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OAK RIDGE NATIONAL LABORATORY
QUARTERLY PROGRESS REPORT
OF
SERVICES AND ADMINISTRATION
FOR PERIOD ENDING SEPTEMBER 30, 1954

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OAK RIDGE NATIONAL LABORATORY
QUARTERLY PROGRESS REPORT
OF
SERVICES AND ADMINISTRATION
FOR PERIOD ENDING SEPTEMBER 30, 1954



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OF
SERVICES AND ADMINISTRATION
for Period Ending September 30, 1954

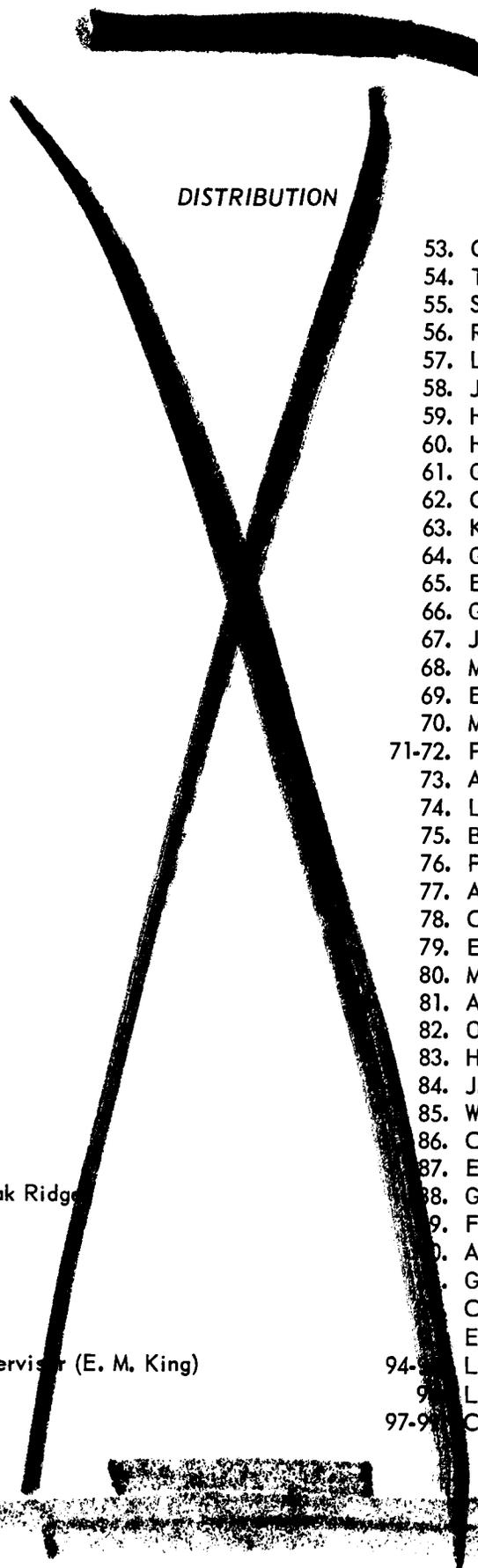
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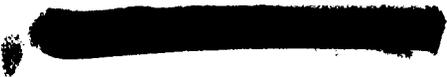
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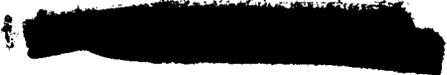
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OAK RIDGE NATIONAL LABORATORY QUARTERLY PROGRESS REPORT OF SERVICES AND ADMINISTRATION

SUMMARY

1. LABORATORY ADMINISTRATIVE AND PROGRAM SERVICES

A brochure presenting results of economy measures during FY 1954 has been completed and will be issued early in the next quarter. The brochure shows that during FY 1954 significant progress was made in reducing costs of many operations and effecting other economies that resulted in the Laboratory's being able to perform more research and development work per dollar of total expenditures. Notable economies resulted from improvements developed through the research program of the Laboratory.

The Financial Plan received from the AEC at the beginning of this quarter for FY 1955 incorporated unexpected reductions in funds requested in ORNL budget submissions. Subsequent program change letters received from the AEC imposed further cuts which have placed the Laboratory in the awkward position of having either to terminate several promising, though comparatively small, research and development programs or to find other support for them.

Following a series of meetings between Carbide representatives and the AEC, a compromise procedure was developed whereby the Laboratory prepares, twice a year, a special schedule summarizing data from operating reports and from cost analyses in a form designed to provide uniform cost reporting.

Following a meeting between the AEC Controller, personnel of the AEC Isotopes Division, and representatives of ORNL, a review of pricing policies concerning both radioactive and stable isotopes was initiated.

