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OAK RIDGE NATIONAL LABORATORY
QUARTERLY PROGRESS REPORT
OF
SERVICES AND ADMINISTRATION
FOR PERIOD ENDING DECEMBER 31, 1954



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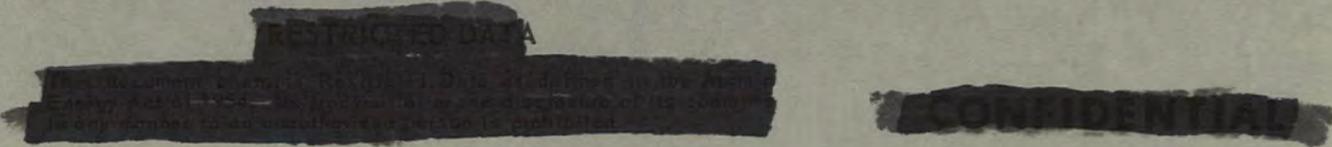
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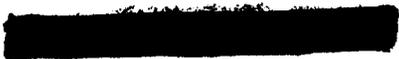
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OAK RIDGE NATIONAL LABORATORY
QUARTERLY PROGRESS REPORT
OF
SERVICES AND ADMINISTRATION
for Period Ending December 31, 1954

Compiled by W. E. Thompson

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DATE ISSUED

FEB 24 1955

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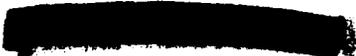
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CONTENTS

SUMMARY	1
1. LABORATORY ADMINISTRATIVE AND PROGRAM SERVICES	3
Year-End Review of the State of the Laboratory	3
ORNL Midyear Review of FY 1955 Program and Budget	3
Uniform Laboratory Reporting	3
Use of the Oracle for Business Applications	3
Expansion and Acceleration of the ORNL Research Reactor	3
Research and Development Project Procedure	3
Report on Research and Development Projects	4
Policy Change in Radioisotope Distribution	4
Changes in Stable Isotope Production	4
Equipment Pool	4
Second-Hand Stores	4
PBX Switchboard, Building 1000	4
Consolidated Stores Catalog	4
Cost Collection and Distribution Committee	5
Tool Practices Committee	5
New Ink for Printing	5
Union Negotiations	5
Arbitration	5
2. PERSONNEL SERVICES	6
Employee Health Services	6
Safety Record at ORNL	6
Physical Safety	6
Major Medical Expense Plan	6
Training Activities	6
General Wage Increase	6
Personnel Summary	7
3. ORGANIZATION AND POLICY CHANGES	8
Operating Policies and Procedures	8
4. CONSTRUCTION AND MAINTENANCE PROJECTS	8
Active Projects	8
In-pile loops	8
Corrosion examination facility	8
Metallographic cell	8
High-Radiation-Level Analytical Facility	8
Homogeneous Reactor Test	9
Source and Fissionable Materials Machine Shop, Source and Fissionable Materials Storage Vault, and Addition to Rolling Mill	9
Clothing Decontamination and Monitoring Facility	9
Multi-Kilocurie Loading Cell	9
Projects in Design Stages	9
Solid State Building	9
ORNL Research Reactor (ORR)	10
Multicurie Fission-Product Pilot Plant	10



Automatic fire protection	10
Metal Storage Facility	10
Addition to Building 3010	10
ORNL Projects in the Y-12 Plant	10
Installation of motor-generator set in Electronuclear Laboratory Building 9204-3	10
Additional offices in Reactor Experimental Engineering Building 9204-1	10
Library expansion and substores relocation in Biology Research Building 9207	10
Chronic Exposure Facility, Building 9743-2	10
Relocation of Health Physics "Boston Project" Laboratory	11
ANP Engineering Building 9201-3	11



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OAK RIDGE NATIONAL LABORATORY QUARTERLY PROGRESS REPORT OF SERVICES AND ADMINISTRATION

SUMMARY

I. LABORATORY ADMINISTRATIVE AND PROGRAM SERVICES

At a symposium for senior scientific staff members on December 29, 1954, the Laboratory Director and the Research Director reviewed the accomplishments of the Laboratory during 1954 and the plans for the coming year, described the Laboratory's present position as sound, and emphasized the challenge of continuing the record of achievements.

