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MONTHLY STATUS AND PROGRESS REPORTS

PERIOD: AUGUST 1949
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Excerpt

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| DEPARTMENT OF ENERGY | |
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| REVIEWER NAME: | <i>H. Schmidt</i> |
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U.S. ATOMIC ENERGY COMMISSION

Issued September 1, 1949

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7 - BIOLOGY AND MEDICINE

Research Projects Approved During August, 1949

Medicine

1. University of Rochester - Dr. Harold Hodge - "Program on the Toxicity of Circular Compounds" - \$19,000 - 1 yr.
2. Harvard University - Howe Laboratory, Boston, Massachusetts - Drs. W. Everett Hinsey and Robley Evans - "Effects of Neutron and Gamma Radiation on the Ocular Lens" - \$4,000
3. Mt. Sinai Hospital - Dr. Mary Dobotka - "The Use of Isotopes in the Study of the Etiology of Drug Eruptions" - \$4,000 - 1 yr.

Biology

1. Cornell University - Drs. Alexis L. Romanoff and Wasley A. Fisher - "The Effects of Internal Radiation from Radioactive Isotopes on the Development of the Embryo" - \$4,000 - 1 yr.
2. University of Missouri - Dr. Sam Brody - "Determination of Thyroid Activity in Farm Animals with Special Reference to Dairy Cattle in Relation to (a) Ambient Temperature, (b) Productive Levels by the Rate of Radioisotope Levels" - \$4,000 - 1 yr.

Washington-Appropriate Research in the Areas of Biology, Medicine, and Bionhysics

The direct research program now being carried on at numerous institutions and universities as recommended by the Division of Biology and Medicine have been stimulated by subjects of research in biology, medicine and bionhysics.

| | <u>Percent</u> | | <u>Percent</u> |
|-------------------------|----------------|------------------|----------------|
| Training | 1.1 | Genetics | 7.4 |
| Immunology | 1.1 | Plant Physiology | |
| Radiobiology | 1.1 | and Pathology | 5.8 |
| Soils | 1.1 | Waste Disposal | 4.3 |
| Intermediate Metabolism | 1.1 | Aquatic Biology | 3.2 |
| Animal Physiology | 1.1 | Physical and | |
| Cancer | 1.1 | Chemical | 1.9 |
| | | Miscellaneous | 1.8 |
| | | | <u>100.0</u> |

[REDACTED]

University of California at Los Angeles was in the Alamogordo area for a period of about 7 weeks collecting plant and animal material. Collections were made at the site of the bomb and the adjacent area and at an area about 30 miles away where there was a rather heavy "fallout" from the bomb.

The plant life in the crater has been reestablished in a normal pattern of that in adjacent areas and so far as can be observed there is no adverse physiological influence on the vegetation. The chief question will be to determine whether or not the animal life in the crater area has reestablished a normal pattern. Laboratory studies are under way on the effect of the trinitite to identify the elements responsible for the activity.

Within the immediate area of the crater the level of radioactivity was not considered an external hazard to man. Low levels of activity are found in the surface soil and vegetation in the Chupadera mesa 30 and 40 miles from the bomb site. The rate of uptake of activity by grasses appears to be of a low order.

The activity of the tissues of cattle grazed on the Chupadera mesa is no higher than for cattle from other sections of the country. The tissues of small animals that inhabit the area continuously are being analyzed to determine the extent of their activity and any physiological effects that might be expected to occur.

Research at University of California

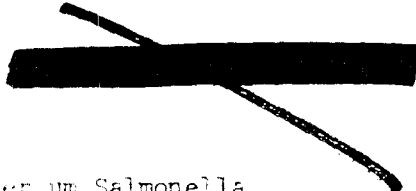
Investigations of the mechanism in laboratory of the University of California have shown that phosphoric acid is a major product of photosynthesis in barley leaves. It disappears rapidly upon cessation of illumination and is increased tenfold by 2 minutes of illumination. It is found that oxygen is required for the maintenance of the phosphoric acid. This is evidenced by the presence of low activity in 2 barley leaves after 2 minutes of illumination in the dark.

