keep abreast of the accelerating rate at which new problems are being submitted, a revision of equipment requirements is underway.

LIBRARY, FILES AND CENTRAL REPORTING SERVICE

Plant Library

Library work volume and book statistics were as follows:

	December	January
Number of books on order received	198	228
Number of books fully cataloged	236	290
Number of bound periodicals processed but not fully cataloged	0	97
Pamphlets added to the pamphlet file	64	123
Miscellaneous material received, processed, and routed (Including maps, photostats, patents, etc.)	55	25
Books and periodicals circulated	3,034	3,181
Unclassified reports processed	223	184
Unclassified reports circulated	140	226
Reference services rendered	1,472	1,714

	Main Library	W-10 Branch	108-F Branch	Total
Number of books	6,782	2,753	258	9,793
Number of bound periodicals	4,183	0	526	4,709

Work in the Plant Library proceeded on a routine basis. Figures on the circulation of books and periodicals, and the number of technical reference services rendered, continued to climb and reached a new high for the fourth successive month.

The reference services rendered, of which a number of typical questions are listed below, continued to reflect the use of the Library's reference resources by all Divisions at Hanford:

What is Graphitar?
What are the available data on the equilibrium vapor pressure of the acetone-water system?
What would be the effect, if any, of H_2 on PbO, PbO_2? Would the oxides be reduced at 300° C+?
What is the electromotive force of tantalum compared to other metals?
What information is available on the use of Mg electrodes for protection of small steel water tanks?
What is the energy of emission from A-37?
Is there a method for cutting metal bars which would produce no, or almost no scrap?
What information is available on the calibration and theory of Kanne chambers?

How does Poisson's ratio for Al vary with temperature? What is it at 600° - 700° F?
What is the solubility of $Fe_2(C_2O_4)_3$ at room temperature?
What are quantitative and qualitative methods for micro-determination of Sb?
Who manufactured or installed General Motor's high velocity air conditioning system? How does it work?
What is the element coronium? Does it have any other name?
What are the tonnage figures for the production, importation and consumption of Cr on U. S.?
What is the thermal conductivity of He gas from 100° C to 450° C at standard pressure?

Classified Files

Work volume statistics for the Classified Files were as follows:

	December	January
Documents routed	10,010	12,935
Documents issued	5,477	6,403
Reference services rendered	3,940	4,540
Registered packages prepared for offsite	289	268
Inter-area mail sent via transmittal	23,879	31,657
Holders of classified documents whose files were inventoried:		
(a) Because of normal perpetual inventory procedure	134	26
(b) Because of transfer of work assignment	2	3
(c) Because of termination	1	2
Inventory reductions:		
Copies of documents destroyed	398	3,177
Copies of documents downgraded	0	0
Copies of documents declassified	1	41
Classified documents located which were unaccounted for in previous inventory	37	35
Volume of unclassified mail handled by the 300 Area Mail Room	26,111	30,279

A final shipment of 4 packing cases of classified documents was transmitted to the du Pont Company at Wilmington. This shipment completed the transfer to du Pont of a complete file of the classified records accumulated by the Operations Central Files during du Pont's tenure at Hanford. Completion of the indexes has necessarily had to await final accumulation of the material. These indexes are being edited, and plans are underway to have them retyped and transmitted to du Pont soon.

Final transfer of the du Pont records released 3 clericals for work on current Classified Files work. This has enabled the Audit and Inventory

Unit to reach its planned strength of 11 for the first time. The inventory of the 700 Area Classified Files and the D & C Classified Files was begun on January 8, and of the 300 Area Classified Files on January 29. This inventory is proceeding satisfactorily.

The manual for the "Servicing and Control of Classified Research and Development Reports," issuance of which had been delayed, was finally issued by the A.E.C. as GM Bulletin 176. Inasmuch as our Classified Files supervision had participated actively in the development of this manual, present Files procedures are satisfactorily in line with the procedures recommended.

The Chicago Patent Group is indicated officially in the manual as a recognized classified document accountability station, and appears on the list of approved transfer stations. An indirect result of their changed status has been the return to Hanford of a large number of reports previously transmitted to the Patent Group, who are apparently reducing their document holdings. About 500 such reports were received.

An improved form for inter-area transmittals, using snap-out carbons and reduced size, was introduced. This form was developed as a result of a suggestion from one of the Files clerical personnel, and its use will save typing and filing time.

Central Reporting Service

Work volume statistics for this Unit were as follows:

	December	January
Ditto masters run	619	672
Mimeograph stencils run	876	996
Ditto copies prepared	19,332	25,919
Mimeograph copies prepared	43,589	96,661
Formal Research and Development Reports issued	14	9
Reports abstracted	263	389

In addition to the routine abstracting of reports, the staff of the Abstracting Unit are at work on two bibliographies: (1) A "Bibliography of the Pile Cooling Water Problem," and (2) a "Bibliography of the 105 Production Tests." The second, in addition to its value to research, will be used as a basis for the organization of this production test material in the Classified Files.

A draft of a revision of document HW-18223, on the "Hanford Codes and Jargon," was completed but issuance will be delayed pending resolution of a number of codes.

INVENTIONS

All Technical Services Division personnel engaged in work that might reasonably be expected to result in inventions or discoveries advise that, to the

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best of their knowledge and belief, no inventions or discoveries were made in the course of their work during January 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 for possible inventions or discoveries.

Inventor(s)	Title
Jesse W. Sadler	Waffle Grid Gear
Frank B. Quinlan	General Purpose Pneumatic Manipulator

Signed T. W. Hauff, Division Head

TWH:mcs

MEDICAL DIVISIONS

JANUARY 1951

General

Personnel Changes

The roll increased from 279 to 282.

Visits

Dr. Sachs attended a Civilian Defense meeting in Seattle.
Dr. Lloyd M. Farner, Medical Administrative Consultant for the Washington State Division of Vocational Rehabilitation, was guest speaker at the monthly meeting of industrial physicians.
Dr. Shields Warren, Dr. Charles Dunham, and the Advisory Committee on Biology and Medicine, spent two days at the project reviewing the H. I. and Medical program.

Industrial

Employee physical examinations increased from 2227 to 2737. Dispensary treatments increased from 7506 to 8211.

Six major and thirteen sub-major injuries were treated, as compared to four major and twelve sub-majors for the previous month. One major and no sub-major injuries were sustained by G. E. employees.

Mental Health was the monthly topic of the Health Activities Committee.

Two "S" Division employees received burns from nitric acid contaminated with plutonium. Both required special decontamination procedures. While the deposit of plutonium was small, in one case it was felt advisable to use zirconium citrate intravenously to increase the elimination rate.

Sickness absenteeism, weekly employees, increased by 0.17% to 2.17%, while total absenteeism increased by 0.03% to 2.70%.

Kadlec Hospital

The average daily census increased from 90.8 to 98.1 (86.9 adults, 11.2 infants). The census was 88.1 a year ago. Daily census: Maximum - 117, Minimum - 72. Nursing hours per patient day were: Mixed Services 2.90, Obstetrics 5.51.

A course in Ward Management, under the direction of the University of Washington School of Nursing, is being given at Kadlec Hospital.

Public Health

Communicable disease incidence decreased by 42%.

Costs (December)

Medical Divisions' operating costs before assessments to other divisions were as follows:

	November	December	December Budget
Industrial Medicine (Oper. Div.)	$ 40,017	$ 39,573	$ 40,563
Public Health (Oper.)	11,513	11,475	11,070
Kadlec Hospital (net)	24,909	24,450	25,478
Hosp. assessments to other divisions & Workmen's compensation	3,366	3,418	3,700
Subtotal - Oper. Medical Divisions	79,805	78,916	80,811
Construction Medical (Ind. & P.H.)	11,786	12,539	13,387
Total (Operations & Construction)	$ 91,591	$ 91,455	$ 94,198

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MEDICAL DIVISIONS

JANUARY 1951

Industrial Medical Division

General

Physical examinations increased from 2227 in December to 2737 in January, and dispensary treatments increased also from 7506 to 8211. There was one General Electric major injury. Sub-contractor employees sustained five major injuries and thirteen sub-major injuries. The increase in dispensary treatments was fairly general throughout most stations, and was about equally divided between occupational and non-occupational cases.

Two industrial nurses terminated their employment during the month, otherwise there were no personnel changes.

The industrial physicians' scientific meeting dealt with vocational rehabilitation. The guest speaker was Dr. Lloyd M. Farner of Seattle, Medical Administrative Consultant for the Division of Vocational Rehabilitation of the Washington State Board for Vocational Education.

The Health Activities Committee met on January 17th, and the mental health topic "Use your head to keep your mind" was presented. Material on this subject was prepared for distribution to all employees.

There were two "S" Division employees who received nitric acid burns contaminated with plutonium. Both required special decontamination procedures, and one, due to blood and urine levels, required specialized procedures directed at increasing the excretion rate of the absorbed plutonium.

The net cost of operations decreased $369. This decrease resulted chiefly from decreased traveling expenses and reduced assessments from other divisions. Salary costs on the other hand increased approximately $600. due to an increase in nursing personnel. See table below for cost details.

Absenteeism (weekly employees) due to all causes increased by 0.03% to 2.70%, while absenteeism due to sickness only increased by 0.17% to 2.17%.

Costs	Increase or (decrease) over previous month	December	November	December Budget
Administration	$ (1,283)	$ 7,742	$ 9,025	$ 9,047
Household & Property	(28)	1,420	1,448	1,300
Professional Services	1,165	25,403	24,238	26,140
Total Direct Expense	(146)	34,565	34,711	36,487
Accrual for Public Liability Claims	-0-	150	150	-0-
Transferred Charges from other Divisions	(261)	5,443	5,704	5,100
Less: Revenue	37	585	548	1,024
Workmen's Compensation	(75)	587	662	700
Net Cost Operations	(369)	38,986	39,355	39,863

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MEDICAL DIVISIONS

JANUARY 1951

Physical Examinations	December	January
Operations		
Pre-employment	126	288
Rehire	35	48
Annual	497	503
Interval	309	230
A. E. C.	19	6
Re-examination & Laboratory Recheck	123	176
Termination	100	92
Sub-total	1204	1343
Sub-contractors		
Pre-employment	269	407
Rehire	346	397
Recheck	90	106
Termination	318	484
Sub-total	1023	1394
Total Physical Examinations	2227	2737
Laboratory Examinations		
Clinical Laboratory		
Government	75	30
Pre-employment, termination, transfer	4984	7198
Annual	2599	2600
Recheck (Area)	1602	1238
First Aid	2	7
Clinic	2637	2108
Hospital	3640	4413
Public Health	32	41
Total	15571	18635
X-Ray		
Government	14	3
Pre-employment, termination, transfer	793	1292
Annual	517	654
First Aid	159	160
Clinic	205	242
Hospital	225	234
Public Health	12	15
Total	1925	2600
Electrocardiograph		
Industrial	60	48
Clinic	2	4
Hospital	27	36
Total	89	88
Allergy		
Skin Tests	5	8

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MEDICAL DIVISIONS

JANUARY 1951

First Aid Treatments	December	January
Operations		
New occupational cases	281	331
Occupational case retreatments	948	1073
Non-occupational treatments	2682	2838
Sub-total	3911	4242
Construction		
New occupational cases	540	689
Occupational case retreatments	2266	2427
Non-occupational treatments	789	808
Sub-total	3595	3924
Facility Operators		
Treatments	---	45
Total First Aid Treatments	7506	8211
Major Injuries		
General Electric	1	1
Sub-contractors	3	5
Total	4	6
Sub-major Injuries		
General Electric	2	0
Sub-contractors	10	13
Total	12	13

Absenteeism - Weekly Employees

	Male	Female	Total	Percent Absenteeism	Comparison with Previous Month
No. days absent due to all causes	2163	1061	3224	2.70%	0.03% increase
No. days absent due to sickness only	1728	868	2596	2.17%	0.17% increase

Avg. days absent due to sickness by each male employee ..... .39 day or 390 days per 1,000 employees
Avg. days absent due to sickness by each female employee ..... .57 day or 570 days per 1,000 employees
Avg. days absent due to sickness by all employees ..... .43 day or 430 days per 1,000 employees

Comparison of present year-to-date total absenteeism figure with the 1950 figure shows a decrease of 0.18%.

Absenteeism due to all causes, by Divisions:

Manufacturing	2.40%
Health Instrument	2.51%
Municipal, Real Estate & General Service	2.53%
Employee & Community Relations	2.54%
Medical	2.70%
Design & Construction	2.74%
General Accounting	3.02%
Technical	3.15%
Plant Security & Services	3.27%
Purchasing & Stores	3.40%

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MEDICAL DIVISIONS

JANUARY 1951

Absenteeism Investigation	December	January
Total No. calls requested.....	7	24
Total No. calls made.....	8	24
No. absent due to illness in family.....	0	0
No. not at home when call was made.....	1	6

Hospital Division

The average daily adult hospital census increased from 77.7 to 86.9, as compared to 75.0 a year ago. Breakdown of this average census by services is as follows: Medical - 26.8; Surgical - 29.9; Pediatrics - 19.5; Obstetrical - 10.8. The average daily newborn infant census decreased from 13.1 to 11.2, as compared to 11.7 a year ago.

Nursing hours per patient per day:

Medical, Surgical, Pediatrics.....	2.90
Obstetrical.....	5.51

The ratio of hospital employees to patients (excluding newborn) for the month of December, 1950 was 1.75. When newborn infants are included, the ratio is 1.51. This is a slight increase over the previous month's ratio, due primarily to a decrease in patient census.

The net expense of the Richland community medical program for December, 1950 was $24,450., as compared to $24,909. for November. Breakdown is as follows:

Kadlec Hospital net expense $ 24,210.

This is a decrease of approximately $400. as compared to November. Total expenses decreased approximately $600. due primarily to lowered salary charges to clinical laboratory, but revenues also decreased about $200., resulting in the net decrease of approximately $400.

Clinic net expense 240.

This is a decrease of approximately $60., as compared to November, due primarily to lowered salary assessment for time spent on clinic records.

In order to provide an opportunity for nurses to familiarize themselves with the latest technique of nursing management and to improve the efficiency of our nursing service, a course in Ward Management was begun on January 3rd. The course is under the direction of the University of Washington School of Nursing, and represents three hours of University credit toward a Bachelor of Arts or Science degree. Miss Harriett Smith, R. N., and Miss Jean Boyle, R. N., Assistant Professors, University of Washington School of Nursing, are conducting the course. The first series of classes was held on Januard 3rd, 4th, and 5th, and the second series on January 18th and 19th. Each class is three hours long. The course will be completed after two additional series of classes during the month of February. A total of twenty-four registered nurses enrolled in the course. Twenty of them are regularly employed at Kadlec Hospital; three are private duty nurses in Richland, and one is currently inactive and living in Richland.

A second time study was completed during the week of January 14 - 19 on our obstetrical nursing service. The results of this study are currently being reviewed by our nursing consultants in Seattle and San Francisco.

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MEDICAL DIVISIONS

JANUARY 1951

Two new items of equipment were purchased and installed in our dietary department - a Hobart dishwasher and a combination steam table and dish-warming unit. The remainder of the new equipment needed in the kitchen is included in our hospital expansion and remodeling program.

Kadlec Hospital	December	January
Average Daily Adult Census	77.7	86.9
Medical	26.0	26.8
Surgical	25.1	29.9
Pediatric	13.6	19.5
Obstetrical	12.3	10.8
Average Daily Newborn Census	13.1	11.2
Admissions: Adults	488	559
Discharges: Adults	495	534
Newborn	81	66
Patient Days: Adult	2409	2695
Newborn	406	347
Total	2815	3042
Average Length of Stay: Adults	4.9	4.8
Newborn	5.0	6.1
Occupancy Percentage: Adults	87.3	84.3
Newborn	165.0	88.0
Average Nursing Hours per patient day:		
Medical, Surgical, Pediatrics	3.34	2.90
Obstetrical	4.02	5.51
Avg. No. Employees per patient (excluding newborn)	1.75	
Operations: Major	70	89
Minor	84	121
Eye, Ear, Nose, Throat	47	89
Dental	2	3
Births: Live	82	57
Still	0	0
Deaths	7	5
Hospital Net Death Rate	1.2%	0.67%
Net Autopsy Rate	57.1%	60.0%
Discharged against advice	1	2
One-day cases	92	101
Admission Source: Richland	79.7%	76.6%
North Richland	7.9%	9.3%
Other	12.4%	14.1%
Admissions by Employment: General Electric	77.1%	73.5%
Government	2.1%	3.0%
Facility	4.5%	3.6%
Sub-contractors	10.0%	13.8%
Schools	1.2%	1.6%
Military	2.9%	3.2%
Others	2.2%	1.3%
Hospital Outpatient Treatments	374	584

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MEDICAL DIVISIONS

JANUARY 1951

Physical Therapy Treatments	December	January
Clinic	133	187
Hospital	139	128
Industrial: Plant	125	142
Personal	11	13
Total	408	470
Pharmacy		
No. of prescriptions filled	2931	3013
Patient Meals		
Regulars	3823	3872
Specials	1302	1284
Lights	24	1
Softs	1283	1897
Tonsils & Adenoids	104	189
Liquids	169	197
Surgical Liquids	90	61
Total	6795	7507
Cafeteria Meals		
Noon	1195	1425
Night	184	277
Total	1379	1702

Public Health Division

Communicable diseases decreased by 42%. The decrease was particularly marked in scarlet fever and chicken pox cases reported. Complications in both of these illnesses have been minimal.

Dr. Sachs was named Acting Coordinator of Civilian Defense in the Richland area. A total of ten meetings with various groups was held to coordinate the activities of G. E. and A. E. C. agencies. A meeting was attended in Seattle, called by the State Medical Civil Defense Director.

Two clinics were held for Richland children. The second handicapped children's clinic at Marcus Whitman School was conducted by Dr. Rockwell, the consultant orthopedist. A total of twenty-three children were examined at the two clinics. The nursing activities in other services continued to hold to the average for each activity.

A meeting was held with representatives of the American Red Cross Home Nursing Service to discuss the teaching of home nursing classes. It was decided that the certified public health nurse might take additional work under the home nursing consultant from the Red Cross, which would prepare her to teach inactive nurses and other qualified persons to teach classes.

The Washington Cancer Society representative, Mrs. Gertrude Ellis, made her second trip to Richland to meet with interested professional and lay persons in planning a unit of the society in Richland.

Miss Carolyn Bowen, orthopedic nurse and physical therapy consultant, visited here to spend some time working with the physical therapist and the nurses in the handicapped children's program. During her visit, a meeting was called by the Supt. of Schools, Mr. Wright, and the Director of Special Services, Mrs. Olsen, to further develop the policies indicated in this program
8 between the school and the health department.

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MEDICAL DIVISIONS

JANUARY 1951

During January, there was an increase in the number of children's problems coming to the attention of the Social Service Counselors. The largest area of service continues to be in helping with parent-child relationships.

A rating survey of the farms and plants supplying milk to Richland was conducted the latter part of 1950 by the State Dept. of Health, and a report submitted this month. The rating score was 80%, the average for the state as a whole. This was the first such survey ever conducted in this area, and consequently there were discrepancies in interpretation of various items of sanitation on the part of the numerous producers, processors, and members of this department. This factor was essentially the reason for a lower score than was anticipated.

All grocery stores and meat markets have been subjected to inspections under the county ordinance for food handling establishments. This procedure was effected in order to obtain more satisfactory compliance with sanitary regulations. In regard to restaurants, it has resulted in more satisfactory compliance and general improvement of conditions. Health examinations of all food handlers are required yearly, and such an examination consists essentially of a blood test and chest x-ray.

Fluorination of the water supply is still under consideration. However, a definite decision is being delayed pending receipt of recommendations from a consulting firm engaged in making a study of the entire water supply system for the city. Routine bacteriological analyses of water samples have been satisfactory.

During the month of January, our in-service education of the staff continued with one staff meeting and two section meetings for the public health nurses and social service counselors on interviewing techniques.

Education	December	January
Pamphlets distributed	25822	14436
News Releases	4	0
Classes	0	0
Staff Meetings	1	1
Lectures & Talks	5	6
Attendance	206	302
Films shown	3	1
Attendance	57	75
Radio Broadcasts	1	0
Immunizations		
Diphtheria and/or Pertussis and/or Tetanus	295	497
Smallpox	543	31
Tuberculin Test	1	11
Total	839	539
Social Service		
Cases carried over	78	86
Cases admitted	14	13
Cases closed	6	20
Remaining case load	86	79

MEDICAL DIVISIONS

JANUARY 1951

Sources of Referral - Social Service	December	January
Public Health	1	3
Doctors	7	3
Interested Person	2	2
Personal Application	3	4
Other agency	1	1
Total	14	13
Sanitation		
Inspections made	115	188
Bacteriological Laboratory		
Treated water samples	189	200
Milk samples (inc. cream and ice cream)	18	8
Other bacteriological tests	249	287
Total	456	495
Communicable Diseases		
Chicken pox	251	161
Erysipelas	0	7
German measles	18	0
Impetigo	1	0
Mumps	2	0
Pinkeye	3	3
Poliomyelitis	1	0
Ringworm	22	0
Roseola	1	10
Scabies	5	1
Scarlet fever	26	10
Syphilis	6	0
Tuberculosis	0	1
Vincent's infection	1	0
Total	337	193
Total No. Nursing Field Visits	1182	538
Total No. Nursing Office Visits	298	143

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MEDICAL DIVISIONS' PERSONNEL

Jan. 31, 1951

1100 Area	Physicians	Nurses	Anesthetists	Nurse Aides	Orderly & Amb. Dr.	Technician - Clin. Laboratory	Tech. - X-Ray	Tech. - Bact. Lab.	Tech. - Phys. Ther.	Secretary	Cler. Work. Leader	Steno. & Typist	Office Mach. Oper.	Telephone Oper.	General Clerk	Pharmacist	Dietitian	Cook	Kitchen Worker	Soc. Serv. Couns.	Sanitarian	Health Educator	Janitor	Records Supv.	Accounting Supv.	Admin. & Assistant	Others	TOTAL
Division Admin.	2	2								2	1	1.5	2	3	11									2	3	2	2	33.5
Industrial	3.7	6		1								1.5	1		6								4.6					23.8
Hospital	2	55*	3	24	6	10.5	3	1	** 2			2			*** 12	3	2	5	10				7.8				7	155.3
Public Health	1	8		1								3			1					3	2	1	.6					20.6
3000 Area Industrial	2	1				1.4	2								7								.7					14.1
Public Health		2																					.3					2.3
Outlying Areas MJ-4		1																										1.0
100-B	.2	1				.1									.25													1.55
100-D	.2	4				.1									.25													4.55
100-F	.1	4				.1									.25													4.45
100-H	.1	1				.1									.25													1.45
241-S		1																										1.0
200-E	.1	4				.1									.3													4.5
200-W	.2	5				.6									.3													6.1
300	.3	2													.4													2.7
MJ-1	.1	3													1													4.1
White Bluffs		1																										1.0
TOTAL	12	101	3	26	6	13	5	1	2	2	1	8	3	3	40	3	2	5	10	3	2	1	14	2	3	2	9	282

* (4) Nurses working part time.
** (1) Physical therapist working part time.
***(1) General Clerk charged to clinic.

(Net increase - 3)

Number of employees on roll:
Beginning of month 279
End of month 282

HEALTH INSTRUMENT DIVISIONS

JANUARY 1951

Summary

Removals and additions to the force resulted in a net gain of four employees. One Special Hazard Incident, involving plutonium contaminated skin burns of two operators, was investigated and reported. Small deposits of plutonium in the body of the operators were found.

In the Biology Division, biological monitoring continued on a routine basis with no unusual findings. The plutonium absorption experiment was delayed due to the detection of impurities in the Pu^{238} received from the University of California. As observed in animals, botanical specimens are showing the ability to absorb and organically bind tritium. This gives an additional indication for a possible increase in the tritium hazard.

Development Division control measurements on activity density in water, soil, air, and vegetation were consistent with previous findings. Decreases in filterable beta emitters in the atmosphere and in the deposited concentration of I^{131} on vegetation were observed.

In bioassay, in addition to the two positive plutonium cases, uranium up to 19 μg/liter was found for metal fabrication workers, and tritium up to 60 μc/liter in the relevant operations.

HEALTH INSTRUMENT DIVISIONS

JANUARY 1951

Organization

The composition and distribution of the force as of 1/31/51 was as follows:

	100-B	100-D	100-F	100-H	200-E	200-W	300	700	P.G.	Total
Supervisors	1	1	8	2	4	12	12	6	0	46
Engineers *	4	7	31	3	7	18	14	4	0	88
Clerical	0	0	3	1	1	3	3	5	0	16
Others	18	16	57	11	35	74	48	11	8	278
Total	23	24	99	17	47	107	77	26	8	428

* includes chemists, biologists, etc.

Number of Employees on Payroll	January 1951
Beginning of month	424
End of month	428
Net increase	4

Added to the roll were a biochemist, 4 technical graduates, 6 laboratory assistants, 4 inspectors, a survey boat operator, and a field clerk.

Removed from the roll were a superintendent, a unit leader, an inspector, 5 technical graduates, a field clerk, and a personnel meters clerk.

General

There was one Class I Special Hazards Investigation, concerned with plutonium-contaminated skin burns of two operators. Close cooperation between the Medical and Health Instrument Divisions was required to achieve the best possible balance between decontamination of the acid burns and the required medical care of the affected areas. Apparently positive evidence of transmission of activity through the areas, and of presumed deposition in the bone was obtained. Provisional data indicated body deposition of 0.04 μg and 0.007 μg Pu, respectively. The final deposition may prove to be lower, as there was an obvious possibility of sample contamination, and zirconium salt therapy may also be effective. There were two informal investigations of minor exposure incidents.

The A.E.C. Advisory Committee on Biology and Medicine with Dr. Shields Warren and some of his associates visited the site to review the health instrumentation and medical programs. A brief tour of the new biological laboratories

3

was made, and condensed accounts of the development work in progress and in planning stage, in both biophysics and biology, were submitted. At an informal evening meeting, group heads benefited greatly from the stimulus of personal discussion with the visitors.

C.C. Gamertsfelder, J.W. Healy, and H.M. Parker, each appeared twice on the program of an A.E.C.-sponsored Health Physics Conference in Chicago. This was essentially the first full-scale meeting exclusively devoted to health-physics.

H.M. Parker was appointed chairman of a subcommittee of the International Committee on Radiation Protection, to consider safe handling of radioisotopes.

Visitors included the following consultants: Drs. Donaldson, Cantril and Ensminger.

The following trips were reported:

M.L. Barad - Inspection of AEC wind tunnel, New York City; Attend Symposium of AEC Meteorologists, Washington, D.C.

J.H. Redisko - Botanical investigations at BNL, soil science studies at Beltsville, Md.

W.R. Portch and D.P. Schively - Assistance to AEC on Las Vegas tests.

During the period covered by this report, all persons in the Health Instrumen 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 there in covered by this report notebook records, if any, kept in the course of their work have been examined for possible inventions or discoveries.

Inventor	Title
None	None

Health Instrument Divisions

OPERATIONAL DIVISION

100 Areas

General Statistics

	December 1950					January 1951					1951 to Date
	B	D	F	H	Total	B	D	F	H	Total	
Special Work Permits	755	1314	355	766	3190	596	1177	736	700	3209	3209
Routine & Spec. Surveys	537	779	481	651	2448	441	748	638	608	2435	2435
Retention Basin	87	170	90	87	434	84	209	47	95	435	435
Air Monitoring Samples	217	171	200	88	676	167	195	106	139	607	607

Retention Basin Effluent

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

	100-B	100-D	100-DR	100-F	100-
Power Level (MW)	375	325	415-460	290	485
Average beta dosage-rate (mrep/hr)	1.5	1.3	1.8	1.0	2.2
Average gamma dosage-rate (mr/hr)	3.2	2.9	3.7	2.2	3.3
Average total dosage-rate (mrep/hr)	4.7	4.2	5.5	3.2	5.5
Average integrated dose in 24 hrs. (mrep)	113	101	132	77	132
Maximum integrated dose in 24 hrs. (mrep)	130	118	146	127	161
Maximum integrated dose in 24 hrs. (mrep) 1951	130	118	146	127	161

100-B Area

Pile and Associated Buildings

Ten cases of skin contamination resulted from high level decontamination work in the discharge area. All cases were successfully reduced.

P10-Operation - 108 Building

Three employees gave urine samples greater than 20 μc/liter of tritium oxide; two of these were the continuation of high samples reported previously.

Metallurgical Laboratory - 111 Building

Dosage-rates up to 2 r/hr were encountered when the ruptured slug from the 105-H pile was removed from the section of process tube and photographed.

Health Instrument Divisions

100-D Area

105-D Pile and Associated Buildings

After burial of scrap and dummies, dosage-rates up to 5 r/hr were observed at the edge of the burial trench. Backfilling reduced the radiation level to 600 mr/hr.

105-DR Pile and Associated Buildings

During the removal of pieces upstream from a ruptured slug in tube #3188, two pieces fell to the pit of the elevator. The work area was instantly evacuated, and no overexposure resulted. The slugs were covered with sand reducing the dosage-rate at the edge of the pit to 20 mr/hr. Removal of the ruptured slug proceeded with dosage-rates up to 20 r/hr reported; no overexposure resulted.

100-F Area

Pile and Associated Buildings

The unit was shut down for 21 days during this period for extensive inspection and maintenance repair. Dosage-rates up to 25 rep/hr including 2.5 r/hr were reported during this work; however, there was no overexposure to personnel. During the installation of a covered discharge trough, welding slag ignited some contaminated waste at the bottom of the discharge area; it was quickly extinguished. An air sample taken during the fire gave no appreciable result.

Biology Farm and Building

Surface dosage-rate of 10 rep/hr including 70 mr/hr at 4 inches resulted when a pipette was inserted into a full I^{131} isotope bottle causing the solution to overflow. Decontamination efforts were successful without overexposure.

P-11

Six of the 37 air samples taken were above 10^{-11} µg Pu/cc. The maximum sample was 7.9×10^{-11} µg Pu/cc taken during the breaking of the level line to the reactor.

100-H Area

Dosage-rates up to 3 rep/hr were observed at the near downcomer roof vent due to effluent water vapor. When vapor was drawn into the "D" elevator machinery room through the roof ventilator, dosage-rates ranging from 75 mrep/hr to 100 mrep/hr resulted.

Health Instrument Divisions

200 Areas - T and B Plants

General Statistics

	December 1950					January 1951					
	T	231	234-235	B	Total	T	231	234-235	B	Total	1951 To Date
Special Work Permits	715	40	288	314	1357	958	36	296	367	1657	1,657
Routine & Spec.Surveys	502	421	505	555	1983	556	391	406	559	1912	1,912
Air Monitoring Samples	554	598	1279	1074	3505	544	612	1436	682	3274	3,274
Thyroid Checks	106	--	--	43	149	38	--	--	52	90	90

Canyon Buildings

In the T Plant, 66 of 400 air samples showed results above 10^{-12} µg Pu/cc, with a maximum of 6×10^{-10} µg Pu/cc in the canyon when the blocks were removed at 8-R; 141 were above 10^{-10} µc f.p./cc, with a maximum of 6.4×10^{-4} µc f.p./cc. Caustic flushes of the 18-4 sampling system reduced the number of 18-4P samples requiring monitoring assistance from eleven last month to two.

In the B Plant, 118 of 464 air samples showed results above 10^{-12} µg Pu/cc, with a maximum of 9.4×10^{-10} µg Pu/cc; 122 were above 10^{-10} µc f.p./cc, with a maximum of 6.2×10^{-4} µc f.p./cc. Dosage-rates up to 11 rep/hr were reported on the 15-9 ring balance and associated piping as a result of a blow back when steam pressure was applied to unplug the instrument line. An above normal amount of maintenance work in the canyon resulted in extensive deck contamination. Decontamination efforts are in progress with dosage-rates up to 35 rep/hr including 1 mr/hr at four feet reported.

Concentration Building

Cell roof vents indicated the following average discharge rates:

	µg Pu/24 hours	
Cell vent	224-T	224-B
A	--	33
B	20	29
C	88	26

Waste Areas

In the T Plant, jumper changes in the 153-TX, 154-TX, and 155-TX diversion boxes were necessary when the metal waste line from the 154-TX diversion box to the 271-TX tank farm failed. The maximum exposure-rate reported was 3.6 rep/hr including 1.7 r/hr at the edge of the 154-TX diversion box.

Health Instrument Divisions

Plant Laundry

Twelve of the 70 air samples showed positive results, with a maximum of 6.1 x 10^{-12} μg Pu/cc obtained while processing canyon clothing.

General

All thyroid checks were below the warning level.

Isolation Building

Eighty of the 612 air samples taken were above 10^{-12} μg Pu/cc; the maximum of 1.6 x 10^{-10} was obtained on the 903 duct system. One hundred and eight unregulated items and seven floor locations were found contaminated. There were two cases of skin contamination and both were successfully reduced. The maximum level of gamma radiation encountered was 80 mr/hr on PR containers.

Purification Building

Air Sample Results

Two hundred and fifty-seven of 1,436 air samples were above 10^{-12} μg Pu/cc; the maximum sample of 1.1 x 10^{-6} μg Pu/cc was obtained during the changing of the filters in hood 21A.

234 Building - Operating Section

An attempt to sparge the hood 29 evaporator by applying air pressure from the fresh air system resulted in a spray of contaminated liquid, grossly contaminating two operators. Immediate decontamination efforts were not successful because the solution, being highly acidic, caused burns on the skin surfaces. Blood and urine samples of the personnel involved indicated a slight positive intake of plutonium into the body. Later decontamination efforts were successful. The incident was formally investigated.

235 Building - Operating Section

Widespread plutonium contamination resulted in room 230 during the replacement of the exhaust filter in hood 21A.

General Building

The plutonium concentration in the discharge air for the 26 inch vacuum exhaust averaged 6.6 x 10^{-11} μg Pu/cc.

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Health Instrument Divisions

200 Areas Control Laboratories

	T	B	231	234-235
Items contaminated not regulated	162	94	119	101
Skin contamination - alpha	0	3	1	2
Skin contamination - beta	1	0	--	--
Contaminated floor locations	12	57	7	48

In the T Plant, monitoring assistance was furnished while running ten process samples, with a maximum exposure-rate of 17.5 rep/hr at 18 inches reported during the slurping of a 13-4BP sample.

In the B Plant, waste shipment from the 300 Areas was slurped with a maximum dosage-rate of 4.8 rep/hr including 800 mr/hr at 14 inches.

In the Isolation Building, floor and clothing contamination resulted in room 34 when a P-1 disc was dropped.

In the Purification Building, nine positive air samples were obtained in room 153, where waste samples are slurped, with a maximum concentration of 3.6 x 10^{-11} ug Pu/cc reported.

Particulate contamination in particles per 1000 cubic meters was as follows:

Location		December 1950	January 1951
222-T	Outside	28	43
	Hallway	170	100
	Room 7	490	360
222-B	Outside	40	27
	Hallway	66	120
	Room 7	480	770

300 Area

General Statistics

	December 1950	January 1951	1951 to Date
Special Work Permits	121	83	83
Routine & Spec. Surveys	210	260	260
Air Samples	155	138	138

Metal Fabrication Plant

Twenty-five of fifty-nine air samples were above 5 x 10^{-5} ug U/cc; the maximum

[redacted]

of 6.3×10^{-4} µg U/cc was obtained near the press in chip recovery room.

During shutdown of "A" and "B" furnaces in the Melt Plant, dosage rates of 200 mrep/hr and 120 mrep/hr respectively were encountered due to spilled MD-6 oxide.

Test Pile Building

Gold foils gave a dosage rate of 1.2 rep/hr including 150 mr/hr at two inches when removed from the pile.

Technical Building

Monitoring assistance was given in room 37 when gold foils and silver wires were counted, with a maximum dosage rate of 3.5 rep/hr at two inches reported.

Hand Score Summary

There were 40,083 alpha and 48,816 beta scores reported. About 0.04% of the alpha and about 0.04% of the beta scores were high. No attempted reduction was indicated for one high alpha score in 222-B, one high alpha score in 224-B, and one high beta score in 105-DR. Where decontamination was attempted, it was successful.

PERSONNEL METERS

Pencils

	100-B	100-D	100-F	100-H	E&N 200	200-W	300	Total	1951 To Date
Pencils Read	18,537	15,936	17,851	9,572	20,714	43,060	35,322	160,992	160,992
Single Readings (100 to 280 mr)	24	38	20	14	19	60	21	196	196
Paired Readings (100 to 280 mr)	1	1	0	0	0	1	0	3	3
Single Readings (Over 280 mr)	31	20	69	7	25	103	50	305	305
Paired Readings (Over 280 mr)	0	0	1	0	0	0	0	1	1
Lost Readings	2	3	2	0	0	6	0	13	13

Of the four significant pencil readings reported, only one was confirmed by film badge results.

Investigation of lost readings revealed no possibility of an over-exposure.

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 Da
Badges Processed	2,701	2,727	2,732	2,861	2,180	428	6,628	6,218	26,475	26,4
Number Readings (100 to 300 mrep)	28	50	100	12	39	0	73	109	411	4
Number Readings (301 to 1500 mrep)	0	14	54	10	1	0	15	6	100*	1
Number Readings (Over 1500 mrep)	0	0	0	0	0	0	0	0	0	
Lost Readings	1	0	1	1	1	0	3	2	9	

* 39 of total were due to fogged film
* 61 of total were over 300 mrep for beta but below 1500 mrep. In all cases the gamma reading was below 300 mr.

Lost readings were accounted for as follows:

Badge dropped in water	1
Badge lost in area	4
Recovered lost badge	1
Damaged film	1
Light struck	1
Packet lost in area	1
Total	9

Investigation of the above lost readings indicated no possibility of an overexposure.

Badge Resume, Construction Areas

	200-W	100-DR	Total	1951 To Date
Badges Processed	4,202	2,507	6,709	6,709
Number Readings (100 to 300 mrep)	37	7	44	44
Number Readings (301 to 1500 mrep)	13	8	21*	21*
Number Readings (Over 1500 mrep)	0	0	0	0
Lost Readings	0	0	0	0

* Fogged Film

Total badges processed 1951,	Operation	26,475
	Construction	6,709
	TOTAL	33,184

Health Instrument Divisions

In addition to the badge program, a total of 1,910 items of 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	38	69	104	48	248	507	507
Number of significant readings	0	0	0	0	0	0	0
Number of significant readings (Above 50 mrem)	0	0	0	0	1*	1*	1

* Investigation has not been completed to date.

Neutron Film

Badges Processed	100-B	100-D	100-F	100-H	200-W	Total	1951 To Date
Personnel	29	111	58	89	45	332	332
Special	0	2	2	0	20	24	24

[redacted]

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Health Instrument Divisions

CONTROL AND DEVELOPMENT DIVISION

CONTROL GROUPS

Site Survey

Monitoring for radioactive contamination in drinking water and water purification plants indicated no deviation from previous findings. No change in the activity density of beta emitters in the Columbia River above the 100-F Area was noted; small decreases below 100-F Area were attributed to the extended shutdown of that area. The highest activity density measured in the river was 4.1×10^{-6} μc/cc as sampled near Hanford. Analysis of small bits of floating debris in the river indicated activity densities as high as 1.7×10^{-3} μc/gram

Air monitoring by use of integrons and detachable ionization chambers did not differ from the levels of last month. Decreases in filterable beta emitters in the atmosphere were apparent at most monitoring stations; a decrease by a factor of about 10 over last month was noted at Hanford while most other stations indicated a decrease by factors of 3 to 5. The highest activity density measured was 3.1×10^{-12} μc/cc near the 200-West Area Gatehouse. No apparent decreases in the concentration of I^{131} in the air as measured using scrubber solutions have been noted; silver reactors are now installed on all dissolver off-gas lines in both 200-West and 200-East Areas. Stack monitoring data from the 200-West Area based on 6 measurements indicate that only approximately 0.5% of the iodine involved in the dissolver is expelled into the atmosphere via the stack; similar measurements before the silver reactors were installed showed this value to be about 15%. Although these data are imprecise, due to the nature of the sampling, the relative values are probably sound. Clearly indicated is the need for energetic pursuit of means calculated to prevent emission of iodine through the canyon cell - sand filter - stack system.

Active particles in the atmosphere appear to be higher at some monitoring stations particularly within the 200-West Area; most of these apparent increases were weighted by the somewhat higher concentrations measured during the week ending December 15. No assignable cause could be attributed to this at the present time. No comparable change was observed at the off-area monitoring stations.

Significant decreases in the deposited concentration of I^{131} on vegetation were observed. The maximum activity density measured was 8.7×10^{-3} μc/gram at the 200-West Area gate. Values of 1×10^{-5} to 3×10^{-5} μc/gram were obtained in the Tri-city Area. Detectable I^{131} was measured in Sunnyside, Wallula, and Spokane; these values were of the order of 4 to 9×10^{-6} μc/gram.

The activity density in rain samples inside the Separations area averaged about 3 to 4×10^{-6} μc/cc with an individual maximum of 10^{-5} μc/cc.

Beta emitters in pile effluent water remained at the somewhat higher levels

reported last month. The average activity density measured at the outlet side of the 107 basins ranged from 7.1×10^{-4} μc/cc to 1.2×10^{-3} μc/cc. No change was noted in the activity density of the 200 and 300 Area waste systems.

The integrating water sampler was installed and adjusted to the principal waste line of the 300 Area. The constant sampling was adjusted to 0.7 liters per 24 hours.

Bioassay

Five hundred and forty-five urine samples were analyzed for plutonium; eighty-six urine samples were processed as controls. Plutonium in these urine sample averaged 0.04 dis/min, and the blank urine samples averaged 0.06 dis/min. The average recovery yield for plutonium based on 43 spiked urine samples was 96%. Positive plutonium was measured in the blood and urine of 2 employees involved in an incident in the 234-5 area. The plutonium measured in one case was 6.7 dis/min in the urine, and 2.2 dis/min in the blood; in the second case, 0.9 dis/min and 0.6 dis/min were measured in the urine and blood, respectively. Correcting these values using the equations of W. Langham, plutonium depositio of 0.04 μg would apply in the former case, and 0.007 μg plutonium in the latte case. Resamples are in process for both individuals.

All other special incident samples were < 0.33 dis/min. During the month, one set of urine samples was rejected because of a low recovery yield in a spiked sample.

Five hundred and twenty-seven urine samples were analyzed for fission products and seventy-four urine samples were run as controls. No sample exceeded the arbitrary reporting limit of 10 counts per minute.

One hundred and seventy-six urine samples were analyzed for uranium. The maximum result was 19 μg/liter measured in a sample from an employee in the Melt Plant.

A new sampling program has been initiated in the 300 Area which follows the procedures recommended by the University of Rochester. Personnel will now be sampled at 4:00 pm Thursday and then again at 8:00 am Monday; these two sample will essentially represent exposure and non-exposure periods. Urine samples with a pH of < 5.5 will not be considered as good samples as it was shown that the pH should be at least 5.5 for a representative measurement of uranium in urine.

The increased sampling frequency of 234-5 personnel prompted about six months ago on the basis of a suspected trend indicating a probable buildup of plutonium was discontinued; sampling four times per year was resumed. A comparison of individual and group data of 234-5 personnel with other plant personnel for the past six months indicated no significant difference in the values measured.