In response to a request from the AEC, the Laboratory established a procedure whereby routine requests for capital funds in amounts less than \$20,000, after receiving Laboratory administrative approval, are forwarded to the Oak Ridge Operations Office for information.

The Reactor Development Subcommittee of the General Advisory Committee of the AEC visited

ORNL in September to review portions of the Aircraft Nuclear Propulsion and Homogeneous Reactor development programs. Discussions covered not only technical aspects of the work but also levels of effort, costs and budgets, and source of technical manpower.

During the quarter approximately 400,000 pre-punched IBM stores issues tickets were distributed to stores in a program designed to eliminate errors formerly made in manually posting key information on the IBM cards. To provide a method of ready identification of individuals withdrawing materials from stores, arrangements were made during September to include on the departmental materials distribution report the badge numbers of the individuals withdrawing materials from stores.

Helicopter service between Oak Ridge and the Knoxville airport was initiated by the AEC during August. Normally, the helicopter is used only by Laboratory employees who require a method of transportation more expedient than the vehicle service furnished by the Knoxville Airport Transit Service.

A committee was established in June 1954 to study methods of improving tool management and to establish more uniform practices for the four Carbide installations. A final report was prepared and submitted in September. A similar committee had been established in April to review the operating practices and procedures covering storage and warehousing in the four Carbide installations. This committee also submitted its final report in September, making recommendations for changes in certain operating practices. In August a group was established for the purpose of compiling and maintaining a single stores catalog for the four Carbide installations.

Final arrangements were made in September to place in operation a second-hand store for the purpose of reissuing "used but reusable" expendable materials.

Experience has shown that the Equipment Pool operation not only provides more effective utili-

zation of equipment temporarily out of service by making it available to all users but also results in savings through the elimination of unnecessary duplication of equipment.

In September agreement was reached with the Atomic Trades and Labor Council on a hospital and surgical plan to be effective from October 1, 1954 to October 1, 1955. An identical agreement was reached with the International Guards Union of America. The plan agreed upon provides for improved benefits at no increase in premiums.

Continued efforts to reduce Cafeteria operating costs are reflected by the reduction of cafeteria employees from 26 to 24 and the elimination of the 50¢ "special" lunch.

2. PERSONNEL SERVICES

A small subdispensary in the 7000 area was opened in August. Some changes in routine physical examinations have been made to improve the diagnostic information obtained without increasing the work load in the laboratory.

At the end of the quarter, ORNL had exceeded all previous safety records of the Carbide and Carbon Chemicals Company by working 3,222,000 man-hours without a disabling accident.

A revised proposal for the installation of automatic equipment to improve fire protection in ten Laboratory buildings that now have no automatic fire protection has been submitted to the AEC.

The university student Co-op Program at the Laboratory has been expanded somewhat with several divisions using co-op students to replace technicians on routine laboratory work.

During the quarter the Laboratory's permanent employees increased from 3256 to 3308; the entire increase is attributable to additional scientific and technical personnel.

A continued high rate of occupancy has been maintained through the quarter in the 93 apartments which are managed by the Laboratory for use by temporary personnel. The apartments have been most useful in accommodating scientific personnel participating in the Laboratory's program on a temporary basis.

3. ORGANIZATION AND POLICY CHANGES

Reflecting the increasing responsibilities of Pratt & Whitney Aircraft Division of the United

Aircraft Corporation and the greater participation of their personnel in the Aircraft Nuclear Propulsion Program at ORNL, a representative of Pratt & Whitney is now serving as Associate Project Director of the ANP Project at ORNL. In the Homogeneous Reactor Project, the Laboratory's Assistant Research Director responsible for the Reactor Experimental Engineering and Chemical Technology Divisions has been appointed to the newly created position of Assistant Project Director.

Miscellaneous official bulletins and standard practice procedures were issued or revised so that employees would be informed of current policies.

4. CONSTRUCTION AND MAINTENANCE PROJECTS

Major active projects during the quarter included fabrication of in-pile loops, installation of Thorex process equipment, design and engineering for the high-radiation-level facility, installation of the HRT, and various minor revisions to complete the ARE installation. Projects in design stages include the extension to the rolling mill, the clothing decontamination and monitoring facility, the Multi-Kilocurie Loading Cell, the Solid State Building, the Metallographic Cell, and the Corrosion Examination facility.

Miscellaneous projects during the quarter included the relocation of the Instrument Department maintenance shop, the X-10 building painting program, and the relocation of the Engineering Department in the former Training School Building 3022.

