January 31, 1967

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ATOMIC ENERGY COMMISSION

MEETING ON BIKINI RADIATION DATA

Note by the Secretary

The General Manager has requested that the attached memorandum of January 26, 1967 from the Director, Division of Biology and Medicine, be circulated for the information of the Commission.

W. B. McCool

Secretary

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UNITED STATES GOVERNMENT

Memorandum

TO : FILES

DATE: January 26, 1967

FROM : Charles L. Dunham, M.D., Director
Division of Biology and Medicine

SUBJECT: MEETING ON BIKINI DATA - JANUARY 24, 1967

In response to a letter from the Secretary of Interior, Stewart Udall, and a following letter from Under-Secretary Sisco, Department of State, the Division of Biology and Medicine called a meeting to consider the available information on the radiation levels on the Atoll of Bikini and what additional information would be required to make a rational decision as to whether or not it would be safe to return the Bikini natives some 200 strong from Kili, Majuro, Jaluit, and a few other places to their home atoll. The following persons attended the meeting:

University of Washington
Dr. Allyn H. Seymour
Dr. Arthur D. Welander

Brookhaven National Laboratory
Dr. Robert A. Conard
Dr. Stanton Cohn

Department of Interior
George Milner, