

M. W. Boyer, General Manager



June 16, 1952

Shields Warren, Director, Division of Biology and Medicine

MONTHLY STATUS AND PROGRESS REPORT, MAY 1952 -DIVISION OF BIOLOGY AND MEDICINE

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326 U.S. ATOMIC ENERGY

US DOE ARCHIVES



Transmitted herewith is the Monthly Status and Progress Report for this Division covering the month of May 1952.

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CC: J. H. Burchard

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By: DICK Koogle 6-9-89

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Civil Defense Activities

shelter entrance to minimize entering black preseures. Arrangement will be made to accelerate the planning for immediate construction at Hanford as these data are developed. AEC Communal Shelter. ( The impension of completing construction of the proposed communal shelters at Hanford at an early date has been emphasized. In order to provide the best functional design for the construction, disquesions were held with representatives of the Ballistics Research Laboratory of the Army Ordnance Corps at Aberdeen, Maryland. A series of model shock tube tests have been planned to determine the best configuration of

## Research Activities

Rediation and Mutation Rates per Come. (MCCLASSIFIED) In order to add to the field of knowledge of the effects of radiation on future generations, genetically determined steems of the fly, Drosophile, are being developed in an AEC-supported study at Indiana University. A record of the rates of mutation of single genes will be made following radiation of the flies at increasing does levels. As a result of the study, preside data on the genetic effects of radiation in animals more resistant than the mouse to radiation will be available for comparison with data being collected on the mouse at Cak Ridge. Similar studies on the genetic effects of neutron irradiation will also be undertained at Indiana University.

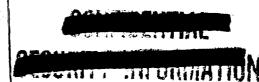
Commers for Mapping Isotope Distribution. (UNCLASSIFIED)
A commers which will map the distribution of radioactive isotopes in
the body has been developed by the AEG-University of California
group at Berkeley. The device is similar in principle to a pin-hole
camera and utilises several crystals as esintilistion counters in the
relative position of the photographic plate. It is presently being
used to map metastases of thyroid cameer after injection of radioactive todine in the body.

to determine and therefore limits the use of control measures for prevention of disease-killing organisms in trees. Study of the rate of movement of radioactive isotopes in normal cak trees as compared to oak trees infected by Cak Wilt disease is being conducted at the AEC-University of Wisconsin project. Isotopes can be detected easily Study of Tree Disease by Radioactive Laptores. (UNGLASSIFIED) method by which infected trees are killed is a difficult process.



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in the tree by means of radioautographs and can be used in concentrations which are not toxic. The mode of action of the Oak Wilt disease has thus been traced, and it is believed that trees are killed in the following way: The water and mineral nutrients move from the roots to the leaves in xylem vessels in the stems. The xylem vessels are tubes made from rows of cells, but these cells are dead in all the stems. However, these dead xylem cells are surrounded by small live Ray Cells. Recently, investigations on this project have discovered that when a tree is infected with the Oak Wilt disease, the Ray Cells grow prolifically and get into the xylem vessels and plug them up through uncontrolled growth. As these vessels are plugged, the life flow of minerals and water in the tree is retarded and as the symptoms progress the tree dies of starvation.

### Industrial Health

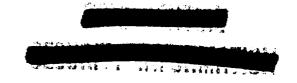
### 1. Health Physics

Investigation of Radon and Radon Decay Products. (UNCLASSIFIED) In the interest of reducing health hazards incidental to mining operations, an AFC-supported survey will be conducted by the U.S. Public Health Jervice in several western states. The survey will include some 300 uranium mines which will be examined by three teams of two men each. The principal objectives of the study are:

- a. To sample the radon content of the air in the various mines;
- b. To sample the radon decay products carried by the dust in the air of these mines; and
- c. To correlate concentrations of radon and radon decay products with ventilation and other related conditions of operation.

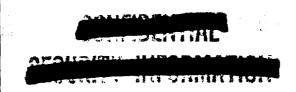
### 2. Industrial Medicine

Meeting of Industrial Physicians. (UNCIASSIFIED) The spring meeting of the AEC industrial physicians was held at Rochester, N.Y. on May 15-16. Attendance included physicians from 14 AFC installations and the following physicians from Canada and England:



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Fr. Freet H. Henton, AEC Project, Chalk River, Canada; Fr. Katherine Hilliams, Atomic Energy Research Establishment, Harwell, England; and Dr. Andrew S. McLean, Division of Atomic Energy (Production), Capenhurst (near Chester), England.

Mutual problems encountered by the various industrial medical departments were discussed. Items of particular interest were: survey of need for industrial physicians in AEC program; health examination on test personnel; transmittal of medical data of visiting personnel to office headquarters; audiometric surveys; treatments of NaK burns; chronic beryllium poisoning; white-cell counts; toxic effects of lithium and tributylphosphate; design of first-aid decontamination facilities; fellowship program in industrial medicine and industrial hygiens.

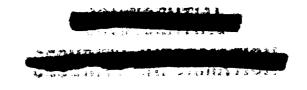
### 3. Radiation Instruments

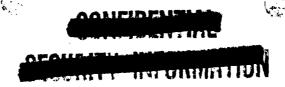
Visit of Chalk River Personnel. (UNCLASCIFTED)

Mr. John Hardwick (Chief, Electronics Branch), Atomic Energy
Project, Chalk River, Canada, visited the Radiation Instruments
Branch on May 8. Previously, he was given a comprehensive review
of the status of American civil defense instrumentation by the
Federal Civil Defense Administration. Members of the branch and a
representative of the Civil Defense Maison Branch briefed him on
the relative responsibilities of the AEC and FCDA which is in contrast to the situation in both England and Canada where the Atomic
Energy Projects have been assigned the full responsibility of
developing monitoring instrumentation. Mr. Hardwick emphasized
that his interest was primarily directed towards designs which would
minimize both circuitry and battery complements with the result in
increased stability and freedom from maintenance.

### General

Isotopes for Cancer Program. (UNCLASSIFIED) The Commission recently announced a change effective July 1, 1952 in the program of free distribution of isotopes for cancer. Previously, radio-isotopes for cancer research and therapy were available free of production costs—only transportation and handling costs being charged to the users. Under the new policy, a charge of 20 per cent of production costs will be made. This change effects only the price and not the availability of isotopes; production will continue to meet all demands.





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The Advisory Committee for Biology and Medicine and the Advisory Committee on Isotope Distribution have agreed that a charge of 20 per cent of catalog prices would not hamper advances in this field, and would help indicate the future demand in relation to other caneer research and therapy tools.

During the remainder of the fiscal year, ending June 30, 1952, the Commission will make radioisotopes available for eanger studies without charge for production costs.

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