

M. H. Boyer, General Manager

Septem er 10, 1952

John C. Bugher, Director Division of Biology and Medicine

MONTHLY STATUS AND PROGRESS HELDET, AUGUST 1952 - DIVISION OF BILLOCY SHO MESICINE

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

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CC: J. H. Burchard

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HONTHLY STATUS AND PROGRESS REPORT

Division of Biology

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MONTH OF AUGUST, 1952

Weapons Test Activities

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purposes of the meeting weres

- evaluate the objectives of a fall-out program;
- To determine the necessary procedures and equipment to fulfill the
- order to provide readily interpretable data
- agreeable organisational relationships d with the fall-out studies

equipment.neededato

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Early in August, Mr. Floyd Lamb of Alamo, Nevada, requested that the Commission examine some of his cattle which had lost patches of hair believed to have been caused by radiation. A preliminary examination of these animals by a team from Los Alamos indicated that the cattle had been exposed to a satisfit degree of radiation carried by dust particles in low level dust clouds which settled in the firing site and adjacent areas. Some cattle showed patches indicating only temperary loss or discoloring of hair, others revealed localised radiation damage to the skin, not unlike a burn; however, these showed normal healing.

Although the cattle showed no ill effects other than superficial burns, the Commission will continue observations of the emposed animals in ecoperation with Mr. Lamb. Arrangements have also been made to purchase two of the cattle most severely burned. These will be shipped to the University of Tennessee Farm at Oak Ridge for further study. The U-T Group has been engaged in a long-range study of cattle which had been exposed at Alamogordo during the 1945 tests.

Research Astivities

Uptake of Fission Products by Plants. (***) Studies of the uptake of fission products in plants are being made using redicactive fall-out soil caught within a few miles of the underground shot during weapons test detonations (Jangle). The radioactive soil was added to representative soils found in the United States. Crops grown in these soils take up a sissable amount of the total activity present in the original radioactive material. The activity is mainly radioactive strontium. Plants grown in typical eastern acid soils low in calcium took to many times as much radioactivity as in western type alkaline soils. The large difference between uptake of the activity from the various soils indicates the dependence of the uptake of strontium on the level of exchangeable calcium in the soil. Continued investigations will also include the use of weathered fall-out radioactive material.

These studies involve long-term investigations on distribution of radioactivity and biological pathways whereby the material may be absorbed, and the effects of the deposition in plants and animals.

Industrial Health

Health Physics

Health Physics Conference. (UNCLASSIFIED) A classified Realth Physics Conference will be held at Idahe Falls, Idaho, on October 16-18, 1952. The meeting which will be spensored by the Division of Miology and Medicine will include industrial health personnel from AEC-centractors, military and civil defense agencies and the Commission.

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Administrative and research problems in the radiation protection field will be discussed, and informal papers on pertinent questions will be presented.

Photodosimetry Neeting (Communication The problems associated with photodosimetry during nuclear weapons tests were considered at a recent meeting of personnel from AEC-contractors, Armed Forces Special Weapons Project, the Bureau of Standards, the Mational Institutes of Health, and the Commission.

The objectives of the conference were to establish standardized procedures for: the use of film badges; wearing, developing and interpreting film badges; and record keeping.

A special study group was appointed to conduct recearch an problems for which sufficient data are not now svailable, and plans were made to have a set of standard procedures issued by the Bivinion at an early date.

Waste Disposal at Seg. (UNCLASSITED) Investigations as to the feasibility of disposing of large quantities of radicactive liquid waste material into the sea are under way by the Division. This matter is of much interest and importance and necessitates consideration of such items as:

- Disposal of radioactive waste in scaled containers (as drums or large tanks), or disposal by pumping the waste directly into certain ocean areas;
- b. Ocean areas most suitable for such disposal;
- e. Ultimate distribution of waste in the sea;
- d. Effects of such disposal on sea life, and ultimate/human life.

Discussions have been held recently with the Scripps Oceanographic Institute at La Jolla, California, to determine their willingness to undertake such a survey. Further meetings will be held with other oceanographic groups in order to interest them also in the problem.

General

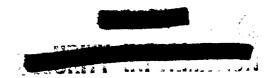
Atomic Bomb Casualty Commission (manufactured The present status of the Atomic Bomb Casualty Commission project since the signing of the peace treaty was reported by the Director of the project in Japan during his recent visit to Washington. As previously reported (see July Byagress Report), arrangements were made through the U. S. Embassy in Japan whereby ABCC and its personnel would be accepted by the Japanese Government as an adjunct to the U. S. Embassy. The Japanese Government, however, has declined to formalize such an agreement in writing. In the opinion of the Director, Dr. Grant Taylor, this lack of

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formal understanding imposes serious obstacles in the daily dealings with other elements of the Japanese Government. In addition, concern was expressed over the welfare of ABCC personnel and the ability to recruit additional or replacement personnel due to the post-treaty unrest and anti-American sentiment which now appears to be widespreas.

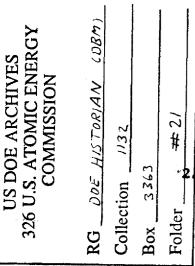
In view of these problems, the Director believes strongly that continued operation in Japan would be possible only by outright attachment to the Far Eastern Command. Affiliation with the U. J. Embassy had been considered desirable to avoid the stigma of the military in a research operation so intimately connected with the Japanese community, while at the same time enabling most of the pre-treaty privileges accorded to ABCC. If, however, the anti-American sentiment grows to the extent that the safety of ABCC personnel would be jeopardized, arrangements with the Department of Defense may be necessary. The solution would be either to have the Department of Defense take over the operation of ABCC, or to include it as one of the contractors of the Far Eastern Command essential to the military operation and in accordance with the Administrative Agreement. The National Academy of Eciences, contractors to the Commission for operation of the project in Japan, have been authorized to explore with the Department of Defense alternative mechanisms on a preliminary basis by which a change-over to the Far Eastern Command might be effected.

Visit to Harwell, England. (UNCLASSIFIED) During a recent visit to Europe Dr. Paul B. Pearson of the Biology Branch visited Harwell, England. The following items pertaining to the program of the Harwell group were reported by Dr. Pearson:

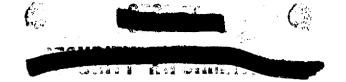
. Neutron Effects on Mice. A small pile is used in this project, and 500 male mice (about 5 weeks old) are exposed continuously to neutrons. Three levels of exposure are used, namely, 5 rep (rountgen equivalent physical) per week; 0.7 rep per week; and 0.3 rep per week. The mice receiving 6 rep per week become completely sterile after about 12 weeks, and this condition continues even after removal of the mice from the exposed field. It has also been found that cataracts develop in most of the mice.

Approximately 50 rep reduces the weight of the testes by 50%; this weight change of the testes is considered by Dr. R. E. Mole of Harwell as a more sensitive measure of radiation injury than change in the weight of the spleen.

Hazards of Agricultural Contamination. The Harwell group has given a great deal of study to this problem. Primary interest concerns pasture and grasing areas that might be contaminated from redisactive fallout. The problem in the United Kingdom could be much more acute than in the United States due to the highsoncentration of livestock per square mile, and the fact that over 50% of the food supply is imported. Thus, a loss of home production should imports become restricted would be a serious problem.



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In this connection, the Harwell Group has requested that the Commission make available to them a shipment of soil samples taken from the area of the weapons test site. This soil would be used in connection with research studies now being made on crops in that country. Steps have been taken to implement this request.

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