ORNL projects in the Y-12 plant on which work progressed during the quarter included air conditioning a part of the ANP Engineering Building 9201-3; provision of alternate power, installation of transformers, power redistribution, and installation of a gas-fired furnace in the ANP Engineering Building 9201-3; Library expansion and Substores relocation in the Biology Research Building 9207; additional offices in the Reactor Experimental Engineering Building 9204-1; the relocation of the Health Physics "Boston Project" Laboratory in the former Change House Building 9723-9; and the ORNL roads program in Y-12.

1. LABORATORY ADMINISTRATIVE AND PROGRAM SERVICES

ECONOMY BROCHURE

A brochure requested by the AEC to set forth economies effected by the Oak Ridge National Laboratory in carrying out its operations during FY 1954 was completed late in the quarter and will be issued early in the next quarter. The brochure shows that during FY 1954 significant progress was made in reducing costs of many operations and in effecting other economies that resulted in the Laboratory's being able to perform more research and development work per dollar of total expenditures. In addition to the savings realized from improved efficiency and more streamlined operating methods, notable economies resulted from improvements developed through the research program at the Laboratory. The over-all result of economy measures at the Oak Ridge National Laboratory is reflected in the continued reductions in overhead rate and in the ratio of supporting personnel to scientific and technical personnel, both of which reached the lowest point in the Laboratory's history.

**ORNL FINANCIAL PLAN AND
SUBSEQUENT CHANGES**

The Financial Plan received from the AEC at the beginning of this quarter for the Fiscal Year 1955 incorporated unexpected reductions in funds requested in the ORNL budget submissions. Subsequent program change letters received from the AEC imposed further budget cuts which have placed the Laboratory in the awkward position of having either to terminate several promising, though comparatively small, research and development activities or to find other support for them. Table 1 shows the reductions that have been effected by the AEC; the Laboratory has requested

restoration of the amount proposed in the budget.

UNIFORM LABORATORY REPORTING

Following a series of meetings between Carbide representatives and the AEC, a compromise procedure was developed whereby the Laboratory submits, twice a year, a special schedule summarizing data from operating reports and from cost analyses in a form designed to provide uniform cost reporting. The formal instructions for preparation and submission of the forms were received from the AEC at the end of the quarter.

REVIEW OF ISOTOPE PRICING POLICY

Following a meeting between the AEC Controller, personnel of the AEC Isotopes Division, and representatives of ORNL, a review of pricing policies concerning both radioactive and stable isotopes was initiated. Particular emphasis is being placed upon determining actual costs of producing isotopes and developing a new policy on stable isotope loans and sales that will result in placing the program on a better financial basis. Also included in the review was the consideration of problems arising from the present methods of handling stable isotope distribution and inequities that exist between foreign and domestic customers.

**AEC REVIEW OF SUBDIRECTIVE PROJECTS
COSTING FROM \$2,000 TO \$20,000**

In response to a request from the AEC, the Laboratory established a procedure whereby requests for capital funds, after receiving Laboratory administrative approval, are forwarded to the Oak Ridge Operations Office for information. The forms for requesting funds, standard ORNL forms

TABLE 1. REDUCTIONS EFFECTED BY THE AEC TO BUDGET PROPOSAL

Budget Activity	Budget Proposal	Initially Reduced to (Financial Plan)	Subsequently Reduced to
4560 Instrumentation and Controls	\$ 60,000	\$ 30,000	\$ 6,000
4582 Waste Treatment Systems	50,000	50,000	10,000
4581 Separations Systems	55,000	0	0
9500 General Plant Projects	700,000	626,000	

SERVICES AND ADMINISTRATION PROGRESS REPORT

originally intended for internal use only, are now being forwarded to the AEC for their review of projects in the \$2,000-\$20,000 range.

GENERAL ADVISORY COMMITTEE VISIT TO ORNL

The Reactor Development Subcommittee of the AEC's General Advisory Committee visited ORNL September 21, 22, and 23 to review portions of the Aircraft Nuclear Propulsion and Homogeneous Reactor development programs. Charts showing progress to date and plans for the future were prepared for presentation to the Committee, and thorough discussions of both programs were held during the three-day period. Discussions covered not only technical aspects of the work but also levels of effort, costs and budgets, and sources of technical manpower.

PREPUNCHED IBM STORES ISSUE TICKETS

During the quarter approximately 400,000 prepunched IBM issue tickets were installed in Stores. The tickets are prepunched by IBM with key information that formerly had been manually posted to the issue tickets by Stores issue clerks. Utilization of the tickets will establish better inventory control and provide a time-saving feature by limiting the number of errors to be investigated and corrected. Errors formerly made in manually posting key information will be virtually eliminated under the prepunched card system.