Benjamin Bassett, David G. Hahn, and Stepka of the University of California Radiation Laboratory reported further on the pathway in photosynthesis. By employing paper chromatography and radioautography they have been able to separate and identify the carboxylic and phosphate esters formed in the process. The first carbon product of carbon dioxide assimilation during photosynthesis has been shown to be phosphoglyceric acid.

Research at University of California

At Los Angeles, California, Pleugh and associates have

[REDACTED]



found that strains of Escherichia bacterium Salmonella typhimurium originally isolated from human infections grow on synthetic media containing only salts and glucose, and without vitamins or growth factors. After ultra violet radiation at about 2650A or X radiation with about 118 r units the 5 percent organisms surviving are plated out on the minimal medium to allow all bacteria surviving unchanged to grow. Then enriched meat infusion agar containing the more important amino acids and vitamins is layered over and the plates again incubated. This treatment usually results in the growth of additional small colonies, some of which are found on testing to have lost certain specific qualities of the original strains. These altered strains which do not grow unless certain specific amino acids, vitamins, or other growth promoting substances are present in the media. These new strains with specific requirements remain constant just as the parent strains, and are probably determined by gene mutations just as in higher organisms. Here, however, the mutated cells which require a specific substance appear to have lost a particular enzyme or enzyme system by which the parent strain synthesized or elaborated that substance. This is an evolutionary scheme and a mechanism of gene action as suggested by studies of these and other microorganisms.

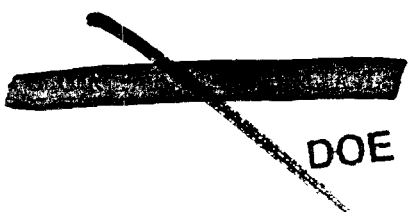
Applied Biophysics

The progress of the following program in biophysics was assisted by the support of a fellowship grant from the University of Minnesota and the support of the National Science Foundation from the University of Rochester. With the assistance of Dr. Robert Schmitt, a general curriculum in biophysics and related fields was developed to lead to the Ph.D. degree in Biophysics. The program was designed to meet the standards described in the program of research.

Discussions were held with other divisions to set up specific emergency procedures and procedures which will automatically go into action in the event of a major accident or shipment of dangerous materials.

Discussions were held with the Departments of Public Health and the Environmental Protection Agency regarding the responsibility of the AEC in notifying the public in the event when isotopes are shipped into a state.

In cooperation with the Division of Cell Research, the Division of Biology and Biophysics and the National Research Council, has agreed to sponsor a program on the biological effects of radiation. Effects on Living Systems, a symposium was held at Oberlin College, Ohio, in 1961.



DOE ARCHIVES

VI - GENERAL COUNSEL

The bulk of the work of the Office of the General Counsel during August has consisted of giving advice on substantive matters which will be covered by the reports of other staff divisions and need not be repeated here. There are, however, several important items which call for a separate report from this Office.

Congressional and Legislative Matters

The investigation by the Joint Committee on Atomic Energy into the United States Atomic Energy Project was brought to a close on August 29 after several executive sessions on personnel security cases. On August 11 the Commission's quarterly report was discussed with the Joint Committee at an executive session. Also, during the first 10 days of August there were four public hearings before a subcommittee of the Joint Committee on the subject of Hanford School Facilities.

During the month 36 communications were sent to the Joint Committee on Atomic Energy and, in addition, 124 letters were sent to individual members and to committees other than the Joint Committee.

Public Law 266, 81st Cong., 2d., the Independent Offices Appropriation Act, 1950, (containing the Commission's appropriation for fiscal 1950) was signed by the President on August 24. Prior to that date appropriations had been continuing in effect by a third temporary extension, pursuant to Public Law 261, 81st Congress.