The FY 1955 Midyear Program and Budget Review at ORNL was performed on a revised schedule which enabled the Laboratory to include November cost experience in the review. The new schedule worked exceptionally well, and the Midyear Review document was well received by ORO. Additional funds amounting to \$1,417,000 were requested for FY 1955, primarily because of acceleration and expansion of the reactor programs.

The first ORNL report under the new uniform laboratory reporting method was submitted in December and covered the period July 1 through November 30, 1954. This report will be required semiannually in the future.

Preliminary investigation indicated the feasibility of using the Oracle, a high-speed digital computer, for performing all steps of a complicated routine for control of business functions such as stores inventory. Actual use of the machine on a regular basis must await arrival of additional equipment for recording the information computed by the Oracle.

A proposal has been submitted to the AEC for increasing the power level of the ORNL Research Reactor from 5 to 20 Mw and for accelerating the construction schedule. This proposal was motivated by the increasing evidence that radiation effects on corrosion may be serious and by acceleration of the program schedules for the reactor projects.

A new procedure requiring Policy Committee approval for Research and Development Projects involving the expenditure of more than \$10,000 in operating funds has been adopted. A monthly re-

port of costs incurred against authorized Research and Development Projects is now being issued.

It has been indicated that the 80% subsidy on "free" cancer isotopes will be discontinued on shipments to government agencies beginning July 1, 1955. The subsidy on shipments for cancer research at other than government agencies will continue. The Laboratory has proposed a procedure for the sale of separated stable isotopes. When warranted, loan of isotopes will still be possible under the new procedure. In response to indications of interest in significantly larger quantities of electromagnetically enriched isotopes, the Laboratory has proposed a continuous-shift operation of stable isotope production starting January 1, 1955.

Activity of the equipment pool has increased greatly during the quarter. Since April 1952, equipment valued at \$400,000 has been turned in to the pool and withdrawals amounting to nearly \$200,000 worth of equipment have been made, leaving equipment valued at over \$200,000 still in the pool.

A second-hand store was placed in operation in December to serve as a collection and distribution point for used but reusable, expendable materials. The initial "stock" of the store is nearly \$18,000, based on a valuation of 25% of book value. Over 10% of the initial stock was issued during the first month.

The PBX switchboard in Building 1000 was removed from service in December and was replaced with direct dial lines. The estimated saving is \$6000 per year.

As a means of effecting economies and of obtaining uniform practices among all four Carbide Atomic Energy installations, the first section of a consolidated stores catalog has been issued, steps are being taken to standardize methods of cost collection and distribution, and additional steps are being taken to standardize practices concerning the provision of tools.

Negotiations with the Atomic Trades and Labor Council on a wage reopening were concluded in

November with an agreement to a general increase of four cents an hour for hourly employees to be effective January 15, 1955 and to observe on the preceding Friday holidays that fall on Saturday. These agreements concluded all further wage negotiations under the present contracts until their expiration in October 1955. No arbitration cases were heard during this quarter.

2. PERSONNEL SERVICES

Arrangements have been made for all Laboratory personnel on temporary assignment in the Y-12 area to have their periodic examinations done by the ORNL Health Division. ORNL personnel permanently assigned to the Y-12 area will have their examinations done by the Y-12 Plant Medical Department.

At the end of the quarter the Laboratory personnel had worked a total of 890,038 man-hours without a disabling accident.

It is intended to fence in the site of the new Clothing Decontamination Facility in order to eliminate guard escorts for the construction contractor's personnel and the need for issuance and collection of personnel monitoring meters.

The area including the LITR, the Water Demineralization Building, and the former Special Materials Machine Shop has been reduced in classification and removed from the exclusion area.

In December a major medical expense plan was made available to eligible salaried employees with a base salary of \$500 or more per month. Staff conferences on this new plan were presented in the latter part of December.

As a result of the annual review of the ORNL salary structure, a general wage increase of \$10 per month for all salaried employees became effective November 1, 1954.

The total number of employees at the Laboratory at the end of the quarter was 3258, a decrease of 50 from the total at the beginning of the quarter. The reduction reflects the lay-off of approximately 70 craftsmen as a result of a review and re-

scheduling of the maintenance and construction work load.