ADDITION OF BADGE NUMBER TO REPORTS OF MATERIALS DISTRIBUTION

To provide a method for ready identification of individuals withdrawing materials from Stores, arrangements were consummated during September to include on the departmental materials distribution report the badge numbers of the individuals withdrawing materials from Stores. Inclusion of the badge number will enable concerned personnel to quickly identify employees making stores withdrawals that may be questionable and will eliminate the rather time-consuming process required heretofore. The badge number will be recorded by IBM as of October 1 and will be reflected on the reportings of the October material distributions.

HELICOPTER SERVICE

Helicopter service between Oak Ridge and the Knoxville airport was initiated by the Atomic

Energy Commission during August. On August 23 a limited number of Laboratory employees began using this method of transportation. Management Services, Inc., took over the operation of the helicopter service on September 20, and formalized flight schedules were established, making the service available to Laboratory employees. Normally, the helicopter is used only by Laboratory employees who require a method of transportation more expedient than the vehicle service furnished by Knoxville Airport Transit Service.

TOOL PRACTICES COMMITTEE

A committee was established on June 16 to study the various problems of tool management, endeavor to find methods of improvement, and establish more uniform practices for the four Carbide installations.

The committee's work culminated in a final report that was prepared and processed for Management approval on September 23.

The report contains recommendations designed to strengthen and improve tool practices as related to loans, storage, inspection, and uniform procedures.

STORAGE AND WAREHOUSING COST COLLECTION AND DISTRIBUTION COMMITTEE

On April 9, a Cost Collection and Distribution Committee was established by Management to review the operating practices and procedures covering storage and warehousing at the four Carbide installations. The committee action was designed to investigate storage and warehousing practices and to establish, where practicable, more efficient, economical, and uniform methods in the alignment of forms, of cost accounts, and of operating procedures and development of management reports.

A final report of the committee work was compiled on September 15. It included recommendations for changes in certain of the operating practices and was submitted to Management for approval on September 20.

CONSOLIDATED STORES CATALOG

On August 17 Management authorized a Central Catalog and Specifications Department to be established for the purpose of compiling and maintaining a single stores catalog for the four Carbide installations. The Department was established as the result of recommendations made on July 30 by a Catalog Committee made up of

representatives from the four installations.

The consolidated stores catalog, when compiled and maintained, will facilitate the transfer of stores items between installations, permit lower inventories on many common items, improve purchasing activities, and act as a prerequisite to further studies in materials procurement, storage, and use.

SECOND-HAND STORES

Final arrangements were effected in September to place in operation by November a Second-Hand Store for the purpose of reissuing "used but reusable" expendable materials.

To encourage participation in the activity, used materials will be accepted and issued at 25% of value.

It is anticipated that the cost-saving attraction of the function will encourage volume activity, thereby creating a maximum utilization of used expendable materials.

EQUIPMENT POOL

Early in FY-55 a decision to expand the activity carried on by the Equipment Pool resulted in a request to all divisions to contribute to the Pool 1% of value of all equipment on hand.

Although space and storage problems presented a considerable obstacle during the initial stages of the program, approximately 40% of the equipment requested from divisions had been handled by the Equipment Pool as of September 30.

It has been determined that the Equipment Pool operation provides not only a method for effectively utilizing equipment out of service by making it available to all users but also a cost-saving feature by eliminating unnecessary duplication of equipment.

UNION NEGOTIATIONS

Negotiations with the Atomic Trades and Labor Council on a wage reopener were concluded on August 19 with an agreement for a general increase of 6¢ per hour for all employees represented by the Council, to be retroactive to April 15, 1954. Similar negotiations were concluded with the International Guards Union of America, Local 3, on August 24 with an agreement for a 6¢ per hour wage increase, to be retroactive to April 30, 1954.

On September 28 agreement was reached with the Atomic Trades and Labor Council on a hospitalization and surgical plan to be effective from October 1, 1954 to October 1, 1955. An identical agreement was reached on September 29 with the International Guards Union of America, Local 3. Both agreements are subject to ratification by the members of these organizations. The plan upon which an agreement was reached provides for improved benefits at no increase in premium. The insurance carrier will be Connecticut General Life Insurance Company.

ARBITRATION

There were no arbitration cases during this period; however, the Company's position in an arbitration case heard on May 20, 1954 involving the principle of subcontracting laundry work was upheld by Arbitrator Jacob J. Blair. The union had filed a grievance in protest of the Company's reduction in the work load and the number of employees in the ORNL laundry by a new procedure under which ORNL provides only clothing decontamination and monitoring services, with uncontaminated company-issued clothing to be laundered by a commercial laundry.

CAFETERIA

The following changes were made in the cafeteria operation in an effort to reduce the amount of the subsidy or "loss":

1. The number of employees was reduced from 26 to 24 by transfer of one to Metallurgy Division and termination of the other. The only notable change in service resulting from this reduction was the substitution of packaged ice cream for bulk ice cream.