On August 2 the Senate passed S. 1374, to amend the Atomic Energy Act with respect to the Military Liaison Committee. The bill provides that the members of the Military Liaison Committee shall be designated by the respective Secretaries of the Army, Navy, and Air Force from each of the three departments. The bill is now pending in the House.

Construction Rider

The construction rider to the 1950 appropriation posed a number of interpretative problems necessitating discussions with the Bureau of the Budget and the General Accounting Office, in which the Office of the General Counsel participated. Assistance was also given to the Division of Finance and Insurance or Production in the preparation of plans for the administration of the rider, including a letter of understanding to the Bureau of the Budget and a proposed GM Bulletin which has been distributed to the field offices.

Fellowship Program

Section 101-A of the Independent Offices Appropriation Act, 1950, establishes a requirement of full background investigation by the FBI, and a loyalty determination by the Commission, prior to the award of fellowships out of Commission funds. As a result of this provision, the National Research Council was notified that no new fellowships should be awarded, and no existing fellowship renewed, until there had been an appropriate determination by the Commission. This office assisted the Research Division in working out arrangements with the National Research Council for obtaining ISQ's from the fellows coming up for renewal and for processing them after receipt. An internal procedure was prepared and issued by the General Manager early in September, which specifies that investigative reports shall be considered for fellowship approval on the basis of the same criteria used in the President's loyalty program for Federal employees. Under this procedure, cases involving derogatory information will be referred by the Washington Area security office to a panel composed of one representative each from the Division of Security, the Division of Research, and the Office of the General Counsel, and this panel will make a recommendation to the General Manager or Deputy General Manager for appropriate disposition of the case.

Important Contract Matters

Important contract matters in which we participated during August included the following:

1. We participated in review of the definitive contract with Westinghouse relating to the Maryland ship propulsion reactor. This contract was approved by the General Manager early in September.
2. Negotiations at the El Segundo Office and in Pittsburgh between representatives of the Reactor Development Division and the Blaw-Knox Construction Company, concerning a proposed cost-plus-fixed-fee contract for the engineering design of the general test reactor; and review of this proposed contract in Washington.
3. Completion of negotiations by Raw Materials Operations for the cost-plus-fixed-fee contract with the Galigher Company of Salt Lake City covering operation of the Monticello, Utah, ore processing plant until December, 1957.
4. Discussion relative to an proposed contract with Western Electric Corporation of the Sandia Laboratory; these discussions were completed in early September.

Long-Term Lease Policy

During August considerable work was done on the Commission's policy with respect to long-term leases, on the basis of a staff study originally prepared at Oak Ridge and later modified to reflect discussions in Washington. After determination of the matter by the Commission, we assisted the Procurement Division in drafting suitable instructions to Oak Ridge on the manner in which the long-term lease policy should be carried out.

Personnel Policy

Section 110 of the Independent Offices Appropriation Act, 1950, establishes a ratio of 1 to 1 for persons engaged 50 percent or more of their time in permanent administration. We have been assisting the Division of Organization and Personnel on problems arising in connection with the interpretation and application of this rider.

During August we also examined the legal aspects of proposed policies on selection and appointment of AEC personnel, as well as reduction in force procedures, particularly from the standpoint of the Veterans Preference Act. In connection with the selection and appointment procedure, a memorandum of law was prepared on the applicability of the Veterans Preference Act, which was included in a staff paper presented to the Commission prior to dispatch of a letter early in September to the AEC requesting approval of the AEC plan.

We also assisted in the consideration given within the Commission to the proposed bill now pending in the Congress.

Atomic Energy Relations with Great Britain and Canada

During the month we participated in the consideration of a number of matters relating to the atomic energy relations of the United States with Great Britain and Canada. These included items arising under the established technical cooperation program, as well as preliminary preparations for the exploratory discussions which this Government will hold with the UK and Canada during the latter part of September. In addition, we assisted in the preparations being made for the Declassification Conference to be held at Chalk River beginning September 15.

Federal Property Act

During August our office prepared and distributed to the attorneys in the field a memorandum relating to the interpretation

of the recently enacted Federal Property Act of 1949. New problems concerning the application of this statute are continuing to arise and are being given special attention.