Health Instrument Divisions

There were 502 urine samples processed for tritium activity. Difficulties with operation of vibrating reeds for this measurement necessitated the temporary addition of a third shift to keep up with the work load. A re-evaluation of control data indicated that a reporting level of 5 μc/liter instead of the former 1.6 μc/liter is more realistic, when the system is routinely operated by technicians. A breakdown of the results of the tritiated water analyses follows:

	μc/liter						
Concentration Group:	<5	5-10	10-20	20-30	30-40	40-50	50-60
Number of samples	362	88	38	3	6	3	2

Twenty-one different individuals were involved in the > 5 μc/liter category; four individuals contributed 92 high samples; the individual contribution of each of the above was 18, 22, 28, and 24 samples. All others contributed from 1 to 6 high urine samples.

Analytical-Control Laboratory

Difficulty with the low background alpha counters continued. A third shift has been added temporarily to make available more counting time so that normal operation can be continued in other groups depending on the Counting Room for results.

Installation of semi-micro automatic pipetting devices shows promise of eliminating human errors in routine pipetting operations. Thirty-nine samples of miscellaneous materials were analyzed for radioactive emitters as a service to the H.I. Operational division. Additional samples of P-13 water indicated about 300 μc/liter of what is believed to be tritium. These were obtained both by the generation of acetylene-vibrating-reed method and the generation of hydrogen-proportional counter method. Activity other than tritium observed as contamination on glass obtained from the P-10 operation has not been specifically identified, but current data indicate that this emitter has a half-life > 100 days, emits x-rays of ~ 2 Å, possibly as bremsstrahlen, and a weak beta particle ~< 0.6 Mev. Chemical and spectrographic analysis to date has not been conclusive in identifying this material.

A summary of the samples analyzed and counting room measurements made appears below:

Laboratory Type Sample	No. of Tests January 1951	1951 To Date
Vegetation	1,604	1,604
Water	1,773	1,773
Solids	267	267
Fluorophotometer	732	732
Special Survey Analyses	39	39
Air Sample Analyses	179	179
Total	4,594	4,594

Health Instrument Divisions

Counting Room

Type Sample	No. of Tests January 1951	1951 To Date
Beta measurements (recounts included)	4,868	4,868
Alpha measurements (recounts included)	4,111	4,111
Control points (beta and alpha)	2,082	2,082
Decay curve points	2,140	2,140
Absorption Curve points	318	318
Total	13,519	13,519

Calibrations

	Number of Routine Calibrations		
	December 1950	January 1951	1951 to Date
Radium Calibrations			
Fixed Instruments			
Gamma	251	264	264
Portable Instruments			
Alpha	269	300	300
Beta	614	624	624
Gamma (radium)	1,158	1,149	1,149
X-ray instruments	3	--	--
Neutron	32	1	1
Total	2,076	2,073	2,073
Personnel Meters			
Beta	533	875	875
Gamma (radium)	8,512	9,490	9,490
X-ray	3,937	2,190	2,190
Neutron	13	20	20
Total	12,995	12,575	12,575
Grand Total.....	15,322	14,913	14,913

Meteorology

	January 1951	
Forecasts	Number made	Percent Reliability
Production	93	81.0%
24-hour	61	79.7%
Special	27	88.9%

Health Instrument Divisions

The most notable feature of the weather for January was the sharp contrast in temperatures between those experienced during the last five days and those experienced prior to that time.

Total From	Total To	Average Temperature (Degrees F. at 3' level)	Departure from Monthly Normal
1st	26th	36.4	+ 7.3
27th	31st	15.3	- 13.8

The highest temperature of the month (55°) occurred on the 25th - only about 24 hours before the second of two cold front passages on the 26th sent temperatures skidding to the lowest levels of the current winter season. The lowest temperature of the month (6 above zero) occurred on the 30th. In spite of thi cold wave, however, the past month was by far the warmest January which has been experienced at Hanford Works in the past three years.

Precipitation was normal during the month with a total of 0.84 inch, including unmelted snowfall of 5.3 inches.

DEVELOPMENT GROUPS

Experimental Meteorology

The trajectories of air masses leaving the Hanford Works are being computed. Information received from the local Army unit indicates that information on local upper winds may be obtainable by the use of radar during times when atmospheric visibility is too poor to allow the use of pilot balloon technique.

Industrial Hygiene

A program for correlating exposures to uranium atmospheres with the urinary excretion of uranium was begun.

Some X-ray diffraction studies to determine the physical state of the uranium contamination were made by the Metallurgical group of the Technical Divisions. The results were satisfactory, but a better method of collecting fume samples directly on the specimen fiber is being studied.

The study of the "Thermit" welding operation at White Bluffs was concluded, and a report is being prepared. Iron, nickel, and chromium oxides were found in concentrations greater than the MAC levels.

Geology

There was no significant change in the contaminated zones in the water table

beneath the 200-East and 200-West Areas. Well 361-T-15 was completed during the month. This well, located 1200 feet east of the 241-T-361A reverse well, did not contain any radioactive material above the detection limit.

The activity densities in water samples from the 300 Area wells located near the Columbia River were somewhat variable. The two wells west of route 4S continued to show a slow decrease while the rest of the wells continued a steady increase.

Sediment samples from test holes around waste disposal cribs and tile fields were not significantly different from normal.

Geologic field work was concentrated in the Redox construction area where numerous excavations permitted close inspection of subsurface materials and conditions.

Soil Science

The carbonate content over the whole depth of well 219-S-2 has been determined to be about 2.4% when calculated as calcium carbonate. If this carbonate content remains constant to a depth of about 200 feet, a column of soil 20 feet in diameter and 200 feet long beneath a waste crib would contain enough carbonate to neutralize 450 million liters of solution at pH4.

Methods Development

An attempt is being made to start using the electrodeposition-nuclear track film technique on a routine basis for Bioassay. Yields on 1700 d/m spiked samples after TTA and electrodeposition were 70-80%. Spiked solutions, of 180 d/m, without TTA analyses, run by one laboratorian from Bioassay and one technologist from the Development group averaged 100% in one case and 92% in the other. Spiked solutions run through the TTA process by the same two peopl gave between 80% and 90% yields for the first 2 days.

A comparison between the alpha counters and the nuclear track film, using a known standard with the film, indicated good agreement within the counting error expected.

The hydrogen counter, to be used for tritium analyses, gave excellent results for the last half of the month after the GM tubes were washed with distilled water, alcohol, and ether to remove dust. Plateaus of 350 volts length with slopes of about 3% per 100 volts were obtained. Backgrounds stayed at 20-30 c/m with sensitivities of 19-20 c/m per μc/liter water sample over the range of 5 to 100 μc/liter. A number of water samples and urine samples were run with good comparison between the counter and the vibrating reed electrometer procedure. An attempt is currently being made to put this process into routine operation.

Health Instrument Divisions

The investigation of collection of tritium from the atmosphere by combustion to water has indicated that a major fraction of the tritium is held on the pre drying bed before entrance into the combustion chamber.

A study of the self-scatter of RaE beta particles with sample plate loadings of 0-0.7 mg/cm^2 has indicated that this factor may account for a major portion of the discrepancy between the theoretical and actual value of the activity measurements for K^{40}.

Some preliminary studies on a Nuclear Instrument Company proportional beta counter have been started. The characteristics as an alpha counter are very similar to the PC-2A previously tested. Plateaus with various beta emitters indicated satisfactory operation for energies between 0.015 and 2.4 Mev. Considerable difficulty is anticipated in calibrating this equipment for measurements with various energy sources because of scattering problems.

A rough estimate of the efficiency of the CWS type 6 filter paper for collection of natural radioactive materials in the air (radon daughters) was made by passing the air through the paper and then into an electrostatic precipitator. As judged by the alpha counting rate in the two samples, the filter was better than 95% efficient for the gross activity. This is much higher than values reported by Dr. Urry's organization.

Physics

A relatively successful exposure to a radium beryllium neutron source using NTB film was made. There was still considerable fog due to gamma radiation which made it difficult to measure short tracks accurately, but enough of the longer tracks were measurable to determine the main features of the neutron spectrum.

A rough check of the neutron flux from the new polonium-boron source using a lucite-moderated BF_3 counter gave a value of 1.35×10^8 neutrons/sec. Preliminary results from the counting of foils exposed in the graphite pile indicate 1.33×10^8 neutrons/sec. The supplier's calibration corrected for decay was 1.53×10^8 neutrons/sec.

Measurements of the gamma energy dependence of several experimental ionization chambers and of DuPont type 552 film were made using radiation from Co^{60} and N^1

Instrument Development

One "Pete" surface monitor for tritium contamination has been operating satisfactorily with a mixture of 90% argon and 10% methane which is preferable to the original pure methane used previously because the explosive hazard is much less with this mixture.

A prototype portable BF_3 counter was completed and calibrated. Upon compiling

the data needed for maintaining the instrument and checking the design drawings, development will be completed.

The scintillation alpha monitor (Poppy replacement type) gave one month of trouble-free service, with a 13% geometry and a 0.3 c/m background.

Further attempts to count scintillations from aqueous plutonium solutions were unsuccessful. Previous supposedly successful measurements may have been due to beta contamination which was found in the samples.

A set of differential ionization chambers was designed and partially built to determine the tritium uptake from a contaminated atmosphere by a rat. Contaminated air breathed in by the rat will go through one chamber while the exhaled air will go through the other chamber. The minimum uptake measurable will be about 0.01% using 100 μc/cc of intake air and a Beckman micro-micro ammeter.

Health Instrument Divisions

BIOLOGY DIVISION

Analyses Group

1. Radioactivity in Carcasses

The method of determining radium in bone ash by liberation of Rn and counting in a large proportional counter was tested with 5 standard Ra solutions. Initial counting rates showed excellent recovery; however the expected counting rate buildup from the Rn daughters was not observed. An explanation for this lack of buildup is not immediately evident.

Several Ra determinations performed by precipitating Ra in the presence of Ba as the sulfate utilizing dimethyl sulfate undergoing hydrolysis were made on both blank and spiked bone samples. Good yields were obtained. The blank samples indicated values of 10^{-13} μg of Ra/g of ash, a value comparable to Hursch's work at Rochester.

2. Alpha and Beta Analyses of Organic Material

Investigations as to the possibility of counting tritium with liquids as the scintillating media gave negative results. Water solutions of cesium iodide, silver iodide in 4N silver nitrate made from tritium oxide solutions, and a solution of terphenyl in benzene, spiked by dissolving tritiated acetylene in the solution were tried.

A new and a ten-fold more sensitive method for the determination of I^{131} in large tissue samples was developed and tested. The method involves fusion in Na_2CO_3, solution of the salts, precipitation of the iodide with Ag and counting the precipitate. The method will be incorporated into routine procedures next month.

Work continued on the colorimetric method for determining Th. Tissue, vegetation and water samples have been successfully analyzed. Further testing is still necessary for soil samples.

3. Radioelements in Organisms in Pile Effluent

A third sample of algae from 107-F was analyzed for radioelements, with emphasis on short lived radioisotopes. Results confirmed previous analyses. It is interesting to note that Na^{24} is present in algae only in small quantities with As and Cu making up the bulk of the elements whose half-lives are near one day. This is contrary to previously reported data. A preliminary report is being prepared for this problem.

4. Physical Processes Affecting Methods for Isotope Use

Studies of coincidence losses in beta counting were continued. Complete measurements have been made on four of the six sets in use.

No significant difference was found in alpha counting rates between point sourc and 1.5" sources.

Empirical curves showing VGM readings vs. the amount of activity for several types of samples were prepared for Civil Defense.

5. Waste Disposal Methods for Biological Specimens

Inactive.

6. Physical Chemical Methods for Dosimetry due to Deposited Isotopes

With the exception of literature work, the problem is inactive.

Services

Because of a rapid decay rate of a sample of Pu^{238} from the University of California, an alpha emitter analysis was run. Results (confirmed by a pulse analysis and film track studies of the Methods Group) indicated that the sample activity consisted of approximately 60% curium and only 40% Pu^{238}. On the results of this analysis, the sample was purified before further use.

Analytical services to other biology groups consisted of calibrating four ORNL shipments of I^{131}, preparing spike solutions of Pu^{238}, I^{131}, and Sr^{90} for animal or plant feeding, and the analysis of about 1200 samples. These are in addition to approximately 2800 alpha and beta counts, including decay and absorption studies. This work represents about a 10% increase over last month.

Aquatic Biology Group

1. Effect of Pile Effluent on Aquatic Organisms

The extended shutdown of the 100-F pile temporarily interrupted experimental conditions, and the rapidly falling river water temperature slowed the developmental rate of the chinook salmon fry. Trends observed last month continued, however, with a significantly high mortality (26%) in the most severe condition, 10% uncooled area effluent, and a possible increased mortality (3.2%) in the 5% uncooled area effluent and in the 10% refrigerated and filtered pile effluent. Mortality among control lots was consistently low (1.5%). All fish held in dilutions of the warm area effluent have not started to feed.

2. Biological Chains

The activity density of yearling rainbow trout held in 5% pile effluent is now at a minimum for the year. Food intake is very low and no difference in activity density is now detectable between the fish receiving radioactive algae and those on an uncontaminated diet. Males are now maturing but the majority of the females may not spawn until next year.

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3. Radiobiological-Ecological Survey of the Columbia River

Unfavorable hydrographic conditions continued to hamper the collection of bottom organisms but small fish were consistently obtained. Activity densities of aquatic organisms, as represented by the Hanford station, showed a further decline resulting from the extended shutdown of the 100-F pile, slightly increased river flow, and colder temperatures. With the exception of the plankton (1.1×10^{-2} μc/g) the activity density of aquatic forms is now near the minimum for the year. A maximum activity for large fish (7.8×10^{-6} μc/g) was found in the liver of a whitefish.

Numbers of dead whitefish were observed along the river bank indicating that perhaps several hundred may have died in this section of the Columbia River. These fish were practically all mature males, they showed no visible lesions, and had activity densities many times below permanent maximum permissible concentrations. Like, if not greater, numbers of whitefish died above Priest Rapid Similar mortalities were observed during the winter of 1948-49.

4. Control of Algae in 107 Retention Basins

Inactive.

Biochemistry Group

1. Relative Biological Effects via Biochemical Systems

The effectiveness of various types of external and internal ionizing radiations on L. Casei growing in suboptimal media are being investigated.

2. Absorption of Pu from the G.I. Tract

This problem had to be temporarily suspended because it was discovered that 60% of the alpha activity in the feeding solution was due to the presence of substances other than plutonium. The impurities are being removed and the daily feeding of a new group of rats will be initiated at once.

3. P-10 Hazards Biological Investigations

Preliminary results indicate that tritium oxide* administered intraperitoneally to rats has a half-time of 3 days in body water. Within twenty-four hours about one per cent of the injected tritium is present in the tissue-bound state. Of a total of 14 different tissue samples analyzed at this time, the liver contained the largest amount of bound tritium (3.4 μg/g wet tissue) and muscle had the lowest amount (0.2 μg/g wet tissue). The tritium-binding ability of skin was surprisingly great (2.0 μg/g wet tissue), but this requires confirmation. After

*Until there is an established nomenclature, the divisions will use "tritiated water" to mean indeterminate mixtures of HTO, T_2O and H_2O, despite the objections of some purists. Where T_2O is prepared in an essentially pure state by the burning of triti in oxygen it will be known as tritium oxide, (analogous with deuterium oxide). The ide was so prepared in this case, and then diluted with distilled water. If it is shown later that T_2O does not readily exchange to HTO in body fluids, there may eventually develop separate literature on the effects of administered HTO and T_2O.

6 days, the total bound tritium in rats increased to 1.5% of the injected dose. A five-fold increase in the bound tritium of muscle, and a two-fold rise in that found in fat and small intestine was also observed at this time.

The long-term experiment on the retention of tritiated water in mice continues. The earlier short-term experiment was described in document HW-20092.

The previous method for exposing the skin of rats to the vapor of tritiated wate was modified. At present each rat is exposed for a given period of time, sample of blood and of tritiated water vapor from the exposure chamber are removed for analyses, and the animal is immediately sacrificed. By determining the tritium content in blood and body water at any one given time, the calculations of skin permeability to this radioelement will be facilitated. Analytical data are not available yet.

4. Possible Therapeutic Agents for Radiation Damage

Various procedures to be used in tissue-respiration studies are being set up.

5. Percutaneous Absorption of Radioelements

Work not started.

Services

During the month of January, 926 biochemical and 747 hematological determinatio were carried out in the Biological Services Laboratory. New procedures in protein-bound iodine determinations were initiated with results summarized in Zoology's report.

Botany Group

1. Agricultural Field Station

Twenty soil samples were taken from the treatment plots. The average activity density was 1.9×10^{-5} μc/g and the range was 9.4×10^{-6} to 2.5×10^{-5} μc/g.

2. Translocation of Radioelements in Plants

Russian thistle and tomato plants grown for four days in nutrient solution at pH 6.0 and containing 0.0001 p.p.m. total yttrium and 0.85 μc of Y^{91} per liter absorbed and translocated to the leaves significantly more yttrium (approximately 3 times as much) than red kidney bean and wheat plants grown under the same conditions. In this experiment, the thistle and tomato plants did not concentrate yttrium when results were expressed on a fresh weight basis, but they did concentrate this element approximately 5 times on a dry weight basis.

Red kidney bean plants concentrate strontium (2-9 times on a wet weight basis) in a plant parts when grown four days in a nutrient solution at pH 6.0 and containin

10 p.p.m. total Sr and 0.099 μc Sr^{90} per liter. These results are a sharp contrast to those with Y^{91} where it was found the same species of plant did not concentrate yttrium when grown under the same conditions.

In the range 1-100 p.p.m. of Sr in nutrient solution the uptake of this element by red kidney beans grown under the same conditions as above has not been proportional to concentration. In these experiments, concentration factors of 5-9 on a wet weight basis were found for leaf material.

3. P-10 Botanical Investigation

Work is continuing on the establishment of the rate of incorporation of tritium into plant water and organic matter of red kidney bean plants exposed to light or darkness and grown in nutrient solution containing tritiated water.

A chloroplast preparation from clover or bean leaves has been found to reduce t dye 2,6 dichlorobenzenoneindophenol in the presence of light. Preliminary results indicate that this fraction contains the active component involved in the reaction which converts hydrogen from water into organically bound hydrogen (the same probably holds true for tritium in plants).

Three organisms (Escherichia coli, Azotobacter chroococum and Chlorella pyrenoidosa) have been cultured in the laboratory and their hydrogenase activity has been determined manometrically and by the reduction of methylene blue. The first two organisms exhibit marked hydrogenase activity and C. pyrenoidosa exhibits considerable activity after several hours incubation under an atmosphere of hydrogen. This is evidence of an adaptive hydrogenase enzyme(s) in C. pyrenoidosa.

4. Effects of Radiation on Plant Life

Exposure materials in preparation.

Physiology Group

1. Biological Effects of Active Particles

Using some recently acquired information, an experiment is planned to obtain a rather definite answer to the question of particle effects. Experimental animals are being obtained.

2. Bone Metabolism of Radioelements

A successful rib resection was performed on a control animal.

3. Techniques in Autoradiography

No report.

Health Instrument Divisions

Services

Two hundred histological preparations were made for the Experimental Animal Farm. Autoradiography and photography services to other groups increased during the month.

Zoology Group

1. Biological Monitoring

A monthly census of waterfowl was initiated on the reservation. A total of 6,800 waterfowl was counted on January 12, of which 55% were Canada geese and 41% mallards. This count is not an indication of the maximum number of wintering waterfowl. It reflects, instead, unusually mild weather allowing an abnormally greater dispersion of the birds. Banding was continued during the month.

In part of an experiment to determine the possibility of transfer of activity from bone to muscle tissue during the cooking of waterfowl, controlled feeding of P^{32} to waterfowl was accomplished. Six ducks were given an average dosage of 0.23 μc/g body weight. Two were sacrificed three weeks after feeding and the distribution of the isotope within the body is being determined. Incomplete results indicate flat bones, e.g., cranium, have greater uptake ability than long bones by a factor of approximately 2. Flat bones were highest in activity density and femoral marrow was low. The brain was the lowest of all the organs of soft tissue and pancreas was highest.

2. Toxicology of I^{131} in Stock Animals

Necropsies were performed on two ewe lambs from the 240 μc group. One animal succumbed after being prostrate for 5 days. The animal appeared to lack coordination in its limbs and collapsed on losing muscular control. The animal exhibited enteritis and a terminal pneumonia.

The other post-mortem involved a sacrificed ewe lamb that had become weak and prostrate. It had been previously described as losing weight and exhibiting a stupid and lethargic attitude, stiffness in gait, muscular weakness and alopecia. The animal presented a gelatinous material subcutaneously over the pectoral and ventral thoracic and abdominal regions. There was general evidence of right heart failure.

The facilities of the statistics group's IBM unit are now being utilized. Thyroid counts are the first set of data to be so handled. A definite saving in time will be realized together with a greater utilization of accumulated data. Plans are under way to handle similarly the blood chemical determinations and hemograms.

Health Instrument Divisions

Protein-bound iodine data obtained by the Biochemistry Group are beginning to show interesting trends as indicated by analyses of blood from ewes and rams. Protein-bound iodine level in serum apparently decreases with increasing dosage of I^{131}. This fall is at least 25% in sheep receiving 240 μc I^{131} per day and almost twice as great in sheep receiving 1800 μc.

[redacted]

GENERAL ACCOUNTING DIVISION
SUMMARY OF MONTHLY REPORT

January 1951

GENERAL

Withholding statements for 1950, Form W-2, were delivered to Monthly Paid employees on January 5, 1951 and to Weekly Paid employees on January 12, 1951. The Collector's copies of Withholding Statements were forwarded to the General Office on January 15, 1951 for transmittal to the Collector of Internal Revenue.

Considerable overtime was required in January in the Payroll Divisions in order to complete Federal Social Security Reports, State Social Security Reports, Withholding Tax Reports, Returns of Information at the Source, Annual Report of Employee Contributions under the Pension Plan, and various other year-end reports.

In connection with the individual statements to be delivered to all employees March 9, 1951 showing their status in the principal benefit plans, Payroll Divisions prepared work sheets which are being used effectively in the accumulation of the necessary information. A schedule was also prepared showing the steps to be completed in sequence, so as to facilitate the movement of the work between the various sections of the Payroll Divisions. As a result of this advance planning and scheduling the number of overtime hours required to complete the individual statements to employees will be greatly reduced. As of January 31, 1951, it was estimated that the job of accumulating and recording the information on work sheets was 85% complete.

Representatives from all accounting divisions met with the head of the AEC Finance Division and completion dates were established for major accounting reports for the months of January and February 1951. Dates for final transfer of billings between divisions were advanced several days as were closing dates of several accounts. As a result of this meeting, and due to the earlier closing dates established, major accounting reports will be issued earlier than in previous months.

Increased purchasing activity was reflected directly in the volume of work handled in the Accounts Payable Section where more vouchers were booked than in any month since decentralization of the Accounting Division in March, 1949. Vouchers entered increased 34% and number of checks issued increased 13% over December.

In connection with the 4th Quarter Budget Review, letters of instruction together with working papers were forwarded to division heads. Schedules were also prepared and submitted to division accountants requesting data relative to Cash Working Capital and Inventories for the Balance Sheet Budget. Instructions were received from the Atomic Energy Commission relative to the preparation of Fiscal Year 1953 and revisions of Fiscal Year 1952 budgets and considerable preliminary work was completed in connection with these budget estimates.

General Accounting Division

As a result of extensive cost studies, operations Industrial Medical costs were liquidated at standard rates this month. Flat rates were established for the various industrial medical services and assessments to other divisions were based on amount of service actually received by customer divisions.

Internal auditors together with representatives of General Accounting Office and AEC Finance Division made unannounced audits of cashiers funds on January 16, 1951. Field work was completed and reports are in process covering the audit of Hospital and Bus Revenues, Receiving and Shipping, and Timekeeping procedures. Review of procedures employed by Stores Division is continuing, especially those concerning account reconciliations and taking of physical inventories.

Advances from AEC decreased from $5 000 000 as of December 31, 1950 to $4 000 000 as of January 31, 1951. Advances are accounted for as follows:

	January	December
Cash in Bank - Contract Accounts	$3 010 724	$4 029 911
Cash in Transit	428 657	409 470
Expenditures Disallowed by A.E.C.	10 619	10 619
Cash in Bank - Salary Accounts	50 000	50 000
Travel Advance Funds	100 000	100 000
Advances to Subcontractors	400 000	400 000
Total	$4 000 000	$5 000 000

Hanford Works cash disbursements and cash receipts, excluding advances from Atomic Energy Commission for the month of January 1951 as compared with December 1950 may be summarized as follows:

	January	December
Disbursements		
Material and Freight - GE	$2 510 455	$1 874 321
Payrolls - GE (Net)	1 941 262	2 336 307
Payments to Subcontractors	3 300 065	2 981 771
Other	992 187	936 383
Total	$8 743 969	$8 128 782
Receipts		
Rents	$ 145 036	$ 105 974
Hospital	41 747	43 033
Telephone	15 989	16 076
Bus Fares	10 858	9 098
Sales to AEC Contractors	62 559	-0-
Other	39 123	44 131
Total	$ 315 312	$ 218 312
Net Disbursements	$8 428 657	$7 910 470

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General Accounting Division

STATISTICS

Employees and Payroll	Total	Monthly Payroll	Weekly Payroll
Employees on Payroll at beginning of month	7 886	1 922	5 964
Additions and transfers in	166	11	155
Removals and transfers out	(102)	(13)	(89)
Transfers from Weekly to Monthly Payroll	--	15	(15)
Transfers from Monthly to Weekly Payroll	--	(4)	4
Employees on Payroll at end of month	7 950	1 931	6 019

Number of Employees	December	January
Bargaining group - HAMTC	3 052	3 072
Bargaining group - Building Services	67	68
Other weekly	2 845	2 879
Two platoon firemen	65	61
Executive, administrative & operating	1 265	1 274
Professional	551	553
Other monthly	41	43
Total	7 886	7 950

Number of Employees		
Manufacturing	3 374	3 410
Design and Construction	670	668
Municipal	250	244
Real Estate & General Services	422	428
Technical	809	812
Health Instrument	424	429
Employee & Community Relations	94	98
Plant Security & Services	971	976
Purchasing & Stores	348	353
Medical	278	283
General Accounting	189	189
General Administrative	57	60
Total	7 886	7 950

Overtime Payments		
Weekly Paid Employees	$70 830	$66 217
Monthly Paid Employees	20 576 (1)	16 814 (2)
Total	$91 406	$83 031

Number of Changes in Salary Rates and Job Classifications	878	1 158

Gross Amount of Payroll		
Manufacturing	$ 1 472 003	$1 250 658
Design and Construction	277 474	249 097
Municipal, Real Estate & General Services	260 533	226 981
Others	1 247 051	1 080 060
Total	$ 3 257 061 (3)	$2 806 796 (4)

Annual going rate of Payroll		
Base	$32 679 658	$33 027 729
Overtime	1 060 686	1 113 110
Isolation Pay	1 027 305	1 039 935
Shift Differential	409 202	409 688
Other	47 685	44 562
Total	$35 221 536	$35 635 024

General Accounting Division

Average Hourly Base Rates	December	January
Bargaining group - HAMTC	1.899	1.896
Bargaining group - Building Services	1.456	1.459
Other weekly	1.620	1.619
Two plateon firemen (monthly rate ÷ 173.9 hours)	1.882	1.848
Executive, administrative and operating	2.766	2.795
Professional	2.629	2.667
Other monthly	2.215	2.205
Total	1.985	1.991

Average Earnings Rate Per Hour (5)

	December			January		
	Weekly	Monthly	Total	Weekly	Monthly	Total
Manufacturing	$2.059	$2.797	$2.201	$2.062	$2.802	$2.201
Design and Construction	1.613	2.871	2.104	1.617	2.915	2.105
Municipal, Real Estate & General Services	1.843	2.327	1.985	1.829	2.362	1.994
Others	1.718	2.629	1.939	1.711	2.673	1.943
Total	$1.873	$2.685	$2.068	$1.871	$2.715	$2.070

% Absenteeism	December	January
Weekly - Men	2.28	2.27
Weekly - Women	3.55	3.70
Total Weekly	2.60	2.63
Monthly	1.46	1.46
Grand Total	2.36	2.34

(1) Payments cover period from 16th of previous month to 15th of current month, except that in the case of Design and Construction Divisions, payments cover period November 1, 1950 to November 30, 1950.
(2) Payments cover period from 16th of previous month to 15th of current month, except that in the case of Design and Construction Divisions, payments cover period December 1, 1950 to December 31, 1950.
(3) Includes payments for the five (5) week period ended December 24, 1950 in the case of weekly paid employees.
(4) Includes payments for the four (4) week period ended January 21, 1951 in the case of weekly paid employees.
(5) Includes shift differential and Isolation Pay. Excludes overtime premiums, commissions, suggestion awards, etc.

Employee Benefit Plans

Pension Plan	December	January
Number participating at beginning of month	6 490	6 471
New participants and transfers in	34	128
Removals and transfers out	(53)	(45)
Number participating at end of month	6 471	6 554
% of eligible employees participating	95.0%	95.7%

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General Accounting Division

Employee Benefit Plans (Continued)

Pension Plan (Continued)

Employees Retired	January	Total to Date
Number	1	155-a)
Aggregate Annual Pensions Including Supplemental Payments	$ 95	$37 398-b)
Amount contributed by employees retired	239	23 475

(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	December	January
Number participating at beginning of month	7 679	7 691
New participants and transfers in	66	59
Cancellations	(12)	(19)
Removals and transfers out	(42)	(52)
Number participating at end of month	7 691	7 679
% of eligible employees participating	97.2%	96.0%

Dependent Coverage		
Number participating at beginning of month	5 033	5 033
Additions and transfers in	25	39
Cancellations	(3)	(16)
Removals and transfers out	(22)	(29)
Number participating at end of month	5 033	5 027

(1) The new Insurance Plan was made effective on December 1, 1950.

Claims - Disability Benefits (2)

Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	-0-	72
Daily Hospital Expense Benefits	-0-	95
Special Hospital Services	-0-	110
Surgical Operations Benefits	-0-	65
Dependent Benefits Paid		
Daily Hospital Expense Benefits	-0-	149
Special Hospital Services	-0-	167
Surgical Operations Benefits	-0-	116
Amount of claims paid by insurance company		
Employee Benefits	-0-	$13 610
Dependent Benefits	-0-	14 856
Total	-0-	$28 466

(2) Statistics cover only claims paid and not all claims incurred during the month.

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Employee Benefit Plans (Continued)

Claims - Death Benefits (3)	January	Total to Date
Number	5	57
Amount	$28 000	$293 327

(3) Statistics for January and total to date include two deaths which resulted from accidental injury. Total to date includes all claims under the old and new insurance plans.

Group Life Insurance (1)	December	January
Number participating at beginning of month	5 871	56
New participants and transfers in	-0-	-0-
Cancellations	(5 815)	(12)
Removals and transfers out	-0-	(3)
Number participating at end of month	56	41

(1) Group Life Insurance Plan was discontinued on November 30, 1950. Participants at 12-31-50 and at 1-31-51 are employees absent with continuous service who are 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 Life Insurance Claims	December	January
Number of claims	3	-0-
Amount of insurance	$17 500	-0-

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 (1)	December	January
Personal Coverage		
Number participating at beginning of month	7 192	26
New participants and transfers in	-0-	-0-
Cancellations	(7 166)	(7)
Removals and transfers out	-0-	-0-
Number participating at end of month	26	19
Dependent Coverage		
Number participating at beginning of month	4 774	13
Additions and transfers in	-0-	-0-
Cancellations	(4 761)	(1)
Removals and transfers out	-0-	-0-
Number participating at end of month	13	12

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Employee Benefit Plans (Continued)

Claims (2)	December	January
Number of claims paid by insurance company:		
Employee Benefits		
Weekly Sickness and Accident	75	15
Daily Hospital Expense Benefits	107	17
Special Hospital Services	123	15
Surgical Operations Benefits	106	15
Dependent Benefits Paid		
Daily Hospital Expense Benefits	182	17
Special Hospital Services	212	24
Surgical Operations Benefits	203	60
Amount of claims paid by insurance company:		
Employee Benefits	$19 040	$ 3 597
Dependent Benefits	26 020	7 029
Total	$45 060	$10 626

Premiums		
Personal - Employee Portion	$ 56	$ 41
- Company Portion	27 (3)	20 (3)
- Total	$ 83	$ 61
Dependent- Employee Portion	$ 36	$ 33
- Company Portion	29 (3)	27 (3)
- Total	$ 65	$ 60
Grand Total	$ 148	$ 121

(1) Group Health Insurance Plan was made effective December 1, 1949 and was discontinued on November 30, 1950. Participants at 12-31-50 are employees absent with continuous service who are 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.

(2) Statistics cover only claims paid and not all claims incurred during the month.

(3) Gross company cost before dividend.

Vacation Plan

Number of employees granted permission to defer one week of their 1951 vacation to 1952

	January		
	Weekly	Monthly	Total
Manufacturing	41	6	47
Municipal, Real Estate & General Services	3	0	3
Technical	0	1	1
Plant Security and Services	15	6	21
Medical	1	0	1
Total	60	13	73

General Accounting Division

Employee Benefit Plans (Continued)

U. S. Savings Bonds	Mfg.	D&C	Municipal, Real Estate & General Services	Other	Total
Number participating at beginning of month	1 658	248	294	1 357	3 557
New authorizations	51	19	8	61	139
Voluntary cancellations	(47)	(17)	(11)	(24)	(99)
Removals and transfers out	(6)	(1)	(2)	(15)	(24)
Transfers in	6	2	-	1	9
Number participating at month end	1 662	251	289	1 380	3 582
% Participating	48.7%	37.5%	43.0%	43.1%	45.1%
Bonds issued					
Maturity Value	$ 72 430	$ 9 975	$ 11 600	$ 55 175	$ 149 150
Number	1 491	212	236	1 147	3 086
Refunds issued	25	4	5	14	48
Revisions in authorizations	27	6	6	33	72
Annual going rate of deductions					
G.E. Employees Savings and Stock Bonus Plan	$677 542	$100 023	$110 445	$535 830	$1 423 840
G.E. Savings Plan	223 224	26 921	35 272	147 187	432 604
Total	$900 766	$126 944	$145 717	$683 017	$1 856 444

Annuity Certificates (For duPont Service)	January	Total to Date
Number issued	-0-	74

Suggestion Awards		
Number of awards	1	859
Total amount of awards	$250	$14 445

Employee Sales Plan

	January		
	Major Appliances	Traffic Appliances	Total
Certificates issued	86	372	458
Certificates voided	2	9	11

Salary Checks Deposited

	December		January	
	Weekly	Monthly	Weekly	Monthly
Richland Branch - Seattle First National Bank	719	854	700	848
North Richland Area Office - Seattle First National Bank	12	6	10	6
Richland Branch - National Bank of Commerce	188	161	218	177
Out of state banks (Schenectady staff)	--	1	--	2
Total	919*	1 022	928**	1 033

*Week ended 12-24-50
**Week ended 1-28-51

Special Absence Allowance Requests	December	January
Number submitted to Pension Board	5	6

Absenteeism (Weekly Paid Employees)	1950	1951
January 1 to January 21	2.63%	2.77%

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General Accounting Division

PERSONNEL AND ORGANIZATION

Number of Employees	December	January
On Payroll at beginning of month	182	189
Removals and transfers out	(5)	(6)
Additions and transfers in	12	6
Number at end of month	189	189
Net increase (or decrease) during month	7	-0-
% of terminations and transfers out	2.7%	3.2%
% of absenteeism	2.60%	2.72%

Changes by division in number of Accounting Division employees during January, 1951 were as follows:

	Name
General: No Change	
One transfer from Plant Security and Services	Lacy F. Ross
One termination	Virginia K. Staley
Accounts Payable: No change	
Cost: Decrease of one employee	
One new hire	D. P. Brosnan
One transfer to Budgets	J. G. Fick
One employee entered Military Service	R. J. DeVilbiss
General Accounts: No change	
Plant Accounting: No change	
One new hire	S. F. Casteel
One employee entered Military Service	W. J. Burnside
Weekly Payroll: Decrease of one employee	
One return from illness absence	Betty J. Nield
One transfer to Instrument Division	Virginia L. Snodgrass
One termination	Margaret J. Lafferty
Monthly Payroll: Increase of one employee	
One transfer from Budgets	L. C. Stewart
Special Assignment: Decrease of one employee	
One new hire	J. M. Graves
One transfer to Internal Audit	G. M. Meyers
One termination	N. E. White
Budgets: No change	
One transfer from Cost	J. G. Fick
One transfer to Monthly Payroll	L. C. Stewart
Internal Audit: Increase of two employees	
One new hire	D. H. Burkhardt
One transfer from Special Assignment	G. M. Meyers

Injuries	December	January
Major	-0-	-0-
Sub-major	-0-	-0-
Minor	1	1

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General Accounting Division

PERSONNEL AND ORGANIZATION (Continued)

Number of Accounting Division employees as of January 31, 1951 were as follows:

	Number of Employees		
	Non-Exempt	Exempt	Total
General	4	6	10*
Accounts Payable	14	1	15
Cost	12	1	13
General Accounts	17	1	18
Plant Accounting	22	2	24
Weekly Payroll	66	6	72
Monthly Payroll	18	2	20
Special Assignment	2	-0-	2*
Budgets	5	1	6
Internal Audit	3	6	9*
Total	163	26	189

*R. L. Warburton and A. J. McGinnes, formerly included in Special Assignment; and L. P. Murray and Suzanne N. Endow, formerly included in Interal Audit, are now included in General Accounting-General as of 1-31-51.

Non-exempt employees may be summarized as follows:

	Number as of	
Classification	12-31-50	1-31-51
Accounting A	1	2
Accounting B	1	2
Accounting C	6	5
Accounting D	6	7
Business Graduate	15	15
Clerical Working Leader	5	6
Cost Clerk A	1	1
Cost Clerk B	1	-0-
Cost Clerk C	1	1
Cost Clerk D	1	1
Field Clerk C	2	2
General Clerk A	19	19
General Clerk B	44	44
General Clerk C	23	21
General Clerk D	9	8
General Clerk E	-0-	1
Office Machine Operator A	8	8
Office Machine Operator B	6	6
Secretary B	1	1
Steno-Typist A	2	2
Steno-Typist B	6	6
Steno-Typist C	4	4
Steno-Typist D	-0-	1
Total	162	163

Open employment requests as of January 31, 1951 were as follows:

Accounting B	2
Accounting C	2
Accounting D	2
Business Graduates	17
Cost Clerk B	1
Cost Clerk C	2
Cost Clerk D	3
General Clerk B	3
Steno-Typist B	1
Total	33

1 2 1 2 1 2 4

General Accounting Division

	January	December
Accounts Payable*		
Balance at Beginning of Month	$ 52 106	$ 81 517
Vouchers Entered	1 142 951	977 575
Cash Disbursements	1 098 304	1 007 764
Cash Receipts	1 958	778
Balance at end of month	$ 98 711	52 106
Number of Vouchers Entered	2 441	1 828
Number of Checks Issued	1 405	1 247
Number of Freight Bills Paid	507	278
Amount of Freight Bills Paid	$ 7 767	$ 5 081
Number of Purchase Orders Received	1 199	1 278
Value of Purchase Orders Received	$ 362 767	$ 341 696
Cash Disbursements		
Municipal, Real Estate & General Services	$ 90 325	$ 199 797
Design & Construction	4 432 321	3 551 127
General	3 209 796	3 491 540
Manufacturing	1 011 527	886 318
Total	$8 743 969	$8 128 782
Material and Freight	$2 510 455	$1 874 321
Lump Sum and Unit Price Subcontracts	190 582	356 061
CPFF Subcontracts		
Labor	2 665 357	2 113 193
Others	444 126	512 517
Payrolls (Net)	1 941 262	2 336 307
Payroll Taxes	439 719	320 879
U. S. Savings Bonds	170 230	147 469
General & Administrative Expenses	200 000	200 000
Miscellaneous	182 238	268 035
Total	$8 743 969	$8 128 782
Cash Receipts		
Municipal, Real Estate & General Services	$ 134 351	$ 97 474
Design & Construction	45 099	33 926
General	7 532 044	6 853 652
Manufacturing	13 470	16 296
Total	$7 724 964	$7 001 348

*General Divisions Only.

General Accounting Division

	January	December
Detail of Cash Receipts		
Advances from AEC	$7 409 471	$6 782 982
Rents	145 036	105 974
Hospital	41 747	43 033
Telephone	15 989	16 076
Scrap Sales	11 610	20 575
Bus Fares	10 858	9 098
Miscellaneous Accounts Receivable	16 722	11 297
A.E.C. Cost-type Contractors Accounts Receivable	62 559	-0-
Refunds from Vendors	3 762	2 960
Employee Sales	691	665
Educational Program	780	309
All Other	5 739	8 379
Total	$7 724 964	$7 001 348
Number of Checks Written		
Municipal, Real Estate & General Services	177	180
Design & Construction	679	529
General	1 405	1 247
Manufacturing	795	649
Total	3 056	2 605
Bank Balances at End of Month		
Chemical Bank & Trust Company - New York		
Contract Account	$ 664 200	$1 799 383
Seattle First National Bank - Richland		
Contract Account	1 948 376	2 016 643
U. S. Savings Bond Account	174 120	217 270
Salary Account No. 1	20 000	20 000
Salary Account No. 2	30 000	30 000
Travel Advance Account	32 947	46 838
Seattle First National Bank - Seattle		
Escrow Account	31 685	57 496
National Bank of Commerce - Richland		
Contract Account - Manufacturing	288 473	213 682
Contract Account - Municipal, Real Estate & General Services	109 675	203
Total	$3 299 476	$4 344 019
Travel Advances and Expense Accounts		
Cash Advance balance at end of month*	$ 37 766	$ 27 761
Cash Advance balance outstanding over one month*	1 096	800
Traveling and Living Expenses:		
Paid Employees	36 261	23 552
Billed to Government	34 125	21 732
Balance in Variation account at end of month	14 821	12 685 Dr.

*General Divisions Only.

General Accounting Division

Hospital Accounting	January	December
Accounts Receivable		
Balance at Beginning of Month	$ 118 073	$ 118 263
Invoices Issued	58 991	52 698
Refunds	447	636
Cash Receipts	41 747 Cr.	43 033 Cr.
Payroll Deductions	7 684 Cr.	6 898 Cr.
Bad Debts Written Off	-0-	3 564 Cr.
Adjustments	33 Cr.	29 Cr.
Balance at End of Month	$ 128 047	$ 118 073

Scrap Sales	January	Total to Date
(a) Number of Sales	26	309
(b) Revenue (Not including Sales Tax)		
Revenue to G.E.	$ 11 610	$ 310 562
Revenue to AEC (Sale of Tract Houses)	376	39 334
Total Revenue	$ 11 986	$ 349 896

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General Accounting Division

ACCOUNTS PAYABLE

The number of vouchers booked in January was 2 441 amounting to $1 142 951 as compared to 1 828 in December amounting to $977 575. This is an increase in volume of 34% over December and is the greatest number of vouchers booked in any one month since March 1949.

The number of checks issued in January was 1 405, an increase of 13% over December and is the greatest number of checks issued by this section in any one month since April 1949. Details are as follows:

	January	December
Chemical Bank & Trust Co.	503	408
Seattle-First National Bank	902	839
Total	1 405	1 247

A total of 2 346 vouchers were paid in January averaging 1.67 vouchers per check, slightly lower than the average of 1.68 for the month of December.

On January 31 there were 1 339 vouchers on hand requiring additional supporting data before they could be forwarded to AEC for final audit. Details, compared with December, are as follows:

	January	December
Number on hand - Paid	368	329
Number on hand - Unpaid	971	991
Total	1 339	1 320

Of the above 368 paid vouchers on hand, there were only 12 more than 90 days old, and of the above 971 unpaid vouchers, there were only 10 more than 90 days old.

