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MONTHLY STATUS AND PROGRESS REPORT
DIVISION OF BIOLOGY AND MEDICINE
MONTH OF SEPTEMBER 1951

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW
SINGLE REVIEW AUTHORIZED BY: AA Sanigamu 11/2/94
DETERMINATION [CIRCLE NUMBER(S)]
1. CLASSIFICATION RETAINED
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3. CONTAINS NO DOE CLASSIFIED INFO
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REVIEWER (ADD):
NAME: ML Kulsky
DATE: 11/7/94

Research Projects Approved During the Month of September

The following number of proposals were approved by the Research Committee for negotiation or renewal during the month:

	Number	Amount
Medicine	7	$ 118,432
Biology	8	63,082
Biophysics	2	141,804
Total	17	$ 323,318

SECRET

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Weapons Tests

Establishment of Policy for Permissible Levels of Radiation For Test Personnel - The Division developed a policy regulating the permissible radiation dose level for personnel participating in test operations. This policy authorizes a permissible exposure of 3.9 r of gamma radiation for test personnel, without regard to dose rate provided this exposure represents the total integrated gamma dose over any 13 consecutive weeks including the test period. This policy re-emphasizes the average dose level of 0.3 r per week. The Test Director will explain in a report any cases where the radiation exposure for a 13-week period exceeds 3.9 r.

Country-wide Monitoring Program for BUSTER-JANGLE Tests - Representatives of the New York Laboratory, ONWI, Argonne, Hanford and the UCLA project met in Washington with representatives of the U.S. Weather Bureau and the Biophysics staff to develop plans for a country-wide monitoring program during the BUSTER-JANGLE tests. In accordance with these plans, 50 Weather Bureau Stations will make daily collections of radioactive dust fall-out or rain-out and forward the samples to the regional laboratories listed above (plus the Brookhaven and Rochester projects) for uniform counting. In addition, plans call for AFOAT-1 to chart the courses of the radioactive clouds across the country and to make detailed airplane observations of the clouds as they cross the 84th meridian. In close contact with these activities, the New York laboratory will make additional ground observations of fall-out with mobile teams and high-volume samplers. All results will be collected by the New York laboratory for coordination and analysis, primarily for the purpose of coordinating fall-out with meteorological conditions and the nature of the radioactive dispersion in the atmosphere above. The results will be available for use in public announcements, information to sensitive industries, and answers to queries. (END OF SECRET)

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Monitoring Operations - In order to augment the Los Alamos "Rad-Safe" monitoring organization which has operating responsibility for radiological health and safety during the tests, the Biophysics Branch has arranged, through the excellent cooperation of 6 contractors, to furnish 11 monitors to serve throughout the entire series of tests. In addition, 6 radiological physics fellows from the University of Rochester will serve during the JANGLE series.

Background Survey of Natural Radioactivity in Soil, Plants and Animals at the Nevada Test Site - The AEC project at UCLA has made a background survey of the natural radioactivity in the soil, plants and animals around the Nevada Test Site. This data will be available should a survey of radioactivity in this area after JANGLE be desired from a health hazard standpoint or for studying the natural life cycle of radioactivity in the soil to the plants and finally to animals and man. ([redacted]

[redacted]

Soil Analysis at the Nevada Test Site - The AEC project on soils, U. S. Department of Agriculture in conjunction with the Biophysics Branch, has made extensive soil analysis at the Nevada Test Site for particle size and chemical composition. The data will be utilized in predicting the hazards of such experiments as JANGLE and in studying how particles in the air from an atomic blast might vary from those originally a part of the soil. [redacted]

Medical Training

Radiobiology - The radiobiology training courses given at Duke University and Reed College, which are operated by the AEC in connection with the Fellowship Training Program, got under way this month for the third successive year. These six-month courses are designed to give post-doctoral medical fellows extensive training in mathematics, the physical sciences, and radiobiology and thus prepare them to enter fields of research of particular interest to the AEC. In addition to the AEC fellows, 13 medical officers of the Armed Services and the Public Health Service are receiving this training. Several of the fellows and medical officers who received this training in previous years now occupy key positions in the atomic medical research programs of both the AEC and the Armed Forces laboratories.

Industrial Medicine - Dr. Bryant H. Reisum, the first physician to complete the academic year of training under the AEC Industrial Medical Fellowship Training Program, has reported to Oak Ridge to begin a year of on-the-job training in industrial medicine with the Carbon and Carbide Chemical Company.

Seven physicians have been selected as qualified for AEC Industrial Medicine Fellowships subject to fellowship clearance approval and will shortly begin

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their academic year of training at the University of Rochester, Harvard University, and the University of Cincinnati.