2. The 50¢ "special" lunch was discontinued because the permissible substitutions of vegetables and salads on this lunch made it difficult to control the food cost. A saving in the food cost has been effected by this change.

CUSTODIAL

During this period two employees terminated and were not replaced.

The following buildings were added to the number requiring janitorial service: Engineering and Mechanical Office Building 3022, Central Machine

SERVICES AND ADMINISTRATION PROGRESS REPORT

Shop Annex Building 2018, and Liquid Metal Laboratory Building 2011.

Approximately one-half of Building 1000 was vacated; therefore janitorial service in this building

was reduced. This vacancy will provide space for Architect-Engineer and Subcontractor employees to be engaged in construction programs at ORNL during fiscal years 1955 and 1956.

2. PERSONNEL SERVICES

EMPLOYEE HEALTH SERVICES

A small subdispensary in Building 7009 was opened on August 16th. Because of illnesses and vacations in the nursing staff the dispensary had to be temporarily closed, and it has become apparent that an additional nurse would be necessary to ensure constant service at all three dispensaries. Adjustments will be made in the present staff to make a place for a full-time nurse, who will be obtained as soon as possible.

Routine hemograms done on all physical examinations have been modified during the past quarter. A hematocrit, a complete white blood count and differential, and a sedimentation rate are now included in this part of the examination. This change was undertaken because it was felt that more diagnostic information could be obtained, without, however, increasing the work load in the laboratory.

A minor change in the notification of restrictions for either occupational or nonoccupational illness or injury disability has been made. A copy of the restriction form is now forwarded directly to the Division office as well as to the individual's foreman. An attempt will be made to indicate the probable duration of any restrictions.

A concentrated effort by the Health Division staff is being made to encourage employees who are restricted because of surgically correctible defects to undergo corrective surgery as soon as possible. Many employees, long restricted because of such defects, are now having the needed surgery.

During the past quarter the doctors of the staff have made regular visits to the working areas of the Laboratory in order to establish closer contact with supervision relative to health problems in their groups and also to better evaluate working conditions and potential occupational health hazards.

SAFETY RECORD AT ORNL

There were no disabling accidents experienced during the third quarter of 1954. At the close of the reporting period, the Laboratory had exceeded all previous safety records of the Carbide and Carbon Chemicals Company by working 3,222,000 man-hours without a disabling accident.

PLAN FOR REDUCING FIRE-LOSS POTENTIAL

The preliminary proposal requesting the installation of automatic fire protection systems in 24 buildings has been modified. The modification requests the installation of automatic systems in 10 buildings at an estimated expenditure of \$76,200.

TRAINING ACTIVITIES

Staff Conference. As a part of the Staff Conference Program, "Selecting the Best Person for the Job" was presented. Six meetings, September 9, 10, and 13, were held, and the total attendance was 217.

Apprentice Training. Related instruction classes were reactivated on September 20 for 40 apprentices representing 7 crafts.

CO-OP PROGRAM

The university student Co-op Program at the Laboratory has been expanded somewhat. Several divisions have used co-op students to replace technicians on routine laboratory work with substantial success. The following schools are participating in the program:

University of Tennessee
University of Louisville
University of Cincinnati
Georgia Institute of Technology
Drexel Institute of Technology
Alabama Polytechnic Institute
Virginia Polytechnic Institute

PERSONNEL SUMMARY

A personnel summary for the quarter is given below:

	Week Ending July 2	Week Ending October 1
Permanent Employees, total	3256	3308
Hourly	1090	1076
Weekly	882	891
Monthly	1284	1341
Breakdown by Division		
Aircraft Reactor Engineering	87	102
Analytical Chemistry	202	202
Biology	111	116
Chemical Technology	184	185
Chemistry	103	110
Director's	34	31
Educational	9	9
Electronuclear Research	56	54
Engineering and Mechanical	881	879
General Office	129	125
Health	22	22
Health Physics	130	132
Industrial Relations	146	142
Information and Reports	86	88
Instrumentation and Controls	178	175
Laboratory Protection	148	147
Libraries	29	29
Materials Chemistry	93	93
Mathematics Panel	20	22
Metallurgy	105	116
Operations	96	95
Physics	103	102
Reactor Experimental Engineering	150	174
Research Director's	35	38
Stable Isotope Research and Production	61	61
Solid State	58	59
	<u>3256</u>	<u>3308</u>

Changes in Personnel During Quarter

Hires	102
Transfers in	42
Transfers out	14
Terminations	78

SERVICES AND ADMINISTRATION PROGRESS REPORT

FURNISHED APARTMENTS

A continued high rate of occupancy has been maintained through the summer in the 93 apartments which are managed by the Laboratory for use by temporary personnel. In addition to providing housing for research participants, temporary summer employees, reactor students, temporary AEC personnel, and a variety of consultants to both the Laboratory and the K-25 production programs, numerous organizations associated with important Laboratory programs have been served. Among

these are Goodyear Rubber Company, Catalytic Construction Company, Rust Engineering Company, Fairchild Corporation, and Pratt & Whitney Aircraft.