Number of freight bills paid in January was 507 as compared with 278 in December. This is an increase of 81% in volume over December and is the greatest number of freight bills processed in this office in any one month since decentralization of the Accounting Division in 1948.

The General Ledger Accounts Payable balance on January 31 was $98,710.86. Details of this balance by months, compared with December, are as follows:

General Accounting Division

ACCOUNTS PAYABLE (CONTD.)

	January	December
August	$ 3.60 Dr.	$ 1,338.85 Dr.
September	4.72 Dr.	4.72 Dr.
October	2,473.23 Dr.	1,537.46 Dr.
November	2,774.16	3,272.71
December	9,594.91	51,714.76
January	88,823.34	-
Total	$98,710.86	$52,106.44

BUDGETARY CONTROL

In connection with the fourth quarter budget review, letters of instruction, work sheets and statistical schedules were completed and forwarded to division heads. Also in connection with this quarterly budget review, detailed work schedules were prepared and forwarded to division accountants requesting data relative to Cash Working Capital and Inventories for the Balance Sheet budget.

During the latter part of the month certain divisions returned their completed work sheets and schedules together with narrative justifications of forecasted increases and decreases. Information contained in schedules received to date has been reviewed and analyzed and additional necessary work to complete has been done.

A draft of a letter of instructions covering the preparation and presentation of the budget for Fiscal Year 1953 and revision of the budget for Fiscal Year 1952 was received from the Atomic Energy Commission. Comments concerning procedures outlined and budget data requested in the letter were solicited by the Atomic Energy Commission before the final letter was issued. Several meetings were held with AEC personnel to discuss certain parts of the letter and some recommendations were made.

In line with instructions as modified, work was begun on preparation of statistical data, drafting schedules, work sheets and letters of instructions for division heads' use in the preparation of their budgets.

COST

General Division Operating Reports for the month of December were issued on January 15, 1951. Detailed reports of Research and Development Costs were issued on January 23, and Consolidated Summary of Costs was issued on January 29, 1951.

Cost analyses letters were issued to manager of each General Division on January 19, 1951. These letters summarized the months' cost and pointed out and explained significant changes from the previous month.

General Accounting Division

COST (CONTD.)

IME liquidation rates for all General Divisions were reviewed and revisions were made in the rates of certain divisions. Changes in organization, and the fact that adequate cost experience in the case of newly established groups was not available when rates were originally fixed resulted in the need for revising these rates.

The report of "Technical Divisions Costs per Man-Month of Research and Development Authorizations" formerly issued monthly as a separate report was discontinued and the information contained therein was added as a notation on the detailed Research and Development cost reports.

Allocation of Fire Division costs in the 100 and 200 Areas amounting to $32 500 was revised this month. Previously, charges had been made in accordance with coding on firemens' time cards. With this revision, P Division in each 100 Area is receiving the same assessment and costs in the 200 Areas are divided equally between the S Divisions in 200 East and 200 West.

Accruals for Unusual Maintenance costs in the 700 Area were thoroughly reviewed and certain expenditures which had been considered as expense were reviewed with Plant Accounting. As a result, Plant Accounting agreed that items totaling $39 922 should be capitalized. These included Hauserman partitions, renovation of 722 A Building, new roof on the 723 Laundry Building and revision of Building 705 lighting. In addition, analyses of assessments to the 723 Laundry revealed that two items of a capital nature totaling approximately $1 400 had been charged to expense in error. Necessary adjustments were made to capitalize these costs and relieve expenses.

GENERAL ACCOUNTS

Advances from A.E.C. decreased from $5 000 000 as of December 31, 1950 to $4 000 000 as of January 31, 1951 as indicated in the following schedule:

	January	December
Cash in Bank - Contract Accounts	$3 010 724	$4 029 911
Cash in Transit	428 657	409 470
Expenditures Disallowed by A.E.C.	10 619	10 619
Cash in Bank - Salary Accounts	50 000	50 000
Travel Advance Funds	100 000	100 000
Advances to Subcontractors	400 000	400 000
Total	$4 000 000	$5 000 000

The General Accounting Division issued 1 405 contract checks this month as compared with 1 247 last month. Cash disbursements decreased from $3 491 540 to $3 209 796.

General Accounting Division

GENERAL ACCOUNTS (CONTD)

General Ledger Trial Balances were received from all Accounting Divisions by January 16, 1951. Hanford Works Financial Statements and Consolidated Financial Statements were completed on January 18 and January 26, 1951, respectively.

The number of Travel Expense Reports processed this month was 147 as compared with 113 last month. Traveling employees spent $24 494 and of this amount, reimbursement was received from the Atomic Energy Commission for $23 625. The balance of $869 was charged to the Travel and Living Expense Variation Account. The balance of Travel Advances to Employees increased from $27 761 to $37 766 due primarily to increased advances to Purchasing and Stores Divisions employees.

The Travel and Living Expense Variation Account has been charged with $14 821 (All Divisions) Fiscal Year to Date. The increase in charges this month was $2 136, of which $647 was entertainment expense and $1 489 the difference between expenses incurred by employees and amount billed to A.E.C.

The balance of Accounts Receivable-Miscellaneous decreased from $80 058 to $8 909. This was due to the transfer of $74 586 to the newly established General Ledger Account, Accounts Receivable-A.E.C. Cost Type Contractors.

There are four invoices over 90 days old representing freight claims included in the open balance. These are being followed by the Traffic Section of the Purchasing Division. Majority of other items in this balance represent billings to other G. E. Departments.

Memorandum Billings were received from Knolls Atomic Power Laboratory covering General Engineering Laboratory Assistance to Hanford in the amount of $143 357, KAPL Assistance to Hanford of $3 434, and Research Laboratory Assistance of $393.

INTERNAL AUDITING

An unannounced audit of Cash Change Funds was made on January 16, 1951. The audit was performed jointly by members of General Accounting Office, Atomic Energy Commission and General Electric Company. Results of the audit were reported in Internal Auditing Report No. IA-27.

During the week ended January 26, 1951, annual audit was made of the AEC Advance Account by an auditor from the public accounting firm of Peat, Marwick, Mitchell & Co.

Field work has been completed and reports are being prepared for audits of (1) Hospital Revenue, (2) Receiving and Shipping (3) Timekeeping and (4) Bus Revenue.

General Accounting Division

INTERNAL AUDITING (CONTD)

Although the field work has been completed in connection with Audit of Bus Revenue, a satisfactory system of collection, safeguarding and accounting for revenue has not yet been devised with which to supplant the present system, which was found by audit to be inadequate. Next week an auditor will visit the Seattle Transit System, in Seattle and review their methods of control.

One auditor will be assigned to Operating Stores early next month, to assist Stores Division personnel in the preparation of monthly inventory reconciliations between Stores Control ledgers and the General Ledger, as of the close of business January 31, 1951. Two auditors aided Stores personnel in the initial reconciliation as of the close of business on December 31, 1950. It was found that difficulties due to final monthly postings, change-over to new Control Desk System, etc., delayed the preparation considerably. Reconciliation forms have now been prepared and it is expected that two or three man days should complete the job, whereas in the past, as much as twenty man days were required. Follow-up of Stores Division's reconciliations will be made until an adequate efficiency in preparation has been attained by Stores personnel.

Additional field work is to be done in connection with the "Study of Taking Physical Inventories by Stores Divisions".

Follow-up is also being made of Stores Division's physical inventory of Small Tools at White Bluffs.

Work is progressing on the detail Audit of State Business and Occupational Taxes, paid by General Electric to the State of Washington covering the period from September 1, 1946 through December 31, 1950.

MEDICAL ACCOUNTING

The balance in Accounts Receivable increased $9 974 during the month; from $118 073 in December to $128 047 in January. This increase is due in part to an increase of $6 292 in sales and a decrease of $1 287 in payments on account. Assigned Metropolitan Insurance claims in the amount of $9 399 for services rendered during December were not completed by Medical Records insurance unit until the second week in January. This did not permit sufficient time for processing and payment by the months end.

Out-patient invoices numbered 2 296 and amounted to $9 995 in January as compared to 2 117 invoices amounting to $8 888 in December. This represented an increase of 179 invoices amounting to $1 107.

MEDICAL ACCOUNTING (CONTD)

In-patient revenue increased $5 185 over December due primarily to the increase in the adult patient day census from 77.7 in December to 86.9 in January.

A total of 46 claims in the amount of $2 260 were submitted this month to Fort Lewis for services rendered military personnel. Reimbursement on 48 claims in the amount of $751 on prior months billings was received during the month.

Blue Cross claims paid during the month numbered 26 and amounted to $2 586.

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	16	5 093
Collections by Yakima Adjustment Service	42*	1 862
Accounts recalled	7	1 624
Accounts at Y A S as of 1-31-51	123	20 888

*Includes 23 accounts paid in full and 19 accounts partially collected.

January Industrial-Operations Costs are being assessed to other Divisions on the basis of service rendered each division rather than on a cost per employee basis as was used in the past. A cost per examination, and cost for each first aid station has been determined from a cost study. Annuals, pre-employment, post-employment, and interim examinations are charged to other divisions at a flat rate per examination. First aid costs by area are assessed to each division on the basis of number of employees in that area by division. Health Education and Group Insurance costs are assessed to each division on the basis of employees in each division. New cost studies are to be made periodically and standards adjusted as warranted.

The variance between actual cost and costs assessed to other divisions will be entered on the Industrial Medical-Operations Cost Report as an over or under liquidation.

The study of Oak Ridge Hospital Cost reports and comparison of costs with those of Kadlec Hospital for the 5 months period ended November 30, 1950 was completed in January and a report was submitted to W. D. Norwood, M. D., Medical Divisions Manager.

MEDICAL ACCOUNTING (CONTD)

Briefly summarized below is a comparison of major differences.

	COST PER PATIENT DAY			
			Excess of Kadlec Costs Over Oak Ridge	
	Kadlec Hospital	Oak Ridge	Amount	Percentage
Salaries	$17.34	$12.20	$5.14	27%
Continuity of Service	2.06	.38	1.68	9%
Laundry	1.28	.47	.81	4%
All Other Costs	6.85	6.31	.54	2%
Total	$27.53	$19.36	$8.17	42%

Kadlec Hospital revenues per patient day as compared to Oak Ridge Hospital for the same period were 26% higher. The larger volume of out-patient service at Kadlec Hospital as compared to Oak Ridge accounts for the greater part of the increased revenues.

PLANT ACCOUNTING

Surveys of Plant Accounts and physical inventories taken during the last several months have disclosed that equipment valued at approximately $330 000 was not included in the Plant Appraisal of June 30, 1949. Entries will be prepared in February to add this equipment to the Plant Accounts with an offsetting credit to the general ledger account Plant Appraisal Adjustments.

The "Audit Report of Fixed Assets" prepared by AEC as a result of an audit performed by them is now in process of review. This report covers the period June 30, 1949 to June 30, 1950. In accordance with recommendations in this report relative to continuing physical inventories of Plant facilities, inventories of three plant accounts -- Motor Vehicles, Heavy Equipment, and Railroad Rolling Stock -- have been started. Although it is impossible to take a complete physical inventory of these facilities, reference to records of the Transportation Division is being made as to the number of units on hand as of December 31, 1950. Records of Plant Accounting are being reconciled with these records and adjustments will be made. This procedure has been approved by the AEC.

In order to provide a measure of performance in connection with the reviewing of work orders, a memorandum record has been established in this section of all work orders effecting plant accounts. Work Orders totaling approximately $25 000 which had been coded to expense accounts in January were, as a result of Work Order review, charged to Capital Accounts.

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General Accounting Division

PLANT ACCOUNTING (CONTD)

In the past, some Work Orders covering the replacement of like size and/or capacity of transformers, poles, and motors were charged to expense. This was due to the lack of a definite understanding of the proper treatment of these costs. These items will in the future, be accounted for as additions or retirements when replaced or removed.

In last month's report, it was stated that depreciation expense would not be distributed in Fiscal Year 1952. This month, AEC informed that beginning July 1, 1951, they would request that depreciation expense be distributed to operating costs although no direct assessments to the divisions should be made.

1212135

General Accounting Division

PAYROLLS

During the month of January there were 102 removals from payroll. There were no transfers to other units of the Company. There were 166 additions to the payroll, including 2 transfers from other units of the Company. The result is a net increase of 64 employees on the payroll.

* * * * * * * *

New Year's Day, January 1, 1951, was an observed holiday at Hanford Works. Due to the resulting short work week, it was necessary to deliver salary checks for employees of the outer areas to patrolmen at the area gate houses between 8 PM and 11 PM on Thursday, January 4, 1951 instead of at 2 PM on Thursday which is the normal delivery time. Preparation of the payroll was completed without overtime during the week. However, 7 overtime hours were required for delivery of checks to the outer areas on Thursday evening.

* * * * * * * *

Fourth Quarter Reports for Social Security Tax purposes for 4,047 employees were prepared and forwarded to the General Office.

* * * * * * * *

Fourth Quarter Reports for Unemployment Compensation purposes applicable to the States of Washington, Oregon, New York, Illinois, Virginia, and Pennsylvania were prepared and forwarded to the General Office for filing with the various State Unemployment Compensation Divisions. Individual reports showing taxable wages for year 1950 were prepared for 9,032 employees subject to State of Washington Unemployment Tax and forwarded to Olympia, Washington.

* * * * * * * *

Annual Report of Excise Tax showing total wages paid subject to the Federal Unemployment Tax Act was prepared and forwarded to the General Office.

* * * * * * * *

Individual Withholding Statements, Quarterly Withholding Statements, and amount of income tax withheld applicable to the State of Oregon were forwarded to the Oregon State Tax Commission.

* * * * * * * *

During the month of January, New York Non-Resident Tax was withheld for one employee. This amount will be paid to New York State Tax Division.

* * * * * * * *

Withholding Statements, Form W-2, for the year 1950 were prepared for 8,975 employees. These statements were delivered to monthly paid employees on January 5, 1951 and to weekly paid employees on January 12, 1951. Withholding statements were reissued to 70 employees who had lost or misplaced their original forms. There were no cases where employees claimed that incorrect information was shown on their W-2 forms.

1212136 * * * * * * * *

New Withholding Exemption Certificates, Form W-4, were received from all employees and these certificates were summarized in a report showing number of employees by divisions segregated by place of residence, sex and marital status.

* * * * * * * *

Military Duty Allowance equivalent to one month's salary was paid during January to two employees who entered the Armed Forces. The gross payment to these employees amounted to $624.26. A total of $7,565.82 has been paid to employees for Military Duty Allowance as of January 31, 1951.

* * * * * * * *

As of January 31, 1951 there were 109 employees who had left the Company to enter the Armed Forces of the United States as follows:

	Called to Duty	Volunteered For Duty	Total
Reserve Officers	3	2	5
Enlisted Reserves	25	4	29
National Guard	1	-0-	1
Selective Service	21	53	74
Total	50	59	109

* * * * * * * *

A Hanford Works Suggestion System Report was prepared during the month of January and forwarded to General Office showing information on Suggestion Awards for the year 1950. Statistics included the number of suggestions received, number of suggestions adopted, total amount of awards, etc.

* * * * * * * *

Under the provisions of the agreement reached between Hanford Atomic Metal Trades Council and General Electric Company relative to Auxiliary Fire Brigade pay, 75 employees submitted claims that they had not been paid in accordance with the terms of the agreement. These claims were checked with Wage Rates Division and it was determined from additional information submitted to them that 7 Auxiliary Firemen had not been paid correctly and 4 Auxiliary Firemen had not received a payment although they were eligible. Accordingly, additional retroactive auxiliary fire brigade pay was paid to 7 employees and retroactive auxiliary fire brigade pay was paid to 4 employees who had not previously received a payment. The total payment in these 11 cases amounted to $155.65 which was paid during the month of January.

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In order to facilitate the work of the Payroll Divisions in connection with the statements to be given individual employees showing their status in the principal benefit plans, work sheets were prepared in advance and a schedule prepared listing the flow of work between the various sections of payroll so that the statements may be delivered to all employees March 9, 1951. As a result of this advance planning and scheduling the number of overtime hours required to complete this work will be greatly reduced. Approximately 1,584 man hours were expended in connection with this work during the month of January.

Approximately 117 man hours were expended in connection with a special Payroll analysis.

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New authorization cards for check-off of union dues were received by Weekly Payroll Division for 91 employee members of 8 unions affiliated with Hanford Atomic Metal Trades Council, as follows:

International Union of Operating Engineers, Stationary Local #280	25
International Chemical Workers Union, Local 369	14
International Brotherhood of Teamsters, Warehousemen, Garage Employees & Helpers, Local 839	2
Instrument Craftsmen's Guild	4
United Association of Journeymen & Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, Local No. 598	23
Hanford Industrial Firemen, Local #37	8
International Brotherhood of Electrical Workers, Local 77-139	1
United Brotherhood of Carpenters and Joiners of America, Local Union #2403	14
Total	91

In addition to the above, replacement authorization cards were submitted for 10 members of the International Chemical Workers Union, Local 369, which authorized deduction of union dues for each of these members in the amount of $3.00 per month instead of $2.00. Authorizations for check-off of union dues in effect at January 31, 1951 cover 853 employee members of 14 unions.

One new Payroll Deduction Authorization signed by a Medical Division employee was submitted in January by the Building Service Employees International Union, Local 201. At January 31, 1951 check-off of union dues was in effect for 19 Medical Division employees of the Building Service Employees International Union.

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There were 15 time cards received late in payroll during the month of January.

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In addition to regular payroll addressograph work approximately 96,300 items were addressographed for other divisions. Considerable extra work was done by the addressograph section in connection with the individual reports to employees covering Principal Benefit Plans.

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One garnishment served on the Company had not been dismissed December 31, 1950. Two garnishments were served on the Company during January. Two of these three cases were dismissed during January by Court Order, one with payment to the Court, and one without payment to the Court. One case was pending at January 31, 1951.

1212138

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During January, preferential rates were eliminated in 25 cases where employees were transferred or reclassified. As of January 31, 1951 there were approximately 1,150 employees on preferential rates.

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U. S. Savings Bonds having a maturity value of $74,600 were withdrawn from the G. E. Employees Savings and Stock Bonus Plan during January by 179 participating employees. There were 1,334 U. S. Savings Bonds withdrawn by employees. This is the largest number of bonds withdrawn in any one month since the G. E. Savings and Stock Bonus Plan was placed into effect. U. S. Savings Bonds and Custody Receipts covering purchases by employees through Payroll deductions in December were delivered to employees on January 26, 1951. There were 859 U. S. Savings Bonds and 4,023 Custody Receipts delivered.

As of January 31, 1951, the percentage of Hanford Works employees participating in the G. E. Employees Savings and Stock Bonus Plan and General Electric Savings Plan and the annual going rate of payroll deductions for both plans was as follows:

Percentage of Participation

	Mfg.	D&C	Municipal Real Estate & General Services	Other	Total
G. E. Employees Savings and Stock Bonus Plan	43.1%	33.0%	38.2%	38.2%	39.9%
General Electric Savings Plan	11.9%	8.4%	9.8%	8.9%	10.2%
Both Plans	48.7%	37.5%	43.0%	43.1%	45.1%

Annual Going Rate of Deductions

	Mfg.	D&C	Municipal Real Estate & General Services	Other	Total
G. E. Employees Savings & Stock Bonus Plan	$677,542	$100,023	$110,445	$535,830	$1,423,840
General Electric Savings Plan	223,224	26,921	35,272	147,187	432,604
Total	$900,766	$126,944	$145,717	$683,017	$1,856,444

The percentage of Hanford Works employees participating in the G. E. Employees Savings and Stock Bonus Plan and General Electric Savings Plan and the annual going rate of payroll deductions for both plans as of December 31, 1949 and December 31, 1950 was as follows:

Percentage of Participation

	12-31-49	12-31-50
G. E. Employees Savings and Stock Bonus Plan	46.5%	40.4%
General Electric Savings Plan	10.5%	10.1%
Both Plans	51.0%	45.1%

1212139

Annual Going Rate of Deductions

	12-31-49	12-31-50
G. E. Employees Savings and Stock Bonus Plan	$1 557 288	$1 424 348
General Electric Savings Plan	425 749	429 010
Total	$1 983 037	$1 853 358

* * * * * * * *

During the month of January, checks were delivered to 14 participants in the G. E. Employees Savings and Stock Bonus plan who withdrew during the year 1950 U. S. Savings Bonds purchased during the year 1948. These checks represent income for the year 1949 on General Electric common stock credited to their accounts as of December 31, 1948.

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During the month of January, charts of employee and payroll statistics were revised, and will be extended on a current basis for use of management.

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Under the new Insurance Plan employees, who were absent due to illness on December 1, 1950 and who were still absent due to illness on January 1, 1951 and who were covered under the old Group Life Insurance Plan, will have their insurance coverage continued without further contributions by them during the period of their disability up to a period of one year. Accordingly, 32 employees were notified by letter dated January 18, 1951 of this provision.

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Vacation request cards for the year 1951 for weekly paid employees were prepared and forwarded to all Divisions during the month of January.

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Under the G. E. Pension Plan 256 eligible employees who were not participating in the Plan and 41 employees who became eligible for participation in January were canvassed for enrollment in the Plan. Enrollment cards were received from 53 employees who were eligible but not previously participating and 31 newly eligible employees signed enrollment cards.

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Contributions to the Pension Plan by employees for the year 1950 were reported on individual cards to the Pension Division in Schenectady for 8,120 employees. A reconciliation of the total amount reported on these cards with the General Ledger Pension Accounts was prepared and forwarded to the Pension Division.

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1212140

During the four-week period ended January 7, 1951, 357 incorrectly completed time cards were received in Payroll as follows:

Isolation Pay not checked "Yes" or "No"	118
Incorrect hours shown	97
Straight Day or Shift Worker not indicated	51
Not signed by Supervisor	46
Shift No. incorrect or not shown	43
"Call-In" Time not indicated	2
Total	357

Contact was made with interested divisions and corrections were made before payment of salary was made.

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Approximately 20 employees who had worked for more than one employer in 1950 requested forms for use in obtaining refund of excess Social Security Tax deducted during the year 1950.

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Authorizations for deductions from payroll for the purchase of safety shoes were received from 90 employees in January.

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In January a total of 6,133 items were submitted to Weekly Payroll Division for deduction from salaries of Weekly Paid employees for rent and telephone charges as follows:

House Rents	3,168
Dormitory Rents	625
Trailer Rents	92
Barracks Rents	21
Telephone Accounts	2,227
Total	6,133

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As of January 31, 1951 there were approximately 752 employees authorized to pick up salary checks, U. S. Savings Bonds and Custody Receipts. During January, 42 employees were added to the list so authorized.

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There were no cases of lost salary checks reported in January and there were no cases pending as of January 31, 1951.

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A total of 151 employees were scheduled to begin their 1951 vacations in January. Approvals were received during the month to defer one week of the 1951 vacation to 1952 for 60 weekly paid employees and 13 employees on the Monthly Payroll.

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During the month of January, Continuity of Service was restored by the Pension Board to 4 Hanford Works employees.

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During January, 689 disability claims were processed and forwarded to Metropolitan Life Insurance Company. 707 checks totaling $39,092.22 for 542 claims were received in January from the Insurance Company and forwarded to employees, hospitals and surgeons.

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The following bank reconciliations were complete at January 31, 1951:

Weekly Salary through #229, week ended January 14, 1951
Weekly Salary Vacation #229, week ended January 14, 1951
Bond Account - November
Monthly Payroll #52 - December

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PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - JANUARY 1951

SUMMARY

There was one major injury during the month which establishes a frequency rate of 0.75.

One minor fire occurred during the month. No loss resulted.

Laundry volume in the 200-W Laundry increased more than 25%, by weight, due to extended 100 Area shutdowns for cleanup. The 700 Area volume increased approximately the same due to increased work coming from the North Richland barracks.

Mail volume was unusually high due to special distributions.

The continuing heavy work load in the Printing Section necessitated sending $1,716.00 worth of printing orders to outside printers.

Work accomplished by the Office Methods Section resulted in estimated savings of $4,126.00 of which $3,630.00 will be on an annual recurring basis.

On January 15, radio station WGMB-13 was placed in service at White Bluffs. This station is used by the U. S. Army and establishes radio contact between them and Security Patrol.

Practice evacuations, blackouts and Patrol mobilizations were continued during the month.

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PLANT SECURITY AND SERVICES DIVISIONS

MONTHLY REPORT - JANUARY 1951

ORGANIZATION AND PERSONNEL

Number of employees on payroll:

	Beginning of month	End of Month	Increase	Decrease
Staff	3	3		
Patrol and Security	592	597	5 (a)	
Safety & Fire Protection	142	144	2 (b)	
Office Services (General Services, Clerical Services, Records Control and Office Methods)	229	230	1 (c)	
TOTALS	966	974	8	

NET INCREASE: 8

(a) - Patrol and Security

7 - New Hires
1 - Returned from Leave of Absence
1 - Transferred from Richland Police
1 - Transferred to "P" Division
2 - Removed from Roll due to Leave of Absence
1 - Termination

(b) - Safety and Fire Protection

6 - New Hires
1 - Transferred from Transportation
1 - Transferred to Instrument
4 - Terminations

(c) - General Services

1 - New Hire
2 - Transferred from Engineering and Construction Services
1 - Re-engaged
1 - Transferred to "S" Division

Clerical Services

8 - New Hires
11 - Transferred to other Divisions

Records Control

1 - New Hire
1 - Termination

Office Methods

1 - New Hire
1 - Transferred from Clerical Services
1 - Transferred to Design & Construction Reactor Division

121244

Plant Security and Services Divisions

SAFETY AND FIRE PROTECTION

Injury Statistics

Days since last Major Injury	0
Accumulated Exposure Hours since last Major Injury	0
Major Injury Frequency Rate (1-1-44 through 1-31-51)	0.80

	December	January	Year to Date
Major Injuries	1	1	1
Sub-Major Injuries	2	0	0
Minor Injuries	254	287	287
Exposure Hours	1,320,411	1,335,340	1,335,340
Major Injury Frequency Rate	0.76	0.75	0.75
Major Injury Severity Rate	0.02	0.264	0.264
Minor Injury Frequency Rate	1.92	2.14	2.14

Major Injury No. 73

On January 31, an employee of the Housing and Real Estate Division amputated his right thumb at the first joint when he accidentally dragged it across the 16" blade of a Yates American table saw which he was using in the 722 Hangar Building, 700 Area.

The investigation revealed that although the guard was in place, the employee failed to lower the blade to the thickness of the stock he was cutting. He also failed to use a push stick, thus disregarding two important accepted safe practices.

Safety Activities

The Chief Supervisor of the Safety and Fire Protection Division met with the Chairman of the Manufacturing Divisions Safety Council's Program Committee and drew up a procedure covering the policy, objectives and organization of the new Program Committee of the Nucleonics Safety Council which is to be presented to the Council for confirmation.

The seventh Annual Report of the Safety and Fire Protection Division was prepared and distributed during the third week in January. It showed the exceptionally good progress made in safety during 1950 in detailed statements from startup (1-1-44) to the present time. The various tables showed improvemen in safety by all Divisions on the Plant.

A proposal by the Health Activities Committee to promote a Health and Safety topic of the Month jointly was favorably accepted by the Program Committee of the Manufacturing Divisions Safety Council.

The combination shift schedule and 1951 calendar cards were printed and distributed to all employees during the month.

The Safety Award gifts were distributed to the forty-seven employees whose selections were not received before the original order on the gifts had been placed. It is felt that all employees' requests have been taken care of.

Plant Security and Services Divisions

Safety Activities (Contin)

The Maintenance Safety Derby which started December 1, 1950 and will continue through March, 1951, is again showing good results in increasing interest in safe working practices and good housekeeping throughout all the areas in which the Maintenance Division operates.

The industrial Patrol Division has started on an interesting contest of keeping the "Patrolman on the Poster" in possession of all his limbs and members. It should further the development of safety mindedness.

Upon special request of the Project Engineering Divisions, full time safety coverage was assigned to the Morrison-Knudsen Company, sub-contractors. This was the result of a series of accidents in preparing to dismantle the deareator tanks in the 100-D Area.

Special efforts are being put forth to furnish safety coverage to all employees working in the 1100 Area and members of the various branches of the Municipal Divisions.

The "P" Division in the 100-F Area completed a four-week limerick contest, "D" shift taking first place. It is felt the contest stimulated interest in safety.

Fire Protection Activities

Fire Protection Surveys were completed on Building 222-B, Analytical Laboratory, Essential Materials Warehouse, and the 305-A Building.

Fire alarm system demonstrations were given to members of the clerical group in 100-B Area and to the Power Division in 100-D Area.

The Underwriters' Laboratories film, "Testing for Safety", was shown to several groups in the 100 Areas.

The fire alarm in 100-F Area was changed to a one-loop system to increase the reliability of the system.

All foam type first aid fire extinguishers in the 100 Areas were replaced with dry compound type to give better protection and reduce service costs.

The sprinkler system in the Riverland Round House was tested. Its operation was satisfactory.

Two new extinguishing agents were tested in uranium fires and were found to be of little value.

The Fire Station at White Bluffs has installed necessary equipment to recharge the CO_2 cartridge for the dry chemical extinguishers,

Industrial Fires

Division	Area	No. of Fires	Cause	Loss
Maintenance	100-F	1	Welding	None
	TOTAL FIRES	1	TOTAL LOSS	NONE

Plant Security and Services Divisions

OFFICE SERVICES DIVISIONS

General Services

Plant Laundry (Building 2723)

	December	January
Coveralls - Pieces	32,453	40,346
Towels - Pieces	6,838	7,270
Miscellaneous - Pieces	76,152	113,225
Total Pieces	115,443	160,841
Total Dry Weight - Lbs.	162,528	219,957

Richland Laundry (Building 723)

Flatwork - Lbs.	43,529½	59,466½
Rough Dry - Lbs.	16,295	19,485
Finished - Lbs.	2,057½	2,340½
Total Pieces	81,065	106,492
Total Dry Weight - Lbs.	61,882	81,292

Monitoring Section - 2723 Laundry

Poppy Check - Pieces	104,212	124,080
Scaler Check - Pieces	141,702	162,905
Total Pieces	245,914	286,985

Increased volume in the 200-West Area Laundry is due to extended shutdowns in the 100 Areas plus the clean-up of a heavy backlog of protective clothing brought about by interrupted production during the move from the old laundry to the new building during the latter part of December. It was necessary to work seven days a week and other extra hours during the past month to keep the operating buildings supplied with ample protective clothing.

The heavy volume in the 700 Area Laundry is due to increased work coming from the North Richland barracks.

Clerical Services

Mail Room

The Mail Room handled special mail, such as, "The Guide to Richland", "This Way Please", rating forms, etc. during the month. As a result, total mail handled was unusually high.

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Plant Security and Services Divisions

Mail Room (Conton)

	December	January
Pieces of Internal Mail handled	530,733	595,892
Pieces of Postal Mail handled	80,884	82,254
Pieces of Registered Mail handled	1,132	1,157
Pieces of Insured Mail handled	266	302
Pieces of Special Delivery Mail handled	268	335
Total Mail Handled	613,283	679,940
Total amount of postage used	$ 2,227.00	$ 2,484.21
Total teletypes handled	4,437	8,015

Office Equipment

The Appropriations and Budget Committee approved a request for the purchase of office equipment for the balance of this fiscal year. This was also approved by the Atomic Energy Commission.

Permission was received from the Atomic Energy Commission for the Purchasing Division to secure the desks, tables, etc. on the basis of delivery and price rather than solely on price, and the Atomic Energy Commission will purchase the machines on the same basis.

	December	January
Office Machines repaired in shop	291	267
Office Machines service calls	340	430
Total Machines Serviced	631	697

Printing Section

Work volume continues to be very heavy and $1,716.98 worth of printing was sent to outside printers.

	December	January
Multilith orders received	278	312
Multilith orders completed	269	300
Multilith orders on hand	87	99
Stencil and fluid duplicating orders received	898	1,137
Stencil and fluid duplicating orders completed	881	1,150
Stencil and fluid duplicating orders on hand	75	62

Plant Security and Services Divisions

Stenographic Services

	December	January
Dictation and Transcription	:00	2:00
Machine Transcription	13:45	12:25
Letters	214:55	248:40
Manuals and Procedures	12:45	119:10
Duplicating - Stencils, Ditto	279:10	354:45
Special	435:50	346:50
Meeting Time	6:00	8:00
Training	258:45	310:10
Absentee Time	8:00	:00
Holiday and Vacation	88:00	128:00
Unassigned Time	121:00	72:00
Total	1,438:10	1,602:00
Employees loaned to other divisions	766:20	987:35
Total hours available	2,204:30	2,589:35

Records Control Section

Quantity of records received, processed and stored:

Design and Construction Division	12	Standard Boxes
CPFF Sub-Contractors	2	" "
Employee and Community Relations Division	11	" "
General Accounting Division	74	" "
Health Instrument Operational Division	13	" "
Manufacturing Administrative Division	4	" "
Medical Division	34	" "
Municipal, Real Estate & General Services	10	" "
Power Division	2	" "
Purchasing Division	50	" "
Plant Security & Services Divisions	23	" "
Project Engineering Divisions	2	" "
Stores Division	46	" "
Technical Service Division	22	" "
Transportation Division	19	" "
TOTAL	324	Standard Boxes

Records service provided for:	470	persons
Records reboxed and processed:	83	Standard storage cartons
Records cartons issued:	485	Standard storage cartons
Records destroyed:	0	
Filing services provided Purchasing and Stores Divisions:	291	Pieces (This material was filed into cartons already in storage)

Re-boxing of Time Cards was stopped due to cold weather.

1212149

Plant Security and Services Divisions

Records Control (Contin)

Work was done on establishing the uniform filing method in the following divisions:

Power Division - 100-B and 100-H Areas
Municipal Parks & Recreation Division
Municipal Accounting Division
Accountability Section - 300 Area
Maintenance Division - Superintendent and 300 Area
Municipal General Services Division
"P" Division - 100-DR Area

The new Records Service Center will be ready for occupancy on February 12, 1951 with the exception of 150 sections of shelving that has not been received.

Office Methods Section

	December	January
Printing orders received	508	525
Printing orders cancelled	20	30
New numbers assigned	168	157
Forms designed	60	49

Special Work Permit form R-208-DS and R-209-DS and the accompanying Time Sheets R-481-DS and R-651-DS, have been re-designed into one form - R-208-DS.R. The new form will now be applicable to all areas and will include timekeeping space. Paper requirements will be reduced one-half, a savings in printing costs of $354.00 per year and a reduction in filing space requirements of 18 lineal feet.

Rent statements being issued by North Richland Realty have been re-designed to eliminate a duplicate typing and mailing operation, which has resulted in an annual labor and material savings in the amount of $1,926.00.

Receiving Reports used by the Stores Division have been re-designed to effect a saving in printing costs of $460.00 per year. The addition of one extra copy of Material Exception Reports has reduced a hand written, serially numbered log down to a simple filing operation - an additional annual saving estimated at $780.00 per year.

Six payroll forms used by Atkinson & Jones (Contract Modification 21) were reduced to two forms, resulting in an annual savings of approximately $110.00.

Other miscellaneous one-time savings in printing and handling costs were estimated at $496.00.

Total estimated savings were $4,126.00 of which $3,630.00 will be on a recurring annual basis.

Plant Security and Services Divisions

PATROL AND SECURITY

General

On January 4, Operations Order I-2, Revision 3, Supplement 2, was issued in regard to the searching of all vendors' trucks at our perimeter barricades. Placing this procedure into effect will insure closer control of contraband and potential sabotage material entering the "controlled" area.

Two new posts were established in the 100-B and 200-E operations areas January 5 by Security Patrol. Zone No. 3, Outer Patrol, was established on the No. 1 and No. 3 shifts in the 100-B Area, and Zone No. 2, Outer Patrol, in the 200-E Area. These patrol cars are jeepsters and are equipped with 30 and 50 caliber machine guns and other necessary equipment. Post orders for these two posts are attached.

A memorandum was issued to all Division Heads and Superintendents on January 5 stating that effective January 8, the 277-S Building, Redox Area, would become classified as an "Exclusion" area, thus permitting the entrance of only "Q" cleared personnel.

Effective January 8, a new patrol post was established in the 200-W Operations area and it will be known as the 277-S badge house, 277-S doors and railroad gates. It will be manned by two men from 7:30 A.M. to 4:30 P.M. Monday through Friday and at other times when necessary. The purpose of this post is to control the entrance and exit of authorized persons to and from the 277-S Building and to open doors and railroad gates at the request of Construction personnel and supervision. On January 29, coverage was increased to cover swing shift, thus the post is manned from 7:30 A.M. to 12:00 midnight and 12:00 to 12:30 A.M. A double badge system was established to control the entrance of this area.

On January 8, a Field Security Inspection representative gave instructions and a demonstration to men assigned to the new cruiser cars at the Patrol Training School from 8:00 to 11:30 P.M., also to the No. 1 shift, 12:00 A.M. to 4:00 A.M. on January 9. Two men from each of the following areas attended each class: 100-B, 200-E and 300 Areas.

Special orders were issued January 10 to the 100-B, 100-F and 100-H Area Security Patrol Sections requiring a daily check of the Power Buildings and installations. In the 100-B Area, this check will be made twice each shift on both the No. 1 and No. 3 shifts, Monday through Fridays, and on all shifts Saturdays, Sundays and holidays. In the 100-F Area, this check will also be made twice each shift on both the No. 1 and No. 3 shifts, Monday through Fridays, and on all shifts Saturdays, Sundays and holidays. In the 100-H Area, this check will be maintained twice each No. 3 shift.

Four security checks of the Power Buildings in the 200-West Area were made during swing shift on January 10. In the future, this will be a routine procedure, and the Supply Clerk will make at least four checks on each swing and graveyard shift of the above specified buildings and immediate area; also frequent checks will be made by the inner area motor patrol.

Plant Security and Services Divisions

Patrol and Security General (Contin)

On January 13, from 12:00 A.M. to 5:30 A.M., representatives from the Security Field Inspection Section were training and demonstrating operating procedures to the last group of cruiser car patrolmen at the Patrol Training School.

Beginning January 15, another radio station, WGMB-13, was installed and placed into service at White Bluffs. It will be used by the United States Army station on the project and as communication between patrol cruisers and army personnel.

Operations Order I-232, Revision 2, was issued January 24, and pertains to mutilated or damaged passes where visual comparison can not be made.

A project estimate was requested on January 24 for the enlarging of the 200-West Main Operations badge house to four lanes. At the completion of the Redox Area, the day shift at 200-West will have over 900 employees. The present number of employees totals 600.

Effective January 25, supplemental security measures were issued relating to the termination of General Electric employees. Items included were: (1) security interview by representative of Employment Division, (2) execution of revised Security Termination Statement embracing applicable federal statutes, (3) checking Classified Files and the Blueprint Reproduction Section to ascertain that all classified material has been properly accounted for, (4) clearance with Top Secret custodians to assure accountability of Top Secret material and (5) surrender of Hanford identification material.

A staff meeting was held with all Patrol Lieutenants, Captains and Supervisors on January 26 to inform them of the protection agreements reached with officials of the Atomic Energy Commission. They were advised that Atomic Energy Commission Field Inspectors would spend considerable time with Field Lieutenants in order to be fully familiar with their problems and to assist in utilizing available patrol manpower to the best advantage. They were requested to start an immediate appraisal of the various patrol functions and then make revisions on present procedures where feasible.

On January 30, Operations Order I-235 was issued pertaining to the procedure to be followed in case perimeter and/or exclusion area fence line repairs are deemed necessary.

Operations Order I-246 was issued January 31 concerning Operations Orders being used as post orders.

A total of 679 pat searches were made during the month. Escorts handled totalled 541.

The Patrol Division made 23 ambulance runs for the Medical Division during the month.

Practice evacuations were held as follows:

100-H Area	1-3-51	8:24 A.M.
100-D	1-24-51	10:05 A.M.

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Plant Security and Services Divisions

Patrol and Security (Contin)

Practice blackouts were held as follows:

100-B	9:17 P.M.	1-21-51
100-D	9:23 P.M.	1-21-51
100-F	7:31 P.M.	1-21-51
100-D	3:32 A.M.	1-24-51
100-B	2:05 A.M.	1-25-51
100-H	8:03 P.M.	1-27-51
100-B	7:25 P.M.	1-29-51
100-D	2:01 A.M.	1-29-51
100-D	9:34 P.M.	1-31-51
100-B	10:25 P.M.	1-28-51

Practice mobilizations were held as follows:

100-B	Plan A	2:02 A.M.	1-11-51
100-B	Plan A	5:31 A.M.	1-23-51
100-B	Plan A	9:55 P.M.	1-26-51
100-D	Plan B	9:02 P.M.	1-21-51
100-D	Plan A	5:32 A.M.	1-23-51
100-D	Plan A	9:54 P.M.	1-26-51
100-D	Plan A	2:03 A.M.	1-11-51
100-D	Plan D	6:05 P.M.	1-14-51
100-F	Plan A	9:25 P.M.	1-9-51
100-F	Plan A	2:03 A.M.	1-11-51
100-F	Plan A	2:05 A.M.	1-12-51
100-F	Plan D	6:04 P.M.	1-14-51
100-F	Plan A	9:27 P.M.	1-22-51
100-F	Plan A	5:32 A.M.	1-23-51
100-F	Plan A	6:26 P.M.	1-29-51
100-F	Plan A	2:13 A.M.	1-30-51
100-H	Plan A	12:40 P.M.	1-7-51
100-H	Plan A	9:25 P.M.	1-9-51
100-H	Plan A	2:03 A.M.	1-11-51
100-H	Plan A	2:06 A.M.	1-12-51
100-H	Plan A	5:30 A.M.	1-23-51
100-H	Plan A	6:26 P.M.	1-29-51
200-E	Plan A	1:38 A.M.	1-7-51
200-E	Plan A	2:02 A.M.	1-11-51
200-E	Plan A	2:05 A.M.	1-12-51
200-E	Plan A	6:07 P.M.	1-15-51
200-E	Plan A	9:02 P.M.	1-21-51
200-E	Plan A	5:32 A.M.	1-23-51
200-E	Plan A	1:37 A.M.	1-24-51
200-E	Plan A	1:31 A.M.	1-25-51
200-E	Plan A	1:15 A.M.	1-29-51
200-E	Plan A	9:07 P.M.	1-29-51

Plant Security and Services Divisions

Patrol and Security (Contin)
Practice Mobilizations

200-W	Plan A	2:05 A.M.	1-12-51
200-W	Plan B	9:02 P.M.	1-21-51
200-W	Plan A	1:35 A.M.	1-24-51
200-W	Plan A	1:31 A.M.	1-25-51
200-W	Plan A	1:17 A.M.	1-29-51
300	Plan A	2:12 A.M.	1-30-51
300	Plan A	9:04 P.M.	1-29-51

Emergency Procedures for White Bluffs and vicinity were issued by Security Patrol during the month.

Official Blackout Procedures for the 100-F Area were issued by Security Patrol on January 5.

An evacuation procedure for the 234-5 Building was revised and issued on January 12.

General Blackout Procedures for the 200-East Operations Area were revised and issued by Security Patrol on January 25.

On January 18, in order to constantly review the effectiveness of the challenging system, the procedure was established whereby Patrol Sergeants from the 200 Areas would make occasional trips through the Power and process buildings in the 100 Areas in plain clothes and report their findings to the interested officials. These men will be unknown to workers in the 100 Areas, and it is felt that by this method, the challenging system can be more accurately evaluated.