Medical Program

Betatron, University of California - A 70 million electron volt betatron purchased by the AEC for cancer and radiobiology investigations at the University of California Medical Center has been delivered and is now being tuned up. In addition to experimental work on improved cancer therapy, the machine will be used to increase knowledge of biological damage produced by supra-voltage ionizing radiation.

Atomic Bomb Casualty Commission - The newly reconstituted Committee on Atomic Casualties of the National Academy of Sciences held its first meeting during the month. Members of the committee are Drs. Detlev W. Bronk (Chairman), Shields Warren (John C. Bugher, alternate), W. C. Davison, Ernest W. Goodpasture, A. Baird Hastings, Fred J. Hodges, John S. Lawrence, James V. Neel, Joseph T. Wearn, and M. C. Winternitz. A new policy and basic procedure guide for the operation of the ABCC was developed and adopted at the meeting.

Radiation Instruments

Special Electron Tube Development Program - A contract with the RCA for development of a new and improved photomultiplier analyzer and other special electronic tubes is being extended. The RCA submitted a proposal which has been found to be technically sufficient. Indications are that the total AEC requirements for the alpha scintillation photomultiplier tube are insufficient to warrant a special production run by RCA.

Tests and Evaluation - The Radiation Instruments Branch arranged for evaluation of two newly developed civil defense type instruments by the National Bureau of Standards. Ten new nuclear instruments were inspected during the month for conformance to manufacturer's specifications. Three scintillation Geiger counters manufactured by the Nuclear Research Corporation, Philadelphia, Pennsylvania, employing ultra-violet sensitive tubes were found to be inferior to alpha scintillation counters employing photomultiplier tubes.

Publications - A new section, "Test Reports", has been added to Ra-Det which will be primarily based on the National Bureau of Standards evaluation program for the AEC. This new section is scheduled to appear for the first time in the October, 1951 issue.

Exhibits - In cooperation with the National Bureau of Standards, the Radiation Instruments Branch sponsored an exhibit on radiation physics for the conferees of the American Roentgen Ray Society meeting held in Washington during the month. Approximately 75 instruments, accessories, and special components were displayed.

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Civil Defense Liaison Activities

Shelter Tests - Nevada Test Site - The Chief, Civil Defense Liaison Branch has been appointed Project Officer for the experiment to obtain test data to support theoretical design of communal-type personnel shelters proposed for installation at AEC prime target installations. It is proposed to test one shelter comprising 16 feet of 7.5-foot diameter reinforced concrete pipe with reinforced concrete ramp-entrances, and 10 feet of 10-gauge multiplate corrugated metal pipe of the same inside diameter and multiplate ramp-entrances. This shelter will be located at such distance as to withstand structurally the overpressures from Shots B and C and to collapse from Shot D.

The Project Officer will also monitor the FCDA personnel shelter test. This includes 21 shelters of corrugated metal and wood construction to be exposed to different overpressures. These shelters are of the "backyard" type, designed for the individual home owner to be constructed at his expense. (END OF CONFIDENTIA

Technical Information Furnished FCDA - During the month the Civil Defense Liaison Branch furnished the FCDA with the following technical publications:

1. Proposed Listing - Operation Greenhouse Reports.
2. Volumes II through V of "Medical Effects of Atomic Bomb". (Joint Commission for the Investigation of the Effects of the Atomic Bomb in Japan).
3. Instructions to Personnel.
4. AEC Laboratory Pamphlets.
5. UR-180, "Use of Commercially Available Portable Survey Meters for Emergency Fission Product Monitoring of Water Supplies".

The Civil Defense Liaison Branch, at the request of the FCDA, reviewed a report of a Shelter Conference called by the FCDA in July.

The Civil Defense Liaison Branch arranged a meeting during the month for the purpose of apprising representatives of the FCDA of recent developments at the ABCC project in Japan and of the contents of the Hempelmann Report which recounts the history of the Los Alamos radiation injuries.

Review of Construction Design Criteria - During the month a meeting was held by representatives of the AEC, duPont, and Harris Associates in which the latter attempted to secure additional information on which to base a report on the Savannah River Operation. The attitude of duPont was one of willing cooperation; however they emphatically pointed out that the time spent in reviewing plans and in taking men from their regular work for conferences was

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slowing up the job and would delay the project. The Harris Associates report had not been received at the end of the month; duPont in the meantime continuing to push their designs to completion.

Loan of Radiation Detection Instruments and Sources - For use in civil defense training the Civil Defense Liaison Branch during the month arranged for the loan of instruments to the states of Nevada and New York and extension of a loan of radioisotopes to the Texas State Department of Health.

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