407713

File copy

This document consists of 5 pages
No. 1 of 1 Copies, Series HD-A

[redacted]

Project Chariot & Kangaroo

UARTERLY PROGRESS REPORT

to the JOINT COMMITTEE on ATOMIC ENERGY

OPENNET ENTRY	
☐ Authorized for Public Release	
By:	Date:
Entered in OpenNet	
By:	Date:
☐ Not Authorized for Public Release	
By:	Date:

Exempt

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
SINGLE REVIEW AUTHORIZED BY: Sinicoalli 11/2/94	DETERMINATION (CIRCLE NUMBER(S))
REVIEWER (ADD):	1. CLASSIFICATION RETAINED
NAME: H R Schmidt	2. CLASSIFICATION CHANGED TO:
DATE: 12/9/94	3. CONTAINS NO DOE CLASSIFIED INFO
	4. COORDINATE WITH:
	(5.) CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	(7.) OTHER (SPECIFY): Cover and pp 43-46 only.

[redacted]

This document contains restricted data as defined in the Atomic Energy Act of 1954. Its transmittal or the disclosure of its contents in any manner to an unauthorized person is prohibited.

April - June 1959

UNIQUE DOCUMENT # SAA200051460000

UNITED STATES ATOMIC ENERGY COMMISSION

94HDOT1827

[redacted]

EXTRANEOUS MATERIAL DELETED

EXTRANEOUS MATERIAL DELETED

Part VI

Biology and Medicine

MEDICAL SURVEY OF RONGELAP PEOPLE, MARCH 1959 (UNCLASSIFIED)

The sixth annual medical survey of the Rongelap people was carried out in March. These people were the ones receiving the greatest amount of exposure from the fallout accidentally occurring after the experimental detonation of a thermonuclear weapon on March 1, 1954. The survey showed that the group had recovered from the acute effects of the radiation exposure, and appeared generally to be in good health. The following summarizes their health status with respect to radiation effects.

1. No illnesses or diseases were found that could be associated directly with acute radiation effects.
2. Three deaths and one case of cancer have occurred, but with no apparent relation to radiation effects.
3. Fertility does not appear to have been affected. The incidence of miscarriages and stillbirths in the exposed group appears to be somewhat higher than in the unexposed island population. However, a lack of vital statistics does not permit definite conclusions.
4. Evidence suggesting a slight lag in growth and development of exposed children was being reevaluated on the basis of better age data obtained during the recent March survey.
5. Blood platelet levels are within the normal range but somewhat below the level for the unexposed population.
6. Residual changes in the skin from beta burns were found in only 12 cases. None showed any evidence of cancerous change. Originally 64 Rongelaps had extensive skin lesions and epilation.
7. Possible late effects of radiation such as shortening of life span, increased incidence of leukemia and malignancies, increased incidence of degenerative diseases, opacities of the lens of the eyes, and genetic changes have not been observed.
8. Original body burdens of internally absorbed fission products appeared to have been too low to have produced any acute or long-term effects.
9. Some increase in body burdens of cesium 137, zinc 65, and strontium 90 have been caused by the return of the people to the island of Rongelap. However, the levels were below the accepted permissible dose and no untoward effects are anticipated.

Because of the limited knowledge of the late effects of radiation in humans, it is considered essential that medical surveys of the Rongelap people continue in order to detect and treat any further effects from radiation that might develop. Although body burdens of radioactive isotopes were well below the accepted permissible dose levels, and while no further significant

increase is expected, future medical surveys should include close checks on the levels of these body burdens.

OCCUPATIONAL RADIATION EXPOSURES OF AEC AND AEC-CONTRACTOR PERSONNEL, 1958

A summary of occupational radiation exposures received by AEC and AEC-contractor personnel during calendar year 1958 is as follows:

1. About 99.7 percent of all radiation exposures were less than the 5 rem which is the recommended maximum average annual whole body dose for occupational exposure.
2. About 91 percent of all exposures were less than 1 rem total dose.
3. There were 12 exposures reported as equal to or greater than the recommended maximum yearly permissible dose of 15 rem. All of these were the result of accidental radiation exposures and have been investigated in detail.

The data summarizes the exposures received by 71,868 employees at 97 AEC and AEC-contractor facilities, and indicates that radiation protection operations are maintaining the low average levels of personnel exposures achieved in previous years. In 1955, the year in which the last summary was prepared, there were 302 exposures higher than the 5 rem recommended maximum average annual whole body dose for occupational exposure.* In 1958 there were only 188 such exposures, or 38 percent fewer than in 1955, although the number of people in 1958 whose occupation subjected them to the potential risk of radiation exposure was much greater than in 1955.