3. ORGANIZATION AND POLICY CHANGES

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 the fabrication and installation of in-pile loops, construction of the Corrosion Examination Facility, and the start of fabrication of equipment for the Metallographic Cell.

Work on the following construction projects was being performed by subcontractors during the quarter: the High-Radiation-Level Analytical Facility, the steel tank for the HRT and the HRT Building Extension, the addition to the Rolling Mill, the Source and Fissionable Materials Machine Shop, the Source and Fissionable Materials Storage Vault, the Clothing Decontamination and Monitoring Facility, and the Multi-Kilocurie Loading Cell.

Projects in design stages include the Solid State Building, the ORNL Research Reactor, the Multi-curie Fission-Product Pilot Plant, the automatic fire protection systems, a metal storage facility for the 7000 Area, and an addition to the Bulk Shielding Facility Building.

ORNL projects in the Y-12 Plant on which work progressed during the quarter included installation of the motor-generator set in the Electronuclear Research Building 9204-3, the additional offices in the Reactor Experimental Engineering Building 9204-1, the library expansion and substores relocation in the Biology Building 9207, the chronic exposure facility in Building 9207-2, the relocation of the Health Physics "Boston Project" laboratories in Building 9723-9, and air conditioning and power redistribution changes in the ANP Engineering Building 9201-3.

1. LABORATORY ADMINISTRATIVE AND PROGRAM SERVICES

YEAR-END REVIEW OF THE STATE OF THE LABORATORY

At a symposium for senior scientific staff members on December 29, 1954, the Laboratory Director and the Research Director reviewed the accomplishments of the Laboratory during 1954 and the plans for the coming year. The year 1954 was described as a most outstanding year, one in which notable scientific and technological advances were made in several major fields of research and development. The Laboratory's present position was described as sound, and the challenge of continuing the Laboratory's record of achievements was emphasized.

ORNL MIDEAR REVIEW OF FY 1955 PROGRAM AND BUDGET

The FY 1955 Midyear Program and Budget Review at ORNL was performed on a revised schedule which enabled the Laboratory to include November cost experience in the review. In prior years, only costs through October were included; November costs were estimated. The revised schedule was made possible by special arrangement with the K-25 Plant Accounting Department to furnish November cost reports about a week earlier than usual and by approval of the AEC Oak Ridge Operations Office for the midyear review to be submitted about a week later than customary. The new schedule worked exceptionally well, and the Midyear Review document was well received by ORO.

Additional funds amounting to \$1,417,000 were requested for FY 1955, primarily because of acceleration and expansion of the reactor programs; \$500,000 each was requested for the Homogeneous Reactor Project and the Aircraft Nuclear Propulsion Project. The remainder of the increase will provide funds for new activities which have been requested by the AEC or have been made possible by recent developments in the current activities.

UNIFORM LABORATORY REPORTING

The first ORNL report under the new uniform reporting method was submitted in December and covered the period July 1 through November 30, 1954. This report is scheduled to be submitted semi-annually.

USE OF THE ORACLE FOR BUSINESS APPLICATIONS

Preliminary investigations indicated the feasibility of using the Oracle, a high-speed digital computer, for performing all steps of a complicated routine for control of business functions, such as stores inventories. A trial run made with a small number of cards, each indicating a business transaction, demonstrated the feasibility and advantages of using the Oracle; therefore, plans are now being made for the routine use of the Oracle in normal business operations. However, actual use of the machine on a regular basis must await the arrival of additional equipment for recording the information computed by the Oracle.

EXPANSION AND ACCELERATION OF THE ORNL RESEARCH REACTOR

A proposal has been submitted to the AEC for increasing the power level of the ORNL Research Reactor (ORR) from 5 to 20 Mw and for accelerating the construction schedule. It is estimated that increasing the power level will cost an additional \$500,000, while the acceleration of the construction schedule will increase the cost by approximately \$330,000. The purpose of the increase in power level and the acceleration of the construction schedule is to provide a better facility for in-pile experiments, which, in both the homogeneous and aircraft reactor projects, are becoming more important because of the problems of determining and overcoming radiation effects on corrosion. The acceleration in construction schedule of the ORR is motivated by acceleration of the program schedules for the reactor projects.