The following is a resume of the Security Field Inspection Sections' activities:

Twelve two-hour classes were conducted at the Patrol Training School which completed the two months class on a "Review of File Cabinet checking and reporting procedures".

Twenty-three investigations and reports were written on possible compromised file combinations, "Restricted Data" unattended, etc.

Fifty-seven personal contacts were made relative to missing documents.

Thirteen physical searches were made in an attempt to locate missing documents.

Seventy-six documents which had been declared missing were located during this period.

Thirty-nine file cabinet combinations were changed during the month of January.

Plant Security and Services Divisions

Patrol and Security (Contin.)

During the month of January, three verbal warnings were issued by Security Patrol. There were no citation or warning tickets issued.

Security Patrol Training School activities:

Advance training for the Security Patrol members at the Patrol training school for the eight weeks period January 19 to March 15 will be divided into classroom and field instruction as outlined below:

Security Class: Topic will include discussion on the dangers of visual recognition check on individuals occupying an office during off shift hours and sabotage. Time - one hour.

Mobilization Plans for Industrial Areas: Will include the time as to when the various plans will be put into effect, whom to send, equipment and weapons and to assemble all available off-duty patrolmen. Time - one hour.

Security Patrol Policy: Will include a general discussion on the activities of the Security Patrol Division in regard to transfers, vacations and service dates. Time - one-half hour.

Health Class: Will include information on the subject of "sleep" as furnished by the Medical Division. Time - one-fourth hour.

Firearms Training: In following up and working with the areas on the new weapons training procedure, a special training period will be held at the Patrol Training School. This training period will include the proper handling, loading, unloading and firing of the .38 caliber handgun, the riot gun and the .45 caliber machine gun.

A complete review of instructions on the .38 caliber handgun covering the "Big Four" in hand gun shooting: grip, stance, sighting and trigger control.

Instructions will be given on defense shooting divided into two categories: deliberate shooting and snap shooting.

Thompson sub-machine gun .45 caliber. Training will include familiarization to the extent that the use of the weapon can operate the control levers without visual assistance will be stressed. Each man will be expected to be able to place the weapon on full automatic, single-fire, safe, or fire position without looking at the levers.

Security

There were 151 General Electric employees who received 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.

Plant Security and Services Divisions

Security (Contin)

There were 309 security meetings held and attended by 4,140 General Electric employees.

A representative of the Security Division showed the film "On Guard" at thirteen meetings, totalling 325 employees, during the month.

Work orders were issued to change the slogans on our two sets of "Burma Shave" type signs in the plant area with the following new slogans:

"Another Eight-and Plans All Set-Have a Good Time-But Don't Forget-Security"

"The Secret-of Our Success-May be the Success-of Our Secrets-Security"

Eighty-five security posters were posted in the various plant areas, each one bearing the same inscription "If it's classified, Don't Talk, Observe Security Regulations". The picture of a parrot is in the background.

Security Bulletin No. 59 entitled "No Reason for Confusion" was issued by the Security Division on January 12.

One-hundred employees of the General Electric Company received a "Q" orientation talk from representatives of the Security Division during the month of January.

Clearances

There were 870 badge transactions completed during January including "A", "B" and "C" and temporary type badges. This makes a total of 35,072 to date.

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HANFORD WORKS
General Electric Company
Richland, Washington

REPORT OF VISITORS FOR PERIOD ENDING JANUARY 31, 1951

Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class.	Restricted Data Unclass	Areas
MEDICAL DIVISION							
I. Visitors to this Works							
S. T. Cantril Tumor Institute Swedish Hospital Seattle, Washington	Medical consultation	W. D. Norwood P A. Fuqua	12-12-51	1-13-51	X		
DESIGN AND CONSTRUCTION DIVISION							
I. Visitors to this Works							
P. C. Bogiages General Eng. & Con. Lab. Schenectady, New York	Consultation regarding installation of M-760 line and 432 Project	G. Thayer	1-6-51	1-9-51	X		200-W 231 234 235
K. L. Boring General Eng. & Con. Lab. Schenectady, New York	Installation consultation on 432 Project	G. Thayer	1-23-51	2-10-51	X		200-W 234 235
N. H. Wood General Eng. & Con. Lab. Schenectady, New York	Installation consultation on 432 Project	G. Thayer	1-23-51	2-22-52	X		200-W 234 235
A. J. Curtis Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-349, design of pile	J. R. Kelly W. C. Royce J. L. Boyd	1-31-51	1-31-51		X	300 XXX

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
L. L. Ketchan Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-349, design of pile	J. R. Kelly W. C. Royce J. L. Boyd	1-31-51	1-31-51		X	300 XXX
E. G. MacKay Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-349, design of pile	J. R. Kelly W. C. Royce J. L. Boyd	1-31-51	1-31-51		X	300 XXX
B. S. Malin Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-349, design of pile	J. R. Kelly W. C. Royce J. L. Boyd	1-31-51	1-31-51		X	300 XXX
C. C. Starratt Charles T. Main, Inc. Boston, Massachusetts	Liaison on sub-contract G-349, design of pile	J. R. Kelly W. C. Royce J. L. Boyd	1-31-51	1-31-51		X	300 XXX
II. Visits to other Installations							
F. W. Braun to: Willamette Iron & Steelo Portland, Oregon	Vessels for Phase I, project C-362	W. A. Larsen	1-1-51	1-3-51		X	
F. W. Braun to: Kellex Corporation New York, New York	Engineering consultation on Project C-362	W. C. Barnholt	1-17-51	1-25-51	X		
G. S. Cochrane to: Gen. Eng. & Con. Lab. Schenectady, New York	Liaison work in connection with 432 project	D. H. Marquis	1-8-51	1-24-51	X		
W. H. Clymer to: Knolls Atomic Power Lab. Schenectady, New York	Interview for employment	H. E. Scott	1-18-51	1-19-51	X		
L. O. Hasselblad to: Bremerton Navy Yard Bremerton, Washington	Contact vendor to expedite critical material for C-362 project	S. A. Allison	1-2-51	1-3-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
L. O. Hasselblad to: Bremerton Navy Yard Bremerton, Washington	Contact vendor to expedite critical material for C-362 project	S. A. Allison	1-15-51	1-17-51		X	
L. O. Hasselblad to: Kellex Corporation New York, New York	Expedite design information needed in the field	G. A. Vincent W. C. Barnholt	1-30-51	2-6-51	X		
R. C. Hollingshead to: Johnston Pump Company Los Angeles, California	Design consultation	Mr. Brown	1-15-51	1-16-51		X	
R. C. Hollingshead to: Vulcan Copper & Supply Co. Cincinnati, Ohio	Design consultation	Mr. Rommel	1-16-51	1-17-51		X	
R. C. Hollinghead to: A. O. Smith, Co. Milwaukee, Wisconsin	Design consultation	Mr. Best	1-17-51	1-17-51		X	
R. C. Hollingshead to: Sterns-Rogers Company Denver, Colorado	Design detail discussion	O. L. Clow	1-31-51	1-31-51		X	
A. J. Karnio to: Gen Eng. & Con. Lab. Schenectady, New York	Consultation regarding design and installation of equipment on 432 project	D. H. Marquis	1-10-51	1-17-51	X		
R. F. Klein to: Pachmayr Gun Works Los Angeles, California	Consultation on "C" and "D" machines	D. Wood	1-16-51	1-19-51		X	
J. A. Larkin to: Kellex Corporation New York, New York	Check bulk steel orders	W. C. Barnholt	1-17-51	1-25-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. A. Larkin to: U.S. Steel Supply Company Pittsburgh, Pennsylvania	Coordinate shipment of materials to fabricators	- -	1-26-51	1-27-51		X	
R. C. Mann to: Kellex Corporation New York, New York	Consultation on instrumentation for Project C-362	J. S. Atwood J. S. Atwodd	1-29-51 1-2-51	2-15-51 1-17-51	X X		
R. C. Mann to: Foxboro Instrument Company Foxboro, Massachusetts	For approval of prints	J. G. Dodson	1-18-51	1-19-51		X	
R.C. Mann to: Hathaway Instrument Co. Denver, Colorado	Consultation on instrumentation	- -	1-29-51	2-15-51		X	
R. C. Mann to: Potter Aeronautical Co. Newark, New Jersey	Consultation on instrumentation	- -	1-29-51	2-15-51		X	
H. M. Parker to: Pacific Cost Engineering Alameda, California	Approve substitution of sample boxes	Mr. Quinn	1-29-51	2-1-51		X	
J. S. Parker to: Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on 432 Project	F. E. Crever	1-10-51	1-17-51	X		
J.S. Parker to: Kellex Corporation New York, New York	Consultation on status review of Projects C-362 and C-187-D	G. White, Jr. B. R. Prentice	1-17-51	1-19-51	X		
E. L. Reed to: General Electric Ind. Eng. Division Schenectady, New York	Consultation regarding 100-G Water plant components	W. C Bloomquist	1-8-51	1-17-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. L. Reed to: Apparatus Department General Electric Company Schenectady, New York	Consultation regarding 100-G water plant components	G. B. Warren	1-8-51	1-17-51		X	
E. L. Reed to: Roberts Filter Company Philadelphia, Pennsylvania	Consultation regarding 100-G water plant components	J. W. Burton F. R. Haddock	1-8-51	1-17-51		X	
E. L. Reed to: Babcock and Wilcox New York, New York	Consultation regarding 100-G water plant components	T. S. Sprague	1-8-51	1-17-51		X	
J. L. Swanson to: Kellex Corporation New York, New York	Check bulk steel orders in relation to equipment at Kellex	G. White, Jr. W. C. Barnholt	1-17-51	1-24-51	X		
J. W Underwood to: Willamette Iron & Steel Portland, Oregon	Engineering consultation	D. S. Holoman	1-9-51	1-11-51		X	
W. B. Webster to: Kellex Corporation New York, New York	Design conference on Project C-362	J. S. Atwood	1-2-51	1-12-51	X		
T. Williams to: Kellex Corporation New York, New York	Design conference on Project C-362	J. S. Atwood	1-2-51	1-12-51	X		

ELECTRICAL DIVISION

I. Visits to other Installations

H. A. Carlberg to: Knolls Atomic Power Lab. Schenectady, New York	Maintenance and service	B. R. Prentice	1-24-51	1-24-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
EMPLOYEE AND COMMUNITY RELATIONS DIVISION							
I. Visits to other Installations							
H. E. Callahan to: Mound Laboratory Miamisburg, Ohio	Attend sixth meeting of AEC personnel Information Panel	J. Z. Zack	1-8-51	1-10-51	X		
HEALTH INSTRUMENT DIVISIONS							
I. Visitors to this Works							
G. Somson Idaho Operations Office Idaho Falls, Idaho	Attend training course in repair of health physics instruments	W. Singlevich	1-21-51	1-27-51	X		
II. Visits to other Installations							
H M. Parker to: Argonne National Lab. Chicago, Illinois	Attend health physics information conference	J. E. Rose	1-15-51	1-19-51	X		
C. C. Gamertsfelder to: Argonne National Lab. Chicago, Illinois	Attend health physics information conference	J. E. Rose	1-15-51	1-19-51	X		
M. L. Barad to: College of Engineering New York University New York, New York	Visit AEC wind tunnel	G .H. Strom	1-26-51	1-29-51		X	
J. W. Healy to: Argonne National Lab. Chicago, Illinois	Attend health physics information conference	J. E. Rose	1-15-51	1-19-51	X		
J. H. Rodiske to: Brookhaven National Lab. Upton, L.I., New York	Botanical and soil science investigations	Dr. Singleton	1-29-51	2-9-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. R. Portch to: Las Vegas, Nevada	Assistance to AEC in Las Vegas tests	- -	1-18-51	1-18-51			
D. P. Schively to: Las Vegas, Nevada	Assistance to AEC in Las Vegas tests	- -	1-18-51	1-18-51			
PROJECT ENGINEERING DIVISIONS							
I. Visitors to this Works							
R. C. Mackeown Gen. Eng. & Con. Lab. Schenectady, New York	Consultation on M-760-2 Line P-10 X Project	W. R. Folts	1-4-51	1-15-51	X		100-B 108
C. D Carroll Gen. Eng. & Con. Lab. Schenectady, New York	Conference on design freeze on plex metal extraction Line #2	W. R. Folts F. A. Bowman	1-29-51	2-3-51	X		100-B 108
R. A. Koehler Gen. Eng. & Con. Lab Schenectady, New York	Conference on design freeze on plex metal extraction Line #2	W. R. Folts F. A. Bowman	1-29-51	2-3-51	X		100-B 108
H. W. Bousman Gen. Eng. & Con. Lab. Schenectady, New York	Conference on design freeze on plex metal extraction Line #2	W. R. Folts F. A Bowman	1-29-51	2-3-51	X		100-B 108
II. Visits to other Installations							
W. R. Folts to: Gen Eng. & Con. Lab. Schenectady, New York	Discussion of P-10-X equipment	C. D. Carroll	1-14-51	1-16-51	X		
W R Folts to: Chrysler Corporation Detroit, Michigan	Discussion of air raid sirens	J. C. Hammelof	1-17-51	1-17-51		X	

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. R Felts to: Hevi-Duty Electric Co. Milwaukee, Wisconsin	Discussion of furnaces	N. C. Bloyo	1-18-51	1-18-51		X	
D. M. Brown to: L. H. Hoffman Company Portland, Oregon	Inspection of buildings constructed with pre-cast concrete wall slabs	L H. Hoffman B. Hoffman D. Doring	1-19-51	1-19-51		X	
H. C. Riches to: L. H. Hoffman Company Portland, Oregon	Inspection of buildings constructed with pre-cast concrete wall slabs	L. H. Hoffman B. Hoffman D. Doring	1-19-51	1-19-51		X	
E. S Bell to: L. H. Hoffman Company Portland, Oregon	Inspection of buildings constructed with pre-cast concrete wall slabs	L. H Hoffman B. Hoffman D. Doring	1-19-51	1-19-51		X	
C. F. Gabel to: L. H. Hoffman Company Portland, Oregon	Inspection of buildings constructed with pre-cast concrete wall slabs	L. H. Hoffman B. Hoffman D. Doring	1-19-51	1-19-51		X	
M. O. Triem to: L. H. Hoffman Company Portland, Oregon	Inspection of buildings constructed with pre-cast concrete wall slabs	L H Hoffman B. Hoffman D. Doring	1-19-51	1-19-51		X	
W. L. Sapper to: U.S. Atomic Energy Comm. Washington, D. C.	Discuss matters pertinent to priorities and procurement of materials	Mr. Bloch	1-4-51	1-12-51	X		

MANAGEMENT

I. Visitors to this Works

R. H. Landes Sandia Corporation Los Alamos, New Mexico	Discuss salary administration	J. R. Rue	1-22-51	1-23-51	X		

II Visits to other Installations

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
D. W. McLonegan to: Knolls Atomic Power Lab. Schenectady, New York	Review prospective technical needs and education program	K. H. Kingdon D. E. Irwin	1-11-51	1-12-51	X		
MANUFACTURING MANAGEMENT							
I. Visitors to this Works							
V. F. Hanson E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consultation on instrumentation	C. N. Gross W. K. MacCready W. M. Mathis	1-22-51	1-27-51	X		
H. J. Bowman E. I. du Pont de Nemours & Co. Wilmington, Delaware	Consultation on instrumentation	C. N. Gross W. K. MacCready W. M. Mathis	1-22-51	1-27-51	X		
P. Permar E. I. du Pont de Nemours & Co Wilmington, Delware	Consultation on instrumentation	C.N. Gross W. K. MacCready W. M. Mathis	1-22-51	1-27-51	X		
F. A. Danewood E. I. du Pont De Nemours & Co. Wilmington, Delaware	Assist on canning tests	C N. Gross W. A Blanton	1-29-51	2-2-51	X		
POWER DIVISION							
I. Visits to other Installations							
H F. Measley to: General Electric Company Schenectady, New York	Attend conference with Ind. Eng. Division relative to expansion facilities	W. C. Bloomquist	1-8-51	1-11-51	X		
"S" DIVISION							
I. Visits to Other Installations							

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
T. Prudich to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Consultation on DP West and 234-5 operation	I. B. Venable R. D. Baker	1-22-51	1-26-51	X		
V. R. Chapman to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Consultation on DP West and 234-5 operation	I. B. Venable R. D. Baker	1-22-51	1-26-51	X		
PURCHASING AND STORES DIVISION							
I. Visitors to this Works							
A. J. Woodhouse Ballard Transfer Seattle, Washington	Deliver load of material on order HW 74757-M	H. H. Hart	1-5-51	1-5-51		X	200-W 241-T
D. L. Navin Reliable Transfer Seattle, Washington	Deliver load of material on order HW 74757-M	H. H. Hart	1-5-51	1-5-51		X	200-W 241-T
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver load of material cylinders	H. H. Hart	1-8-51	1-8-51		X	100-F 105 100-D 105
H. L. Halverson United Truck Lines Kennewick, Washington	Deliver load of material on order 71672-M	H. H. Hart	1-9-51	1-9-51		X	200-W 271-T
M. Brill Lee & Estes Kennewick, Washington	Deliver load of material on order HWO 9617 and HW 70910	H. H Hart	1-15-51	1-15-51		X	200-E XXX
D. A. Westermeyer Consolidated Freightways Kennewick, Washington	Deliver load of material on order HW 75250	H. H. Hart	1-16-51	1-16-51		X	100-B 105

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
W. Frouhling United Truck Lines Kennewick, Washington	Deliver load of material on order AEC 55863-M	H. H. Hart	1-23-51	1-23-51		X	300 303-J
B. Tuomey Lee & Estes Pasco, Washington	Deliver load of material on order HW 71666	H. H. Hart	1-25-51	1-25-51		X	100-D XXX
H. Woody Lee & Ester Pasco, Washington	Deliver load of material on order HW 71666	H. H. Hart	1-25-51	1-25-51		X	100-H XXX
M Brill Lee & Estes Kennewick, Washington	Deliver load of material on order H_W 71666	H. H Hart	1-25-51	1-25-51		X	100-H XXX
D. A. Westermeyer Consolidated Frieghtways Kennewick, Washington	Deliver load of material on order HW 75270-M	H. H. Hart	1-26-51	1-26-51		X	100-B 105 100-D 105
J. Stanich U.S. Pipe & Mfg. Company San Francisco, California	Repair Pipe Bender	O. C. Hardigg	1-22-51	1-26-51		X	
II. Visits to other Installations							
W. W. Koenig to: U. S. Atomic Energy Comm. Washington, D. C.	Attend meeting with AEC officials with respect to Hanford graphite requirements	N. Carruthers	1-15-51	1-17-51	X		
M. Schulze, Jr. to: Argonne National Lab. Chicago, Illinois	Discuss plate glass viewer	H L. Hull	1-19-51	1-26-51	X		
J. C. Hamilton to: Southwest Welding Co. Alhambra, California	Inspection	Mr. Lindmo	1-8-51	1-10-51		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: Standard Steel & S.W. Eng. Los Angeles, California	Inspection	Mr Love	1-11-51	1-11-51		X	
J. C. Hamilton to: Southwest Welding Co. Alhambra, California	Inspection	Mr. Lindmo	1-12-51	1-13-51		X	
C. P. Lawson to: Southwest Welding Co. Alhambra, California	Expedite deliver of fabricated vessels	R. Edens A. Tiegten	1-8-51	1-13-51		X	
R. J. Gandy to: Kemmerer Coal Company Kemmerer, Wyoming	Contact contract vendor of coal	Mr Sorensen	1-10-51	1-10-51		X	
R. J Gandy to: Storns-Rogers Company Denver, Colorado	Expedite engineering equipment orders	Mr. Clow	1-11-51	1-12-51		X	
R. J. Gandy to: Kemmerer Coal Company Kemmerer, Wyoming	Contacting for Hanford coal supply	L.M. Pratt B. P. Manley	1-13-51	1-15-51		X	
TECHNICAL DIVISIONS							
I. Visitors to this Works							
D. H. Ahmann Knolls Atomic Power Laboratory Schenectady, New York	Liaison work	D. W. Pearce W. K. Woods J C. L. Chatten W. M. Harty	1-15-51	1-18-51	X		300 3706 321 100-B 108
C. E. Stilson Nuclear Energy for the Propulsion of Aircraft Oak Ridge National Lab. Oak Ridge, Tennessee	Consult and work on in-pile creep test	J. B. Lambert	1-1-51	1-20-51	X		100-D 105 101 100-H 105 300 3706

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
H. E. Robertson Nuclear Energy for the Propulsion of Aircraft Oak Ridge National Lab. Oak Ridge, Tennessee	Consult and work on in-pile creep test	J B. Lambert R. E. Guthens	1-5-51	1-22-51	X		101 100-D 105 100-H 105
P.C. Bogiages Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	1-3-51	1-13-51	X		100-B 105 108 300 3706
G. S. Monk Argonne National Laboratory Chicago, Illinois	Discuss hot lab escalation	L D. Turner	1-8-51	1-9-51	X		101 100-B 105 300 3706
C. D. Carroll Gen Eng. & Con. Lab. Schenectady New York	P-10 consultation	H. F. Zuhr	1-29-51	2-2-51	X		200 W 234 235 100-B 105 108 300 3706
R H Koehler Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	1-29-51	2-2-51	X		200-W 234 235 100-B 105 108 300 3706
H. W. Bousman Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	H. F. Zuhr	1-29-51	2-2-51	X		200-W 234 235 100-B 105 108 300 3706
R. A. Hanson International Business Machines Richland, Washington	Service IBM equipment	T. W Hauff P. M. Thompson	1-2-51 1-5-51 1-9-51 1-12-51 1-30-51	1-3-51 1-5-51 1-9-51 1-12-51 1-30-51		X	101 101 101 101 101

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. F. Flagg Knolls Atomic Power Lab. Schenectady, New York	Preparation of Redox analytical manual and separations chemistry	F W. Albaugh A. H. Bushey	1-22-51	1-24-51	X		300 3706 200-W 235 234
R. C Warren International Business Machines Richland, Washington	Service IBM equipment	P. M. Thompson	1-5-51	1-5-51	X		101
G. W. Watt University of Texas Austin, Texas	Research and development consultation	R. H. Beaton	1-6-51	1-12-51	X		100-B 108 200-E 221-B 200-W 271-U 271-T, 231, 234, 235 300 3706, 32
R. L. Cummerow Gen Eng. & Con. Lab. Schenectady New York	Discuss thermal conductivity	P. H Reinker	2-4-51	2-5-51	X		100-B 105 300 3706
II. Visits to other Installations							
R. J. Brouns to: Knolls Atomic Power Lab. Schenectady, New York	Confer on P-10 analytical chemistry	C. Mannal J. Marsden	1-2-51	1-4-51	X		
R. J. Brouns to: U.S. Bureau of Standards Washington, D. C.	Confer on P-10 analytical chemistry	F. O. Mohler R. D. Huntson	1-5-51	1-5-51	X		
R. J. Brouns to: U.S. Atomic Energy Com. Washington, D. C.	Discuss P-10 analytical sample transfer	P.W. McDaniel	1-5-51	1-5-51	X		
E. M. Kinderman to: Oak Ridge National Lab. Oak Ridge, Tennessee	Discuss recent analytical developments	M. T. Kelley	1-25-51	1-26-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
E. M. Kinderman to: Louisiana State Univer. Baton Rouge, Louisiana	Attend fourth annual symposium	- -	1-29-51	1-31-51		X	
P.E. Collins to: Los Alamos Scientific Lab. Los Alamos, New Mexico	Discussions on 234-5 operations	I. B. Venable R. D. Baker	1-22-51	1-27-51	X		
F. J. Leitz, Jr. to: E. I. du Pont de Nemours Wilmington, Delaware	Consultations on stack gas problems	F. S. Chambers	1-22-51	1-24-51	X		
F. J. Leitz, Jr. to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultations on stack gas problems	F. L. Steahly	1-24-51	1-25-51	X		
F. J. Leitz, Jr. to: Argonne National Lab. Chicago, Illinois	Consultations on stack gas problems	S. Lawroski	1-24-51	1-26-51	X		
C. A. Rohrmann to: E. I. du Pont De Nemours Wilmington Delaware	Consultations on stack gas problems	F. S. Chambers	1-22-51	1-24-51	X		
C. A. Rohrmann to: Oak Ridge National Lab Oak Ridge, Tennessee	Consultations on stack gas problems	F. L.Steahly	1-24-51	1-25-51	X		
C. A. Rohrmann to: Argonne National Lab. Chicago, Illinois	Consultations on stack gas problems	S. Lawroski	1-24-51	1-26-51	X		
R. E. Smith to: E. I. du Pont de Nemours Wilmington, Delaware	Consultations on stack gas problems	F. S. Chambers	1-22-51	1-24-51	X		
R. E. Smith to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultations on stack gas problems	F. L. Steahly	1-24-51	1-25-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
R. E. Smith to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultations on stack gas problems	F. L. Steahly	1-22-51	1-24-51	X		
R. E. Smith to: Argonne National Lab. Chicago, Illinois	Consultations on stack gas problems	S. Lawroski	1-24-51	1-25-51	X		
R. E. Tomlinson to: E. I. du Pont de Nemours Wilmington, Delaware	Consultations on stack gas problems	F.S. Chambers	1-24-51	1-26-51	X		
R. E. Tomlinson to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultations on stack gas problems	F. L. Steahly	1-22-51	1-24-51	X		
R. E. Tomlinson to: Argonne National Lab. Chicago, Illinois	Consultations on stack gas problems	S. Lawroski	1-24-51	1-26-51	X		
B. Weidenbaum to: E. I. du Pont de Nemours Wilmington, Delaware	Consultations on stack gas problems	F. S. Chambers	1-22-51	1-24-51	X		
B. Weidenbaum to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultations on stack gas problems	F. L. Steahly	1-24-51	1-25-51	X		
B. Weidenbaum to: Argonne National Lab. Chicago, Illinois	Consultations on stack gas problems	S. Lawroski	1-24-51	1-26-51	X		
E. A. Eschbach to: Argonne National Lab. Chicago, Illinois	Technical liaison	C. E. Stevenson F. G. Foote	1-6-51	1-9-51	X		

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Name - Organization	Purpose of Visit	Person Contacted	Arrival	Departure	Restricted Data Class	Restricted Data Unclass	Areas
J. B. Lambert to: Argonne National Lab. Chicago, Illinois	Consultation on ANL-140	A. Amorosi	1-23-51	1-24-51	X		
J. B. Lambert to: Oak Ridge National Lab. Oak Ridge, Tennessee	Consultation on new experimental work	D. S. Billington	1-25-51	1-26-51	X		
A. R. Matheson to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	J. Marsden	1-2-51	1-5-51	X		
W. L. Schalliol to: Argonne National Lab. Chicago, Illinois	Technical liaison	C. E. Stevenson F. G. Foote	1-8-51	1-9-51	X		
H. F. Zuhr to: Knolls Atomic Power Lab. Schenectady, New York	P-10 consultation	J. Marsden	1-6-51	1-12-51	X		
H. F. Zuhr to: Gen. Eng. & Con. Lab. Schenectady, New York	P-10 consultation	D. H. Marquis H. W. Bousman	1-8-51	1-12-51	X		

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PURCHASING AND STORES DIVISIONS

SUMMARY

JANUARY 1951

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

	Total Personnel as of 12/31/50	Total Personnel as of 1/31/51	Net Change
Exempt	69	71	+2
Non-Exempt	277	281	+4
Totals	346	352	+6

The Administrative Assistant to the Manager resigned as of January 31, 1951 to accept employment elsewhere.

The work load in the Purchasing Division reached a new high. 4,357 purchase requisitions were received as compared to 3,230 in the previous month and 2,870 orders were placed as compared to 1,896 the previous month.

The dollar value of all orders placed during the month amounted to $2,772,690.22 of which $1,399,101.32 was for construction materials.

According to best information available at month end, 90% of the major equipment items for Redox and TBP were on order.

Difficulties were encountered in maintaining shipping schedules of bulk steel orders and at month end it appeared as though some steel originally scheduled for January shipment would not be shipped until February and March.

Shipments of stainless steel from the Pittsburgh warehouse totaled 253,000 pounds. Six additional orders for stainless steel were placed during the month.

A Resident Inspector and Expediter were established at the Southwest Welding and Manufacturing plant at Alhambra, California, for the purpose of maintaining a closer control in the scheduling of equipment on our orders placed with this company.

Arrangements were made to assume responsibility for inspection of materials upon receipt at the plant site. An engineer representative of the Inspection Section will be located in construction areas for this purpose.

Negotiations were started to increase the quantities on several essential material contracts due to accelerated production schedules.

Ten requests for priority assistance in obtaining capital equipment were received from as many of our suppliers. The reason given by them was that the equipment was necessary to produce material on our orders.

PURCHASING AND STORES DIVISIONS

SUMMARY

3,987 purchase requisitions were processed through screening with the result that 2,376 items were supplied from project inventories thus obviating the necessity for purchase from outside sources.

Materials valued at $10,206.07 were declared excess from operations inventories. This was accomplished by the discontinuance of 1,188 obsolete items.

Materials valued at $375,010.27 were disbursed from the 10.20 Account, Construction Materials held for Possible Future Use, to construction forces. This represents a substantial increase in such disbursements over the previous month.

The project proposal for re-warehousing graphite in the 186 Building was held up indefinitely due to the possibility that additional construction might be undertaken which would require the use of this material.

A letter was received from the Commission directing that all excess lists be cancelled.

A letter was received from the Commission requesting that steps be taken to prevent excessive accumulation of materials. A meeting was held with division representatives to discuss ways and means of accomplishing the objectives outlined by the Commission. Satisfactory progress was being made at month end.

The evacuation of several North Richland Warehouses to provide space for the Army Industrial Area was progressing satisfactorily at month end.

Plans and specifications for the proposed Central Warehouse Facilities together with an appropriation request for engineering funds were completed.

The work load of the Traffic Section continued to increase.

A wildcat switchmen strike throughout the nation hampered the flow of materials to the project; however, at month end there was no cause for alarm.

The Traffic Manager attended a meeting in San Francisco with Government and Motor Carrier representatives to discuss government traffic in western territory.

As a result of rate reductions obtained from the carriers a total savings in freight charges for the month amounted to $23,298.26.

PURCHASING AND STORES DIVISIONS

STAFF SECTION

January, 1951

GENERAL

As requested by the Cost Section, General Accounting Division, a statement of the personnel in the Surplus, Salvage, and Scrap Section rendering service to the Design & Construction Divisions and the Manufacturing Divisions to be charged to Account 10.30, Reserve for Inventory Adjustment, was submitted.

The estimated number of personnel, by job classification, in the Purchasing Division rendering service to the Design & Construction Divisions was submitted to the Cost Section, General Accounting Division, as requested.

The 3rd and 4th quarters FY1951 budget review of personnel forecasts was submitted to the General Accounting Division. Estimated personnel to be assessed to Municipal, Real Estate and General Services Divisions were entered on this budget to provide, as accurately as possible, a basis for charges to those divisions which are currently on a fixed basis. Special notation was made regarding increased travel and telephone expense anticipated due to increased expediting and inspection work.

The current inventory of the 904 Account, Spare Parts, is revealing some items which have not been recorded previously. These items are being listed for inclusion in regular inventories.

Returnable Container, Stores Material Transfer, and Stores Control Section procedures were kept up to date through initiation of revisions.

The Screening Procedure for all Stores Sections has been completed and the Procedure for the Shipping Section of the Surplus, Salvage and Scrap Section has been developed.

PERSONNEL

	As of 12-31-50			As of 1-31-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Cost Budget Control	2	2	4	1	-	1	-1	-2	-3
Methods - Procedures Inventory & Audit	2	10	12	2	12	14	0	+2	+2
TOTALS	4	12	16	3	12	15	-1	0	-1

SAFETY AND SECURITY

Safety and Security Meetings Scheduled - 1
Number Attending ---------- 12

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PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION
JANUARY, 1950

The work load in the Division reached a new high in January. 4357 purchase requisitions were received and assigned as compared with 3230 in December. Orders placed totaled 2870 as compared with 1896 the previous month. Requisitions on hand at the end of the month had increased from 1332 on December 31, to 1428 on January 31.

The dollar value of orders placed during January amounted to $2,772,690.22 of which $1,399,101.32 was for construction materials. Of 427 construction requisitions received during the month, 33 were for projects C-187-D and C-187-E and 242 requisitions for projects C-361 and C-362. The balance of the construction purchase requisitions were for construction MS Stores material and miscellaneous construction supplies.

According to known requirements, approximately 90% of the major equipment items for Redox and TBP are on order. However, final delivery of equipment is being delayed because of the tight material supply situation, particularly stainless steel and electrical material. Orders placed with Steel Mills during the third quarter of 1950 originally scheduled for shipment from the mill during the fourth quarter 1950 and the first quarter 1951 will not be completed until the second quarter 1951. Also approximately 10% of coupons selected for corrosion tests are failing to meet our minimum corrosion requirement.

An announcement of the possibility of building a new production facility increased the volume of requests from the field for information regarding the availability and delivery time required for the procurement of the necessary material.

A resident expeditor and inspector were established at the Southwest Welding & Manufacturing Company plant, Alhambra, California, for the purpose of maintaining closer control over a number of orders for fabricated vessels held by this company. This arrangement is working out very satisfactorily and considerable progress has been made towards the completion of the vessels on order.

The Purchasing Division was requested to be responsible for inspection of materials upon receipt at the plantsite. To accomplish this function, arrangements have been made to have an engineer representative of the Inspection Section located in the construction areas of the Separation Division projects. This man will be responsible for the engineer's approval on equipment purchased by the General Electric Company and received for the D&C Divisions.

The large backlog of corrosion samples waiting corrosion tests at the end of December has been considerably reduced during January and the situation is well in hand in that corrosion testing is again on a current basis.

The number of alterations resulting from design changes and material shortages is responsible for part of the extremely heavy work load in the division. 135 alterations were processed on construction orders during the month. 113 return orders were also issued which in many cases necessitated reopening of the purchase orders and the establishment of new prices.

PURCHASING AND STORES DIVISION
PURCHASING DIVISION

Negotiations were begun to increase the quantities on the following essential material contracts. These contracts were placed before production schedules were increased and consequently do not cover a sufficient quantity of materials to meet our present high production rate.

Sodium Bismuthate - General Chemical Division - To be increased from 80,000 lbs. to 120,000 lbs. Period Covered - August 1, 1950 - July 31, 1951.

Nitric Acid - E. I. dePont deNemours & Company - To be increased from 9,000,000 lbs. to 12,000,000 lbs. Period Covered May 1, 1950 - April 30, 1951.

Soda Ash - West End Chemical Company - To be increased from 3,600,000 lbs. to 5,200,000 lbs. Period Covered July 1, 1950 - June 30, 1951.

Six additional bulk stainless steel orders were placed during the month of January. Shipments of stainless steel from the Pittsburgh warehouse to vessel fabricators totaled 253,000 lbs.

The National Production Authority issued revised controls on Cadmium, Tin, Nickel, Steel and Aluminum during the month. We are now required to furnish our suppliers with certifications on Cadmium, Copper and Tin. These regulations specifically list the purpose for which the basic metals and manufactured products containing these metals may be used. The impact of these new regulations are being discussed with operating and design personnel to determine the necessity of asking for exemption from parts of these regulations.

Ten requests for priority assistance to obtain capital equipment for our suppliers were handled during the month.

General Ceiling Price Regulations were issued during the month. These include ceiling prices for the sale of manufactured products and scrap materials.

PERSONNEL

	As of 12-31-50			As of 1-31-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	1		1	1	1	2		+1	+1
Purchasing	14	17	31	14	23	37		+6	+6
Expediting	8	11	19	9	11	20	+1		+1
Inspection	21	4*	25*	22	5*	27*	+1	+1	+2
Clerical	1	18	19	1	21	22		+3	+3
Priorities	1	2	3	1	2	3			
TOTALS	46	52	98*	48	63	111*	+2	+11	+13

* The above figures do not include 4 rotational trainees assigned to Inspection.

SAFETY AND SECURITY

Safety and Security Meetings Schedule 4
Number of employees attending - - - 88
Minor Injuries - - - - - - - - 0

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PURCHASING AND STORES DIVISIONS
PURCHASING DIVISION

STATISTICS	G	D	TOTAL
Requisitions on hand 1-1-51 (includes 104 assigned to Gov't.)	1139	193	1332
Requisitions assigned during January	3665	692	4357
Requisitions placed during January	3688	573	4261
Requisitions on hand 1-31-51 (includes 190 assigned to Gov't.)	1116	312	1428

	NUMBER	VALUE	
HW Orders Placed	2120	$1,553,782.05	
HW Alterations placed	177	180,193.15	(Credit
Total	2297	$1,373,588.90	
HWC Orders Placed	438	$1,566,773.22	
HWC Alterations placed	135	167,671.90	(Credit
Total	573	$1,399,101.32	
AEC Orders placed	163	$ 312,955.84	
DC Orders placed	30	52,085.31	

Government Transfers	OR	ORC	TOTAL
	0	0	0

Return Orders Issued	NUMBER
	113

Dollar Value of Orders to date to which Priority Rating was applied:

	4th Quarter 1950	1st Quarter 1951	2nd Quarter 1951	3rd Quarter 1951
DO-40	$ 1,901,593.98	$ 1,067,703.52	$ 311,963.29	$ 101,200.68
DO-41*	22,546,844.19	1,349,801.98		

* Includes Contract Section, Design & Construction Divisions

OPEN ORDERS

HW Orders	1367
HWC Orders	803
Government Orders	64

Number of New Orders requiring inspection during month	65
Number of Orders requiring inspection completed during month	16
Number of Orders outstanding requiring inspection at month's end	338
Number of HW Orders expedited (Routine)	710
Number of HW Orders expedited (Special Requests)	280
Number of HWC Orders expedited	750

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PURCHASING AND STORES DIVISIONS
STORES DIVISION
JANUARY, 1951

GENERAL

3987 purchase requisitions were processed through screening and 2,376 items were furnished from plant sources. 21 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 $247,913.51. Receipts of incoming shipments remained relatively high for the month reflecting a total of 4,878 receiving reports issued.

Materials valued at $10,206.07 were declared excess from active inventories during the month. This was accomplished by the discontinuance of 1188 obsolete stock items.

Materials valued at $375,010.27 involving 21 captions in the 10.20 Account (Construction Held Material) were disbursed to construction forces during the month. In addition to the foregoing, materials valued at $47,960.38 were withdrawn for operations' forces and materials valued at $28,953.67 were shipped to other government agencies as directed by the Commission.

As a result of recent developments, the project proposal for rewarehousing graphite in the 186-D Building, Clearwell Section, was not presented to the A & B Committee during January. The foregoing project will be substantially modified or cancelled in its entirety.

A letter was received from the Commission requesting that all excess lists be cancelled and that the property thereon be rescreened against project requirements that will be established as a result of the new construction program.

During the month a request was received from the Commission to the end that decisive action be taken to prevent excessive accumulation of materials throughout the Hanford Works. A meeting was held January 24, 1951 with Division Managers or their representatives to discuss ways and means of attaining the objectives outlined in the Commission's request. It was agreed that each using division will inventory all supplies and materials in their custody which are not recorded in an inventory account and that an analysis of those inventories will be made by a representative of the Stores Division and the holding division to determine the action necessary to comply with the requirements of the Commission.

The evacuation of certain North Richland Warehouses to provide space for the proposed Army Industrial Area in North Richland as requested by the Commission Jan. 22, 1951 was progressing satisfactorily at month end.

Materials and equipment valued at $319,696.66 were withdrawn from Excess (Account 10.10) and returned for use on the project. Of this amount, construction forces' withdrawals were valued at $214,946.43

Plans and specifications for the centralized warehouse facilities together with the appropriation request for engineering funds were complete at month end. It is anticipated that the A & B Committee will act on this project at its meeting Feb. 13, 1951.

PURCHASING AND STORES DIVISIONS
STORES DIVISION

PERSONNEL

	As of 12-31-50			As of 1-31-51			Net Change		
	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total	Ex.	Non-Ex.	Total
Administrative	4		4	4		4			
Construction Matl. Sect.	2	36	38	3	35	38	+1	-1	
Operations Matl. Sect.	4	105	109	4	104	108		-1	-1
Surplus, Salvage & Scrap Materials Section	5	60	65	4	56	60	-1	-4	-5
TOTALS	15	201	216	15	195	210	—	-6	-6

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	9
Number of Employees Attending	181
Minor Injuries	3

STATISTICS

Construction Materials Section

Items in Stores Stock	44,301
Items added to Stock	4,073
Items Completely Liquidated from Stock	1,185
Store Orders Posted (Items)	4,009
Number of Requisitions Screened - A.J.	757
Number of Items Screened - G.E.	5,145
Number of Items Furnished from Stock	1,189
Value of Disbursements	$422,970.65*
Inventory Valuation at Month End - Materials	$7,842,268.11
Value of Materials Shipped	28,953.67
Value of Materials Received	464,572.58

*Includes $375,010.27 disbursed to Construction & CPFF Subcontractors

Operations Materials Section

Number of Items added to Stores Stock	500
Number of Items Deleted from Stores Stock	1,188
Items in Stores Stock at Month End	45,842
Store Orders Posted	24,000
Number of Requisitions Screened this Month - G.E.	3,230
Number of Items furnished from Plant Sources this Month	1,187
Inventory Valuation at Month End (903-all Captions, 906 & 912)	$1,177,297.14
Inventory Valuation at Month End (Spare Parts)	1,646,996.77
Inventory Valuation at Month End (Special Materials)	3,162,394.95
Total Value Inventory Accounts	5,986,688.86
Value of Disbursements, not including Cash Sale Items	245,821.87*
Value of Cash Sales	610.29
Value of Sales, Payroll Deduction	1,481.35
Value of Materials Declared Excess	10,206.07
Value of Materials Returned to Stores Stock for Credit	6,679.15

*Includes $16,295.52 disbursed to Construction and CPFF Subcontractors

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Continued)

Surplus, Salvage and Scrap Materials Section			
Balance of Account 10.10 as of 12-29-50			$7,422,490.02
Receipts 12-29-50 to 1-31-51			
Automotive Equipment	$22,357.36		
Office Furniture	277.73		
Material and Supplies	35,728.45		
Miscellaneous Equipment	5,792.75		
Machine Tools & Equipment	7,855.53		72,011.82
Adjustments - Classes & Current Market Prices			2,534.89
			7,497,036.73
Disbursements 12-29-50 to 1-31-51			
On Project			
Lumber	13,958.62		
Automotive Equipment	219,452.45		
Machine Tools & Equipment	1,030.73		
Office Furniture	447.44		
Material and Supplies	47,638.13		
Miscellaneous Equipment	37,169.29		
		$319,696.66*	
Transfers from Excess to Account 10.20		5,473.92	
Off Project			
Lumber	2,630.28		
Automotive Equipment	543,083.52		
Machine Tools & Equipment	35,352.05		
Office Furniture	120.00		
Material and Supplies	59,201.49		
Miscellaneous Equipment	118,046.65	758,433.99	1,083,604.57
Balance of Account 10.10 as of 1-31-51			$6,413,432.16
Total Receipts to Date			$33,968.141.70
Total Disbursements to Date			27,554,709.54

*Includes $214,946.43 disbursements to Construction and CPFF Subcontractors

Scrap and Salvage Disbursed	
Scrap Sales Completed	7
Scrap Sales in Process	8
Scrap Sales Revenue for month of January	$4,330.94
Total Scrap Sales Revenue to Date	4,330.94

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PURCHASING AND STORES DIVISIONS
STORES DIVISION

STATISTICS (Continued)

WAREHOUSING, RECEIVING, DISBURSING & SHIPPING SECTIONS

Construction Materials Section	
Store Orders Filled	3,942
Number of items received	4,073
Items filled for shipping	720
Operations Materials Section	
Receiving Reports Issued	4,878
Emergency Store Orders Filled	7
Shipments Processed (Containers & Material)	336
Shipments Received	4,951
Store Orders Registered	27,315
Surplus, Salvage & Scrap Materials Section	
Store Orders Filled	1,163
Truckloads of Material Shipped	32
Carloads of Material Shipped	52

D&C CONSTRUCTION STORES

Account 10.16 as of January 31, 1951

Account No.		Balance 12-31-50	Purchases	Disbursements	Balance 1-31-51
10.16-101	Cement	65.10		25.84	39.26
10.16-103	Plaster, etc.	21.03			21.03
10.16-104	Lumber	6,947.40	372.34	3,931.75	3,387.99
10.16-105	Reinforced Steel	797.15			797.15
10.16-106	Misc. Stores	14,658.29	431.40	1,604.92	13,484.77
10.16-107	Plumbing	42,244.89	88.27	539.07	41,794.09
10.16-108	Electrical	22,682.21	927.15	1,321.54	22,287.82
10.16-110	Paint, Glass	1,329.97	90.49	51.67	1,368.79
10.16-111	Welding Rod	1,276.66	30.80	178.07	1,129.39
10.16-112	Structural Steel	1,361.86	32.01	303.16	1,090.71
10.16-115	Roofing Supplies	69.07		60.84	8.23
10.16-118	Automotive	12,973.34	157.61	7,071.22	6,059.73
10.16-133	Small Tool Repair Parts	346.43		27.84	318.59
10.16-134	Clothing	1,430.13	59.04	407.12	1,082.05
Totals		106,203.53	2,189.11	15,523.04	92,869.60

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION
JANUARY, 1951

GENERAL

The work load of the Traffic Section continued to increase over previous months.