FALLOUT STUDIES

Hearings on Fallout from Nuclear Weapons Tests

Hearings on fallout from nuclear weapons tests were held before the Special Subcommittee on Radiation Effects of the Joint Committee on Atomic Energy on May 5–8. The testimony presented by the many scientists engaged in laboratory studies and evaluation of hazards resulting from weapons testing updates many important aspects of the information presented to the subcommittee in 1957.

Removal of Radioactive Strontium from Milk

The feasibility of removing radioactive strontium from milk has been demonstrated in laboratory experiments at the University of Tennessee-AEC Agricultural Research Laboratory. Using a form of ion exchange resin, it has been found possible to remove up to 94 percent of radioactive strontium from separated (skimmed) milk without the loss of calcium from the milk. Other effects of this treatment upon the quality of the milk are under study. Radioactive strontium associated with cream may be removed by repeated dilution of the cream with water, followed by the separation of the cream from the water.

Because of the promise of this work the Department of Agriculture was contacted to encourage them to conduct research in this area. If such research is initiated and shows suffi-

*See Twenty-first Semiannual Report of the Atomic Energy Commission to the Congress, July–December 1956, pp. 165–8.

cient promise, experimental removal of radioactive strontium on a pilot-plant scale could be undertaken, since the Department of Agriculture has facilities for processing as much as 100 gallons of milk per hour.

Reports on Fallout

On May 5 Chairman McCone announced that the AEC would release quarterly information on fallout gathered by scientists of the AEC and its contractors.*

The quarterly reports containing detailed tabulations on domestic and world-wide fallout levels will continue to be issued by the AEC Health and Safety Laboratory in New York. These reports are published for sale through the Office of Technical Services, Department of Commerce.

PROJECT CHARIOT ENVIRONMENTAL STUDIES

The Commission has approved planning for biological studies to be conducted before and after the proposed detonation of nuclear devices for excavating a harbor in Alaska. Not often in the history of the United States has there been an opportunity to give scientific study to landscapes and seascapes prior to their exploitation. Project CHARIOT offers the first complete opportunity to gauge the effects of nuclear detonation on ecological systems. The studies associated with the project will provide much basic knowledge, important both economically and scientifically, of natural living resources in a little known area of Alaska. Activities to be conducted include:

1. Biological inventory listing taxonomically the flora and fauna of land, ocean, and fresh water,
2. Mapping and photography of vegetation patterns and animal concentrations,
3. Dynamic aspects of biological communities such as food chains, land, sea and water productivity, seasonal changes, and migrations of people, land and sea animals, and birds and fishes,
4. Studies of human populations, including food habits and seasonal migrations, and
5. Studies of the physical environment including geology, meteorology, marine currents, and pre- and post-shot radiation measurements of plants, animals, and soils.

Participating in this program will be the University of Washington, the University of Alaska, the Arctic Research Center, and the ecology group of the General Electric Company at Hanford.

EDUCATION AND TRAINING

Grants Awarded to Educational Institutions

The AEC announced in May that grants totaling $382,098 were being awarded to 41 universities to encourage nuclear training in life sciences. This was the seventh of a series of

*A statement on fallout was issued by the AEC to the public on September 8. The AEC will continue to make routinely available fallout information, either through similar releases or through procedures developed by the Federal Radiation Council. President Eisenhower on August 22 established by executive order the Federal Radiation Council to advise him on radiological health. The President also directed that the Department of Health, Education, and Welfare have the primary responsibility within the Executive Branch for the collation, analysis, and interpretation of data on environmental radiation levels.

grants, and brought to $2,192,805 the total amount awarded in 193 grants to 128 institutions. The purpose of the grants is to assist nonprofit educational institutions by providing teaching aids, demonstration apparatus, and student equipment to be used in courses in nuclear technology as related to the life sciences.

Advanced Training in Health Physics

Special fellowships for advanced training in health physics are to be offered to qualified individuals beginning with the 1959–60 academic year.* Five new fellowships are to be offered each year, and are to lead to the doctorate degree in disciplines which contribute to health physics such as radiation physics, chemistry, biology, and engineering. The training is to help assure that highly qualified senior health physicists are available to meet the needs of AEC and industrial programs. (End of UNCLASSIFIED section.)

*The AEC announced this program on July 9.

EXTRANEOUS MATERIAL DELETED

EXTRANEOUS MATERIAL DELETED