RESEARCH AND DEVELOPMENT PROJECT PROCEDURE

A new procedure covering the authorization of Research and Development Projects has been adopted. These projects are defined as jobs involving the expenditure of more than \$10,000 (\$20,000 in the heavy engineering divisions) in operating funds for labor other than division labor and materials on a project which can be clearly defined as to beginning and end. The new procedure requires Policy Committee approval for

SERVICES AND ADMINISTRATION PROGRESS REPORT

Research and Development Projects prior to issuance of work orders and purchase requisitions for labor and materials to be used in the project. The procedure adopted early in the quarter has worked very satisfactorily and has contributed significantly to improved administrative control of operating funds. A monthly report of costs incurred against authorized Research and Development Projects is now being issued.

REPORT ON RESEARCH AND DEVELOPMENT PROJECTS

During December, arrangements were completed to issue to concerned personnel, on a monthly basis, a new report titled "Report on Research and Development Projects and Major Operating Work Orders."

The report consolidates all work orders applicable to the individual research and development projects and sets out all major operating work orders estimated to cost in excess of \$5000.

The initial report will be distributed early in January.

POLICY CHANGE IN RADIOISOTOPE DISTRIBUTION

It has been indicated that the 80% subsidy on "free" cancer isotopes will be discontinued on shipments to government agencies effective July 1, 1955. The subsidy on shipments for cancer research to other than government agencies will continue.

CHANGES IN STABLE ISOTOPE PRODUCTION

The Laboratory has proposed a new procedure to permit the outright sale of separated stable isotopes whenever desired by the user or deemed advisable by the Laboratory. Loan of isotopes will still be possible under the new procedure when circumstances warrant.

In response to indications of interest in significantly larger quantities of electromagnetically enriched isotopes, the Laboratory has proposed that stable isotope production operations be performed on a continuous shift operation starting early in 1955. It is estimated that changing to continuous shift operation will enable present production rates to be doubled.

EQUIPMENT POOL

The decision made earlier this year to expand the activity of the Equipment Pool resulted in a heavy influx of equipment into the Pool during this quarter.

Since the inception of the Pool on April 15, 1952, equipment valued at \$402,761 has been contributed to the operation; transfers from the Pool amounted to \$188,223; and the equipment on hand as of December 31, 1954 is valued at \$214,538.

SECOND-HAND STORES

Final arrangements were completed in September to place in operation a second-hand store during the second quarter of this fiscal year. The store went into operation on December 1, 1954.

Through December, \$17,666.85, representing 25% of book value of used but reusable expendable material, had been turned into the store and credited to the account of the contributing departments. Issues from the store during the month amounted to \$2130.91.

It is expected that issue activity will increase as the cost saving features of the store become recognized and that full utilization of used but reusable materials will be achieved.

PBX SWITCHBOARD, BUILDING 1000

On December 18, 1954 the PBX switchboard in Building 1000 was removed from service and was replaced with direct dial lines.

The cost of installing and continuing the direct dial service in Building 1000 will be offset by the discontinuance of rental charges on the PBX equipment.

In addition to convenience benefits and the improved service to be derived from the new installation, overhead costs will be reduced by approximately \$6000 per year.

CONSOLIDATED STORES CATALOG

Work on the four-installation consolidated stores catalog is progressing as scheduled, with the publication of the first section of the catalog in December. It was made effective and placed into operation at ORNL on December 23, 1954.

COST COLLECTION AND DISTRIBUTION COMMITTEE

The Cost Collection and Distribution Committee, established June 10, 1954, submitted to management on September 20, 1954 a report of findings and recommendations relative to the alignment of forms, cost accounts, procedures, and reports within the materials functions of the four-installation operations. Recommendations of the committee were approved by management on November 2, 1954.

Since approval of the committee recommendations, the following actions have been taken:

1. A uniform method of reporting was effected in December to present to management statistical data covering the materials and stores functions within the four installations. The method of reporting reflects a ready comparison between plants to cover items such as cost of operations, manpower requirements, volume of work, etc.