The apartments have been useful in securing the services of high-level scientific personnel needed on a temporary basis.

Based on past occupancy rates, amortization of the initial cost of the furnishings and all accrued operating cost will require approximately 12 more months.

3. ORGANIZATION AND POLICY CHANGES

ORGANIZATION CHANGES IN MAJOR REACTOR PROJECTS

Reflecting the increasing responsibilities of Pratt & Whitney Aircraft Division of United Aircraft Corporation and the greater participation of their personnel in the Aircraft Nuclear Propulsion Program at ORNL, a representative of Pratt & Whitney is now serving as Associate Project Director of the ANP Project at ORNL. The total number of Pratt & Whitney employees now assigned to this program is approximately 26. It is expected

that during FY 1955 this number will be increased to about 70.

In the Homogeneous Reactor Project, the Laboratory's Assistant Research Director responsible for the Reactor Experimental Engineering and Chemical Technology Divisions has been appointed to the newly created position of Assistant Project Director. He will continue to serve as Assistant Research Director, also.

OPERATING POLICIES AND PROCEDURES

Laboratory policy adjustments released during this quarter are summarized below:

	Number	Subject
Official Bulletins	AR-No. 286	Reporting Absences
	AR-No. 287	Long Distance Telephone Calls
	AR-No. 288	Transportation Facilities
Standard Practice Procedures (Revised)	D-5-2	Emergency Assistance Policy for Oak Ridge Installations
	D-6-1	Moving and Travel Expenses - Inbound
	D-6-2	Moving and Travel Expenses - Outbound
	D-6-3	Travel on Company Business
		Attachment: "Request for Approval of Lease"
	D-2-4	Specifying and Obtaining Warranties and Manufacturers' Data
	12-G	Code Account Descriptions
	52-D	Classified Information
	55-B	Fire Prevention and Control
		Attachment: "Fire Prevention and Control Regulations"
57-D	Removal of Property from the Laboratory Area	

4. CONSTRUCTION AND MAINTENANCE PROJECTS

ACTIVE PROJECTS

ANP and HRP In-Pile Loops

Special emphasis was placed on the ANP and HRP in-pile loop programs during the quarter to expedite the completion of the work at the earliest possible date. The fabrication of all the components was approximately 80% complete, and assembly work on the loops was started. One unit for the HRP was assembled and was mechanically tested near the end of the quarter. This loop was previously scheduled for in-pile testing on September 6; however, several small leaks were found during the mechanical tests. It is now anticipated that the repairs will be completed and that the loop will be ready for in-pile tests early in the next quarter.

Several minor modifications and additions were made to the loop disassembly equipment to correct deficiencies that were found during the testing period. It is expected that these changes will provide for more efficient operation of the installation.

Thorex

Practically all phases of the mechanical work originally scheduled for the modifications and procurement and for the fabrication and installation of the facilities that are located in the pipe tunnel, control room, makeup room, solvent room, and cells VI and VII in Pilot Plant Building 3019 were completed during August. The completion of the work in cell V was delayed because of an extended delivery date for two purchased tanks. The tanks have now been delivered, and the installation will be completed during October. Testing and checking of the completed portions of the installation were started during the last week in August. It is presently anticipated that the entire installation will be completed and ready for full-scale operation by December 1.

High-Radiation-Level Analytical Facility

Oak Ridge National Laboratory participation, with the exception of Title III engineering and the final connection of utilities, in the High-Radiation-Level Analytical Facility was completed during this quarter. Subcontract bids were received and reviewed by the Engineering Department and the Carbide Purchasing Department. It is expected that a contract will be awarded and that the construction work will be started during October.

The scope of the work originally specified for this facility has been expanded to provide for the construction of a seven-cell installation. The original plans outlined a facility consisting of five cells with provisions for the construction of two additional cells at some future date. A recent re-evaluation of the Laboratory's requirements for this type of a facility, based on programs presently in operation and those anticipated for the near future, has dictated the feasibility and economy of providing the larger installation at this time.