Meeting with Field Attorneys

Preparations were begun during August for a meeting with attorneys from the field legal offices scheduled to be held in Washington on September 15, 1949, and 16.

III - FINANCE

Budget

A letter received from the Bureau of the Budget early in the month stated that they would accept the cost-based budget and a single appropriation subject to the approval of the Senate and House Committees on Appropriations.

The Independent Offices Appropriation Act for fiscal year 1950, signed by the President on August 24, 1949, made funds available to the Commission as follows:

| | |
|--|---------------|
| | (In millions) |
| Cash for new appropriations | \$ 327.9 |
| Contract authority | 387.2 |
| Unobligated balances of prior years as of June 30, 1949, reappropriated | <u>44.9</u> |
| Total legally available for obligation | \$ 760.0 |

In accordance with the agreement with the Bureau of the Budget at the time that agency approved the reappropriation and merging of prior-year appropriations with the 1950 appropriation, \$59.5 million of the total available is being held in budgetary reserve and will be used only with the prior approval of the Bureau.

The Budget staff worked on developing allotments of funds within the amounts available and prepared staff paper AEC 123/19 to inform the Commission concerning the status of the budget program for fiscal year 1950.

In beginning the review of 1951 budget estimates which came in about the middle of August, the Division found that more inventory information was needed and sent out a form designed to obtain the necessary additional information.

Consolidated Annual Financial Statements

By the end of the month preliminary annual financial statements had been received from Chicago, Oak Ridge, Hanford, Schenectady and Colorado, and the preliminary consolidated statements for Santa Fe in early in September. The New York Operations Office is progressing with the preparation of its annual statements in final form.

Financial Appraisal of Physical Facilities

The financial appraisal of physical facilities has now been completed at all offices except Oak Ridge and Los Alamos. The present schedule calls for completion of the work at Oak Ridge between October 1 and 15 and completion of the work at Los Alamos by November 15.

Insurance

During the month the Division issued two Controller's Releases initiating an Insurance Series: CR-18, Guides to Insurance Policies and Procedures, and CR-20, Insurance Claims Procedures.

Auditing

A proposed Controller's release on the auditing of cost-type contractors' insurance premiums was sent to the Directors of Finance at all Operations Offices for comment.

A memorandum to the General Manager on a proposal for the independent audit of AEC accounting and internal control procedures and the independent audit of AEC cost-type contractors incorporated suggestions developed over a period of several months.

Claims of and against AEC and formal GAO notices of exception seem to be increasing and requiring more and more staff time. The problem of developing more uniform and expeditious procedures for handling these items is therefore receiving attention.

Disposition of Microfilmed Records

The general reluctance of legal staffs of contractors to endorse the destruction of records after they have been microfilmed if there is a possibility that such records may be the basis for litigation is receiving consideration as a result of questions raised by the General Electric Company at Hanford. If it is necessary to retain the original records, this may substantially reduce the scope and the economy aspects of microfilming records.

Property

The annual reports on motor vehicles required under Bulletin

GM-88 were received from all installations and comparative analyses are in preparation for operating divisions and for incorporation in reports to be published by the Bureau of the Budget. Figures on numbers of vehicles and utilization seem to compare favorably with those of last year, but the costs reported appear to be high.

The use of Federal Supply Schedules and Bureau of Federal Supply stores has now been inaugurated by our prime contractors at Santa Fe, Oak Ridge, New York and Hanford.

Disposal of surplus property accumulating at the Hanford Operations Office and the disposition of proceeds from the sale of such property required attention during the month. The latter problem has been discussed with a representative of the General Accounting Office but is still pending.

Quarterly Progress Report

A letter to Senator McMahon, dated August 29, 1949, suggested certain changes in the content and coverage of the quarterly progress reports to the Joint Committee. The chief proposals were to eliminate the Community Development chapter, to increase the use of statistical information, and to have each program division director present an oral summary of the information contained in the report of his division.

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