At many points throughout the country railroad switchmen went out on an unauthorized strike January 30. It is expected this action will cause some difficulty in maintaining a steady flow of essential and construction materials to Hanford Works.

The Traffic Manager attended a meeting in San Francisco between Government and Motor Carrier Representatives to discuss Government traffic in Western Territory.

As a result of rate reductions obtained from the carriers, there was a total savings in freight charges for the month of January amounting to $23,298.26. This makes a total savings from September 1, 1946 to date of $1,449,215.99.

PERSONNEL

	Total Personnel as of 12/31/50	Total Personnel as of 1/31/51	Net Change
Exempt	2	2	0
Non-Exempt	7	7	0
	9	9	0

SAFETY AND SECURITY

Safety and Security Meetings Scheduled	1
Meetings Held	1
Minor Injuries	0

PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS

1. Rate reductions obtained from the Carriers:

Commodity	Origin	Savings for January	Savings 9-1-46 thru Dec. 1950	Total Savings 9-1-46 to date
Coal	Kemmerer, wyo.	$6,872.16		
Coal	Roslyn, wash.	2,733.00		
Coal	Roundup, Mont.	6,661.72		
Coal	Superior, wyo.	255.12		
Lime	Evans, wash.	156.72		
Iron & Steel	San Francisco, Cal.	1,532.95		
Sand & Gravel	Pioneer Spur, wash.	82.70		
Phosphoric Acid	South Gate, Calif.	479.52		
Caustic Soda	Tacoma, wash.	1,206.24		
Caustic Soda	Willbridge, Ore.	1,195.69		
Soda Ash	Trona, Calif.	757.50		
Trichlorethylene	Various	129.28		
Railway Express	Various	1,235.66		
		$23,298.26	$1,425,917.73	$1,449,215.99
2. Freight Bill Audit		1,155.95	55,464.50	56,620.45
3. Loss and Damage and Over-Charge Claims		2,503.07	100,827.38	103,330.45
4. Ticket Refund Claims		634.14	11,243.12	11,877.26
5. Household Goods Claims		38.43	14,381.60	14,420.03
		$27,629.85	$1,607,834.33	$1,635,464.18

Work Volume Report

Reservations Made	Rail	128
	Air	88
	Hotel	121
Expense Accounts Checked		240

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (CONTINUED)

Work Volume Report (Cont'd)

Household Goods & Automobiles	Movements Arranged Inbound	7
	Movements Arranged Outbound	1
	Insurance Riders Issued	2
	Insurance Bills Approved	35
	Requests for Claim Billing	1
	Claims Filed	1
	Claims Collected - Number	2
	Claims Collected - Amount	$38.43
Ticket Refund Claims	Filed	48
	Collected Number	25
	Collected - Amount	$634.14
Freight Claims	Filed	19
	Collected - Number	11
	Collected - Amount	$2503.07
	Over and Shorts Processed	6
	Damage Reports Processed	17
Freight Bill Audit Savings		$1,155.95
Freight Shipments Traced		127
Quotations	Freight Rates	219
	Routes	302
Bills Approved	Air Freight	14
	Air Express	102
	Boat	1
	Carloading	286
	Express	316
	Rail	797
	Truck	401
Carload Shipments	Inbound - GE	890
	Others	117
	Outbound - GE	54
	Others	1

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PURCHASING AND STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (CONTINUED)

Report of Carloads Received

	MILW	N.P.	U.P.	TOTAL
General Electric Company				
Ammonium Silico Fluoride		1		1
Acid	1			1
Asphalt		1		1
Bath Tubs	1			1
Liquid Chlorine	1	1		2
Chemicals	4			4
Coal	119	144	497	760
Lime	1	2	2	5
Machinery	1			1
Mineral Wool			1	1
Nitric Acid		11	10	21
Hydrogen Peroxide	1			1
Phosphoric Acid	1	2		3
Pipe	5	2	8	15
Caustic Potash			1	1
Salt	1	1	1	3
Soda Ash	1	1	3	5
Caustic Soda	5	7	6	18
Sodium Nitrite	1			1
Steel	2			2
Ferrous Ammonium Sulphate		1		1
Ferric Sulphate	2			2
Sulphuric Acid		2		2
Switchboard Equipment		2		2
Steel Tanks	6			6
Steel Tubing	2			2
Merchandise	3	4	3	10
Express	1			1
TOTAL	159	182	532	873
A. E. C.				
Desks		1		1
Lumber	9	1		10
Plywood	2	1		3
Shelving	3			3
TOTAL	14	3		17

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PURCHASING & STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (CONTINUED)

Report of Carloads Received (Cont'd)

	MILW	N.P.	U.P.	TOTAL
Atkinson & Jones Construction Co.				
Asphalt	1			1
Brick	1			1
Cement	2	16		18
Gravel		4		4
Insulation	2			2
Mineral Wool	1			1
Partitions			5	5
Pipe	2		7	9
Roofing Material	1			1
Sand		2	4	6
Steel	6		5	11
Copper Wire	1			1
Merchandise	3		2	5
TOTAL	20	22	23	65
Baldwin & Dunham				
Lumber		4		4
Wallboard		1		1
TOTAL		5		5
F. J. Early				
Steel Plates			3	3
Construction Steel			3	3
Cement	1			1
TOTAL	1		6	7
Waale Camplan Co.				
Heaters			1	1
Steel		7		7
Merchandise		1		1
TOTAL		8	1	9
Haigan & Wolff				
Lath			2	2
TOTAL			2	2
Northern School & Supply				
Merchandise		1		1
TOTAL		1		1
L. W. Vail Co.				
Mineral wool			1	1
TOTAL			1	1

PURCHASING & STORES DIVISIONS
TRAFFIC SECTION

STATISTICS (CONTINUED)

Report of Carloads Received (Cont'd)

		MILW	N.P.	U.P.	TOTAL
J. P. Head Pipe		1			1
	TOTAL	1			1
S. S. Mullens Fibreboard			1		1
	TOTAL		1		1
Richland Fuel Coal			7	16	23
	TOTAL		7	16	23
U. S. Jenkins Co. Merchandise		1			1
	TOTAL	1			1
U. S. Army Cooling Apparatus			1		1
	TOTAL		1		1
TOTAL - SUBCONTRACTORS		23	45	49	117
TOTAL ENTIRE PROJECT		196	230	581	1,007

1212189

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

SUMMARY - JANUARY, 1951

The number of applicants interviewed increased from 1,069 in December to 2,002 in January. Of these applicants, 941 were individuals who applied for employment with the Company for the first time. In addition, 381 new applications were received through the mail. Open, nonexempt, nontechnical requisitions increased from 376 at the beginning of the month to 573 at the month end. Total plant roll increased from 7,896 to 7,950. Turnover rate increased from 1.13% in December to 1.48% in January. During January, 46 new requests for transfers to other type of work were received in the Employment Office, and 31 transfers were effected. Due to the increasing demand for personnel, and to give people in this vicinity an opportunity to have interviews, the Employment Office was kept open two Saturdays (January 20 and 27). Publicity was given to the fact that the Employment Office would be open through newspapers in the Tri-City Area, Walla Walla, Yakima and Wenatchee, and through 32 spot radio announcements in the same localities. On these two Saturdays, approximately 300 people were interviewed, of which 65 were immediately placed in process and others were considered later.

Five employee deaths occurred during January, and one employee retired. During the month 185 visits were made to employees confined at Kadlec Hospital and 53 salary checks were delivered to employees. At the end of January, there were 706 employees registered under the Selective Service Act and 621 military reservists on our rolls.

During the week of January 15, the Supervisor's 40-Hour Training Program was presented, with 42 supervisors participating. A total of 80 supervisors currently enrolled in "Principles and Methods of Supervision", will complete their conferences in February. At the request of the "S" Division, the 17-subject, 8-Hour Nonexempt Training Program was again presented with 30 employees in attendance. A group of 36 Supervisors-in-Training attended a special meeting to discuss the spirit and intent of the GE-HAMTC Agreement. Two issues of the Hanford Works SAGE were distributed during the month. Nine additional Handbooks were distributed to new supervisors. A total of 158 employees were given Orientation during January. The entire Training and Program Development Staff was trained by R. C. Holmquist in the company-wide program, "HOBSO". Three special senior-management meetings were held, at which time the appreciation version of HOBSO was presented.

1212190

Employee and Community Relations Divisions
Summary

On January 30, the NLRB conducted a Hearing to determine whether or not Plant Guards and Village Patrolmen constitute an appropriate bargaining unit. The Davis Panel submitted their recommendation on January 22 on the current wage dispute between the Company and the HMTC, recommending that the Company's offer of 3% of the rates in effect on July 2, 1950, with a minimum of 4 cents an hour, to be effective September 18, 1950, be accepted. While the Council said it would accept the Panel's recommendations, no official ratification has been received from the various locals.

Negotiations on the Master Agreement continued during January. All issues have been disposed of except the Unions' demand for an increase in isolation pay. At a meeting January 9 with a Conciliator present the Unions continued their contention that the construction duration (part of original isolation pay agreement) ended in 1949. On January 19, the Union Negotiating Committee requested the Davis Panel to take jurisdiction. We are informed the Conciliator certified to the Panel that the isolation pay question could not be settled at the local level. At present, the Contractors are considering negotiating once more locally and if no agreement results, allow Panel to place the matter on the agenda along with the Operating Engineers on February 12 and 13. Negotiations on January 10 with a Conciliator present failed to settle two controversial working rules. The Engineers did not report for work on January 15, and remained off the job until January 19, at which time they returned to work in order to be in work status when Davis Panel Intervention was requested. On January 30, the Engineers and Contractors signed a letter agreement which included Spokane rates effective January 1, 1951, continuation of the Master Agreement (excluding isolation pay), and stipulating that the two working rules would be heard by the Panel. The Laborers requested an increase of approximately 15 cents (now $1.60) on January 4, 1951 - no settlement. The Asbestos Workers requested an increase of 37 cents (now $2.55). Contractors favor Spokane increase (25 cents) - no settlement. Roofers granted 19½ cent increase (was $2) effective November 1, 1950. Ironworkers continue to insist their September 22 reopening notice is in order, and request Spokane January 1, 1951, rates, viz.: structural $2.50 (now $2.30 at Hanford) and reinforcing either $2.32 or $2.35 (not yet agreed upon) (now $2.25 at Hanford) - no agreement reached. A threat on January 16 that all Teamsters would be off the job on January 17 did not materialize. The threat was based on (1) layoffs of Teamsters as a result of Engineers dispute, and (2) buses not inspected every 24 hours "as required by law". A Plumber dispute between G.E. and C.P.F.F. piping subcontractors over jurisdiction of the installation of a steam valve was settled by this office. The installation, which was interrupted, has been completed. A threatened Sheet Metal dispute at Willamette Iron and Steel, Portland, (engaged in fabricating essential hoods, etc. for Hanford) is being watched closely, and this office has offered any possible assistance to avoid an actual work stoppage.

1212191

Employee and Community Relations Divisions
Summary

Work continued on the annual G.E. Northwest Area Community Wage Rate Survey. The final pay adjustment covering assignment of employees to the Auxiliary Fire Brigade was made. Meetings were held with Instrument Division supervision and members of the Instrument Guild in reference to classification of Instrument Specialist. Discussions were held with the "S" Division in regard to upgrading Chemical Helpers to Chemical Trainees.

Two representatives of the Vice President in charge of Advertising and Publicity, R. W. Jackson and W. D. Haylon, visited Hanford Works. They were brought up to date on local press relations and presented with a historical report about the relationship between Hanford Works, Tri-City HERALD and the Richland VILLAGER.

Interviews were arranged for Don Carlson of the Walla Walla UNION-BULLETIN for three stories which he plans to give to the magazine BUS TRANSPORTATION.

Hill Williams of the Tri-City HERALD interviewed the manager of Manufacturing Divisions for the first of a series of stories on all Hanford Works Divisions.

The Managing Editor of WESTERN BUILDING magazine interviewed the supervisor of the News Bureau and the Community Relations supervisor, and arrangements were made to send him material for a story about Richland's uptown business district.

A total of 75 news releases were written and distributed by the News Bureau during January and 170 column inches were obtained in Pacific Northwest newspapers.

News stories about civil defense organization and activities were written and released through the News Bureau by the supervisor of Community Relations. Distribution of the Works News through local barber and beauty shops was arranged.

Nine speeches were made during the month for which arrangements had been made by Public Functions.

Fourteen G-E films were shown during the month, and four films from the University of Washington film library were shown. The AEC film "Bikini Survey" was booked for showings to Army personnel stationed at North Richland.

The General Manager's speech was recorded at the Supervisor's Association meeting on January 18. Portions of Charles E. Wilson's speech at the Poor

Richards Club in Philadelphia, recorded the previous evening, also were presented to H.W. Supervisors during the January 18 meeting.

Motion pictures were made of a special flow test in the 100 Areas. Over 500 color slides were delivered to Design Division.

Use of the G-E signature and monogram at Hanford Works was outlined in an Instruction Letter which established Community and Public Relations as the division where questions concerning use of the signature should be referred. Opening of the Employment Office on two Saturdays during the month was publicized via newspaper advertisements, news releases and radio spot announcements.

Hanford Works News provided employees information on the Community House, winter recreation program, polio drive, civil defense, income tax, social security law revisions, rent increases, suggestion system, G.E. School of Nuclear Engineering, Adult Evening Classes, employment needs, and the Employee Sales Plan. A review of 1950 by the General Manager was carried in a lead story.

Three women's pages appeared in the Works News during the month. The new stenographers handbook, "This Way, Please--" was featured on January 26. Special features were written on women and careers at Hanford Works for the Seattle TIMES; the safety shoe bus, and Community House for the Tri-City HERALD; and on Richland church building in 1950 for the Walla Walla UNION-BULLETIN.

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1212193

EMPLOYEE AND COMMUNITY RELATIONS DIVISIONS

JANUARY, 1951

ORGANIZATION AND PERSONNEL

Employment and Employee Services

Effective January 1, 1951, Shirley E. Kreimeier, an Employment Interviewer and Investigator "B", was appointed Assistant Employment Supervisor with responsibility for Women's Activities and Employment.

Effective January 1, 1951, a General Clerk "D", assigned to the Investigation and Files Group was upgraded to a General Clerk "C" and reassigned to the Employment Group.

Effective January 5, 1951, a General Clerk "D" was engaged and assigned to the Employment Group.

Effective January 5, 1951, a messenger was engaged and assigned to the Investigation and Files Group to replace a messenger who left for military service on the same date.

Effective January 25, 1951, a General Clerk "D" was engaged and assigned to the Investigation and Files Group.

Effective January 25, 1951, a Stenographer-Typist "C" was engaged and assigned to the Employment Group.

Training and Program Development

No organization changes were made during January.

Union Relations

Effective January 2, 1951, one Senior Wage Analyst was hired for the Wage Rates Division.

Effective January 8, 1951, one Steno-Typist "B" transferred from the Stenographic Services Division to the Wage Rates Division.

Effective January 15, 1951, one Steno-Typist "B" transferred from the Wage Rates Division to Design and Construction.

Community and Public Relations

No organization changes were made during January.

Number of employees on payroll	January, 1951
Beginning of month	94
End of month	98
Net Gain	4

Reason for Gain: Increased work load in Employment & Employee Services and Union Relations.

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Employee and Community Relations Divisions

ACTIVITIES

Employment and Employee Services

	December, 1950	January, 1951
Applicants interviewed	1,069	2,002

941 of the above applicants interviewed during January were individuals who applied for employment with the Company for the first time. In addition, 381 new applications were received through the mail.

Open Requisitions	December, 1950	January, 1951
Exempt	2	4
Nonexempt	376	573

Of the 376 open, nonexempt, nontechnical requisitions at the beginning of the month, 230 were covered by interim commitments. Of the 573 open, nonexempt, nontechnical requisitions at month end, 420 were covered by interim commitments. During January, 149 new requisitions were received requesting the employment of 450 nonexempt employees.

	December, 1950	January, 1951
Employees added to the rolls	127	171
Employees removed from the rolls	96	117
Net gain or loss	+ 31	+ 54

Of the 117 employees removed from the rolls, none were removed due to lack of work.

Turnover:	December, 1950		January, 1951	
	Male	Female	Male	Female
Excluding employees laid off for lack of work	.88%	2.08%	1.15%	2.79%

Over-all Plant Turnover:	December, 1950	January, 1951
Excluding employees laid off for lack of work	1.13%	1.48 %

During January, 22 employees terminated voluntarily to accept other employment, 19 terminated to enter military service, and 10 terminated to return to school.

At the end of January, there were 74 employees in lack of work status, divided into the following categories;

	December, 1950	January, 1951
Nonbargaining unit employees	29	21
Bargaining unit employees	61	53

Employee and Community Relations Divisions

Transfer Data

Accummulative total of requests for transfer received since 1-1-51	46
No. of requests for transfer received during January	46
No. interviewed in January, including promotional transfers	55
Transfers effected in January, including promotional transfers	31
Trans. effected to date since 1-1-51, including promotional transfers	31
Transfer requests active at month end	56
Transfers effected in January, for employees given lay off notices	0
Trans. effected since 1-1-51, for employees given lay off notices	0
No. of stenographers transferred out of Steno. Pool in January	7

During January, 10 people whose continuity of service was broken while in an inactive status were so informed by letter.

In view of an increasing demand for personnel (production operators, laboratory assistants, clerk typists, stenographers, patrolmen, and nurses), and to offer those people within the vicinity of the project an opportunity to have interviews with us, the Employment Office remained open on Saturdays, January 20 and 27. Our needs for personnel, together with the fact that we would be open on the 2 Saturdays mentioned, was publicized through newspaper advertisements in the 2 Tri-City newspapers, Walla Walla, Yakima, and Wenatchee newspapers. Also 32 spot radio announcements were carried on the 3 Tri-City radio stations, 2 Yakima stations, 1 Walla Walla station, and Sunnyside and Wenatchee stations. Results were encouraging. Approximately 300 people were interviewed on the 2 Saturdays, of which 65 were immediately placed in process and others were considered later.

Employment Statistics

Number of employees on rolls	12-31-1950	1-31-1951
Exempt		
Male	1,869	1,883
Female	52	54
	1,921	1,937
Nonexempt		
Male	4,476	4,484
Female	1,499	1,529
	5,975	6,013
TOTAL	7,896	7,950

ADDITIONS TO THE ROLLS

	Exempt	Nonexempt	Total
New Hires	10	139	149
Re-engaged		2	2
Reactivations	1	14	15
Transfers (from other plants)	4	1	5
Actual additions	15	156	171
Payroll Exchanges	16[a]	4[b]	20
GROSS ADDITIONS 12129b	31	160	191

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Employee and Community Relations Divisions

TERMINATIONS FROM THE ROLLS

	Exempt	Nonexempt	Total
Actual terminations	8	72	80
Removals from the rolls (deactivations)	3	34	37
Payroll exchanges	4[c]	16[d]	20
GROSS TERMINATIONS	15	122	137

GENERAL

	12-1950	1-1951
Applicants interviewed	1,069	2,002
Photographs taken	199	222
Fingerprint impressions (taken in duplicate)	298	561

ABSENTEEISM STATISTICS
(Weekly Salary Rolls)[e]

Male	2.26%	2.50%
Female	3.74	3.93
Total plant average	2.64	2.84

INVESTIGATION STATISTICS

Cases received during the month	306	702
Cases closed	216	241
Cases found satisfactory for employment	229	419
Cases found unsatisfactory for employment	7	32
Cases closed before investigations completed	5	65
Special investigations conducted	23	14

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 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	185
Salary checks delivered to employees confined to hospital	42
Salary checks delivered to employees confined at home	11

During January, 2 notices were posted on allbulletin boards throughout the plant, namely: March of Dimes posters and "America" series posters.

Four publications of Employee Benefit Plans information were prepared for release in the Works News during January.

PRIVACY ACT MATERIAL REMOVED

Employee and Community Relations Divisions

During January the Employee Services Group made the necessary arrangements for to members of the Pasco Internal Revenue Office to be stationed in Dormitory W-10 during February to assist employees in completing their 1950 income tax forms.

As of the end of January, participation in Company Benefit Plans was as follows:

Pension Plan	95.7%
Life & Health Insurance	96.0
Employee Savings and Stock Bonus	39.9

Five employee deaths occurred during January, namely:

Power Division;
Medical Division;
Construction Division;
Construction Division; and
Plant Security and Services Division.

One employee retired during the month, namely:

Silas A. Selman, Transportation Division.

During January, those employees who are within 15 years of their normal retirement age, and who have elected not to participate in the Company's new insurance plan, were contacted to inform them of the benefits they would lose after retirement but not participating in this plan.

A representative of this Group contacted hospitals in Yakima, Toppenish, Sunnyside, Prosser and Pasco, to discuss the benefits for employees under the new insurance plan, as we have employees living in all of these communities. The hospital administrators appreciated receiving this information as well as the claim forms left for use by employees who may be hospitalized at those locations.

During January, 29 letters were written to retired employees giving them information of a general nature which affects them, and two retired employees in this vicinity were visited and the same information was discussed with them.

During January, one Application for Educational Loan was granted by the Education Committee.

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	706
Employees registered who are veterans	438
Employees registered who are nonveterans	268
Employees classified as 1-A	133
Deferments requested to date	76
Deferments granted	39
Deferments denied and appealed at state level	8
Deferments denied and appealed at national level	7
Deferments requested, employees later reclassified	10
Deferments pending	12

12 12 98

PRIVACY ACT MATERIAL REMOVED

Employee and Community Relations Divisions

The statistics with respect to employees who are members of the military reserve are as follows:

Number of reservists on roll	621
Number who have returned to active duty to date	34
Number who returned to active duty in January	7
Deferments requested to date	39
Deferments granted	38
Deferments pending	1

Military terminations

No. of employees who have terminated to enter military service since 8-1-1950	93

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Employee and Community Relations Divisions

Discussions were held with Community Division Supervision in reference to the rate of pay and progression schedules for employees transferred from the Coal Handler classification to the Miscellaneous Operator classification.

Wage Rate personnel participated in discussions with the "S" Division in regard to upgrading Chemical Helpers to Chemical Trainees. The manpower requirements of the job have made it necessary to deviate from the normal training schedule.

Jobs were reviewed in the Community Divisions where it was indicated that employees were working out of classification. Steps have been taken to properly classify the employees assigned to these specific jobs.

Insurance, Workman's Compensation, and Suggestion System:

Suggestion System

	January, 1950	Total since 7-15-47
Suggestions received	184	6,123
Investigation Reports completed	177	5,786
Awards granted by Suggestion Committee	24	947
Cash Awards	$ 475.00	$ 14,745.00
Estimated Savings	5,143.20	20,196.25

The largest single award made during the month of January was to an employee in the Municipal, Real Estate and General Services Division for his suggestion that caulking compound be substituted for putty in the installation of large window panes in prefabs. Through adoption of this idea, a substantial savings in material and labor was realized.

Insurance and Compensation

One case was closed during the month.

Life Insurance

Code information which is known only to Home Office Life Underwriters Association has been furnished 38 insurance companies and investigation agencies during the month of January, 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

	December, 1950	January, 1951	Total since 9-1-1946
Claims reported to the Department of Labor and Industries	81	127	4,023
Claims reported to Travelers Insurance Co.	3	5*	478

*All these claims reported during January were property damage claims.

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Employee and Community Relations Divisions

Reimbursement Authorizations received during the month:

1. Technical Engineers - Wages
2. Teamsters - Overtime Compensation, Meal Time
3. Roofers - Wages
4. Electrician (Linemen) - Wages and Classifications

Work Stoppages - Actual and Threatened

Operating Engineers - January 15 to 19. Approximately 436 Operating Engineers involved. In addition, 700 employees other than Engineers were temporarily laid off as a result of this work stoppage. The strike resulted from dissatisfaction with negotiations. They returned to work upon the insistence of the Contractors and the Conciliator and in order that they would be in work status when requesting Davis Panel intervention.

Teamsters - Threatened on January 16 to stay off the job in protest of (1) layoffs caused by Operating Engineers dispute, (2) buses not receiving 24-hour check "required by law." Strike did not materialize. A Plumber dispute between G.E. and C.P.F.F. piping subcontractors over jurisdiction of the installation of steam valves was settled by this office. The installation, which had been interrupted, was completed.

A threatened Sheet Metal dispute at Willamette Iron and Steel, Portland (engaged in fabricating essential hoods, etc. for Hanford) is being watched closely by this office. We have offered any assistance possible to avoid an actual work stoppage.

Wage Rates:

During the month of January, work continued on the annual General Electric Northwest Area Community Wage Rate Survey.

Instructions were issued relative to Wage Rate policy covering the new Supervisor-In-Training classification. These instructions covered wage rate procedures for procurement, transfers, reclassifications, etc.

On January 25, 1951, the Atomic Energy Commission approved new rates for the Technical Graduate and Business Graduate classifications.

The final pay adjustment covering assignment of employees to the Auxiliary Fire Brigade was made during the month.

Meetings were held with Instrument Division Supervision and representatives of the Instrument Craftsmen's Guild in reference to the classification of Instrument Specialist. It was agreed that the work load would be reviewed and the quantity and type of Specialist work would be determined. Descriptions of individual jobs performed are being accumulated and reviewed for the purpose of this determination.

1212201

equipment. No agreement was reached. On Monday, January 15, the Operating Engineers did not report for work (see Work Stoppages). Negotiations on January 17 with a Conciliator in attendance resulted in a statement by the Conciliator that the parties were deadlocked over the above-mentioned two working rules and the Union could go to the Davis Panel (as they had expressed a desire to do), but before doing so the men should be on the job. After two Union meetings, the men decided to return to work and did so on January 19, 1951. On January 19, the Panel asked Atkinson-Jones, and the latter expressed a willingness, to pay Spokane rates (which the Contractors had offered at all times), and leave isolation pay open.

The General President of the Operating Engineers discussed with the Panel a wire which they were willing to direct to the Panel providing Atkinson-Jones would indicate that the terms would be acceptable. This wire set forth the following conditions: (1) Increases effective January 1, 1951 in conformity with Spokane, (2) Issues to the Panel be confined to the two working rules, and (3) The International will attempt to quiet disturbing influences within their craft at Hanford. The Panel suggested meetings in New York on February 12 and 13 to cover both Operating Engineers and the Isolation Pay issue. On January 22, Atkinson-Jones wired the Panel an affirmative answer to the conditions as set forth in the Operating Engineers proposal. On January 30, the Union and Contractors signed a Letter Agreement which included Spokane rates effective January 1, 1951, continuation of the Master Agreement (excluding isolation pay), and stipulating that the two working rules would be heard by the Panel. A hint of dissatisfaction in the Union still exists at the local level.

The Laborers requested increases of approximately 15 cents (now $1.60) on January 4, 1951; no settlement to date.

Asbestos Workers requested increase of 37 cents (now $2.55). Contractors favor the Spokane increase (25 cents). No settlement.

Ironworkers continue to insist that their reopening notice of September 22 is in order and request Spokane January 1, 1951 rates, viz.: structural, $2.50 (now $2.30 at Hanford), and reinforcing either $2.32 or $2.35 (not yet agreed upon) (now $2.25 at Hanford). No agreement reached.

Roofers were granted a 19½ cent an hour increase (was $2) effective November 1, 1950.

Requests for Reimbursement Authorization handled during the month:

1. Technical Engineers - Wages
2. Teamsters - Overtime Compensation, Meal Time
3. Roofers - Wages
4. Electrician (Linemen) - Wages and Classifications
5. Electrician (Wiremen) - Wages and Classifications

Employee and Community Relations Divisions

Seniority	1
Information to Council	1
Grievance Procedure	2
Wage Rates	2
Miscellaneous	1
Total	16

The status of all grievances received in January, 1951 as compared to those received during January, 1950 is as follows:

	Jan. 1950	Jan. 1951
Settled satisfactorily, Step I	6	4
Settled Step I - Time Limitation	9	--
Pending at Step II	--	12
Settled at Step II	8	--
At Arbitration	--	--
Total	23	16

Six per cent of the total grievances received this year have been submitted by employees outside the bargaining unit.

There was one meeting held during the month with the Council Grievance Committee for the purpose of discussing grievances at the Step II level.

Union Relations - Subcontractor Personnel:

Master Agreement (13 crafts) negotiations were held again on January 9, 1951. Negotiations have been under way since June 27, 1950. All issues have been disposed of except the Unions' demand for an isolation pay increase. The Unions continue to press their argument that the duration of construction (part of the original isolation pay agreement) ended with the layoffs in 1949. For the first time a definite amount of increase ($1) was requested. At the January 9 meeting with a Conciliator present, the Unions continued to insist that the construction duration ended in 1949. On January 19, we were informed that the Union Negotiating Committee had requested the Davis Panel to take jurisdiction of the isolation pay issue. The Davis Panel informed Atkinson-Jones by phone on January 23 that the Conciliator had certified that the isolation pay question could not be settled at the local level. At present, the Contractors are considering negotiating once more at the local level, and if no agreement reached, to call on the Panel to place the matter on the agenda along with the Operating Engineers on February 12 and 13.

At a meeting with the Operating Engineers on January 10 attended by a Conciliator, discussion centered around two working rules, viz.: (1) Operating Engineers be required to work only under a Foreman of their craft, and (2) an Operator and Oiler be on hand to assist Mechanic on repairs of heavy

Employee and Community Relations Divisions

Union Relations and Wage Rates

Union Relations - Operations Personnel:

A representative from this division spent approximately one week in Washington, D. C. in order to obtain official decisions on the Davis-Bacon Act which were of considerable importance to Hanford Works.

On January 30, the National Labor Relations Board conducted a Hearing to determine whether or not Plant Guards and Village Patrolmen constituted an appropriate bargaining unit. A decision from the Hearing Officer was expected by February 15.

The Atomic Energy Labor Relations Panel (Davis Panel) submitted their recommendation to the Company on January 22 after reviewing the positions of the Hanford Atomic Metal Trades Council and the Company on the unsettled wage dispute. The Panel, in brief, recommended that the Company's offer be accepted, i.e., a wage increase of 3% of the rates in effect on July 2, 1950, with a minimum of 4 cents an hour, to be effective September 18, 1950. The provision of Article XXIV of the Collective Bargaining Agreement to remain unchanged.

The Council informed the Company that it would accept the Panel's recommendations subject to ratification by its several unions. However, at month end, no official notice had been received indicating ratification by the bargaining unit membership.

A representative from this division also spent some time in Seattle reviewing with the NLRB the Council's request for a union shop election.

Grievance Statistics

Sixteen grievances were received during the month. Three hundred ninety-six grievances have been received since the grievance procedure was established in April, 1949. Grievances were received this month from the following divisions:

Mfg. Maintenance	1
Mfg. "S" Division	5
Gen. & Office Services	1
Village Public Works	6
Village Realty, Housing	3
Total	16

Employee grievance reports received during the month of January were regarding the following subjects:

Jurisdiction	2
Overtime Rates	5
Vacations	2

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Employee and Community Relations Divisions

TRAINING AND PROGRAM DEVELOPMENT

The Supervisor's 40-Hour Training Program was held during the week of January 15, 1951. A total of 42 supervisors attended this program. At the request of T. S. Lisberger, New York, a special questionnaire was answered by members of this group, following the showing of the G-E film, "The Inner Man Steps Out". This film was well received as indicated by the answers in the questionnaire. On Friday of the program week, a special luncheon was given for the group members, attended by six members of senior management as guests. An anonymous questionnaire was completed by the participating supervisors which resulted in a tabulation indicating objectives were achieved and that the program was well received.

The 80 supervisors divided into PMS Groups 9, 10, 11, and 12, completed Meetings 11, 12, 13, and 14 during January. These four groups will complete their PMS conferences in February. To date, a total of 160 supervisors have completed PMS conferences, while 80 are still in attendance. Additional groups are being started very shortly.

An innovation from the usual annual reports was completed in January by Training and Program Development in the form of an Operations Manual. This manual was designed to give quick information to busy members of management. Copies of the Operations Manual were distributed to all members of senior management at the Hanford Works. In addition to giving a brief resume of each program completed under Accomplishments and setting forth the 1951 Objectives, a special section was included, called "In-Stock Production". This section lists programs available for immediate delivery to groups of supervisors at the request of management. It is expected that divisions will take advantage of having these proved programs disseminated among groups of supervisors who have not had this training before.

A special meeting was held at the request of the "S" Division, with a group of 36 Supervisors-in-Training to cover the spirit and intent of the GE-HAMTC Agreement. In this program, the Agreement is reviewed and each article discussed as to its intent.

During the week of January 8, R. C. Holmquist of New York trained the entire Training and Program Development Staff in the company-wide program, "How Our Business System Operates". The Training Staff took advantage of Mr. Holmquist's visit in Richland by arranging for three meetings held on January 12 and 13, to have Mr. Holmquist present the appreciation version of HOBSO to members of the Nucleonics Department senior management. This program was well received and was the preview introduction to senior management of the forthcoming three 90-minute sessions to be disseminated to all exempt personnel. Problems of the Nucleonics Department Training Staff, as well as method of operation, were discussed with Mr. Holmquist while he was in Richland.

Employee and Community Relations Divisions

TRAINING AND PROGRAM DEVELOPMENT

On January 12, the Non-exempt 8-Hour Training Program was again presented, at the request of the "S" Division, in the 200-W Area to a group of thirty employees. This is an informative program being conducted on a test basis, covering seventeen subjects which have proved successful in increasing morale and improved attitude. Tabulation of an anonymous questionnaire completed by members of this group indicates successful achievement of objectives.

During the month of January, two issues of the Hanford Works SAGE were prepared and mailed to all members of the Hanford Works supervisory-management. Basic information relative to the forthcoming HOBSO program was announced in the SAGE, as well as other current training during the month.

A revision of sections covering Grievance Procedure and G-E Pension Plan was prepared and mailed to all Handbook holders in January. Other revisions are being prepared and, when printed, will be mailed to keep Handbook information current. During the month of January, an additional nine Supervisor's Handbooks on Employee Relations were distributed to new supervisors.

Special preparation was made of a course on "Effective Presentation" by members of the Training Staff, which course will be given by a member of the Training Staff on his own time through the G-E School of Nuclear Engineering.

During the month of January, Orientation was given to two re-engaged, five transferred, and 151 new employees; a total of 158 employees. Re-engaged and transferred employees indicated 100% participation in the Insurance Plan, while 90.7% of the new employees signed to participate in the Group Insurance plan. A special revision of the informative booklet, "Guide To Richland" was secured and is now being distributed through Orientation to all new personnel.

T. A. Purton and J. A. Wood attended the charter dinner meeting of the Washington State Training Directors Society in Seattle on January 26. A total of 26 persons were present, representing sixteen different industrial organizations throughout the Pacific Northwest. This Society offers an excellent opportunity to review the current training activities in these various organizations.

A special conference was held with members of the Training Staff and a member of Employee Services to discuss the forthcoming Benefit Plan Status Report. Due to the pressure of work schedules, particularly on production personnel, it was decided that this program would be disseminated at the proper time through information attached to a copy of the SAGE rather than conducting on-the-job meetings.

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Employee and Community Relations Divisions

Community and Public Relations Division

PUBLIC INFORMATION - News Bureau

Press Relations

Two representatives of the Vice President in charge of Advertising and Publicity, R. W. Jackson and W. D. Haylon, visited Hanford Works. They were brought up-to-date on local press relations and presented with an historical report about the relationship between Hanford Works, Tri-City HERALD and the Richland VILLAGER.

Interviews

Don Carlson, of the Walla Walla UNION-BULLETIN, visited Hanford Works to get three stories. Interviews were arranged so that he could get information to write stories about the 700 area steam plant, Community Patrol lost and found department, and bus transportation on the project. He will do the latter story for the magazine, BUS TRANSPORTATION.

Hill Williams of the Tri-City HERALD interviewed C. N. Gross preparatory to writing a story on Manufacturing Divisions. This will be the first of a series of stories on all Hanford Works Divisions.

Dexter Johnson, managing editor of WESTERN BUILDING Magazine, interviewed the supervisor of the News Bureau and the supervisor of Community Relations. Arrangements were made for the News Bureau to send Johnson material from which he will write a story about Richland's uptown business district for his magazine.

Meetings

The News Bureau Supervisor attended a meeting where the location of parks near Richland along the McNary Dam backwater was discussed.

Annual Editions

Walla Walla UNION-BULLETIN requested and received stories on the following subjects: Richland Patrol, Richland Fire Department, Richland Churches, Richland Business Development, and construction in Richland. Some 24 photos with cutlines were also sent.

The Seattle Daily JOURNAL OF COMMERCE requested and received photos and stories about construction at Hanford Works and development of the uptown business district.

Coverage

A total of 75 newsreleases were written and distributed by the News Bureau during January. Of these, 58 were sent to the "local list" which includes: Columbia Basin NEWS, Tri-City HERALD, Lind LEADER, Yakima Morning HERALD, Walla Walla UNION-BULLETIN, Works NEWS, Spokane CHRONICLE and radio stations KPKW, KWIE, KALE, KREW and KIT. The rest were sent to approximately 75 daily newspapers and wire services throughout the Northwest. Following is a sampling of news release subjects during the month:

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Employee and Community Relations Divisions

Feature Stories - about the safety shoe bus, the new Richland Library, 700 area print shop, Lady from Safetyland, and opportunities for women at Hanford Works. These stories were released with pictures; the last-mentioned went exclusively to the Seattle TIMES.

Union Activities - A copy of the recommendations of the Davis Panel was sent to all media. Copies of the motions to dismiss the Davis-Bacon suit went to local media.

Speakers - Speakers from Hanford Works who spoke out of town during January were B. E. Weidenbaum and H. E. Callahan. Their talks were publicized by the News Bureau.

Employee Benefit Plans - Participation in the new G.E. Insurance Plan and presentation of a large suggestion award were publicized.

Organization Changes - Four promotions were publicized during the month.

Construction Work - Stories included improvement of Columbia Playfield, installation of traffic lights, construction of electrical sub-stations, announcement of the apparent low bidder for the hot semi-works and the apparent low bid of $250,000 for work at Kadlec Hospital.

Hiring - Five releases and 5 photos were sent out concerning hiring activities at Hanford Works.

Safety - Nine stories were released to promote safety in Richland and Hanford Works.

Recreation - The winter recreation program was publicized with 8 news releases.

Other stories released during the month included: Richland tree planting, the availability of G.E. scholarships, power outages, and Richland's 1950 fire record.

Newspaper Space Report - See attached tabulation.

PUBLIC INFORMATION - Community Relations

Publicity activities for the 1951 Benton County Cancer Drive will be directed by the Community Relations supervisor, who accepted the job at the request of the Drive Chairman.

Three requests for information about Richland and Hanford Works were received from high school and college students who were writing reports about the community or the plant. The information requested was furnished.

News stories about civil defense organization and activities were written and released through the News Bureau, at the request of the Civil Defense Authority.

Distribution of the Works NEWS through local barber and beauty shops was arranged. Managers of the firms were contacted, personally, and they volunteered to make copies of the paper available to their customers.

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Employee and Community Relations Divisions

The Chamber of Commerce annual banquet was promoted among members of the Municipal, Real Estate, and General Services Divisions. Many people from these Divisions attended the affair, much to the satisfaction of the Chamber.

HOBSO was discussed with Kiwanis, Rotary, and Lions Presidents, in an effort to interest these organizations in jointly sponsoring the presentation of the Program on the community level. Talks were also had with the local high school principal. All expressed interest in HOBSO, and efforts to gain their support and action will be continued. During his visit in Richland, R. C. Holmquist, a member of the New York Employee Relations Staff, presented the HOBSO "Appreciation" session to the Kiwanis Club, Junior Chamber of Commerce, and representatives of the high school, as well as various Plant groups.

A report of the Ministers-Educators-Management Meeting held in November was written and copies forwarded to interested persons in the Plant and in New York.

PUBLIC INFORMATION - Public Functions

Papers and Speakers

Dr. Merton L. Barad appeared before the American Meteoroligical Society in New York City and spoke on "Radiation, Fog and Atmospheric Pollution."

Dr. H. M. Parker spoke to the American Association of University Women in Richland on "Radiation Protection in Industry and Civil Defense" and to the Benton-Franklin Counties Medical Association in Pasco on the same subject.

E. P. Peabody talked to A.I.E.E. (Richland Section) on "Design and Installation Considerations for Pre-assembled Aerial Cable."

C. B. Wagner appeared before the A.I.E.E. (Richland Section) and spoke on "The 480-Volt Delta System - Grounded or Ungrounded?"

C. R. Brewer entertained the Columbia High School Photo Club with his lecture on Flash Photography.

B. Weidenbaum delivered his "Removal of Radioactive Articulate Matter from Air Streams" to the Northern California Section of AIChE in San Francisco.

Howard E. Callahan presented "Our Relations at Hanford Works" to the Spokane Branch Pacific Northwest Personnel Management Association in Spokane.

George L. Brown presented "Our Relations at Hanford Works" to the Management Club, University of Washington, in Seattle.

Films

Parks and Recreation Division booked 11 G.E. film showings and four University of Washington film showings.

Employee and Community Relations Divisions

Three additional G.E. films were shown.

The A.E.C. film "Bikini Survey" was booked by North Richland Chaplain for troop showings.

Radio

Six 30-second spots on Employment recruiting were written and released for broadcast to KPKW, KWIE, KALE, KUJ, KREW, KIMA, KIT, and KPQ. A total of 46 broadcasts were performed of these employment announcements by those stations. The text was taped for local release.

Six one-minute spots on employment were written and released for broadcast to KPKW, KWIE, KALE, KUJ, KREW, KIMA, KIT, KPQ, KGA, KVNI, and KRLC. These spots will be read approximately 75 times. The text was taped for local release.

A local choral organization was given radio assistance in promoting their concert.