2. On December 21 a proposed procedure covering the Receiving and Shipping Departments was submitted to the four installations for approval. The procedure will provide a uniform method of operating for the four plants and will set out exceptions for each plant as operating conditions or organizational structure requires.

TOOL PRACTICES COMMITTEE

The work of the Tool Practices Committee culminated in a final report that was processed for management approval on September 23, 1954.

On November 2 the recommendations contained in the report were approved by management, and arrangements were effected immediately to establish the following within the Carbide installations:

1. a uniform definition for expendable and non-expendable tools,
2. standard tool kits,
3. a uniform tool and record system,

4. a three-year, periodic, loaned tools inventory,
5. centralized tool cribs and repair shops,
6. uniform procedures for the inspection and storage of tools.

NEW INK FOR PRINTING

One of the problems in photo-offset printing using small presses is the drying of inks, particularly when printing is done on two sides or when multiple colors are used. With the new rapidly drying ink now being used, a six-color chart can be completed, with a separate printing run for each color, in less than eight hours.

UNION NEGOTIATIONS

Negotiations with the Atomic Trades and Labor Council on a wage reopener were concluded on November 9, 1954 with an agreement for a general increase of 4¢ an hour for all employees represented by the Council to be effective January 15, 1955. The negotiations also resulted in an agreement to observe, on the preceding Friday, holidays that fall on Saturday. Similar negotiations were concluded with the International Guards Union of America, Local 3, on November 10, 1954 with an agreement for an increase of 4¢ per hour to be effective January 30, 1955. Observance, on the preceding Friday, of holidays that fall on Saturdays was also agreed to.

These agreements conclude all further wage negotiations under the present contracts until their expiration dates of October 15, 1955 for the Atomic Trades and Labor Council and of October 30, 1955 for the International Guards Union of America, Local 3.

ARBITRATION

No arbitration cases were heard during this quarter.

2. PERSONNEL SERVICES

EMPLOYEE HEALTH SERVICES

Since the assignment of many of the Laboratory personnel to the Y-12 Area is temporary, arrangements have been made for all of them to have their periodic examinations done by the Health Division unless they are in the 4000 code series. This should ensure much better health coverage of this group of people.

A new nurse is being secured to ensure maintenance of constant service at all three dispensaries. The staff of the Health Division has been reduced by three, including one medical technician, one administrative clerk, and one custodian.

An exhaustive study of dispensary visits is currently being made in an attempt to determine accurately how many persons receive services by the Health Division and how often they receive them. The Tabulation Section of Y-12 is providing summary data compiled from the thousands of IBM cards which have been used to record dispensary visits in the past four years.

SAFETY RECORD AT ORNL

At the close of the report period, ORNL had accumulated 890,038 man-hours through December 26, 1954 without a disabling accident.

PHYSICAL SAFETY

Approval was received from the AEC to install automatic sprinkler systems in certain buildings at ORNL. Installations are expected to be completed by July 1955.

It is intended to fence in the site of the new Clothing Decontamination Facility and thereby eliminate guard escorts for the construction contractor's personnel, as well as the need for issuance and collection of personnel monitoring meters.

During the third quarter of 1954, physical changes were made in the exclusion areas at ORNL. The LITR, the Water Demineralization Building, and the former site of the Special Materials Machine Shop were reduced in classification, permitting their being removed from the exclusion area.

MAJOR MEDICAL EXPENSE PLAN

During the last two weeks in December 1954, a Major Medical Expense Plan was made available to eligible salaried employees with a base salary rate of \$500 or more per month.

The Major Medical Expense Plan was developed by Union Carbide and Carbon Corporation with the cooperation of the Prudential Insurance Company of America to help cover the high costs of services, illness, and accidents that are outside the scope of insurance now in effect.

TRAINING ACTIVITIES

Staff Conferences. As a part of the Staff Conference Program, information meetings on the Major Medical Expense Plan were presented. Nine meetings, during the period December 27 to 29, were held, and the total attendance was approximately 800.

Special Orientation. A special orientation program was held on November 3, 1954 for 19 employees of Pratt & Whitney Aircraft Division assigned to the Aircraft Reactor Engineering Division.

GENERAL WAGE INCREASE

As a result of the annual review of the ORNL salary structure, a general wage increase of \$10 per month for all salaried employees became effective November 1, 1954.