Homogeneous Reactor Test

A Carbide subcontract No. 564 was awarded in July to the V. L. Nicholson Company, Knoxville, Tennessee, to perform the work for the HRT facility as outlined in the last quarterly report. Oak Ridge National Laboratory participative work in the preliminary phase of the project was completed in July, and the contract work is presently proceeding according to schedule.

The installation of the temporary building shoring, approximately 99% of the required excavation, the installation of concrete footings for the control room, and the installation of the forms for the control room walls were completed by the end of the quarter. The fabrication and installation of the steel tank by the Chicago Bridge & Iron Co. is scheduled for completion by the middle of next quarter.

A "Request for Directive" was issued in September requesting authorization for the construction of an extension to the existing building, including concrete floors, partitions, and a 5-ton-capacity crane. In accordance with prior approval given by the AEC, the Laboratory is proceeding with Titles I and II engineering in order to expedite the start and completion of that phase of the construction work. This work is scheduled to start on or about November 1, 1954, and to be completed by January 15, 1955.

Aircraft Reactor Experiment

Various minor revisions to the ARE installation, preparatory to high-temperature operation of the entire system, were completed. Several other significant modifications, particularly to the heat barrier doors, were also completed. Initial operation testing has been started.

SERVICES AND ADMINISTRATION PROGRESS REPORT

PROJECTS IN DESIGN STAGES

Extension to Rolling Mill

Due to the close proximity of the proposed rolling mill addition, the source and fissionable materials machine shop, and the source and fissionable materials storage vault, it was decided that it would be advantageous to the Laboratory for the construction of these facilities to be performed under one contract.

The plans and specifications have been prepared and have been issued to the Carbide Purchasing Department for soliciting bids on a three-part contract. The construction work is expected to start about the middle of next quarter.

Clothing Decontamination and Monitoring Facility

A Carbide subcontract No. 568 was issued in July to the architect-engineering firm of Barber and McMurry, Knoxville, Tennessee, to furnish contract plans and specifications for the construction of this facility. Oak Ridge National Laboratory furnished design criteria and will provide for the inspection of the construction and miscellaneous related work. It is expected that a subcontract for the construction of the building and appurtenances will be awarded early in the next quarter.

Multi-Kilocurie Loading Cell

The revised estimate, drawings, and specifications for the Multi-Kilocurie Loading Cell were completed during September and were issued to the Carbide Purchasing Department for obtaining bids. A supplement was submitted to the AEC requesting authorization for an additional expenditure of \$25,658. This increase, raising the total estimated project cost to \$89,158, was influenced by a number of factors which were explained in the supplemental request. Current negotiations indicate that a subcontract will be issued during the first half of October. Requisitions were issued during the quarter for the procurement of manipulators and hoisting equipment, which are part of the Laboratory's direct participation.

Research Reactor (ORR)

"Request for Directive" No. CR-179, Supplement No. 4, was issued to the AEC in July requesting authorization to proceed with the entire ORR project. This request was approved by the AEC in August.

A Carbide subcontract No. 569 was issued in July to the architect-engineering firm of John

McPherson and Sons, Greenville, South Carolina, to perform Title II engineering for the reactor building, building services, reactor shielding, cooling system, and outside utilities. Criteria for most of this phase of the work have been furnished by the Laboratory. Work orders covering the remainder of ORNL participative work were issued in the last week of this quarter.

Solid State Building

Directive No. CL-163, "Solid State Building," was received in July. This directive authorizes a total of \$61,000 for Titles I and II engineering services and miscellaneous related work to be performed by the Laboratory, including Title I, design criteria. Title II engineering will be performed under an AEC prime contract, fixed-price, by an architect-engineer, the H. K. Ferguson Co. of Cleveland, Ohio. Members of the Engineering Department and the Solid State Division have been collaborating on design details subsequent to the preparation of the final design criteria. Current indications are that the criteria will be completed by October 15.

Metallographic Cell

A wooden mockup of the Metallographic Cell was fabricated at the request of the Solid State Division. Various tests are being made with the mockup, simulating operating conditions, to establish final design criteria. It is expected that these tests will be concluded, the final design established, and the fabrication of the cell completed by the end of next quarter.

Corrosion Examination Facility

The design, construction, procurement, and/or fabrication and installation of a shielded cell, approximately 8 x 23 x 9 ft, is under way by the Laboratory. The cell will be divided into three compartments - the machining station, defilming station, and weighing station. Special-purpose equipment and viewing windows for each station will be fabricated and installed. Sufficient detailed design was completed in August to permit the start of the field work. Very good progress has been made to date, and present indications are that all work will be finished by the scheduled completion date in December.