Program Development

Public Address and tape recording equipment was installed in Carmichael auditorium in connection with the Supervisor's Association's meeting on January 18. The General Manager's address was recorded. Charles E. Wilson's address on mobilization was recorded by coincidence by a member of this group and at the request of the General Manager was played for the meeting.

A sound track covering two hours of action was created and run for a local dramatic group.

"Our Relations at Hanford Works" was revamped both textually and visually in order to personalize its presentation by the Divisions Manager at the Regional Meeting sponsored by A.E.C. and G.E. with representatives of the American Society for Engineering Education on February 9, 1951.

Art Work

A map of the Tri-City Area and Kiona was drawn and will be reproduced for distribution to new employees. Five visualizer charts were executed in artype lettering. Three editorial cartoons were drawn for the Hanford Works NEWS.

Art work in two colors for the hospital patient's booklet "Let's Get Acquainted" was completed. The cover for the Supervisor's Association folder was designed. The original map of Richland was revised and brought up-to-date. The four-page "Atomic Test", a Technical Recruiting office brochure, was laid out.

The heading for the Divisions' yearly report was designed. Color roughs for civil defense posters and car cards were executed.

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Employee and Community Relations Divisions

Photo House

Motion pictures were made of a special flow test in the 100 Areas. For this assignment a special panel of instruments was designed and executed in order to record on motion picture film the reaction of the tests.

Two unusual incidents were recorded photographically in order to present visually the causes and conditions under which the incidents took place.

Approximately 600 2" x 2" prints were furnished the Municipal Division for a personnel file.

Over 500 color slides were delivered to Design Division. A test showing proved that they were satisfactory both as to color and focus.

See Photo House work tabulation attached.

EMPLOYEE INFORMATION - Special Programs

The 1000 copies of the G.E.-H.A.M.T.C. Agreement booklet, ordered during December, were received this month.

Use of the G-E signature and monogram at Hanford Works was outlined in an Instruction letter.

Final participation by employees in the new Insurance Plan of 97.4 per cent was announced in a news story through the News Bureau. It also reviewed coverage offered under the new plan.

Opening of the Employment Office on two Saturdays during January was publicized via newspaper advertisements, news releases prepared and released through the News Bureau, Works NEWS publicity, and spot radio announcements throughout the lower Columbia Valley which were prepared and placed via Public Functions. Response during the two Saturdays prompted Employment Office to remain open for at least two additional Saturdays.

Supervisors' Association 1951 membership cards were produced in the 700 Area Print Shop.

Benefit Plan statements which are to be mailed to all employees on March 9 were received from the Printer on schedule and delivered to the Accounting Division for processing.

Lack of nurses at Kadlec Hospital during January was resulting in potentially poor relations with the public. Following discussions with Medical Divisions and Employment Office people, a standing requisition for six nurses has been placed with Employment to have several nurses in process at all times to take care of normal hospital turnover. This activity was in line with Special Programs' responsibility for Kadlec Hospital public relations. Need for part-time duty also was discovered in a discussion with Kadlec Hospital people. As a result of news releases announcing part-time duty nurses were needed, twelve local applicants were interviewed. Some became full-time duty nurses, and others are available for part-time duty.

Employee and Community Relations Divisions

Page proofs of the Nucleonics Department section of the G-E Organization Directory were corrected and returned to Schenectady.

Procedure for distributing copies of "This Way, Please--" through supervisors was developed, the letter to supervisors to accompany each copy was written, and a letter to each recipient of the book was prepared through the News Bureau. Publicity covering the distribution of this book of office procedures for stenographers and other clerical people was coordinated. Received from the printer during January, the book was prepared for the Office Services Division.

The Atomic Energy Labor Relations Panel's recommendation in the wage dispute between the Company and the HAMTC was produced and distributed to Supervisors. This included a covering letter from the Manager of Employee and Community Relations Divisions.

A standard G-E identification sign and an AEC sign designed by the Division's commercial artist were installed above the front entrance to building 703 during January. Arrangements for design and production of the signs, including obtaining AEC approval, were handled.

The Medical Divisions' annual report was developed into a news story and distributed to local news media by the News Bureau.

Progress on four booklets was carried forward. They are: "You and General Electric at Hanford Works," "Safety Is Part of Your Job," "Security Handbook," and "Let's Get Acquainted," a booklet for patients at Kadlec hospital.

EMPLOYEE INFORMATION - Works NEWS

During the month the following programs in the plant and community were publicized:

Community House expansion, revealing progress made to date on facilities and recreational activities available for all Hanford Works people, was publicized through a lead feature story.

Winter Recreation Program for children of Hanford Works people was reviewed in a lead story to acquaint parents with activities being presented.

Rent increases in Richland was covered in full and included complete listing of rents on all houses in the community.

Suggestion system promotion was continued with two lead stories concerning high awards made to suggestors.

Employment needs were run in each issue acquainting all readers with requirements of each of the job positions open.

Polio Drive in the plant and community was publicized by news stories, editorial cartoons, and pictures. All activities taking place concerning promotion of the Drive were reviewed.

Safety promotion was given through lead news stories on Technical Divisions accomplishment of seven years without a major injury; pictures showing

recognition of Areas' attainment of additional injury-free years; results of first quarter of Maintenance Division Safety Derby; and feature story carrying byline of author on front page of new Industrial Patrol Safety Contest.

Educational information was presented on three pages of a twelve page issue giving complete information on registration and classes being offered by the G.E. School of Nuclear Engineering and Adult Evening Classes. Additional service was given through running an entry black for the G.E. School for two additional weeks, and supplementary information on the Adult School was run in a follow-up story.

Civil Defense information pertaining to functional changes made in operation were reviewed, and assistance was given to the program by publicizing the need for nurses.

Income tax information was run giving complete details of the procedure for filing tax forms and details concerning help that will be given to employees by members of the Internal Revenue Bureau at Hanford Works.

Social Security law revisions were brought to the attention of employees through a story covering domestic help being included in the new law.

General Manager's Review of 1950 talk at Supervisor's Meeting was published in a lead story giving details of the accomplishments made by employees in the plant.

Employee Sales Plan promotion was given through picture and story of items available.

Additional accomplishments

One ten and one twelve page paper were published during the month.

Human interest features were emphasized through the month. These included a ski feature, telephone exchange changeover, collecting of Christmas cards by an employee, chess club, glider club, and personal recognition of the safety accomplishments of various employees.

Letters to reporters acquainting them with copy desired by the Works NEWS, emphasis on features, and that a letter a month would be coming to them from now on were sent out.

EMPLOYEE INFORMATION - Women's Activities

Three women's pages appeared in the Hanford Works NEWS during the month of January, 1951.

The story of Bette Szulinski and how she creates her songs and stories for youngsters as "The Lady from Safetyland" was featured January 12 along with the General Electric Consumers Institute recommendations for cleaner washes.

Employee and Community Relations Divisions

The Consumers Institute suggestions for serving waffles any of the three daily meals was featured on January 19. Patterns for a house coat and knit jacket were offered, and 10 were sent to readers on their request.

The new stenographers handbook was featured on January 26. Two stenographers (one a new employee) and a secretary were photographed looking over the book, and a story pointed up the advantages of the new booklet.

"What's Doing" during January featured craft classes, children's theater, youth square dancing, Parent-Teachers meetings and women's basketball.

Special features were written on women and careers at Hanford Works for the Seattle TIMES; the safety shoe bus, and Community House for the Tri-City HERALD; and on Richland church building in 1950 for the Walla Walla UNION-BULLETIN.

Municipal Parks and Recreation publicity included an announcement of the winter recreation program, a feature on Community House, classes in metal tooling, crafts, marionettes, art instruction, dramatic classes, basketball hoop shoot contest, opening of four new playgrounds, report of first meeting of the new Parks and Recreation Board.

NEWSPAPER SPACE REPORT
December, 1950
As compiled from Nucleonics Department News Bureau Clipping Files

SUBJECT	NEWSPAPERS	DATE	COLUMN INCHES	PHOTOS
Frank G. Tabb appointed Supt. in G.E. Health Instrument Division	Tri-City HERALD	Dec. 1	2¼	
	Columbia Basin NEWS	Dec. 3	3	
New Insurance Plan in effect	Columbia Basin NEWS	Dec. 1	3½	
	Tri-City HERALD	Dec. 1	3	
	Yakima Morning HERALD	Dec. 14	1	
Suggestion System awards	Walla Walla UNION-BULLETIN	Dec. 24	3	
	Spokane CHRONICLE	Dec. 25	1½	
	Tri-City HERALD	Dec. 24	2	
Union Activities	Columbia Basin NEWS	Dec. 6	3	
Park Board named	Tri-City HERALD	Dec. 22	3	
G.E. assumes responsibility for window breakage	Tri-City HERALD	Dec. 16	6½	
	Columbia Basin NEWS	Dec. 16	3	
	Walla Walla Union BULLETIN	Dec. 24	5	
Shelter belt story	Walla Walla UNION-BULLETIN	Dec. 31	5½	
Remodeling prefabs	SPOKESMAN-REVIEW	Dec. 8	2	
	Columbia Basin NEWS	Dec. 13	4½	
Bids on Kadlec Hospital	Columbia Basin NEWS	Dec. 13	3	
	SPOKESMAN-REVIEW	Dec. 15	3½	
	Oregon JOURNAL	Dec. 15	2	
	Seattle Daily JOURNAL OF COMMERCE	Dec. 15	5	
	SPOKESMAN-REVIEW	Dec. 15	3	
	Portland Daily JOURNAL OF COMMERCE	Dec. 18	6¼	
	Seattle Daily JOURNAL OF COMMERCE	Dec. 21	4	

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SUBJECT	NEWSPAPERS	DATE	COLUMN INCHES	PHOTOS
Low bid on rehabilitation of office buildings	Boise STATESMAN	Dec. 25	3	
	Walla Walla UNION-BULLETIN	Dec. 24	2	
	Spokane CHRONICLE	Dec. 25	1½	
	Yakima Daily REPUBLIC	Dec. 25	2	
	SPOKESMAN-REVIEW	Dec. 25	2½	
Medical-Dental Clinic completed	Columbia Basin NEWS	Dec. 29	7	
	Walla Walla UNION-BULLETIN	Dec. 29	6½	
	Tri-City HERALD	Dec. 29	4½	
Recreation Stories	Walla Walla UNION-BULLETIN	Dec. 1 & Dec. 29	11½	
	Tri-City HERALD	Dec. 15 & Dec. 27	5	
Christopher Movement film available	Walla Walla UNION-BULLETIN	Dec. 29	3	
	Columbia Basin NEWS	Dec. 30	3	
	SPOKESMAN-REVIEW	Dec. 30	2	
Telephone shortage	Walla Walla UNION-BULLETIN	Dec. 30	5	
	Columbia Basin NEWS	Dec. 30	2	
Cost of A-J houses	Tri-City HERALD	Dec. 6	8½	
New "look" of Richland prefabs	Columbia Basin NEWS	Dec. 14		2
	Prosser BULLETIN	Dec. 21	1½	
Sub-Station bids opened	Columbia Basin NEWS	Dec. 30	3	
	Tri-City HERALD	Dec. 31	2	
Hot-Semiworks bid extended	Portland Daily JOURNAL OF COMMERCE	Dec. 19	3	
	Seattle Daily HOURNAL OF COMMERCE	Dec. 19	2	
Plant hiring	Columbia Basin NEWS	Dec. 6	2½	
	Tri-City HERALD	Dec. 22	3	
TOTAL			170 sq. in.	2

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Employee and Community Relations Divisions

Hanford Works Photo House

	8" x 10"	5" x 7"	2" x 4"	2" x 2"	Negatives	Black & White Slides	Color Slides	Hand Prints	11" x 14"	Film Portraits	16 mm M.P.
EMPLOYEE & COMMUNITY RELATIONS											
Employment			640	5,389	223						
Public Functions	17	14			8						
Special Programs	61	48			54					10	
News Bureau	45	38			18						
Works NEWS		106			103						
Suggestion System	10				7						
MANAGEMENT											
Rotational Training	9									23	
MEDICAL							24				
MUNICIPAL, REAL ESTATE AND GENERAL SERVICES											
Community Safety	22	8			17						
Community Activities		2			1						
Community Patrol	28	56									
Community Fire	16	9			12						
Community Engrs. & Contract	3	51			15						
Commercial & Other Prop.	26				5						
MANUFACTURING DIVISIONS											
Instrument					21				22	2	200 ft.
Power	3				6						
Transportation	46				6				2		
Project Engineering	14				5						
DESIGN & CONSTRUCTION											
Electrical		12			4						
Reactor Division	8				4						
Design							192				
SEPARATIONS DIVISION	12				6						
HEALTH INSTRUMENT DIVISIONS											
Operational		11			17	17					
AEC SAFETY	9	12									
CIVIL DEFENSE	5	4			6			116			
TOTALS	334	371	640	5,389	538	17	316	116	24	33	200 ft.

	Nov.	Dec.	Jan.
Total Prints	5,177	3,275	6,758
Total Negatives	824	471	538
Total Assignments	90	86	108

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MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS
SUMMARY - JANUARY, 1951

ORGANIZATION AND PERSONNEL

Number of employees on roll:		Beg. of Month	End of Month
Administration		11	12
Accounting		30	31
Engineering & Contracts		32	32
Municipal Divisions	(Total 239)		
Public Works		110	103
Parks & Recreation		34	34
Police (Richland)		45	44
Fire (Richland)		58	55
Public Safety		3	3
Real Estate Divisions	(Total 217)		
Housing & Real Estate Maintenance		202	204
Commercial & Other Property		13	13
General Services Divisions	(Total 136)		
Steam & General Maintenance		81	81
Patrol (North Richland)		19	20
Fire (North Richland)		36	35
		674	667

There was a decrease of seven employees in the Divisions during the month of January, 1951.

GENERAL

The new increased housing rental rates, to be effective August 1, 1951, were announced and a copy of the schedule sent to all leaseholders.

Total housing applications pending - 472.

Installation of thirteen traffic control lights has been completed. These lights have made driving safer and more expeditious since the installation.

HARoot/jak
2/12/51

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES
ACCOUNTING DIVISION

MONTHLY REPORT FOR JANUARY, 1951

ORGANIZATION

Employees - Beginning of month	30	Exempt	5	Male	9
Transfers In		Non-Exempt	26	Female	22
Transfers Out	1		31		31
New Hires	2				
Terminations					
Total end of month	31				

RENTS

	January	December
House Leases Processed		
Total active leases beginning of month	5710	5705
New leases	78	85
Cancellations	73	80
Total active house leases end of month	5715	5710
Modifications	8	9
Dormitory		
Total occupancy beginning of month	964	964
New assignments	105	96
Removals	81	96
Total occupancy end of month	988	964
Rental Revenue was as follows		
Equipment	$ 18.80	$ 18.80
Houses		
Basic Rent	198,136.59	199,911.91
Electricity	48,535.41	48,803.80
Water	8,043.70	8,078.51
Steam	2,131.75	1,056.93
Dormitory	13,318.18	13,401.06
Facility		
Basic Rent	43,016.63	44,689.10
Electricity	3,433.92	3,433.92
Water	490.00	490.00
Steam	8,261.20	7,169.83
Utilities - Electrical	2,033.85	1,696.40
	$327,420.03	$328,750.26

TELEPHONE

Number of work orders processed	180	272
Number of working telephones	5079	5095
Revenue including services	$ 18,522.58	$ 18,654.24

MISCELLANEOUS

Invoices prepared during month	328	239
Revenue derived from invoices	$ 6,271.10	$ 5,572.76

Municipal, Real Estate and General
Services Accounting Division

GENERAL

Sixty-nine collection letters were written resulting in the collection of thirty-eight delinquent accounts totaling $251.73.

Eight accounts were submitted to the Yakima Adjustment Service.

Previously submitted 33 accounts	$481.76
Submitted in January 8 accounts	119.34
Collected by Yakima Adjustment Service	7.99
Collected by General Electric Co.	71.34
Balance Agency Accounts	$521.77

Six minor balance accounts totaling $2.38 were written off.

Sixty-seven of the eighty-two active telephone accounts, delinquent thirty days or more as of December 31, 1950 were paid during January.

ACCOUNTS PAYABLE

Statistics

	January	December
Accounts payable vouchers	209	203
Freight Bills processed	19	13
Purchase orders received	81	71
Net amount of purchase orders	$ 58,703.43	$ 20,285.83
Receiving Reports received	103	80
Total net amount disbursed	$ 90,325.46	$199,796.87
Number of checks issued	166	174

A summary of Active Subcontracts is shown below:

Subcontractor	Subcontract Number	Amount Awarded	Paid This Month	Total Paid	Amount Retained
Newland Cafeteria	----- *	139.60	-0-	139.60	-0-
Richland Maintenance Co.	----- *	153,754.47	6,127.38	153,754.47	-0-
Associated Engineers	G-305	113,732.05	-0-	108,870.99	5,730.05
Empire Electric Co.	G-310	16,760.00	-0-	-0-	-0-
Grant, Algot C.	G-318	26,956.59	-0-	23,100.54	615.00
Packard Pipe & Pump Co.	G-326	10,248.50	-0-	2,169.22	241.03
C & E Construction Co.	G-328	173,575.45	10,490.18	165,644.44	8,678.77
F. O. Repine Co.	G-329	29,263.00	-0-	3,950.50	438.95
Pasco Electric Co.	G-331	7,035.70	1,836.33	3,039.43	337.71
Baldwin-Dunham Co.	G-343	652,080.00	36,084.29	36,084.29	4,009.37
		1,183,545.36	54,538.18	496,753.48	20,050.88

* Total amount of contract will be total of estimates as submitted.

Municipal, Real Estate & General
Services Accounting Division

COST

Reports

The December Operating Report was issued January 18, 1951. The Comptrollers Appropriation Report and Supplemental Report were issued on January 15, 1951. The October, November, and December Utilities Reports were issued January 25, 1951. The Construction Budget Status Report was issued January 15,1951. The Operation Budget Status Report was issued January 17, 1951.

Budget

Operations

The Fourth quarter budget review was started.
Some ground work was also laid for the FY 1953 and review of FY 1952.

Construction

The responsibility for writing Appropriations Requests was transferred to the Secretary of the Managers A & B Committee.

C. J. Mashburn was transferred to this desk to replace F. A. Bieber.

Service Orders

Code	QUANTITY (A) Dec.	QUANTITY (A) Jan.	LABOR COSTS Dec.	LABOR COSTS Jan.	MATERIAL COSTS Dec.	MATERIAL COSTS Jan.	TOTAL COSTS Dec.	TOTAL COSTS Jan.
1	1,139	1,151	$2,286.57	$2,352.05	$1,332.94	$1,859.97	$ 3,619.51	$ 4,212.02
2	2,735	2,810	2,931.46	3,086.43	3,988.02	4,241.19	6,919.48	7,327.62
3	496	413	1,157.14	1,070.30	904.88	1,029.26	2,062.02	2,099.56
4	4	5	2.34	4.72	-0-	-0-	2.34	4.72
5	254	196	433.65	365.33	673.89	603.35	1,107.54	968.68
6	482	350	1,178.60	968.80	349.36	347.69	1,527.96	1,316.49
9	4	4	13.65	12.60	8.70	14.61	22.35	27.21
Total	5,114	4,929	$8,003.41	$7,860.23	$7,257.79	$8,096.07	$15,261.20	$15,956.30
Difference(B)-185				-$ 143.18		+$ 838.28		+$ 695.10
Average Cost (C)			$ 1.56	$ 1.59	$ 1.42	$ 1.64	$ 2.98	$ 3.23

(A) Quantity covers the number of Service charges made since each Service Order usually includes several separate charges.
(B) Over (+) or Under (-) Previous month
(C) Whereas Labor costs are almost the same as last month, material costs per Service Charge are up 15%.

1 Plumbing 3 Heat & Vent 5 Lock & Key 9 Sheetmetal
2 Electrical 4 Glazing 6 Carpentry

Work Orders

	November	December	January	Net Change
Active Routine	268	280	285	+ 5
Active Normal	3,077	2,911	2,920	+ 9
	3,345	3,191	3,205	+ 14
W. O. Received	1,716	1,430	1,440	
W. O. Completed	1,978	1,584	1,650	
	- 262	- 154	- 210	

Municipal, Real Estate & General
Services Accounting Division

GENERAL LEDGER

	No.	Debit	Credit
Second Class Invoices Received	97	$707,935.34	$254,983.26
Second Class Invoices Issued	101	$149,857.66	$ 7,476.90

4. 1212222

ENGINEERING AND CONTRACTS DIVISION
MONTHLY REPORT
JANUARY 1951

ORGANIZATION AND PERSONNEL

Number of employees on payroll:	Exempt	Non-Exempt	Total
December 31, 1950	17	15	32
January 31, 1951	18	14	32

GENERAL

The subcontractor is proceeding with the prefab rehabilitation, and in spite of being held up for a week by cold weather, he is still ahead of schedule. It now appears that he will finish well ahead of schedule if no unforeseen difficulties are encountered.

Work is progressing on improved contract procedure.

Contacts have been made with several organizations and agencies in Seattle, Portland, and Spokane in an attempt to obtain more engineering personnel to relieve the shortage of manpower in the engineering group. Several people are being negotiated with at the present time. It is hoped some satisfactory people will be hired.

Report on extended engineering services requests:

		Completed during January
ESR-97-CH	Electrical & Structural Inspections	25
ESR-98-CH	Alteration Inspections	5
ESR-118-CF	Approve Alteration Permits	3
ESR-262-CA	Utilities to Nine Churches--Prepare plans for installation of utilities to West Side UP Church	1
ESR-378-CH	Review Plans for Tenant-Erected Garages	3

The following engineering services requests were completed and closed out:

ESR No.	Description
398-PW	Sidewalk, Curbs and Gutters--New School
400-PW	George Washington Way from Gillespie to Coordinate Club
401-PW	Van Giesen from Perkins to Jadwin
403-PW	Symons Street from Goethals to Jadwin
478-PW	Sidewalk Improvement--George Washington, Gowan, to Van Giesen
507-PW	Rebuilding Swift Boulevard from Wright east to irrigation ditch
	(Note: All above ESRs consolidated with ESR-402-PW)
482	Park Development (Playground equipment and other) (This ESR consolidated with ESR-473)
94-CA	Non-profit Organizations
160-CA	UPtown Theater
180-CA	Latter Day Saints Church
243-PW	Irrigation Ditch Fencing South of Carmichael School
244-PW	Irrigation Ditch Fencing--Wright Avenue to Van Giesen Street

ESR No.	Description
312-SS	700 Area Buildings--Re-roofing, Painting, and Siding
321-CH	Rearrangement of Steam Pits in Dormitories
330-CH	Heating Equipment in "T" Type Houses
362-CH	Water Shut-off Valves in Prefabricated Dwellings
373-CH	Bathtub, Tileboard and Linoleum Installation in Conventional Type Houses
432-PW	Extension of Swift Boulevard to By-pass Highway
494-PR	Drainage on Land Side of Levee
470-CF	Golf Course
505-MU	Elevations--Richland Recharge Basin
511-RC	Metering Multiple Business Government Building
512-MU	8" Water Line on Humphreys Street

Progress report on ESRs that will become projects:

ESR No.	Title and Remarks
112-CH	Study Sagging Floors in M, Q, R, S Houses: Deferred for other work. 70% complete.
303-CH	Study Excessive Settling of Precut House Floors: Deferred for other work. 40% complete.
314-CH	Rewiring Tract House L-901: Awaiting decision of Housing Division on electric heat. 40% complete.
341-SS	Roads and Walks--700 Area: 50% complete.
353-CA Part II	Resurface Tennis Courts at Columbia Playfield: Cost estimate and Manager's appropriation request forwarded to C. F. Barnes January 30, 1951.
356-CH	Relief Valves, Residential Water Heaters: 95% complete. Held in abeyance pending instructions from Housing Division.
379-CH	Interior Painting, Scheduling and Contracting: 90% complete. Cost estimate and method of work revised for project proposal as requested by C. W. Weeks. Transmitted to A & B Committee for approval of funds.
429-CH	Prefab Shower Stalls: 90% complete.
400-403 Inclusive	Roads and Streets--1951: Estimate revised according to change in scope of work requested by the using division. Project proposal forwarded to A & B Committee January 18, 1951.
443-SS	Repair of Exterior Steps and Platform--700 Area Buildings: 60% complete. Scope revised by B. R. Hennigar. New estimate in preparation.
449	Relocation of Partitions in Fire Station #1: 90% complete. Design plans complete.

450-CA	New Fencing--Riverside Park: Awaiting approval of funds. 90% complete.
458-SS	Floors, Foundations, Load Factors in 700 Area Buildings: Work progressing. 15% complete.
459	Study of Removal of Huts 712-A and 712-B: Deferred for other work.
468-SS	Improvement of Lighting--703 Building: Rough-draft project proposal prepared in accordance with ESR and lighting survey. Scope increased by B. R. Hennigar. Project proposal transmitted to A & B Committee.
473-PR 482-PR	1951 Park Development: Cost estimate, attachments, and method of work for project proposal revised at request of W. R. Jones. Awaiting approval of funds.
476-RC	Seattle First National Bank Heating: 90% complete. Letter of recommendation sent to M. L. Blum November 29, 1950.
477	Relocation of Access Panels, U and V Type Houses: 25% complete. Awaiting approval of funds.
483-RH	Rehabilitation of Prefab, 1313 Potter: Plans completed. Specifications to be completed.
484-SS	Sprinkler and Fire Alarm System--703 Building: Work progressing. 50% complete.
485-RM	Exterior Painting of Houses: Project proposal transmitted to A & B Committee January 19, 1951, for approval of funds.
490-RM	Ranch House Roofs: Recommendation report in rough draft.
491	Improvement of Lighting--Recreation Hall: Deferred for other work.
492-MF	New Central Fire Station--Engineering and Design: Recommendation letter sent to Hare December 27, 1950.
500-RM	Exterior House Painting--Divisions II, III and Ranch Houses: Preparation of project proposal scheduled to start 2-1-51.
506-RM	Vent Covers--U and V Type Houses: Deferred for other work.
508-CH	Prefab Rehabilitation (Part II): Deferred for other work.
509	Fire Prevention Protection Survey--Dormitories M-9 to M-14: Deferred for other work.

Private Construction Progress Report (Plans were reviewed and regular field inspections were made in compliance with building permit requirements):

1212225

Theater: Construction started 12-14-49. Final inspection 12-14-50.

Catholic Church Site: Awaiting information.

Reorganized LDS Church: Construction started 8-22-49. Work progressing slowly.

Northwest United Protestant Church: Construction started 9-25-50. Work progressing.

Westside United Protestant Church: Construction started 12-26-50. Work progressing.

Latter Day Saints Church: Construction started 2-5-49. Final inspection report in process.

Assembly of God Church: Construction started 5-23-50. Work temporarily held up.

First Baptist Church: Awaiting start of construction.

Episcopal Church: Awaiting information.

Redeemer Lutheran Church: Construction started 8-21-50. Work progressing.

Central United Protestant Church: Awaiting information.

Christian Science Society: Awaiting information.

Richland Laundry and Cleaners: Construction started 9-22-50. Work temporarily held up.

Addition to Masonic Temple: Construction started 8-11-50. Work progressing.

Outdoor Roller Rink: Construction started 9-1-50. Work temporarily held up.

Free Methodist Church: Awaiting information.

Richland Lutheran Front Addition: Awaiting information.

Richland Investment Company: Construction started 12-8-50. Work progressing.

Status of "C" Type Projects (over $20,000) is as follows:

C-203 Part III — Water Supply and Sewage Facilities--Richland and North Richland Construction Camp: Project completion report in preparation.

C-232-R Part II — Carmichael Junior High School: Work completed except lowering of sprinkler heads.

C-233-R — Irrigation Mains and Grass Seeding--Spalding Grade School: Construction completion notice issued.

C-282-R — Grass Seeding--Columbia Playfield: No further work will be done on this project until Spring.

C-351 Irrigation of Public Grounds:

A. Frankfort Playground: Irrigation system completed. Final acceptance will be made of this area as soon as grass is established.

B. Columbia Playfield: Irrigation system in small areas around parking lot under construction. Balance of work completed with exception of lowering sprinkler heads.

C. Riverside Park: Completed and ready for final testing and acceptance.

D. Marcus Whitman Grade School: Irrigation system approximately 95% complete.

C-356 Equipment for Public Parks: Construction progressing.

C-357 Additional Capacity--Sewage Lift Station: Subcontract signed by interested parties and forwarded to AEC for approval. Diesel engine ordered from General Motors by General Electric has been received by Chicago Pump Company.

C-363 Rehabilitation of Prefabs: Construction started 11-28-50. 20.5% complete.

C-372 Exterior Painting of Houses: Work suspended until April, 1951. 15% complete.

C-373 Roof Replacement--South Storage Reservoir: Project proposal not approved. Awaiting information.

C-375 Site Development--Clubs and Organizations: Prepared letter to AEC for Huck's signature requesting cancellation of the directive authorizing expenditure for this project.

C-382 Well 1100-D, Duke Well Field: Original 20" well re-tested and proved inadequate. Second 20" well drilling and testing to be completed by February 10, 1951.

C-386 1950 Street Patching and Seal Coating: Construction completion notice issued.

C-400 Re-roofing, Painting, and Siding--700 Area Buildings: Contract to AEC for approval. Interior painting resumed. Building 760 started.

C-405 Siding of A & J Houses: Funds not approved. All work suspended pending further instructions from Housing Office.

C-407 Bathtub, Tileboard and Linoleum Installation--Conventional Type Houses: Directive HW-207 issued 11-28-50. Field Release issued 12-8-50. Specifications awaiting AEC approval.

C-408 Additional Erosion Control and Irrigation of Public Areas: Design work 80% complete. Plans and specifications ready for contract by 2-15-51. Preliminary survey completed on Abbot, Duane, Howell, Swift and Cottonwood shelterbelts.

1212221

The status of "S" Projects ($5,000 to $20,000) is as follows:

S-148 North Richland Fire Station Alterations: Construction completion notice issued.

S-255-A Levee Irrigation--Newton Street to Gowan Avenue: Completed with exception of finishing backfill and balancing system. Construction completion notice issued.

S-255-B Grass Seeding--Marcus Whitman and Frankfort Playgrounds: Site grading at Marcus Whitman Playground in progress and will be completed in time for grass seeding operations in the Spring.

Frankfort Playground: Grass seeding will have to be spot-reseeded in the Spring.

S-244 Irrigation Ditch Fence--Wright to Van Giesen: Plans and specifications completed 1-2-51.

S-269 Fencing Recharge Basins: Project completion report issued.

S-290 Automatic Traffic Control Signals: Project 100% complete. Closed 1-22-51.

S-299 Radio Communication System--Fire Division: Negotiations in progress to subcontract this work. Awaiting notice to proceed.

S-321 Steam Pits to Dormitories: Held up pending determination of dormitory disposition.

S-333 Air Conditioning in Dormitories: 60% complete. Awaiting material. It will be necessary to extend directive completion date and contract time.

S-349 Interior Painting--703 Building: Construction completion notice issued.

S-350 Improvement of Lighting in 705 Building: Work request issued. Awaiting material.

S-362 Water Service Alteration--Prefab Houses: Construction started 1-22-51. 7% complete.

S-366 Exterior Painting of Kadlec Hospital, Municipal Building, and 2 Churches: Plans and specifications issued 12-11-50. Awaiting advertising of bids.

S-394 Moving Hutment 1125-1: Subcontract with A. C. Grant for moving of the hutment being terminated. The proposal for a separate subcontract for disposal of damaged hutment is under consideration.

S-397 Radio Communication System for Tenant Service: Project proposal transmitted to M. T. Binns.

S-405 Additional Erosion Control--Street Tree Planting: Street tree planting has proceeded on eleven streets with 321 trees planted by the Erosion Control Group and 131 trees planted along streets bordering parks by the Parks Division, or a total of 452 trees planted during the month of January.

S-415 Hospital Soft Water Line: Negotiations for bid invitations in progress.

S-469 Site Preparation--703 Building: Preparing new estimate and design due to change in scope.

The status of "L" Projects ($2,000 to $5,000) is as follows:

L-237 Richland Village Coordinate System--Monument Installation: Construction completion notice processed and awaiting signature of using division.

L-255 Site Grading, Columbia Playfield: Construction completion notice issued.

L-307 Guthrie-Williams 8" Water Main: Field Release #1 is being processed; awaiting signature of using division.

L-330 Installation of New Oil Burners in "T" Type Houses: Specifications prepared; funds approved; Field Release #1 issued.

L-406 Installation of Cyclone Fence Around Barth Playlot: Held up for inclusion with other fence jobs into one contract.

L-444 Parking Lot--Swift Boulevard and Gillmore Avenue: Construction completion notice issued.

L-483 Fire Damage Repair--Prefab 1313 Potter: Field Release #1 processed and awaiting signature of using division.

L-512 Humphreys Street 8" Water Main--Wright Avenue to Winslow: Field Release #1 processed and awaiting signature of using division.

The status of "K" Projects (under $2,000) is as follows:

K-430 Exterior Painting--Catholic and United Protestant Churches: Plans and specifications issued 12-11-50. Awaiting advertising of bids.

K-480 Service Drive--Uptown Theater: Construction completion notice processed and awaiting signature of using division. Project completion report in preparation.

Plans and specifications were checked for code compliance on the following construction work:

ESR-501-AEC	Jason Lee Elementary School	95% complete
ESR-518-AEC	703 Building Addition	50% complete. Work progressing.

MUNICIPAL DIVISIONS

SUMMARY

JANUARY, 1951

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Fire	57	1	54	1
Parks & Recreation	11	23	13	21
Police	16	29	16	28
Public Works	19	91	19	84
Public Safety	2	1	2	1
	105	145	104	135

Effective January 19, 1951, the name of the Richland Patrol was changed to Richland Police. The functions and activities of the former Richland Patrol Division will not be affected in any way by this change. The designation of Richland Police Department will allow for reference purposes a distinction between the Richland Police and other plant patrol forces.

C. F. Barnes attended a meeting of the Parks and Recreation Commission in Seattle on January 12 and 13, 1951.

Miss Maryan Reynolds, Richland Librarian, was in Portland on January 17, 18, and 19, 1951, to expedite the purchase of library books.

All Superintendents were interviewed regarding the Salary Administration Program during the month.

1212230

PUBLIC WORKS DIVISION
MONTHLY REPORT
JANUARY 31, 1951

ORGANIZATION AND PERSONNEL

		Preceding Month
Number of Employees on Roll:		
Beginning of Month	110	115
New Hires	1	-
Transfers In	5	7
Terminations	2	3
Transfers Out	11	9
End of Month	103	110

GENERAL

The Public Works Division recorded two minor injuries during the month of January; this being a frequency rate of 0.48.

SANITATION

Collection and disposal of garbage and trash were carried on according to schedule with the exception of New Year's Day which was observed as a holiday. Routes normally scheduled on this day, (Monday), were picked up on January 2nd by crews borrowed from other Public Works Sections. The Saturday collection crew was further reduced by one man this month, and now consists of one driver and one helper. Additional economies in the overall operation are to be effected in February by reducing this section by two men, and a request for this reduction is now in the hands of the Employment Division.

The total weight of garbage and trash collected during January was approximately 990 tons, as compared to 903 tons in December.

1212231

Municipal - Public Works

EROSION CONTROL

Approximately 850 trees were set in the "West Shelterbelt" during January, and this tree belt is now complete, having been brought to its designed size of five complete rows.

The street tree planting project was continued, and a total of 321 leaf trees was set during the month. Replacement of dead street trees was also started this month, and 209 replants were made in the vicinity of Cottonwood and Birch Streets.

Replacement of 133 leaf trees was made in the "Duane Shelterbelt" this month, and the setting of 75 more leaf trees and 25 evergreens is required to complete the work in this area.

A total of 146 leaf trees was removed from the Plant Stock Storage Area and delivered to the Parks and Recreation Division for their use.

ROADS AND STREETS

Routine maintenance of streets, sidewalks, and storm drainage systems, and street sweeping, were performed during the month. Work requiring the use of asphaltic materials has been postponed, where possible, until weather conditions are more favorable for this type of work.

At the request of the AEC, both traffic lanes on the south approach to the Bailey Bridge were moved twelve feet to the west to allow for construction of the abutment for the new bridge. Signs were also fabricated and installed on both approaches to control the operation of heavily loaded trucks and busses over this span.

Cross-walks were painted at 25 locations, and nine street marker signs and 73 traffic signs were replaced during the month. It was also necessary to fabricate and install twelve storm-drain grills.

DOMESTIC WATER

Normal operations were performed throughout the month, and the average daily water consumption was 4.85 million gallons per day. This figure represents an increase of about 0.15 million gallons per day over December consumption, and it is interesting to note that the increase is totally attributable to North Richland and the 300 Area, since there was a slight decrease in Richland consumption.

DOMESTIC WATER (CONTINUED)

Overhaul of Wells Nos. 2 and 4 has been completed, and Nos. 15, 18, 3000-A and 3000-B are presently being overhauled.

High-tanks Nos. 1, 2, and 3 were drained, cleaned, repaired and sterilized, and a 10" extension was installed on the column of each of these tanks. During the cleaning process the platinum electrodes which were broken off during the winter of 1949-50 were recovered in the No. 2 and No. 3 tanks, and these electrodes were re-installed and the Rusta-Restor Units are being returned to service. Cathodic protection will then be operative in the three tanks.

A 4" Sparling water meter was installed in the water service line to the Richland Concrete Batch Plant, and consumption data at this facility will be recorded.

Domestic Water System

	Well Production Million Gallons	Avg. Daily Production	Total Consumption Million Gallons	Avg. Daily Consumption
Richland	81.0465	2.6144	80.7707	2.6055
North Richland	34.7210	1.1200	48.6215	1.5684
Columbia Field	34.0554	1.0986		
300 Area			20.8135	0.6714
Totals	149.8229	4.8330	150.2057	4.8453

Pumping tests on the 20" well in the 1100-8 area indicate that this well should not be developed. A new 20" well has been drilled to a depth of 86' and perforation of this casing is scheduled for February.

SEWERAGE SYSTEM

Routine operation of the treatment plants was carried on throughout January. The effluent ditch is presently being re-graded to provide the necessary gradient for tying-in to the pumping facilities and culverts which are under construction by the Corps of Engineers. The costs of this work are to be borne by the AEC.

1212233

SEWERAGE SYSTEM (CONTINUED)

Pump No. 2 at the Sewage Lift Station was overhauled, and the check valve on the No. 1 pump was repaired.

Permanent replacement of 60' of 10" sewer line was made on the trunk line, (which was washed out during December), south of the Carmichael School. Installation of a replacement man-hole on this repaired section is scheduled for February.

Results of the "dissolved oxygen" sewage sampling tests which were carried out in December indicate that there are two sources of septic sewage which must be corrected. Tests on the raw sewage from North Richland show that it is devoid of oxygen at times, and it may be necessary to provide means for chlorinating this raw sewage before it flows to Richland. Septic sewage was also found in the third man-hole north of the Carmichael School, and since this condition is due to an error in gradient, a scheduled flushing of this man-hole has been set up in the sewerage operation.

Sewerage

	Total Sewage Flow Million Gallons	Average Daily Flow Million G. P. D.	Average Rate Flow Gals. Per Min.
Plant No. 1	32.730	1.055	733
Plant No. 2	64.510	2.081	1,445
Totals	97.240	3.136	2,178

IRRIGATION SYSTEM

The removal of silt, sand and debris from the main supply canals was continued in January, and at the close of the month approximately 75% of the canal mileage was clear and ready for operation.

1212234

MONTHLY REPORT
PARKS AND RECREATION DIVISION
January, 1951

ORGANIZATION AND PERSONNEL

	January	December
Beginning of month	34	35
New Hires	4	0
Terminations	1	2
Transfers - IN	1	7
OUT	4	6
	34	34

SCHOOLS

The following is a tabulation of full-time paid School District #400 personnel as of January 31, 1951:

Administration	6
Principals & Supervisors	15
Clerical	23
Teachers	250
Health Audiometer	1
Building Custodians	43
Cooks	36
Nursery School and Extended Day Care	11
Bus Drivers	2
Farm Manager	1
	386

On January 24, it was announced that Robert Chisholm, Assistant Principal at Columbia High School, will become the Principal of Chief Joseph Junior High School at the beginning of the 1951-52 school semester. No successor has been named for Mr. Chisholm.

Mrs. Lilly Peterson will be the Principal of the new Jason Lee Grade School, on which construction will start in the very near future. A successor has not been chosen for Mrs. Peterson's present position as Principal of Sacajawea Grade School.

CLUBS AND ORGANIZATIONS

As of January 31, 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.	1
	10

1212235

Parks and Recreation Division

On January 3, 1951, the organization meeting of the Parks and Recreation Board was held. The development of the Richland Parks and Recreation program and the ultimate need for the Board was presented and the Board's responsibilities and recommended procedures were discussed. Mrs. Lilly Peterson was elected chairman for the year 1951. Lots were drawn to determine the terms. The results were as follows:

Name	Term	Expires
L. S. Johnson	1 year	January, 1952
P. Allen	2 years	" 1953
B. L. Sellin	3 years	" 1954
F. C. Olson	4 years	" 1955
Mrs. Lilly Peterson	5 years	" 1956

The regular monthly meetings will be held on the first Thursday of each month at 5:00 PM. These meetings are open to the public. When necessary the Chairman or majority of the Board will call a special meeting. The Park Supervisor briefly reviewed the park development program and the status of the work now in progress. The Board extended an invitation to the Community Council to have a representative attend the meetings of the Park Board. On January 8, the Board made a tour of the park system to become better acquainted with its facilities.

The "Guide to Richland" and the "Directory" were completed and distributed during the month. A copy of the Guide was sent to all supervisors for information purposes and as a service to their employees desiring information. A Guide is given to all new employees on the Project as well as one copy being distributed to all organizations listed in the Directory. Publicity was also presented to the public informing them that those desiring copies could obtain one at the Parks and Recreation office in W-20. Copies printed include 5,000 Guides and 3,000 Directories. The Directory will be re-issued every six months as a service to provide the public with up-to-date information. The Guide and Directory information was compiled by the Organization Section of the Parks and Recreation Division. The Guide was edited by the Community Relations Division. It is estimated that the 5,000 copies will be sufficient for a two year period.

Richland American Legion Post No. 71 conducted the Tide of Toys Campaign during the first two weeks of January. The program was presented with the cooperation of all the grade schools with excellent results. These toys will be shipped overseas for the children in foreign lands who are less fortunate.

On January 3, 1951, the Red Cross Bloodmobile collected 135 pints of blood from Richland donors.

The Richland Community Concert Association presented Byron Janis in a piano concert on January 17. The concert was presented in the Carmichael Auditorium before a capacity audience.

The March of Dimes Drive began on January 15, and continued through January 31. Many programs were sponsored on behalf of the drive to obtain money. Some of these programs included a Triple Teen Dance, Mothers Porchlight Campaign, Iron Lungs placed in business houses and office buildings, basketball games and many other programs. No financial statement has been issued to date.

1212236

Parks and Recreation Division

On January 18, the Hanford Works Supervisors Organization held their first 1951 meeting. The meeting was held in the Carmichael Auditorium with Mr. Prout as guest speaker.

The Annual Meistersingers Concert was presented in the Columbia High School Auditorium on January 26, and 27, before very large and enthusiastic audiences.