PERSONNEL SUMMARY

A personnel summary for the quarter is given below:

	Week Ending October 1, 1954	Week Ending January 2, 1955
Permanent Employees, total	3308	3258
Hourly	1076	993
Weekly	891	901
Monthly	1341	1364
Breakdown by Division		
Aircraft Reactor Engineering	102	123
Analytical Chemistry	202	208
Biology	116	114
Chemical Technology	185	188
Chemistry	110	111
Director's	31	31
Educational	9	11
Electronuclear Research	54	57
Engineering and Mechanical	879	803
General Office	125	125
Health	22	20
Health Physics	132	130
Industrial Relations	142	139
Information and Reports	88	87
Instrumentation and Controls	175	178
Laboratory Protection	147	147
Libraries	29	32
Materials Chemistry	93	96
Mathematics Panel	22	24
Metallurgy	116	118
Operations	95	97
Physics	102	107
Reactor Experimental Engineering	174	170
Research Director's	38	20
Stable Isotopes Research and Production	61	62
Solid State	59	60
Total	3308	3258
Changes in Personnel During Quarter		
Hires	50	
Transfers in	20	
Transfers out	40	
Terminations	80	

3. ORGANIZATION AND POLICY CHANGES

OPERATING POLICIES AND PROCEDURES

Laboratory policy adjustments released during this quarter are summarized below.

Official Bulletins

DD-No. 67 Replacement of Yellow Protective Clothing

AR-No. 289 Current AR Official Bulletins

AR-No. 1 Official Bulletins (Revised)

AI-No. 279 Rescheduling of Lunch Time

AI-No. 280 Winterizing Precautions

Standard Practice Procedures (Revisions)

D-2-5 The Sale of Contaminated Materials

D-2-5

ORNL Supplement – The Sale of Uranium-Contaminated Surplus and/or Scrap Materials

D-4-5

Hospitalization and Surgical Plan for Employees

D-6-3

Travel on Company Business

21-C

Disciplinary Procedure

33-D

Engineering, Instrumentation and Mechanical Services

Standard Practice Procedures (New)

D-5-8

News Releases from Oak Ridge to Press and Radio

4. CONSTRUCTION AND MAINTENANCE PROJECTS

ACTIVE PROJECTS

In-Pile Loops

The first in-pile loop assembly was installed in hole HB-4 of the LITR early in this quarter and was operated for 400 hr under full reactor power. Upon completion of the in-pile tests the assembly was dismantled for examination of the material specimens and the loop components to determine the extent of the effects of radiation on them. A report covering the findings of the first experiment is now being prepared.

The second in-pile loop was installed in the reactor on December 28 and is scheduled to operate for 600 hr before it will be dismantled. It is presently planned to fabricate and test eight more loop assemblies under this program. The fabrication of the components at the end of the quarter was approximately 95% complete. Current schedules provide for the installation and testing of one loop assembly each month.

The installation of the second ANP fuel loop in hole HB-2 of the LITR was completed during the second week of December. During the course of increasing the power of the reactor, it was necessary to provide additional lead and barytes concrete shielding around the exposed section of the loop to guard against an unexpected emission of high-level gamma radiation. At the end of December the loop had been in operation for 360 hr without incident except that gamma radiation was still

very high. The present experiment is scheduled for a duration of 1000 hr, which will be concluded early in the next quarter. It is not planned to conduct further experimental work with the ANP fuel loop after the completion of the present experiment.

Corrosion Examination Facility

Work on the Corrosion Examination Facility, all of which is being performed by the Laboratory, was approximately 90% complete by the end of the quarter. Originally, the project was scheduled for completion in December; however, because of a delay in the fabrication of certain specialized equipment, the completion date will have to be extended to about the middle of next quarter.

Metallographic Cell

The final drawings for the Metallographic Cell were completed and were issued to the Mechanical Shops in November. It was anticipated that the cell would be completed by the end of the quarter, but difficulty in purchasing the materials has delayed the start of the fabrication work. Current schedules, which are also dependent upon the delivery of the materials, indicate that the project will be completed by the end of this quarter.