MISCELLANEOUS PROJECTS**Instrument Department Maintenance Shop**

Alterations to the east end of the Tool Stores, Equipment Pool, and Time Keeping Building 2506 to provide for the relocation of this shop have been completed. This shop will be moved from the present location in Building 2557 during the first week in October, and, upon completion of this move, preparations for the removal of Building 2557 will be made by the Carbide Property Sales Department.

X-10 Painting Program

At the end of this quarter repair work and painting on 50% of the buildings scheduled for this work had been completed. This number represents approximately 70% of the total work involved and includes all the buildings along Central Avenue except the By-Product Processing and Chemical Separation Building 3026. Due to the urgent need for craftsmen on other work it was not possible to assign the number of craftsmen required to finish all the work by the completion date of October 1. However, if good weather conditions prevail, it is expected that the remainder of the work will be finished during the latter part of next quarter.

Building 3022

Alterations to the second floor of Building 3022 were completed during the quarter, and the Engineering Department was moved to this new location. This move completed the original plan for locating the Engineering and Mechanical Division's administrative personnel and the Engineering Department in a centralized area. Some of the anticipated advantages of this move have already been demonstrated, as evidenced by the effectiveness of interdepartmental coordination of the Division's activities.

ORNL PROJECTS IN THE Y-12 PLANT**ANP Engineering Building 9201-3**

Air Conditioning. Engineering for air conditioning of part of Building 9201-3 was completed, and a subcontract was awarded to the Templin Equipment Company for the major portion of the work at a lump-sum price of \$26,000. A small amount of the work will be done by the Y-12 Plant Maintenance Division at an estimated cost of \$7,000. Work is scheduled to start about October 1, to be completed within 90 days.

Alternate Power. Provision of an alternate power source for Building 9201-3 with automatic throw-over in case of a power failure is estimated to cost \$15,000. Engineering is complete at the end of the quarter, and field work will be done by Y-12 Maintenance forces. This provision of an alternate power source will protect ANP equipment, especially test loops, against damage in case of power outage from one source.

Experimental Gas-Fired Furnace. The experimental gas-fired furnace in Building 9201-3 was engineered and installed by Y-12 forces at an estimated cost of \$5000. This facility will permit the study of natural gas heat as a possible replacement of electrically heated test loops for future installations in the ANP program. It appears that gas-fired furnaces may offer advantages over electrical heat in being able to reach higher temperatures and to operate more economically. Successful performance of this furnace may lead to the increased utilization of this type of heating.

Installation of Transformers. Engineering is in progress for the installation of three 500-kva, welding-type transformers for use in connection with heating the high temperature molten salt test loops in the ANP program. Installation of these specially designed transformers with auxiliary switchgear and equipment is estimated to cost \$66,659.

Power Redistribution. A preliminary proposal is being prepared to cover the redistribution of power in Building 9201-3 for ANP experiments in order to provide the additional electric power required for the expanding high-temperature testing program. The cost is estimated to be \$27,920.

Library Expansion and Substores Relocation in Biology Research Building 9207

Engineering was completed for the Library expansion and Substores relocation in Building 9207, and a contract was awarded to Rentenbach and Wright at a lump-sum price of \$10,890. Work is scheduled to start about October 1, to be completed within 90 days.

Additional Offices in Reactor Experimental Engineering Building 9204-1

An AEC Directive in the amount of \$73,788 was received for the additional offices in Building 9204-1; this expansion will provide 35 additional engineering offices and a drafting room for the HR project in

[REDACTED]

Y-12. Bid opening for the subcontracted portion of this job is scheduled for October 14, 1954.

**Motor-Generator Set Installation in
Electronuclear Laboratory Building 9204-3**

Engineering and field work by Y-12 forces on the installation of a motor-generator set in Building 9204-3 is well along, with completion scheduled for November 15, 1954. Estimated cost, including transfer value of the set, amounts to \$80,800. When completed, the motor-generator set will provide much greater flexibility in the use of the electromagnetic process track magnets for the 63-in. cyclotron operations and special electromagnetic separations of isotopes.

**Relocation of Health Physics
"Boston Project" Laboratory**

The "Boston Project" Laboratory is to be moved

from its present location in the Chemical Pilot Plant Building 9202 to the former Change House Building 9723-9 because of Y-12 production plant requirements in Building 9202. Facilities for this project, which involves a study of the effects of uranium in the human body, are presently being designed by the Y-12 Engineering Division. The estimated cost is approximately \$45,000.

ORNL Roads Program

Portions of roads, sidewalks, and parking lots serving the ORNL facilities in the Y-12 plant are presently being improved. The portions being improved are those that contribute to the safety and convenience of ORNL personnel in the area. This project will cost \$20,400, with a cost of \$11,000 for Carbide's participation. The subcontract work is being performed by Harrison Construction Company and is scheduled for completion by October 15.