The number and types of organizations presently served by the Parks and Recreation Division include:

Business and Professional Clubs		20
Churches & Church Organizations		26
Civic Organizations		5
Fraternal Organizations		24
Music & Art Associations		8
Recreation & Hobby Groups		42
Schools & Parent Teachers Assoc.		13
Social Clubs & Organizations		11
Veteran & Military Organizations		12
Welfare		6
Youth	Boy Scouts	20
	Camp Fire Girls	36
	Girl Scouts	49
	Misc.	10
Miscellaneous		9
		291

RECREATION

On January 23, a Community House Supervisor was employed by the Division, as a replacement for an employee previously transferred to another Division.

On January 26, 1951, one Steno-Typist terminated from the Parks and Recreation Division and will not be replaced at this time. Her work has been apportioned among the other clerical help within the Division.

The Parks and Recreation Division accepted the entire south portion of the Recreation Hall as their responsibility. This section of the building will be known as the Community House and the address is 600 George Washington Way. At this time the large dining room and kitchen are still being used by the commercial operator of the Recreation Hall as a storage area until renovations are completed.

The Recreation Division has started the renovations on a priority schedule. This work includes general cleaning of the floors and walls, waxing, alterations to the lavatories, addition of facilities for a dark room, renovations of space for an office, patching and painting of the hall and lobby walls, and the sealing off of a doorway leading from the pool hall to the hallway of the Community House.

Parks and Recreation Division

On January 23, the City Hoop Shoot started for all age groups. These contests will continue through February 2, 1951. Division 1 and 2 includes girls and boys in the 6th grade and under, Division 3 and 4 includes 14 year olds and under, and Division 5 and 6 includes 15 year olds through high school. Those in Division 3 are eligible for the Seattle Post Intelligencer Hoop Shoot Contest to be held in Seattle for the entire State. This contest is co-sponsored by the Columbia Basin News, Richland Public Schools, and the Parks and Recreation Division. The other Division shoots are sponsored by the Parks and Recreation Division.

Attendance figures for the Month of January are as follows:

Community House	Boys	Girls	Total	Sub-Total
Games Room (27 days)	1,678	535	2,213	
Marionettes (3 sessions)	17	8	25	
Juvenile Art (3 sessions)	23	33	56	
Open Craft (4 sessions)	35	18	53	
Metal Craft (4 sessions)	30	41	71	
Dramatics (3 sessions)	17	46	63	
	1,800	681	2,481	2,481
Servicemen's Center (4 sessions)	Men - 303		Women - 175	478
Spalding Program				
Badminton (5 sessions)			125	
Co-Recreation (5 sessions)			104	
Mens Recreation (5 sessions)			128	
Weight Lifting (10 sessions)			145	
Womens Recreation (3 sessions)			50	
Fencing (3 sessions)			15	
				567
Lewis & Clark School				
1/6/51	39	67	Elementary	
	43	48	Jr. High	
1/13/51	61	77	Elementary	
	50	67	Jr. High	
1/20/51	63	79	Elementary	
	61	80	Jr. High	
1/27/51	43	63	Elementary	
	40	43	Jr. High	
	400	524		924
(58 parents witnessed the dancing)				
Columbia High School				
Jr. Basketball School (1 session)			47	
Minnesingers Boys Chorus (4 sessions)			296	343
		GRAND TOTAL		4,793

1212238

Parks and Recreation Division

PARK MAINTENANCE

The regular monthly inspection of the parks and playgrounds was made and the necessary repairs and cleanup was accomplished. The repairing of all Project mowing equipment and sprinklers was nearly completed. All park benches and tables were also renovated.

The Park Maintenance Section repaired 600 sprinklers for the Housing Division during the month.

Work performed by the Park Maintenance Section during the month on Project S-405-B was as follows:

21 trees were planted at Craighill playground
7 trees on Caples St.
8 trees on Hetrick playground
95 trees on Spalding playground
16 trees were replaced on other park and playground areas

Work was started on Project S-255-B to regrade and seed the area covered by the automatic irrigation system at Marcus Whitman School. This is estimated as a 500 hour job. It is estimated that this is 20% complete.

The installation of playground equipment on Project C-3563 continued during the month. The equipment was installed on Craighill, Roberdeau, Townsend Court and Jefferson playgrounds. It is estimated that this project is 15% complete.

Twenty Work Orders were written during the month.

LIBRARY

The final clearance for placing of book orders was obtained and an order for approximately 6,000 volumes has been placed. The Librarian went to Portland to select additional titles and to speed up delivery on books that had been ordered. The first shipment of these books has been received and are now being processed by the library staff.

One General Clerk reported to work for the library on January 15, and the Children's Librarian report to work on January 22. This makes a total of five employees now on the library staff.

A portion of the new library was obtained for use by the staff on January 23, and the staff was moved to the building on this date. Custodians have been working in the building since this date. They have cleaned and finished all the floors in the main reading room and polished the new furniture and fixtures.

The Librarian spoke to the literature section of the AAUW and the educational section of the Women's Club on the services of the library to the community.

At its January 2, 1951, meeting the Library Board elected Mrs. Elizabeth Weidenbaum as President for 1951. It is estimated that the formal opening of the Library will be held Sunday April 1, 1951.

 1212239

Parks and Recreation Division

MAJOR ACTIVITIES DURING THE MONTH

Jan. 1 - 14	Tide of Toys - American Legion	Community
3	Bloodmobile - Red Cross	Rec. Hall
15 - 31	March of Dimes	Community
17	Byron Janis - Piano Concert Community Concert Association	Carmichael
18	H. W. Supervisors Meeting	Carmichael
26 - 27	Meistersingers Concert	Columbia

1212240

MUNICIPAL DIVISIONS

RICHLAND FIRE

January 1951

ORGANIZATION AND PERSONNEL

Number of Employees on Roll	Present Month	Preceeding Month
Beginning of the Month	58	57
New Hires	0	1
Terminations	1	0
Transfers In	0	0
Transfers Out	1	0
Leaves of absence	1	0
	55	58

FIRE PROTECTION

Response to Alarms		23	10
Fire Loss (Estimated)	Hanford Works	695.80	0.0
	Personal	511.50	17.00
	Total	1207.30	17.00
Investigation of Minor Fires and Incidents		17	10
Safety Meetings		8	8
Security Meetings		4	3
Inside Drills and Schools		60	31
Outside Drills		25	6
Fire Alarm Boxes Tested		183	183

Six Boy Scouts examined for Firemanship Merit Badge.

Lieutenant detailed to assist on sprinkler and alarm system tests at Kadlec Hospital.

Vehicle timing tests conducted on new traffic lights controlled from fire stations.

On January 12th a demonstration was held in Fire Station 1 for local fire and safety officials of a new automatic resuscitator known as the "Pneolator".

One fireman detailed January 15th to stand guard over downed power line at rear of Spudnut Shop until arrival of Electrical line crew.

Five times during the month fire apparatus stood by at the AEC Airport for plane landings or take-offs.

On January 15th a lieutenant was sent to 1605 Davison to investigate an overheated hot water tank.

Firemen detailed January 6th and 30th to flood skating rink at 1500 Haines.

1212241

RICHLAND FIRE DIVISION January 1951

FIRE PREVENTION

Fire Hazard Inspections:	
700 Area Buildings	55
1100 Area Buildings	40
Commercial Facilities	20
A.E.C. Airport Buildings	7
Dormitories	15
Schools	1
Municipal Buildings	8
Residences	1
Miscellaneous Inspections	58
Total	205

Fire Extinguishers:	
Inspected	461
Installed	5
Refilled	8

Fire Hose Standpipes:	
Inspected	97

Fire Hazard Reports Compiled and Submitted:			
700 Area	10	Real Estate	4
1100 Area	4	Municipal	5
A.E.C.	2	Miscellaneous	13
Hospital	8		

Annual Sprinkler and Flow Alarm Tests:

Tests conducted in Public Health Building on January 11th were satisfactory throughout.

Tests conducted January 11th at Kadlec Hospital revealed several failures. Repairs and repeated tests were concluded on January 18th when all systems tested satisfactorily. Recommendation made to Hospital Administrator that monthly tests be made of electrical devices on these systems.

Tests conducted January 24th of 703 Building systems revealed a failure in one system. After corrections were made, this system operated satisfactorily.

A fire extinguisher demonstration was conducted January 23rd for 41 Design and Construction employees.

Instigated removal of weeds around Stores warehouse, well fields and 700 Area.

Numerous hazards reported in Buildings 722-H, 703 and 500 Thayer resulted in engineering studies of remedial measures. Subsequent reports were received indicating a change of occupancy for Building 722-H and removal of the building at 500 Thayer to 3000 Area.

Because of anticipated low water pressure during summer months, recommendations were made for installation of fire department booster connections on 703 Building.

Following detection of excessive burned out display window lights in C.C. Anderson's, matter was reported to Real Estate for correction.

1212242

RICHLAND FIRE DIVISION January 1951

Provision of fire extinguishers for sub-contractor buildings at Duportail and Wright was referred to Public Safety Office.

Upon return of Fire Prevention Week contest book from the National Fire Prevention Week Contest in which Richland won fifth place in competition with 2312 other cities, additional data is being added to the book before submission to the U. S. Chamber of Commerce contest.

Following conferences with A.E.C. and General Pacific Corporation, A.E.C. Property Officials decided that, in the recent exchange for defective fire extinguishers, an overshipment of 200 extinguishers was received. Accounting Division will arrange for payment.

Classes on airplane crash fires and crash procedure given January 23rd and 30th to approximately 35 cadets of Civil Air Patrol.

1212243

MUNICIPAL DIVISIONS

RICHLAND POLICE DEPARTMENT

JANUARY, 1951

ORGANIZATION AND PERSONNEL

Number of Employees on Roll:	Preceding Month	This Month
Beginning of Month	45	45
New Hires	0	0
Terminations	0	0
Transfers in	0	0
Transfers out	0	1
End of Month	45	44

GENERAL

On January 12, 1951, the Richland Police Department assumed the responsibility for operation and control of the new traffic lights which were installed during the months of December and January.

On January 22, 1951, the name of the Richland Patrol Division was changed to Richland Police Department. The functions of the department were not affected by this change. The designation of the Richland Police Department will allow for reference purposes a distinction between the Richland Police and other plant patrol forces and will more aptly describe the functions carried on by this group.

Sgt. E. E. Miller, Traffic Control Section, left Richland January 27, 1951, for Evanston, Illinois, where he will attend a 4½ months traffic training course at Northwestern University.

On January 29, 1951, members of the Richland Police Department attended a meeting of the Yakima River Peace Officers Association held at Union Gap, Washington. Election of officers for 1951 was held and Capt. C. F. Klepper, Administration, was re-elected secretary-treasurer and Capt. J. S. Johnson was elected sergeant at arms.

On January 31, 1951, responsibility for the money escort service for the Richland Branch of the Seattle First National Bank was transferred to the North Richland Patrol. The armored car used for this service was also transferred.

During the month, 159 traffic violation reports were received. These consisted mainly of invalid license plates, speeding and accidents. A total of 116 other reports were received. These consisted mainly of larceny cases.

During the month, a total of 197 letters were received, compared to 263 last month. These consisted of 189 inquiries on arrests and 8 requests for assistance.

During the month, 31 prisoners were processed through the Richland Jail.

During the month, 37 gun registrations were recorded.

1212244

During the month, 84 bicycle registrations were recorded.

TRAFFIC

There were 20 reportable accidents for Richland during the month. This amount shows a reduction of nine over the preceding month and a reduction of 13 over the same month last year. There were no fatalities caused by traffic accidents, but eight persons were injured of which one injury was a major requiring hospitalization.

Causes of the above accidents were: one drunken driving, six negligent driving, two excessive speed, four failure to yield right of way, two following too close, one improper turning, two improper backing, two defective equipment.

Property damage caused by traffic accidents decreased from an average of $315.00 per accident to $275.00 per accident, however, personal injury from traffic accidents was increased to eight compared to six last month and no injuries during the same month last year.

Traffic safety meetings with the School Boy Patrol were conducted at three Richland grade schools by Ptm. D. F. Metz during the month. A survey was made with all grade schools regarding uniform equipment needed for the School Boy Patrol. Twenty new caps and 16 new belts were issued at the various schools.

A bicycle traffic safety film on safe bicycling was shown to 980 pupils at the Carmichael Junior High School along with a traffic safety lecture given by Ptm. D. F. Metz. Traffic safety lectures and films were also presented to a group of 95 persons employed in the 700 Area Administration Building.

The installation of 13 new traffic control lights was completed and put into operation at 13 of the busy intersections throughout the city. Twenty-six stop signs at the same intersections were removed. The operation of the 13 new traffic lights throughout the city has greatly helped to expedite a more rapid, smooth and safer flow of traffic through the intersections.

This installation of the traffic lights also eliminated several officers previously needed for point control at the various intersections. These officers are now free to patrol the streets during peak traffic hours which results in safer traffic flow.

Ten new metal street marker signs have been installed replacing the old type at various intersections throughout the city. Also 30 stop signs were placed on new seven foot standards replacing the four foot standards which elevates the stop signs to meet the uniform traffic control.

TRAINING

Subjects covered in the lieutenant's training classes for the month were as follows:

Locating Witnesses and Missing Persons
Communism
Modus Operandi of Burglars
Handling of Sidearms and Shotguns
Tour of Duty
Law of Arrest
Public Relations
Handling Patrol Cars
Photography Procedure
Traffic Control
Search of Prisoners
Jail Procedure

1212245

Richland Police Department Continued

Advance training at the small arms range for the period in field instruction was as follows:

Pistol 2 hours

Qualifications on the Army-L Course were as follows:

Score	No. Men	Per Cent
Expert	3	100%

A total of 3 men reported to the Range for training.

ACTIVITIES AND SERVICES

	November	December	January
Doors & windows found open	29	53	39
Children lost or found	13	9	12
Ambulance runs assisted	19	25	29
Ambulance driver provided	0	2	2
Dogs, cats reported lost or found	10	13	9
Dog, cat, loose stock complaints	44	47	25
Persons injured by dogs	5	4	5
Bank escorts & details	38	35	40
Fires investigated	17	15	26
Miscellaneous escorts	36	35	19
Complaints investigated	37	28	35
Deaths reported	0	2	2
Articles lost or found	40	37	31
Records inquiries	62	112	319
*Law enforcement agencies assisted			14
*Private individuals assisted			10
*Plant divisions assisted			24
*Emergency messages delivered			58
Totals	350	417	699

*Effective this month a break-down of "persons assisted" will be carried.

1212246

MONTHLY REPORT
RICHLAND POLICE DEPARTMENT
JANUARY, 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 Asslt.	1	0	1	0
5. Burglary—Break & Ent.	2	2	0	0
6. Larceny—Over $50.00	5	1	0	1
Larceny—Under $50.00	24	5	10	4
Bicycle Theft	33	1	0	32
7. Auto Theft	2	0	0	2
TOTAL PART I CASES	67	9	11	39
PART II				
8. Other Assaults	2	0	2	0
9. Forgery & Counterfeit.	0	0	0	0
10. Embezzlement & Fraud	1	0	1	0
11. Stolen Prop:Buy:Rec.Poss:	2	0	2	0
12. Weapons:Carry:Poss.	0	0	0	0
13. Prostitution	0	0	0	0
14. Sex Offense	0	0	0	0
15. Off.Ag.Fam. & Child.	5	0	3	2
16. Narcotics—Drug Laws	0	0	0	0
17. Liquor Laws	0	0	0	0
18. Drunkenness	8	0	8	0
19. Disorderly Conduct	6	0	6	0
20. Vagrancy	9	0	9	0
21. Gambling	0	0	0	0
22. Driving While Intox.	2	0	2	0
23. Violation Rd. & Dr. Laws:				
Speeding	22	0	22	0
Stop Sign	6	0	6	0
Reckless Driving	1	0	1	0
Right of Way	4	0	4	0
Negligent Driving	9	0	9	0
Defective Equipment	5	0	5	0
24. Parking	99	0	13	86
25. All Other Traffic	74	0	73	1
26. All Other Offenses:				
Public Nuisance	2	0	2	0
Pickup for Outside Ag.	1	0	1	0
Dest. of Pers. Prop.	2	0	0	1
Dest. of Govt. Prop.	4	0	0	1
Malicicus Mischief	2	0	0	2
Vandalism	2	0	0	1
Dog Nuisance	1	0	0	1
Car Prowl	5	0	1	1
Illeg.Use of Firearms	3	0	3	0
Investigation	9	0	0	9
Truancy	1	0	1	0
27. Suspicion	4	0	0	4
TOTAL PART II CASES	291	0	174	109

(Continued on Page Two)

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PAGE TWO—MONTHLY REPORT—RICHLAND POLICE DEPT. JANUARY, 1951

OFFENSES	KNOWN	UNFOUNDED	CLEARED ARREST	CLEARED OTHER*
PART III				
28. Missing Persons	13	0	0	13
Lost Persons	3	0	0	3
Lost Animals	7	0	0	7
Lost Property	8	0	0	8
29. Found Persons	5	0	0	5
Found Animals	6	0	0	6
Found Property	26	0	0	26
TOTAL PART III CASES	68	0	0	68
PART IV				
30. Fatal Mot.Veh.Traf.Acc.	0			
31. Pers.Inj.Mot.Veh.Traf.Acc.	5			
32. Prop.Dam.Mot.Veh.Acc.	15			
33. Other Traffic Acc.	0			
34. Public Accidents				
35. Home Accidents	No Accurate Statistics Kept			
36. Occupational Accidents				
37. Firearms Accidents				
38. Dog Bites	1			1
39. Suicides	0			
40. Suicide Attempts	0			
41. Sudden Death & Bodies Fd.	0			
42. Sick Cared For	5			
43. Mental Cases	0			
TOTAL PART IV CASES	26			1
COMPOSITE TOTALS PARTS I,II,III,IV CASES	452	9	185	217

*Cases listed under "Cleared Other" are those cleared by various means other than arrest, such as: orders from prosecutor, juvenile probation officer or other situations in which a mutual agreement is obtained. They are definitely "cleared" cases and differ from the arrest column only in that there were no arrests.

Property Reported Stolen During Month $1,294.30 (Bikes $990.00)
Property Recovered During Month $ 763.00 (Bikes $720.00)

SEE PAGE THREE FOR JUVENILES INVOLVED.

OFFENSES OCCURRED IN 1950 BUT CLEARED THIS MONTH.

Grand Larceny—6 Cases
Petit Larceny--12
Theft of Govt. Prop.-1
Dest. of Govt. Prop.-1
Dest. of Pers. Prop.-1
Breaking & Entering—2
Prowlers--3
Car Prowls—2
Vandalism—1
Molesting--1

1212248

RICHLAND POLICE DEPARTMENT
PAGE THREE--JANUARY, 1951 --MONTHLY REPORT

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																			
Petit Larceny	4	12	M					1	2	1					2	3			1	10
			F												2					2
Assault	1	1	M														1			1
			F																	
Car Prowling	1	2	M												1		1			2
			F																	
Investigation	3	6	M								1					3				4
			F															2		2
Unauthorized Use of Firearms	2	6	M											1	2	3				6
			F																	
TOTALS.....	11	27						1	2	1	1			1	7	9	2	2	1	27

1212249

RICHLAND POLICE DEPARTMENT
JANUARY, 1951

Number of offenses known to police per 25,000 inhabitants in cities of 25,000 persons:

	Wash.Oregon & Calif. Six Months (Jan-June,1950)	One Month Average	Richland (Jan-June 1950)	Richland Dec. 1950	Richland Jan. 1951
Murder	.49	108	0	0	0
Robbery	14.3	2.3	0	0	0
Ag. Asslt.	10.3	1.7	4	0	1
Burglary	90.6	15.1	12	1	0
Larceny	269.6	44.9	223	18	23
Auto Theft	37.3	6.2	4	1	2
Bike Theft			85	37	32

Number of offenses known to police per 25,000 inhabitants regardless of whether offenses occurred in cities or rural districts:

	State of Washington Six Months(Jan-June,1950)	One Month Average	Richland (Jan-June 1950)	Richland Dec. 1950	Richland Jan. 1951
Murder	.53	.08	0	0	0
Robbery	10.9	1.8	0	0	0
Ag. Asslt.	2.7	.4	4	0	1
Burglary	80.3	13.3	12	1	0
Larceny	236.1	39.3	223	18	23
Auto Theft	30.9	5.1	4	1	2
Bike Theft			85	37	32

The portion of offenses committed by persons under the age of 25 yrs. is shown:

	National Average (Jan-June 1950) (Percentage of Cases)	Wash.Oregon.Cal. (Jan-June 1950 (Actual Cases)	Richland (Jan-June 1950)	Richland Dec. 1950	Richland Jan. 1951
Robbery	55.4	7.9	0	0	0
Burglary	63.0	57.0	2	0	0
Larceny	46.7	125.9	57	4	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."

1212250

RICHLAND POLICE DEPARTMENT
RICHLAND JUSTICE COURT CASES
JANUARY 1951

VIOLATION	NO OF CASES	NO OF CONV.	NO OF FORF.	CASES CONT.	CASES PEND.	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.	20	7	6	2		4	1					11	$ 12.50	$ 32.50	$ 15.00
Def. Equip.	6	3	3								1	1	10.00	15.00	5.00
Drunken Dr.	2	1		1						1				52.50	
F.T.Y.R.O.W.	7	5	2								3		25.00	50.00	12.50
Ill. Parking	13	6	6			1			1				21.00	22.00	12.50
Lic. Plates	50	25	19	5			1				1	7	100.00	105.00	20.00
Negligent Dr.	9	7	1	1									17.50	125.00	12.50
Reckless Dr.	1	1								1				37.50	
Speeding	25	13	8	2		2					3		90.50	132.50	
Stop Sign	6	2	3			1						1	15.00	10.00	5.00
No Registration	3		1	2								3			
Auto Theft	1	1 (Taken to Superior Court)													
Larceny by Check	1	1						1	1						
Permit Livestock to stray on Highway	1	1												12.50	12.50
Petit larceny	1					1									
Poss. of stln. prop.	2	2						2	1						
Public Intox.	5	4	1										12.50	60.00	17.50
Public Nuisance	2	2						1	1					17.50	17.50
Vagrancy	8	6	2										35.00	105.00	
TOTALS:	163	87	52	13		9	2	4	3	2	8	23	$339.00	$777.50	$130.00

NOTE: One Drunken Driving Case amended to Negligent Driving

1212251

POLICE DIVISION - TRAFFIC CONTROL STATISTICS

January, 1951

MOTOR VEHICLE ACCIDENTS:

	Total Number		Fatalities		Major Injuries		Minor Injuries	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Richland	29	20	0	0	1	1	2	5

ACCIDENT CAUSES:

	Negligent Driving		Failure to Yield Right of Way		Reckless & Drunken Driving		Other Causes	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Richland	5	6	9	4	1	1	14	9

PLANT WARNING TRAFFIC TICKETS ISSUED:

	Speeding		"Stop" Sign		Parking		Imp. License		Def. Equipment		Other Violations		Totals	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.
Richland	0	0	0	0	24	86	1	1	5	0	0	0	30	87

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	
	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Jan.	Dec.	Ja
Richland	26	22	1	6	6	2	0	1	8	3	8	9	24	14	38	82	111	13

TRAFFIC VOLUME: Average 24-hour Traffic Volume Count for week ending on 1-25-51, on Knight Street opposite Police Headquarters - 1,600 Motor Vehicles.

NOTE: Traffic Control Statistics show ORIGINAL CHARGES ONLY.

1212252

MUNICIPAL DIVISIONS

Public Safety Division

January 1951

ORGANIZATION AND PERSONNEL

Number of employees on roll:		Preceding month
Beginning of month	3	3
New hires	0	0
Terminations	0	0
Transfers	0	0
End of month	3	3

STATISTICAL AND GENERAL

The National Safety theme, "Winter Hazards", was publicized during the month of January through the medium of newspaper articles. Radio interviews were conducted on the subject, "The Pinhold Driver". This program was sponsored by the Richland Safety Council and members of the Public Health Department. Numerous spot radio announcements were made on traffic safety.

The Municipal Public Safety Division gave a summarization of their activities in a speech to the local P. T. A. This summarization was given in order to further familiarize the general public with the over-all safety program.

New safety films were shown to local organizations and at safety meetings. These films consist of: "Wanton Murder", "Screw Drivers and Screw Jays", "The Safe Driver With Care", and "Horizons Unlimited". These films are maintained in the Public Safety office for loan to various organizations desiring them. The film, "Then There Were Four", was turned over to the Richland Public Schools for their use. Also, a radio program was released to the Columbia High School for production by their radio class.

The Public Safety office met with the Parent-Student Council on January 22, to assist them in developing their safety program for the month of April.

All yearly accident reports from the sub-contractors were assembled and forwarded to the Atomic Energy Commission.

The Richland Safety Council is sponsoring a Richland Traffic Digest, which is being prepared by the Police Department and Public Safety office. All expenses incurred in this project will be paid by the Richland Kiwanis Club.

REAL ESTATE DIVISIONS

SUMMARY

JANUARY

ORGANIZATION AND PERSONNEL:

	BEGINNING OF MONTH		END OF MONTH	
	Exempt	Non-Exempt	Exempt	Non-Exempt
Commercial & Other Property Division	7	6	7	6
Housing & Real Estate Maintenance Division	23	180	23	181
	30	186	30	187

GENERAL

On January 10, 1951, an "Amendment to Dwelling House Lease"(Fire Damage) and a "Modification of Maintenance Responsibilities"(Glass Breakage) were sent to all leaseholders in the Village.

The rent increase announcement and a new rent schedule, effective August 1, 1951, were sent to all leaseholders in Richland on January 29, 1951.

Specifications were approved by the A.E.C. to allow crushed rock driveways to be built by leaseholders for car ports instead of former specifications calling for concrete or blacktop.

Richland Investment Company started construction on an investment building in Block 2, Uptown Business District.

New Wing of Medical Arts Building was accepted on January 1, 1951. All doctors and dentists in private practice now have offices in this building.

MUNICIPAL, REAL ESTATE AND GENERAL SERVICES DIVISIONS

HOUSING AND REAL ESTATE MAINTENANCE DIVISION

January, 1951

ORGANIZATION AND PERSONNEL

Number of employees on payroll		January
Beginning of month	23 exempt employees	
	180 non-exempt employees	
	203	203
End of month	23 exempt employees	
	181 non-exempt employees	
	204	204

RICHLAND HOUSING

Housing Utilization as of Month End

Houses Occupied by Family Groups	Conventional	Block	T	Pre Cut	Ranch	Pre Fab	Apt	Tract	Total
G. E. Employees	2217	260	8	381	839	1158	55	39	4957
Commercial Facilities	89	9	2	28	70	63	5	5	271
Community Activities	9	—	-	1	7	3		1	21
Medical Facilities	6	13	-	2	—	1	—	—	22
Post Office	7	—	-	2	3	9	—	3	24
A.E.C. and Other Government	95	28	-	16	40	23	4	4	210
School District	43			5	12	49	1		110
Kellex Corporation	6	5	-	5	7	2	1		26
Atkinson-Jones	9	15	-	6	12	4	4	-	50
Newberry-Neon	3	1		1			1		6
Vernita Orchards								4	4
J. G. Turnbull					1	1			2
Fred J. Early Co.					1				1
V. S. Jenkins					1				1
Total Houses Occupied	2484	331	10	447	993	1313	71	56	5705
Houses assigned - Leases written	6			1	5	7	1	1	21
Houses assigned - Leases not written	5	2	-	1	1	1	2		12
Houses available for assignment	5			1	1	21			28
Total Houses	2500	333	10	450	1000	1342	74	57*	5766

* Tract House NN-1040 has been turned over to the Municipal Divisions, and has been removed from all Housing and Tenant Relation Records.

1212255

Housing and Real Estate Maintenance Division

Housing Turnover During Month.	Begin Month	Moved In	Moved Out	Month End	Difference
Conventional Type	2495	15	26	2484	Minus 11
Block Type	332	4	5	331	Minus 1
"T" Type	10	—	—	10	—
Precut Type	445	10	8	447	Plus 2
Ranch Type	996	11	14	993	Minus 3
Prefab Type	1318	20	25	1313	Minus 5
Apartments	72	3	4	71	Minus 1
Tract	58	—	2	56	Minus 2
Total	5726	63	84	5705	Minus 21

Dormitory Statistics

Dormitories

			Occupants	Vacancies	Total Beds
Men	Occupied	14	550	16	566
Men	Unoccupied				
Women	Occupied	12	***429	**102	*531
Women	Unoccupied	1			

Women's Dormitories occupied by:

G. E. Offices	2
Education	1
Apartments	1
	31

* W-20 Building formerly reported as 50 beds in the above total has been turned over to the Municipal, Real Estate and General Services Divisions for temporary office space.

** This includes 50 beds in Standby Condition in W-17.

*** This includes space of 4 beds in W-9 used for supply rooms and dormitory offices.

GENERAL

Houses Allocated to new tenants	37
Exchanged houses	18
Moves (Within the Village)	14
Turnovers	10
Total Leases Signed	63
Terminations	42
Total Cancellations	84
Applications Pending	472

Allocation Section Statistics

Voluntary Terminations	20
R. O. F.	7
Discharge	1
Transfers	5
Retirement	—
Houses Assigned "As Is"	21
Move Off Project	5
Houses sent to renovation	32

2.

121225b

GENERAL

On January 10, 1951, an "Amendment to Dwelling House Lease" and a "Modification of Maintenance Responsibilities" were sent to all leaseholders in the Village.

The rent increase announcement and a new rent schedule were sent to all residents in Richland on January 29, 1951.

On January 29, 1951 Atkinson-Jones painters started painting the 10 two bedroom prefabs brought in from Columbia Camp. They will be ready for occupancy as soon as painting is completed.

TENANT RELATIONS

Processing of Service Orders, Work Orders, and Service Charges.

	Orders Incomplete As of 12-31-1950	Orders Issued From 12-31 to 1-31.	Total Orders incomplete as of 1-31-1951
Service Orders	168	2819	191
Work Orders	4069	1047	4079
Service Charges	67	265	36
Renovation Work Orders	17	33	13
Painting(Paint Program)		35	

Principal Work Order Load

	Incomplete as of Dec. 31, 1950	Incomplete as of Jan. 31, 1951
Laundry tub replacement	110	121
Bathroom renovation (tub-lino-tile)	287	283(206 Sub-
Tileboard only (bathroom)	12	29 Contract)
Kitchen cabinet linoleum	231	284
Kitchen floor linoleum	59	88

MAJOR WORK PROGRAM

Repair to Prefab Foundations	(600 Completed)	33
Relocation of Prefab Stop and Waste	(414 Completed)	219

WORK ORDERS COMPLETED DURING THE MONTH OF JANUARY

59 Two bedroom prefab Utility rooms were lined with wallboard and linoleum installed.
22 Two bedroom prefabs had sliding cupboard doors changed to swinging doors.
64 Bathtubs were installed.
119 Linoleum repair jobs were completed.
50 Shower stalls were installed in prefabs.
40 Blacktop step orders were completed.
8 Blacktop step orders were completed.
36 Basement walls were waterproofed
28 Hot water tanks were replaced
24 Parking compounds graded and filled with gravel
131 Interior touch-up paint jobs were completed
Trash and weeds removed from entire city after windstorm.

1212257

TENANT RELATIONS (continued)

Alteration Permits issued during the month of January totaled 51 compared to 57 in December.

Automatic Washer	14	Basement Excavation	7
Fence	2	Basement window	1
Basement partitions	2	Range timer on oven	1
Remove closet in Utility Room	1	Range & Refrigerator change	2
Back door installation	9	Move hot water heater	1
Partition in living room	1	Remove 2" of cabinet	1
Electrical wiring	2	Dishwasher	2
Refinish floors	2	Remove shelves	1
Remove coal bin	1	Air conditioner	1
Coal furnace to oil	1		

750 Inspections were made during the month of January as compared to 1183 made during December.

Alteration Permits	39	Bathtubs	58
Cupboards	15	Driving on Grass	1
Floor Boards	19	House Siding	2
Jack and Shim	25	Leaking Basements	11
Linoleum	160	Lot lines	4
Paint	22	Porch and Steps	8
Screen Doors	10	Shades	30
Shower stalls	45	Sidewalks	20
Sinks	4	Tileboard	63
Toilet Seats	5	Top Soil	2
Walls	19	Windows	24
Miscellaneous	164		

MISCELLANEOUS

House freeze-ups, starting January 27 through January 31.

Prefabs	168
Precuts	65
Conventional	5
A & J	1
Tract	1
Facilities	4
Ranch	1

1212258

MAINTENANCE (HOUSING AND REAL ESTATE) FOR MONTH OF JANUARY, 1951

HEAVY MAINTENANCE STATISTICS

	Man-Hour Backlog Non-Routine	Man-Hour Backlog Routine	Craft	Non-Exempt Manpower	Crew Days
	14,207		Carpenters-Upholsterer	55	33
		114	Millwrights	4	3
	1,537		Painters	19	10
	6,060		Plumbers & Fitters	9	84
	648		Serviceman	9	9
	1,726		Sheetmetal	3	72
Sub-Total	24,178	114		99	211

RENOVATION STATISTICS

			Carpenters	1	
			Painters	16	
			Truck Drivers	1	
	1,523		Janitresses	3	9
Sub-Total	1,523			21	9

SERVICE ORDER STATISTICS

			Carpenters	2	
			Electricians	6	
			Locksmiths	1	
			Plumbers	4	3
	374				
Sub-Total	374			13	3

HELPERS-TRAINEES-ETC

			Painter Trainee	1	
			Plumber Helper	1	
			Plumber Handyman	1	
			Sheetmetal Helper	1	
			Carpenter Trainees	4	
				8	
Grand Total	26,075	114		141	223

5.

MAINTENANCE TRANSPORTATION FACILITIES

HEAVY MAINTENANCE

Truck Type	Number in Possession	Craft	Requistioned for Replacement
1½ Ton Flatbed	10	Carpenters	
3/4 Ton Power Wagon	1	"	
½ Ton Pickup	7	"	
Cushman Scooter	1	"	
2½ Ton Dump trucks	2	Labor	
1½ Ton Flatbed (Hyd. Lift)	1	Labor	
½ Ton Pickups	2	Labor	
1½ Ton Flatbed(Chain Hoist)	1	Millwrights	
½ Ton Pickups	3	Millwrights	2 Walk-In Type
½ Ton Panels	1	Painters	
1½ Ton Flatbed(Chain Hoist)	1	Painters	
½ Ton Pickup	1	Painters	
½ Ton Pickups	4	Plumbers	
3/4 Ton Pickups	4	Plumbers	
½ Ton Panel	1	Sheet Metal	
Sub-Total	39		2

RENOVATIONS

29 Passenger Bus	1	Painters	
Station Wagon	1	Painters & Janitresses	
½ Ton Pickup	2	Carpenters	
Sub-Total	4		

SERVICE ORDER

½ Ton Pickups(Service Body)	3	Electricians	3	3/4 Ton Pickups (Service Body)
½ Ton Pickup	1	Electricians		
½ Ton Pickups	2	Carpenters		
½ Ton Pickup	1	Locksmith		
½ Ton Pickup(Service Body)	3	Plumbers	3	3/4 Ton Pickups (Service Body)
Sub-Total	10		6	
Grand Total	53		8	

6. 1212260

MAINTENANCE NARRATIVE - JANUARY, 1951

Three rooms were painted in the Medical Arts Buildings after alterations had been completed, 40 kitchens were painted, 91 bathrooms were painted and miscellaneous painting of equipment was completed in 722 Hangar Building. Work on the interior paint program is now in progress.

Tree roots were removed from 11 sewer lines; 101 bath faucet repairs completed; installed condensate tank at Thrifty Drug; removed and relocated plumbing fixtures and dental chairs in dental building; installed 76 cast iron covers on valve boxes for prefabs; overhauled and replaced radiator valves and traps in 2½ dormitories; inspections of dorms, efficiency apartments and commercial houses for steam leaks twice a week were completed and completed orders where pipes were frozen.

The grease traps were cleaned in commercial facilities; trash was removed inside and outside houses in renovation; delivered coal to houses in renovation; excavated and backfilled 11 sewers for repairs; excavated for repairs and backfilled four fuel oil tanks; hauled top soil and filled holes in yards and around foundations; and trimmed excess grass from sidewalks in dorm. area.

Shower stalls have been changed in two dormitories (W-8 and W-4). Stainless steel soap dishes are being installed over laundry tubs in Women's Dormitories.

Four millwrights have been working on routine furnace service work for the past month.

A total of 2,527 service orders were completed during the month, approximately 88% of this work being done in permanent type houses, 9% for dormitories and 2% for commercial facilities.

Seventy-three miscellaneous pieces of furniture were repaired, reupholstered and refinished for the dormitories; 39 roofs were repaired and 27 windows were repaired.

1212261

M. S. WAREHOUSE SUMMARY FOR December 22, 1950 thru January 25, 1951

TOTAL INV. $112,397.98

INVENTORY ITEMS AMOUNT $68,027.05

RECEIVED IN INVENTORY	CODE	AMOUNT	
ON STORE ORDERS		$ 1,116.93	
ON PURCHASE ORDERS		214.94	
FROM HOUSING	61-20	77.03	
FROM DORM. FURNITURE	64-20	159.80	
	TOTAL RECEIPTS		$ 1,568.70
INVENTORY DISBURSED			
MISC. CHARGE		119.96	
FREE ISSUE	61-20	1,047.45	
CASH ITEMS	61-20	83.29	
DORM SUPPLIES	64-20	661.14	
DORM LINENS	64-20	86.79	
DORM SHADES & REFLECTORS	64-20	18.22	
DORM FURNITURE	64-20	29.63	
WHSE. SUPPLIES	63-20	41.64	
	TOTAL DISBURSED		$ 2,088.12

INVENTORY ITEMS BALANCE $67,507.63

PLANT ITEMS AMOUNT $44,370.93

RECEIVED	CODE	AMOUNT
RECEIVED		$ 2,207.04
DISBURSED		1,507.63

PLANT ITEMS BALANCE $45,070.34

GRAND TOTAL INVENTORY $112,323.01

	PIECES
DORM FURNITURE	122
RANGES EXCHANGED	5
REFRIGERATORS EX.	15
PRE FAB HEATERS EX.	30
SENT TO MAINTENANCE	110
RECEIVED FROM MAINT.	133

8.

1212262

DORMITORY MONTHLY REPORT

Parking lots and driveways in the women's dormitory area are being resurfaced to eliminate poor drainage and large chuck holes.

Steam systems of three dormitories were overhauled and valves, traps, and piping replaced as required.

Fourteen tank rooms were cleaned and sprayed to eliminate insects.

Floors were refinished in 1½ dormitories this month for a total of 9,000 square feet.

Several pieces of dormitory furniture are being repaired and refinished at McNeil Island. This work is on a trial basis and has been arranged through the facilities of the A. E. C.

Dormitories were carefully inspected for hazards during this month and a study is being made with reference to insulation that is hanging from the joists and flooring under the first floor of each dormitory building and presumably creates a fire hazard by reason of the fact that employees occasionally are required to work under the dormitories and it is thought an electrical arc or light might ignite the insulation.

Matrons were required to give an unusual amount of attention and care to twelve residents of the women's dormitories who were ill during the month.

Three dormitory residents died during the month and their personal effects were packed and stored or shipped as required.

131 minor repair orders were processed.

122 pieces of furniture were exchanged between dormitories and warehouse.

Matrons were required to escort craftsmen on 35 maintenance calls in the women's dormitories during the month.

Dormitory linens were restamped (AEC) in eight dormitories to prevent loss.

Linens laundered during the month:

7,261 sheets
3,874 pillow cases
236 spreads
35 pads
201 shower curtains

500 light bulbs were replaced.

Correction: Paragraph nine, line three, the word moral should be morale. This is in the issue of December, 1950.

1212263

COMMERCIAL AND OTHER PROPERTY DIVISION

JANUARY, 1951

DIVISIONAL PERSONNEL:

Number of Employees on Payroll:	January
Beginning of month	13
End of month	13
Net difference	0

COMMERCIAL AND NONCOMMERCIAL PERSONNEL:

Number of Employees on Payrolls:

	Commercial	Noncommercial	Total
December	1,213	82	1,295
January	1,097	81	1,178
Net Decrease			117

SUMMARY OF ROUTINE ITEMS PROCESSED:

Work Orders	65	5	70
Back Charges	4	0	4
Service Orders	32	2	34

CONTRACTS AND NEGOTIATIONS:

A. Commercial:

1. Lease:

Richland Investment Company, covering the construction, operation and maintenance of an investment building in Block 2, Uptown Business District.

2. Supplemental Agreements:

(a) Vance Properties, Inc. - to provide for resubleasing of certain spaces in the Facility.

(b) Davis Furniture Company - to provide for subleasing in the Facility.

3. Assignment of Lease:

Seattle Tent and Awning Company was authorized to sell its building, located at 1348 Jadwin Avenue, Richland, Washington, and to assign its Lease to Messrs. J. W. Fleenor and E. A. Reinertsen, a partnership, for continued operation of a sporting goods store.

4. Letters of Authorization:

(a) Hanford Works Supervisors Association was authorized to have a plot of land northwest of Richland set aside for the Association for a period of two years with an option to lease the land at any time during the two-year period and with the further option to buy the land, if it is possible to do so, at a later date for the purpose of developing a golf course and country club.

(b) True's Oil Company was authorized to sublease the Rainbow Service Station at 303 Casey Avenue, formerly operated by W. K. Woods, to F. W. Potts.

B. Noncommercial:

1. Leases:

(a) First Baptist Church - to provide for the construction, operation and maintenance of a church building at Richmond Boulevard between Raleigh Street and Putnam Street.

(b) West Side United Protestant Church - to provide for the construction, operation and maintenance of a church building located at Lee Boulevard and Wright Avenue.

SUMMARY OF OCCUPANCY AND EXPANSION STATUS:

A. Commercial:	December	January
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	13	13
(c) Total businesses operating in Government-owned buildings	54	54
2. Number of privately-owned buildings	41	41
(a) Number of businesses operated by prime lessees	37	37
(b) Number of businesses operated by sublessees	26	26
(c) Total businesses operating in privately-owned buildings	63	63

1212265

	December	January
3. Total number of businesses in operation	117	117
4. Doctors and dentists in private practice, leasing space in Government-owned buildings	21	21
5. Privately-owned buildings under construction	2	2
B. Noncommercial:		
1. Government-owned buildings		
(a) Churches	4	4
(b) Clubs and organizations	10	10
(c) Government agencies	3	3
Total	17	17
2. Privately-owned buildings		
(a) Completed and in use	5	5
(b) Under construction	5	5
(c) Sites tentatively allocated or leases in process of negotiation	9	9
Total	19	19
3. Grazing leases	41	39

GENERAL:

A. Commercial:

1. Construction was started on the Richland Investment Company building in Block 2, Uptown Business District.

2. The new wing of the Medical Arts Building was accepted on January 1, 1951, and by assignment of this space, as well as by reassignment of space in the original sections, all doctors and dentists in private practice now have offices in this building.

3. Invitations to submit proposals for the operation of a soft drink vending machine service were opened on January 9, 1951, and are now being analyzed.

COMMERCIAL PROSPECTS:

A number of applicants, the majority of which were not interested in constructing privately-owned buildings, expressed an interest during the month to establish and operate businesses in Richland. Inquiries were received covering the following types of establishments:

Drive-in Restaurant	Glass Shop
Jewelry Store	Welding Shop

GENERAL SERVICES DIVISIONS

MONTHLY REPORT

JANUARY, 1951

ORGANIZATION AND PERSONNEL

Number of Employees on Roll:	Beginning of Month Exempt	Non-Exempt	Total	End of Month Exempt	Non-Exempt	Total
North Richland Patrol Division	5	14	19	5	15	20
North Richland Fire Division	36		36	35		35
Maintenance & Operation Division	9	72	81	9	72	81
Total	50	86	136	49	87	136

Personnel changes during month:	Non-exempt
Transfers to Instrument Division	1
Terminations	1
New Hires	2

STEAM AND GENERAL MAINTENANCE DIVISION

General Maintenance:

Have open requisitions for one carpenter trainee and one electrician.