High-Radiation-Level Analytical Facility

A Carbide subcontract was awarded on November 30 to the Carl S. Helrich Construction

Company, Oak Ridge, Tennessee, for the construction of the High-Radiation-Level Analytical Facility adjacent to the Chemical Processing Pilot Plant, Building 3019. Preliminary site preparation work, consisting principally of the relocation of underground utilities, was performed in the last quarter by the Laboratory as part of its participation in the project. Extensions and connections of utilities will be made as required to further assist the contractor with the completion of the project.

Requisitions were issued in October for the purchase of 15 manipulators from the American Machine & Foundry Co. Negotiations between this company and a representative of the Laboratory resulted in obtaining an unusually low unit price for the fabrication of the manipulators.

The contract work is proceeding according to schedule, and at the end of quarter approximately 5% of the structural work was completed.

Homogeneous Reactor Test

The fabrication and installation of the steel tank for the HRT by the Chicago Bridge & Iron Co. (V. L. Nicholson Company, subcontractor) were scheduled for completion during this quarter. However, a revision to the specifications, which required the installation of a bulk head in the tank, made it necessary to extend the completion date for this phase of the project to the first week in February.

A directive dated October 14 was issued by the Atomic Energy Commission approving the construction of an extension to the existing Homogeneous Reactor Building 7500 as requested in Preliminary Proposal No. 218, "HR Building Extension." The extension as proposed will be a structural frame building approximately 25 ft wide by 90 ft long with insulated metal siding to match the existing structure.

An invitation to bid on the construction of the building extension and the construction of chemical technology cells was issued in October and requested that bids be submitted for each part as a separate item. The V. L. Nicholson Company, Knoxville, Tennessee, was low bidder on this phase of the work.

Source and Fissionable Materials Machine Shop, Source and Fissionable Materials Storage Vault, and Addition to Rolling Mill

The V. L. Nicholson Company, Knoxville, Tennessee, was awarded a three-part subcontract

(No. 581) for the construction of a Source and Fissionable Materials Machine Shop, a Source and Fissionable Materials Storage Vault, and an addition to the Rolling Mill. Current schedules indicate that the work on the shop will be completed at the end of February and that the work on the vault and on the addition to the Rolling Mill will be completed in March. The portion of the work to be done by ORNL was approximately 50% complete at the end of the quarter.

Clothing Decontamination and Monitoring Facility

Contract plans and specifications for the Clothing Decontamination and Monitoring Facility were prepared by Barber and McMurry and were submitted to the Laboratory early in the quarter. The plans and specifications were issued to the Carbide Purchasing Department in October for solicitation of bids for the construction of this facility on a subcontract basis. The Charles Hobson Company of Knoxville, Tennessee, submitted the low bid, and on November 19 the Laboratory recommended that they be issued subcontract No. 591.

Work on the facility was started late in December, and by the end of the quarter the excavation for the building foundation had been completed.

Multi-Kilocurie Loading Cell

The Carl S. Helrich Construction Company, Oak Ridge, Tennessee, was awarded subcontract No. 578 for the construction of a high-density concrete cell approximately 11 ft wide by 14 ft deep by 15½ ft high with a wall thickness of 3 ft. Work on the facility was started on November 5, and by the end of the quarter the contract portion of the facility was approximately 30% complete. It is anticipated that all contract work will be completed about the middle of next quarter and that the entire facility will be completed by the end of the quarter.

PROJECTS IN DESIGN STAGES

Solid State Building

During the period, the Engineering Department completed the preparation of the design criteria for submission to H. K. Ferguson Company, the architect-engineer, and also completed the design of the relocation of utilities that will be required for this facility. Preliminary design drawings for the project were received from the architect-engineer; they were reviewed and were then returned to the H. K. Ferguson Company.

ORNL Research Reactor (ORR)

The preparation of plans and specifications by John McPherson & Sons, the architect-engineering firm, was nearly completed during the period. The design work by the Laboratory on the reactor, auxiliary equipment, cooling system, instrumentation, and miscellaneous items is proceeding on schedule. Contracts for the construction of the facility will not be awarded, however, until the Reactor Safeguards Committee makes its decisions. Removal of Building 3006, to clear the site for the reactor building, was started near the end of the period.

A proposal has been made to increase the design power level of the ORR from 5 to 20 Mw. While funds for this change have not yet been approved, the AEC has authorized design work to be started on the cooling system for the higher power level.

Multicurie Fission-Product Pilot Plant

Approval of the Multicurie Fission-Product Pilot Plant, which consists of 16 shielded concrete cells housed in a masonry and steel-frame structure 60 x 112 ft, adjacent tank storage pit, off-gas duct and process equipment, tanks, piping, and instrumentation, was received during the period.

Oak Ridge National Laboratory will design, procure, and install specialized equipment; the building, standard equipment, and utilities will be designed by an architect-engineer and will be constructed under an AEC lump-sum, prime contract.

Automatic Fire Protection

A directive was received December 1 authorizing the installation of sprinkler systems and appurtenant utilities for ten unprotected or partially protected buildings at the Laboratory. Design of the fire protection systems is being done by the ORNL Engineering Department, and the installation will be by a Carbide subcontractor on a fixed-price basis.

Metal Storage Facility

During the period, design was practically completed on the Metal Storage Facility, a metal building 17 x 34 ft to house metal cutoff saws and concrete bases for the storage of metal to be located in the shop and warehouse area. It is expected that a subcontract for the construction of the project will be awarded during the early part of the next quarter.

Addition to Building 3010

A low bid of \$9450 from the Charles Hobson Company was received December 29 for the construction of an addition on the north side of Building 3010, the Bulk Shielding Facility. The one-story addition, 17 ft wide by 34 ft long, which was designed by Laboratory forces, will be of steel framing with metal siding to match the existing structure. It is expected that construction will start early in the next period.

ORNL PROJECTS IN THE Y-12 PLANT

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

The installation of a double-ended motor-generator set in Building 9204-3 is practically complete. The estimated cost, including transfer value of the set, is \$80,800. This facility will provide greater flexibility in the operations of the cyclotrons and electromagnetic separations units in the building.

Additional Offices in Reactor Experimental Engineering Building 9204-1

Design engineering has been completed by the Y-12 Engineering Division for 35 additional offices and a drafting room to be installed in Building 9204-1 to provide facilities for expansion of effort on the HRP. The V. L. Nicholson Company of Knoxville, Tennessee was awarded the installation contract for a lump-sum price of \$59,736. The contractor began work on this project early in January 1955 and is scheduled to complete his work March 1, 1955.

Library Expansion and Substores Relocation in Biology Research Building 9207

Preliminary work required prior to the arrival of Rentenbach and Wright, the contractor for expanding the library and relocating the substores in Building 9207, was completed by Y-12 maintenance forces. The contractor began work early in January 1955 and is scheduled to complete the job February 1, 1955. The cost of the contract portion of this project is \$10,890.

Chronic Exposure Facility, Building 9743-2

The installation of facilities in Building 9743-2 for the chronic radiation exposure of animals is a comparatively small job but is worthy of mention because of its importance to the Biology Division's experimental program. Engineering for the project

is in progress and is scheduled to be complete by January 15, 1955. Field work is scheduled to be completed on or before March 1, 1955. The estimated cost for the project is \$10,991.

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

The "Boston Project" laboratories, which provide for the study of the effects of uranium on the human body, are being moved from Building 9202 to Building 9723-9 because of the requirements of the Y-12 Development Division for space in Building 9202. The new facilities are expected to be in operation by January 1, 1955. It was estimated that the cost for this project would be approximately \$45,000.

ANP Engineering Building 9201-3

Air Conditioning. The preliminary engineering

for air conditioning the offices and laboratories in Building 9201-3 was performed by Y-12 Engineering Division; detailed engineering and installation are presently being done by the Templin Equipment Company.

Installation of Transformers. Engineering is in progress on the three 500-kva, welding-type transformers with auxiliary switchgear which are to be installed on the second floor of Building 9201-3 to provide additional power for experimental work. Specifications for the major items of equipment have been prepared, and these items are on order from outside vendors. The installation is estimated to cost \$69,893.

Power Redistribution. A preliminary proposal for the redistribution of power for ANP experimental work in Building 9201-3 has been approved by the AEC. Work is to be started in the immediate future.