Short life of wood posts is evidenced by the increasing number of fence posts and steam line poles which are breaking because of rot. Heavier replacements can be expected in near future.

Several Hauserman partitions were installed and partitions relocated in office buildings to accommodate changing requirements.

Repairs were made to wall insulation of quiet room and additional doors and equipment provided for Nurses Station in Kadlec Hospital.

Considerable moisture and condensation is resulting from "sweating" under semi-temporary buildings which are not adequately vented. Steps have been taken to open vents where provided and to install vent louvers where they were not originally provided.

Shop service was rendered to other operating groups, including work for the Telephone Division and Electrical Distribution group.

Two hundred chatter bars were made for use in channeling traffic through North Richland.

All miscellaneous carry-over work for 722-A building is completed except steam radiator guards, which are in process.

Diswasher and steam table in kitchen of Kadlec Hospital have been replaced with new modern stainless steel equipment.

Hoisting equipment has been installed at 700 Area Electrical Shop to provide a safer and more efficient method for the handling of electric motors.

1212267

The Electrical group rebuilt 17 household kitchen ranges and repaired 8 household refrigerators. Seven irrigation and well pump motors were overhauled. Sixty-eight new fluorescent fixtures were installed to replace old type fixtures and 9 fluorescent fixtures relocated. All fluorescent fixtures in 770 building were resecured, after several were found to be poorly supported.

Fire Alarm Systems were tested and repairs made at both Kadlec Hospital and 703 building. It has been recommended to Municipal that these systems be tested more frequently.

Shop equipment at the 722 Hangar received a much needed "face lifting" in Safety Code colors, with gratifying results.

Mr. Sam Bates, glazier, received $250 award for his suggestion concerning improved method of caulking of Prefab windows. Approximately 120 of these windows were recaulked this month, along with cutting and sand blasting of other glass.

Material Excessing included removal and crating of two boilers from the old boilerhouse at North Richland.

Considerable repair was made to the condensate return system at 1131 Area buildings. It is anticipated that almost the entire condensate system will require replacement before another heating season.

Crew-Days Work on Hand:

Carpenter	29	Welder	21.5	Painting	42
Electrical	46.6	Sheetmetal	56	Sign Painting	42.5
Machinist	7.5	Millwright	29	Glazing	1
				Pipefitting	12

Steam Operation:

Steam operations were normal at the 784 Powerhouse, with the load increasing considerably in the latter part of the month, with increasing cold weather. Two boilers were in service until January 6, when a third boiler was placed on the line. On January 29 it was necessary to place the fourth boiler in service.

Seven steam line poles were replaced because of breakage from rot. Underground steam line pits were inspected and the necessary maintenance performed.

Coal shipments were stopped on January 15 and coal was used from the stockpile in order to level off the pile and provide additional space for partial carloads. This also eliminated the difficulties experienced in past winters with the unloading of frozen carloads of coal.

Steam generaged - 33,069.4 M. lbs.: steam leaving plant - 28,181.1 M. lbs.: steam delivered - 26,551.7 M. lbs.: coal consumed - 2,543.80 net tons.

NORTH RICHLAND PATROL DIVISION

Twenty-four inquiries regarding formerly employed construction personnel were answered during the month. These inquiries were from the U. S. Navy, U. S. Army and the Civil Service Commission.

Ronald Marr, age 12, 521 E Avenue, North Richland was charged with grand larceny in Juvenile Court in Pasco. He was later placed in a foster home. Dean Marr, age 11, committed on delinquency, was given the same disposition.

1212268

Pvt. Franklin Frazier, age 17, Battery "A" 518th AAA and Donald Beebe, age 18, Battery "A" 518th AAA were taken to county jail in Prosser on January 23. They were charged with "petit larceny" of Government equipment and sentenced to 10 days in the county jail.

William R. Noland, charged with petit larceny by the Civilian Investigation Department of the U. S. Army, was processed by this office, escorted to Prosser and placed in the county jail to serve a sentence of 10 days.

Clarence O. Feagin, age 36, 701 D Avenue was charged with "operating a vehicle while license is suspended" and escorted to Prosser.

All facilities, warehouses, buildings and the John Ball School were checked on the number one and three shifts daily and on all shifts on Sundays and Holidays.

North Richland facility office escort service was assumed by North Richland Patrol as of 1-31-51.

A spectrochemical analysis was made at 300 Area, Building 3706, relative to larcenie that were committed in the Trailer Camp bath houses.

An assembly of School Boy and School Girl Patrol at the John Ball School was addressed. The subject was the cooperation of the school patrol with the local patrol This was a general assembly for all school children.

A total of 22 traffic violation reports were received during the month. These violations included stop sign violations, parking violations, speeding, no driver's license, failure to yield right of way and passing in No Passing Zone.

All fire, safety and traffic hazards observed by North Richland Patrol during the month were reported to proper authorities.

Every Thursday at 7:00 p.m. during the month, an Appearance Officer was assigned to Judge E. W. Brown's court to appear against persons cited to court by North Richland Patrol.

Eight persons were incarcerated in the Richland jail during the month. Violations included public intoxication, petit larceny and public nuisance.

A police school on "In Service Police Training" was held in Pasco during January. The following North Richland Patrol personnel were in attendance: C. H. Overdahl, J. E. Coleman, R. R. Robertson, W. T. Henderson, E. E. Bull, H. R. DeMeyer and H. Struble.

Population of North Richland increased by 388 people. Population is as follows:

	December	January
Bremerton Houses	634	658
Trailer Camp	2,814	2,963
Men's Barracks	971	1,186
Women's Barracks	41	41
Total	4,460	4,848
Lots occupied in Trailer Camp	1,011	1,057

Unusual Incident Reports:

Public Intoxication	6	Auto Accident (2 Private cars)	3
Public Nuisance	1	Auto Accident (1 Private Car)	2
Pick-up for M.P. Detachment (their request)	1	Auto Accident (1 Gov't. and 1 Private Vehicle)	1
Auto Accident (Army Truck, Gov't. Pickup and 3 Private Cars)	1	Reckless Driving	1
		Petit Larceny (Gov't. Equip.)	1
		Theft	2
		Marital Difficulties	1

Special Services Performed:

Emergency Messages Delivered	46
Emergency Long Distance Calls	65
Western Union and Pacific Telegraph Telegrams	4
Fires (Sig. 12)	7
False Fire Alarms	5
Unusual Conditions Reported to Maintenance	17
Escort to First Aid	6
Escort for Wide or High Loads	1
Bicycles Found	3
Bicycles Returned to Owner	1
Pick-up for Kennewick & Richland Police	2
Children Lost	4
Children Found	4
Automobiles Impounded at Patrol Headquarters	3
Personnel Locked out of Barracks Rooms	10
Firearms Checked into Contraband Room	11
Firearms Checked out of Contraband Room	16
Firearms Registered with Arsenal Officer	13
Dogs Reported Lost	1
Dogs Returned to Owners by Patrol	1
Ambulance Detail	1

Complaints:

There were seven grand larceny, seven petit larceny and six miscellaneous complaints during the month. Three cases were cleared.

NORTH RICHLAND FIRE DIVISION

There were 11 responses to fire alarms.

Personal fire loss was estimated at $72.70.

There were 5 investigations of minor fires and incidents.

Four Safety and Security Meetings were held during the month.

Twenty-two inside drills and 5 outside drills were held.

Seventy-five fire alarm boxes were tested.

Tested 2,400 ft. of 2½" hose.

Tested 57 auxiliary alarm boxes.

Refilled 7 fire extinguishers.

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Miscellaneous Activities:

All Fire Division officers made an inspection tour of 3000 Area.

Engines #2908 and 2549 were sent to 1131 Garage for repair.

Fire alarm auxiliary boxes in barracks 157 were repaired.

Portable smoke ejector was sent to 1131 Garage for repair.

Six 1½" nozzles were attached to hose lines in barracks 414.

Radio in Engine #2513 was exchanged.

Well #5 (water system) was tested for capacity (between 600 and 700 G.P.M.) and was found satisfactory.

Installation of a suitable National Standard Thread connection (preferably 4½") with suitable valves at Well #5 and at the million-gallon reservoir was recommended.

It was also recommended that a gasoline engine be installed at Well #5 to provide water in case of electrical outage.

Seventy-seven children were conducted on a tour of the station.

DESIGN & CONSTRUCTION DIVISIONS

I. ORGANIZATION AND PERSONNEL

Employees on D&C Payroll

	January		
	Beginning	End	Net Change
	667	662	-5
Employees on Loan or Under Contract from:			
Instrument Division	9	7	
"S" Division	1	1	
Schenectady	1	1	
Pile Technology Division	1	0	
Kellex Corp.	2	0	
	14	9	
Total D&C Divisions	681	671	-5

II. INVENTIONS AND DISCOVERIES

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

None

ACCOUNTING DIVISION

I. SUMMARY

Project C-342, "DR" Water Works, was transferred to Finished Plant.

Total cash disbursed during the month of January was $4,432,321 compared with $3,551,127 disbursed during December.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

Accounts Payable Distribution Summary follows:

	January	December
General Electric Purchases	$ 1,327,421	$ 704,548
Reimbursement - Atkinson-Jones CPFF Subcontract - Construction	2,182,026	2,382,150
Reimbursement - Atkinson-Jones CPFF Subcontract - Service	152,284	146,415
Reimbursement - Other CPFF Subcontracts (Architect Engineers)	389,678	418,774
Partial Payments to Lump Sum Subcontracts	98,599	118,909
Travel (General Electric)	5,521	2,612
Miscellaneous	72,827	28,787
Total Credited to Accounts Payable	$ 4,228,356	$ 3,802,195

Subcontractors Payroll Statistics:

	January	December
Total number of employees reported by CPFF Subcontractors	5,038	4,964
CPFF Construction Subcontractors Payrolls	$ 1,777,044	$ 1,730,437
CPFF Service Contract Payro..	153,253	161,081
Architect Engineer Payrolls	284,668	323,094
Total CPFF Payrolls	$ 2,214,965	$ 2,214,612
Average per week (4 week period excluding Architect Engineers)	$ 444,261	$ 472,880 *
Average Weekly Earnings	$ 88.18	$ 95.26

* Includes $52,000 retroactive pay adjustment to office workers.

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Ways and means of eliminating unnecessary clerical work are being sought. through the committee for methods and procedures. Some of the revisions which have already been adopted will appear in our January reports. We hope to condense and otherwise improve many of our existing cost reports.

Ledger closing and report dates for the first quarter of calendar year 1951 were established. These dates are earlier than in the past and will require the concentrated effort of all Accounting Divisions and the CPFF Subcontractor.

III. PERSONNEL

Employees on payroll:

	January	
Beginning	End	Net Change
74	71	-3

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HW-20161 - Del

CONTRACT DIVISION

I. SUMMARY

Approval granted by Commission to perform construction of 234-5 - Expansion Program on CPFF basis. Preliminary negotiations are in process with Atkinson - Jones.

Contract modifications were completed with Atkinson-Jones and their CPFF subcontractors for the performance of work on the Waste Metal Conversion Facilities.

Preliminary negotiations are now in progress with Charles T. Main, Inc. for design of a portion of the new **production** facilities.

The last claim of J. A. Terteling and Sons, Inc. on G-245 - Railroad Connection South of Richland, has been settled by denial and, unless Terteling appeals to the Commission under the Disputes Article, this subcontract is closed.

II. STATISTICAL AND GENERAL

Sixteen contract items, totaling $845,354.51 were completed during January.

Amount per contract type is indicated below:

CPFF	$ 730,230.00
Fees (Const.)	16,310.00
L.S. & U.P.	98,814.51
	$ 845,354.51

One contract item showing an increase of $59,879.00 was estimated to be completed in January.

III. PERSONNEL

Number of employees on payroll:

JANUARY

Beginning	End	Net Change
31	30*	-1

* Two employees on loan to other Divisions

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CONSTRUCTION DIVISION

I. SUMMARY

New work authorized to the Construction Division during January 1951, consisted of (1) Project C 362, Phase II, Tank Farm removal Facilities TX,C,B,BY, and BX, (2) Project C-416, Construction Division Fabricating Shop Facilities, (3) Installation of Equipment at Test Tower for TP #41, (4) Alterations to Rooms 177 and 179 in 234 5 Building, (5) Painting of 10 Prefabs (Interior) and (6) Electrical Power Supply to Officers Mess, 3000 Area. As of the end of January 1951, 143 were assigned to Project Engineering Work, 57 assigned to Construction Camp and 262 assigned to Construction Division Work.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

C-362, Phase I, Tank Farms 241 U and 115 Tank 241 TX: Work progressing on excavation, forms and concrete work for equipment pits and trenches. Overall work schedule is approximately three (3) weeks behind schedule due to non deliveries of engineered materials and walk out of operating engineers for approximately (1) week. If engineered equipment and material delivery dates can be improved to meet construction schedule forecast submitted and delivery requirements the lost time can be overcome. Scheduled completion is June 1, 1951.

C-362, Phase II, Tank Farms 241 T, TX,C,B,BY, and BX: Temporary fence around empty tanks in 241-TX has been erected, and construction is scheduled to start upon receipt of drawings promised, February 12, 1951. Tank Farm 241-C is scheduled for completion September 1, 1951, and work is scheduled to start the last week in February 1951.

C-362, Phase III: In accordance with Project C 362, release number 11, the Construction Division will be requested to perform miscellaneous work applicable to Phase III. Requests received to date are (1) Installation of overflow valve between 115 and 114 tanks in 241-TX, (2) Investigate for encasement leaks at 241-TX-155, (3) Amercoat catch tank 241-TX-155, and (4) Make tie-ins to existing process facilities. Work has started on 241-UR tie-ins, work on item (1) is complete and work on items (2) and (3) will be done simultaneously, approximate starting date of February 12, 1951.

C-416, Construction Division Fabricating Shop Facilities: Project was approved January 18, 1951. Work started.

C-295, 251 Substation By-pass Line: Work is approximately 62 percent complete and will be completed February 23, 1951 as scheduled.

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MWI-15, Reactor Division, Test Structure 189-D Building: Work has been discontinued as of January 16, 1951, due to the lack of engineered procured materials. Material shipment has been promised by February 3. Work will be completed one (1) week after receipt of material.

MWI 13, Repair of Excess and Reserve Construction on Equipment: The Construction Division discontinued work on this assignment January 5, 1951. Balance of the equipment to be repaired has been assigned to Atkinson-Jones.

Work Order CC-2614, Reactor Division, Test Tower Installation: Work in progress and completion is expected February 9, 1951 as scheduled.

Work Order CC 2680, Interior Painting of (10) Prefab Houses: Work started January 29, 1951, and completion is expected on February 13, 1951 as scheduled.

Safety:

Major injuries during the month	0
Sub-major injuries during the month	0
Frequency rate to date	0.00
Minor Injuries for month	18

Office Engineering:

Construction Division small tools inventory was completed and submitted to the D&C Accounting Division.

The first issue of material and equipment status report was issued for the 241-UR and 241-TXR tank farms.

Control Engineering:

Estimates were reviewed and checked for Test Tower Facilities, Construction Division Fabricating Shop Facilities, lake development and tract houses NN 1040 remodeling for Public Works Division, interior painting of ten (10) prefabs, piping additions to 234-5 Building, remodeling rooms 177 and 179-A in 234-5 Building and Phases I and II on Project C-362.

Swevices for Layout were furnished to Project Engineering Division in 100 and 200 Areas on water lines for Army and other work, and layout work on Division work, Project C-362.

Take-off work on Project C-362, Phase I is 95 percent complete, the Design Division has been advised of early requirement dates of engineered equipment and materials for Phase II.

Cost Control:

New cost codes were effective for the Construction Division for recording Division Indirect Costs. A "Standard Rate" has been set for liquidating Construction Division Indirect Costs (within Division

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expense and CPFF subcontractors fee) at 25%. This standard rate is to become effective January 1, 1951. Construction Division budgets for the third and fourth quarters of the fiscal year 1951 were prepared and submitted to the D&C Division Accountant.

III. PERSONNEL

	BEGINNING	JANUARY END	NET CHANGE
General Elec.	24	26	+2
Sub and Subcontractors			
Non-Manual	32	39	+7
Manual	412	452	+40
	448	491	+47

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ENGINEERING AND CONSTRUCTION SERVICES DIVISION

I. SUMMARY

The supervisory duties of the Commercial Facilities Section and the Trailer Camp Section were combined under one supervisor. Mr. R. L. Weston was released to become Coordinator of Civilian Defense Activities in North Richland.

The Division's work load remains heavy. Night and Saturday work is being used to meet critical schedules.

Most of Drafting Section's activity is on schedule. Minor delays are being encountered due to a lack of vendor's information and account for the issuance of some drawings with hold reservations. Drawings on the 251 Substation have been completed and released for comment. All construction drawings for the Redox Laboratory and Redox Production Plant have been approved. Certain technological improvements in process will require some changes. The target date of February 1, for release of drawings on Project C-361 is expected to be met. Thirteen draftsmen and designers are employed on RDA-D&C-1 developmental design.

The addition of the Multigraph Model 80 Offset Printer has alleviated the load on the slower, more expensive contact printing units. The work load of the Reproduction Section remains at a high level and production compares favorably with previous months being equivalent to 15.3 acres. Personnel turnover is high due to the draft and to the demand for trainees in the areas at higher pay rates.

II. STATISTICAL AND GENERAL

North Richland Camp

Population*

Trailers	2,947	
Barracks	1,198	
Houses	665	
Total	4,810	Net Increase 354

*Note: This does not include U. S. Army personnel.

Army

Four wings of the Hanford male barracks, a total of 192 beds, were released to the Army from "Special and Other Use" during the month.

Barracks 414 was turned over to Col. Rust of the U. S. Engineers.

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Steam Generating Plant

Steam generated, M lbs.	54,327.00
Oil consumed, gallons	8,568.00
Coal consumed, tons	3,696.64
Boiler efficiency, average %	75.42

Steam cost, per M lbs. $.782

Water consumption for the month was 45,338,300 gallons or an average daily consumption of 1,462,460 gallons.

General

Labor difficulty was encountered in getting steam into Barracks 414 and 416. The matter is temporarily settled, and the work was completed.

The Operating Engineers were off from work January 15 through January 18. The bull dozer operator on the coal storage pile was allowed to work during this period.

Assisted the Contract Section in preparing prints and necessary data for use in the letting of contracts on some small pipe jobs.

Approximately 75% of excess material has been turned in to Stores.

Commercial Facilities

There were eighteen commercial facilities operating in North Richland during January.

Community Activities

The North Richland Improvement Group has been quite active, and since heating equipment has been installed, the evening activities have increased.

There were 60 religious and 72 social meetings conducted during the month.

Security

Statistical Information

During the month, 412 meetings were held at which Security topics were discussed. These meetings were attended by 10,291 employees. Three Security Bulletins were issued.

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Safety

Construction Injuries	Contractors
Major Injuries	5
Sub-Major Injuries	13
Minor Injuries	504

A crane boom buckled in the slab yard when a 40-ton crane was permitted to be walked with a 35-ton concrete slab suspended. Estimated damage $2,100. Safety had previously warned against this practice.

Small Tools

All tools have been excessed.

A considerable savings is being effected by rounding up tools on plant site, properly marking and storing, thus making available for requirements.

Drafting Section

Drafting Production:

New Drawings	124
Miscellaneous	13
Drawings Revisions	86
Drawing efficiency index, man-days/drawing	9.6

Estimating and Standards Section

Estimating:

Estimates Scheduled	27	
Estimates Completed	13	
Estimates to be Completed	14	
Total Estimated Value		$20,000,000.00

Unit Costs:

Unit Cost Report submitted to W.E. Johnson
Studies continued on Project C-187-D and C-362
Studies started on G.E. Construction

Reproduction Section

Production Group Activity:	January
Originals Handled	25,131
Prints Produced	205,996
Square Feet of Paper	618,064
Average Square Feet Per Employee	34,369

Control Group Activity:	January
Number of Orders Processed	2,608
Number of Prints Carded	73,204
Number of Tracings Handled	18,873

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Personnel, Records and History Section

D&C Payroll Additions, Terminations and Transfers:

Additions	29
Terminations	19
Transfers within D&C Divisions	9
Transfers out of D&C Divisions	11

Secret and Confidential Documents Processed:

Documents Issued Documents Routed or Destroyed	1881

Procedures Issued:

D&C Instructions Issued	11

Status of Histories:

Histories Issued	1
Histories Ready to Issue	22
Others in Process	102

Office Services:
All office services' requirements were met.

Reports Issued:
Nine, covering Weekly and Monthly Forces, Vistors, Destroyed and Classified Documents.

Project Cost and Progress Analysis Section
Forecasts, charts, analyses and reports were developed and issued to show status of D&C progress.

III. PERSONNEL
Number of employees on payroll:

January		
Beginning	End	Net Change
305	308	+3

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PRINCIPAL ENGINEERS

I. SUMMARY

The activities of the Principal Engineers consisted of reviewing and commenting on drawings, design instruction letters, Specifications, preparation of special reports and recommendations on utilities such as steam, water, electric power, investigation of Site selction, Critical Materials and effects of electrical loads on utility system in new production Facility. Special advisory and consulting services requested by Design and Construction and other Divisions.

Noninventions or Discoveries were reported.

II. STATISTICAL AND GENERAL

Special Reports:

Army Installation - North Richland & 300 Area including Technical Center
(a) Estimated Sanitary Water requirements, together with approval presently contemplated plans to supply Sanitary Water from the North Richland Distribution Grid, for Army and Construction requirements, also to furnish Sanitary Water to 300 Area including Technical Center requirements, also includes irrigation water for Technical Center landscaping. (b) Plans to convert to Army Post - Electrical Utilities.

C-414 - Pile Technology Building

Preliminary one line diagram of Architect-Engineer and Verbal Clarification of certain phases in the Electrical Design criteria.

Consulting and Advisory Services

C-204 A&B - Extensions to Existing Kadlec Hospital and Medical Arts Building

Review of Roof framing Design, adequate to comply with Uniform Code design loadings. Explanation of certain allocation and expenditure of funds for design, for Public Health Unit.

C-257 - Health Instrument Laboratory

Additional information on disturbing effects of power lines on instrument laboratory.

C-394 - Plot Plan and Utilities - Laboratory Area

Loads on Emergency Electrical System as of present state of building design.

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C-406 - Mechanical Development Building for H.W. Laboratory

Economics in Structure fulfilling functional requirements and complying with uniform Building Code would result from the elimination of the Multi-story section of the building and modification of the framing even though the ground floor area of the building would be increased.

C-421 - Library & Files Building

Design Specifications regarding adequancy for guidance of Architect Engineer in the performance of detail design. Regarding the reduction in area required to bring the cost of the structure within the funds available.

Man-Power Forecast

Prepared List Electrical Studies that could be undertaken by D&C Divisions for both current and future requirements and reviewed lists from other sources.

Review and Comments

C-394-B - Plot Plan & Utilities Laboratory Area

(a) Formal proposal for estimating for expansion of 384 Steam Plant, the general plans were approved by the Using Division.
(b) Size and type of Emergency Electric generator - Diesel or Steam.
(c) Problem of revamping coal handling system with manufacture representative.

C-361 - Metal Conversion Facilities

Design Proposal for heating and ventilating the 224-U Building suggested alternate aproposal as design basis.

C-187-E - Redox Analytical Plant Assistance Laboratory

Air Conditioning Control Proposal.

C-362 - Waste Metal Removal & Recovery Facilities

Anticipated steam demands for 200-W Area reviewed with Power Department, problem of providing additional steam generating capacity on a new operating basis.

Principal Civial Engineer - Qualifications and Functions

(a) Detailed specifications set forth for title position.
(b) Activities for current year outlined, ion basis of known projects. Future plans information should be provided by Management for Studios etc., a definition of functional responsibility Division Wise should be established.
(c) A thorough review of Architectural, Civial and Structural standards to be incorporated in the Plant Standards being developed by the Standards Committee was recommended.
(d) Standardization of Portland Cement Concrete Specifications was recommended, in as much as all Portland Cement Concrete required in the Construction program is made from substantially the same aggregates, a material savings could be effected by such Standardization.
(e) Served as member of town planning board.
(f) Served as member and attended all Sub-Committee meetings of A&B Committee.

Principal Mechanical Engineer

Participated in G.E. School of Nucleonics.

III. PERSONNEL

January

Beginning	End	Net Change
4	4	0

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POWER AND MECHANICAL DIVISION

I. SUMMARY

Work load for Design group for January included 71% of total man-hours as engineering assistance to other Divisions.

No Power & Mechanical Division projects were under construction during January.

No inventions or discoveries were reported.

II. STATISTICAL AND GENERAL

Following is a brief summary of active projects:

C-199, Expansion of 300 Area Sanitary Sewer Disposal Sytem: Under date of January 17, 1951, the AEC approved a Part II Project Proposal for the completion of design and construction of this project.

C-204-B, Additions and Alterations to Kadlec Hospital & Medical Arts Building: Bids for the construction of the additions and alterations to Kadlec Hospital were opened January 26, 1951, which was extended from the originally scheduled opening date of January 1''th. An award of the contract has not been made.

C-257, Health Instrument Control Laboratory: The Construction sub-contractor, Sound Construction and Engineering Company, has submitted various shop drawings and a construction schedule for approval. Actual construction work is expected to start early next month.

C-295, Enlarging 251 Substation: Invitations to bid for obtaining a lump sum contractor were issued January 11, with an opening date of February 8.

Work by the G.E. Construction Division is proceeding on the 230KV by-pass line and is now approximately 60% complete.

Drawings on switchboard work etc., to be performed by Operating Divisions were issued for comment January 23rd.

C-353, Richland Water Supply: Ten copies of the report prepared by Alvord, Burdick & Howson on Phase I were received on January 22 and January 25. The submission of this report completed the work required under Phase I.

C-364, Aquatic Biology Laboratory: Final drawings for this laboratory have either been received or placed in the mail by Barrett & Logan, Architect Engineers. Mechanical specifications, however, will not be mailed until February 1st.

Part II Project Proposal requesting construction funds was transmitted to the A & B Committee on January 2, and after amendment, was again submitted to and approved by the Committee on January 11. Owing to the fact that the Project Proposal reuqested $442,500, and budgeted funds are only $350,000, the entire matter was referred to Washington, where it has been ever since.

C-381, Radiochemistry Building: Plans and specifications being prepared by Leland S. Rosener are essentially complete and are being finally checked. Basic data for preparation of a construction Project Proposal were submitted to Technical Divisions on January 31st.

C-385, Radiometallurgy Building: Structural design being prepared by Leland S. Rosener is approximately 20% complete, and the design of special mechanical equipment is approximately 55% complete.

C-394, Plot Plan & Utilities - HW Laboratory: Project Proposal requesting authorization of construction funds for the steam plant addition was submitted to the Technical Divisions January 31st. Design work on outside utilities, which is under contract to Leland S. Rosener, is approximately 40% complete.

C-406, Mechanical Development Building: At the bid opening on January 4th, two proposals were received, but neither met specifications. Accordingly the building was re-advertised with an opening on January 19th. Award was made to the Dix Steel Building Company, Spokane, the low bidder, on January 31st.

C-414, Pile Technology Building: The design subcontract was awarded to Chas. T. Main, Inc., on January 23rd. Check prints on fundamental design were promptly submitted by the architect-engineer, and five of his engineering staff arrived in Richland on January 31st for a 3-day conference on design details.

C-421, Library & Files Building: A design subcontract was awarded Chas. T. Main, Inc., on January 24th. Delay in making an award was in part due to the fact that the Project Proposal had to be revised in order to reduce the building size from approximately 30,000 sq. ft. to 20,000 sq. ft.

GEO-12, Underground Waste Storage Tanks: This study report was transmitted to C.N. Gross on January 26, 1951.

III. ORGANIZATION AND PERSONNAL:

Employees on payroll:

JANUARY		
Beginning	End	Net Change
55	55	0

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REACTOR DIVISION

I. SUMMARY

During January Design and Development Progress suffered delay due to the interruption of work occasioned by preliminary studies relative to the new "C" Area. These included studies involving Reactor performance, scope, costs, man-power requirements and schedules. It was decided that the responsibility for the water plant work will be transferred to the Power and Mechanical Division and will be handled as a separate project.

A report covering the progress of RDA-D&C-1 during the second quarter of fiscal 1951 was completed and draft copies distributed for review and approval. This report (HW-20051) includes a description of the production facility as it would be designed if undertaken at this time.

No inventions or discoveries were made by members of the Reactor Division during the month of January.

II. STATISTICAL AND GENERAL

1. Process Tube Heat Transfer Tests

Extremely high heater tube temperatures were experienced in obtaining flow versus inlet pressure data. At an approximate flow rate of 3¼ gpm and a heat load of 408 KW the downstream thermocouples suddenly rose to excessive temperatures. On disassembly it was found that the heater tube had collapsed. Plans are to continue the boiling curve with a pressurized tube. Calculations to determine the effects of outlet pressure (in the boiling region) and uniform heating on the inlet pressure have been completed. During the month dummy and pigtail sections were installed.

2. Materials Development

The standard 2S-H-14-72S clad aluminum tube sections have now been in creep test for 8500 hours (at 100°C and 400 and 600 psig.) The creep rate has been nil for 8300 hours. Test Request No. 54 (in-pile corrosion test(has been cancelled, as the information of radiation effect can be obtained from the in-pile test of about the same temperature range which Pile Technology has initiated. This information will be correlated with out-of-pile tests. Tests on nickel boron balls are in progress with further tests planned. Initial efforts to form 3/4 inch ribbed Zr tubing at Superior Tube Company have failed. A program to make roll-welded Zr tubes has been started. Neutron capture cross-sections measured on three samples in 305 pile give value

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ranging from .23blto .31b. Answers from possible fabricators of the boron-stainless steel rod indicates that they would not be willing to fabricate to Hanford tolerances. Efforts to have a rod fabricated will continue and the feasibility of a contrifugally cast-joined rod is being considered.

3. Water Recirculation Tests

This test set-up was put into operation and was brought to design level without difficulties. The tests were discontinued on January 31 because the manpower involved was required on the more urgent 105-C project.

4. Water System Design

During the month Mr. Reed visited the Industrial Engineering Divisions in Schenectady, Babcock and Wilcox Co., and the Roberts Filter Manufacturing Co. Final recommendations were received of equipment which will permit designing a water plant which will have an operating cost of approximately $400,000 per year less than a water plant of the DR type designed for the "G" reactor flow requirements.

Very encouraging results were also obtained in discussions of heat exchangers and power generation equipment for a power recovery plant. It is conservatively estimated that the power than can be recovered will be at least equal to the total demands of the "G" reactor and water plant.

5. Metal Handling

The test stand and associated equipment for the full scale tests of the continuous charging equipment was completed. The conveyor belts and slug handling equipment worked satisfactorily.

6. Vertical Rod Friction Drive Assembly

The testing of the complete rod drive assembly has been completed in the 189-D Building and is being transferred to the test tower at White Bluffs for use in conjunction with the full scale control rod and inverted thimble assemblies. The friction rollers were tested on an endurance cycle where they had a demonstrated life equivalent to 7 to 10 years under pile operating conditions. The tests were terminated for inspection of rollers and not because of any signs of failure. Endurance test data will also be obtained in the test tower.

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The vertical rod assembly has been installed in the tower and it is estimated that the tests will be initiated in approximately one week.

7. Third Safety System

The design of the ball removal equipment to be incorporated at the base of the pile has been completed. The next phase will consist of tests to determine the required duct sizes, bend radii, and slope of discharge ducts to be incorporated in the pile foundation.

8. Construction Tests of Poured Concrete Shield

The final report (HW-19563) has been completed and issued. This project will serve as a very useful guide in establishing construction procedures for the complete shield.

A scope was started to define the work to be performed by an Architect-Engineer firm to review the design of the poured concrete shield. This work was initiated before information was received that a new production facility be built. This work will now performed as part of the final design by the Architect-Engineer firm selected for the 105-C Building.

9. Moderator

The studies of the required graphite coring and undercutting to minimize graphite are approximately 85% complete. This work will be applied to the 105-C reactor.

III. PERSONNEL

J. R. Wolcott was transferred from the Separations Division (D&C) and was appointed Project Engineer for Project C-431-B.

Number on payroll (Excluding Rotational Engineers):

JANUARY

BEGINNING	END	NET CHANGE
41	43	+2

SEPARATIONS DIVISION

I. SUMMARY

A letter modification to Atkinson-Jones contract was written which authorizes the construction subcontractor to begin procurement of materials in an amount not to exceed $300,000 for Project C-413. All sheet and plate for the hoods for line RMB has been shipped to the Pfaudler Company for the account of General Engineering Laboratories and fabrication is well under way. GEL reported progress on their overall portion of the project was 18% at January 25, 1951.

Approximately 95% of the concrete to be poured in the 202-S Building was placed by January 26, 1951. Colder weather the last week of the month retarded concrete work. Overall construction for the Redox Project reached 50% at months end.

Construction of the Redox Laboratory is 81% complete. Again, this month, the major delinquent items contributing to schedule delay are metal partitions and piping.

The final equipment shipment for the RMA line, Project C-198, 234-5 Facility is now scheduled for late February and early March. Construction work on the Crucible Shop will be released as soon as approval has been gained from the AEC. Construction completion stands at 55%.

On Project C-361, Metal Conversion, all designed items have been requisitioned except the HM Chambers and the equipment required by scope changes on ventilation. Scope is 100% complete, detailed design 90% and construction 0.2%.

Project C-362, Waste Metal Recovery Facilities, progress statistics are as follows:

Scope	97.3%
Detailed Design	63.7
Construction	9.4

Procurement is lagging some thirty days on this project. A maximum effort is being made to expedite material deliveries to the fabricators and the job site.

An order was placed with Columbia Steel Corporation for delivery of all required plate and shapes for Additional Waste Storage Facilities, Projects C-417 and C-418. Shipments were promised in March 1951 from Geneva, Utah. Design drawings sufficient for bid assembly purposes on these projects are approximately 95% complete. Completion is schedule for February 2, 1951.

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II. STATISTICAL AND GENERAL

A. Project C-187-D - Redox Production Plant

Power and Mechanical Division work is approximately 99% complete. As of January 29, 274 drawings had been approved and issued to the field.

Separations Division design work on the 241-S tank farm and associated facilities is 100% complete. As of January 29, 129 drawings had been approved and issued to the Fred J. Early, Jr. Company or to Atkinson & Jones.

The preparation of Acceptance Test Procedures is complete.

Late delivery of stainless steel components of Class I Vessels, as well as corrosion failures, continue to impede vendor's progress and prevent improvement of equipment delivery. Efforst are being made to substitute materials from plant stocks where late deliveries or poor materials are delaying fabrication. Rejected material is being utilized wherever possible.

To date 19 Class I Vessels and 28 Class II Vessels have been received.

Approximately 95% of the concrete to be poured in the 202-S Building structure was placed by January 26th. The walls of the first floor of the service side have been poured. Pouring of concrete in the silo region of the plant has progressed to the Silo Crane rail level. Colder weather the last week of the month retarded concrete work. Concrete finishing and painting is progressing in the cells and galleries.

Piping work work is progressing in the galleries and the hot pipe tunnel. A yardstick based on total linear footage of pipe has been prepared for measurement of progress of the work in the hot pipe tunnel. As of January 26, of a total of 15,170 feet of the pipe to be installed, approximately 680' of pipe has been completed (4.5%)

The progress as of this date is 54%. An increased lag of 1.3% over last month in construction progress is evident. This is due to delays in delivery of purchased equipment, faulty "Y" frames, a strike of the Operating Engineers which forced curtailment of work by other crafts, and inclement weather.

B. Project C-187-E - Redox Analytical and Plant Assistance Laboratory

Construction of the Laboratory is 81% complete, 11% behind schedule; the Waste Disposal System is 80.6% complete, 5.6% behind schedule; the overall project is 80.9% complete, 10% behind schedule. Again this month, the major delinquent items contributing to schedule delay are metal partitions and piping.

Pouring of the concrete superstructure of the 219-S building will also be complete in the first part of February as well as installation of two of the three process tanks. Delivery of the third tank is now scheduled for the first week in April, but everything possible is being done to improve delivery of material to the vendor. However, since Willamette Iron and Steel Company is the vendor, the possibility of a delay due to a strike is still a factor.

C. Project C-198 - 234-5 Facility

Progress statistics for the month of January are as follows:

	Percent Complete		
	Basic Design	Overall Design	Constructi
Phases II & III (Richland)	81.0%	73.7%	55%
Phase III (Schenectady)	------	-----	94%

A scope summary document HDC-1988, covering approved modifications and their handling, was issued during the month. Due to the increased work load on Project C-413, GEL have again revised their shipping schedules. A partial carload #9 left Schenectady January 25 and the remaining items will be shipped as completed with the final shipment scheduled for late February or early March.

Construction work on the Crucible Shop will be released as soon as the AEC have given approval to a justification letter sent them this week. Procurement and construction drawings are complete except for the induction furnaces.

All drawing on the Maintenance hoods for Zone 4 were issued to A&J for estimates on the cost of fabrication for these hoods.

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D. Project C-361 - Metal Conversion

Progress statistics as of January 31 are as follows:

Scope	100%
Detailed Plans	90%
Construction	0.2%

The 90% completion of detailed plans compares with a scheduled 100%. It is expected that all drawings will be submitted by the Power & Mechanical Division for approval by February 20.

All designed items have been requisitioned except HM chambers by Instrument Division, some on-site items, and the equipment that would be required by scope change on ventilation.

Recognized shortages of pipe and fittings were discussed with construction representatives and requests made to the field to reserve material for use in substitutions. Appropriate design revisions to allow those substitutions have been made.

E. Project C-362 - Waste Metal Recovery Facilities

Progress statistics for the end of the month are as follows:

Phase	I	II	III	IV	V	VI	Total
% Scope	100	92	100	100	100	100	97.3
% Design	97	35	100	65	100	55	63.7
% Construction	12.4	0	27.4	2.1	97	0.1	9.4

Statistics covering construction drawings as of January 26 are as follows:

Phase	I	II	III	IV	V	VI
Total Drawings Req'd	436	1077	126	1251	20	86
No. started to date	436	361	124	919	20	51
No. received to date	403	213	118	640	20	16
No. approved to date	398	188	118	563	20	16

During this month approximately 195 requisitions were received from Kellex. The initiation of procurement for all major equipment is proceeding on a satisfactory basis. As a general rule, the promised dates are thirty days later than the required dates. A maximum effort will be made to expedite the receipt of this material on site. All requisitions have been received and approved for Phase I, about 80% of the required requisitions have been received and approved for Phase II, about 95% of the requisitions have been received and approved for Phases III and VI,

and about 95% of the requisitions have been received and approved for Phase IV, and approximately 65% of the total required requisitions approved to date are covered by purchase orders.

F. Project C-413 - Expansion of 234-5 Facilities

Progress statistics for the month of January are as follows:

	Basic Design	Overall Design	Construction
Richland	5%	1%	0
Schenectady	-	-	18%

GEL's schedule and estimate for Project C-413 were received.

Certain changes in the scope of work have been agreed upon since the original scope of Schenectady work was outlined in HWC-1962. The requirement for the hood finish was definitely established as #1 mill finish. The present schedules for doing to the work are based on freezing the scope of work and overall design by February 5, 1951.

A description of the subcontractor's work is being transmitted to Atkinson & Jones, Document HEC-2003, so that they can prepare an estimate for fee negotiation.

The Estimating Section have been given all available date on Project C-413 for preparation f a project proposal estimate.

Modification #1 to Directive HW-211 was issued by the AEC revising for submittal of C-413 project proposal from January 10, 1951 to February 23, 1951.

A letter modification to the contract was written which authorizes Atkinson & Jones to do specified work not to exceed $300,000 prior to negotiation of a contract modification for Project C-413.

Barrier steel, bulk supplies of pipe and fittings, bulk supply of wire conduit, fittings, and other miscellaneous items, have been laid aside by the subcontractor forces for construction purposes on Project C-413 under the authority granted in letter modification dated January 16. Certain minor changes to existing wiring under Project C-413 can also be accomplished under the terms of this same letter modification.

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Design and procurement of C-413 modifications and RMB Line equipment have proceeded in Schenectady with current orders for material totaling $720,000 as of January 14. Their reported progress on their overall portion of the project for January 25 was 18%.

G. Projects C-417 & C-418 - Additional Waste Storage Facilities - 241-BZ & 241-TY

An order was placed with Columbia Steel Company on January 5, 1951, for delivery F.O.B. Mill, Geneva, Utah; in March, 1951 of all plate and shapes required for the 241-BZ and 241-TY steel tank liners.

Scoping of Projects C-417 and C-418, preparation of scope drawings, construction data and estimates for inclusion in Project Proposal were completed and transmission of the data to the Manufacturing Division scheduled for January 31.

Design drawings sufficient for bid assembly purposes are approximately 95% complete. 100% completion is expected on February 2.

III. PERSONNEL

Number on Payroll

January		
Beginning	End	Net Change
115 (a)	114 (b)	-1

(a) Includes one GEL and one H.I. employee on loan to the Separations Division.
(b) Includes four GEL and one Pile Technology employee on loan to Separations Division.

PROJECT & RELATED PERSONNEL JANUARY 1951

	12-29-50	1-31-51
GOVERNMENT EMPLOYEES		
Cicilian Personnel-Atomic Energy Comm.	341	341
Civilian Personnel-G. A. O.	7	7
Total	348	348
RICHLAND VILLAGE PERSONNEL		
Comm. Facilities(Inc.No.Richland)	1213	1097
Government Agency, Churches, Clubs, Etc.	83	81
Schools	392	386
Organizations	9	10
Total	1697	1574
CONSTRUCTION SUB-CONTRACTORS		
Atkinson & Jones	3953	3965
Newberry Neon	358	394
Urban, Smyth, Warren Co.	206	241
Hanley & Co.	421	593
Kellex Corp.	490	425
No. Elect. Mfg. Co.	1	2
J. Gordon Turnbull	4	4
Edmond P. Erwin	23	14
Creamer Electric	5	0
J. P. Head	3	6
Royal Co. Inc.	2	23
Phare Paint Store	2	0
Fred J. Early, Jr.	40	39
Steel Const. Co. & Gilmore Fabricators Inc.	75	78
V. S. Jenkins	20	21
Empire Electric Co.	1	4
Morrison & Knudsen Co, Inc.	48	54
Leland S. Rosener	36	0
Associated Engrs. Inc.	11	8
L. A. Hopkins	6	0
C. E. Const. Co.	7	0
Asbestos Supply Co, Seattle	8	4
Johnson Service	1	2
Monterey County Plumbing Co.	16	17
Seldons Inc.	2	0
Acme Elect. Co.	1	0
Montgomery Elevator Co.	0	2
Swede Color Bar	1	0
Barrett & Logan	5	0
Thorgaard Plumbing & Heating Co.	0	2
E.E. Baldwin & Frank Dunham Co.	40	82
Virgil L. Anderson	0	2
Hausermen	14	17
X-Ray Products	6	17
Alvard, Burdick & Howson	2	0
American Pipe & Const.	0	6
Judd Co, Inc.	0	5
Total	5808	6027
General Electric Total	7896	7950
GRAND TOTAL	15749	15899

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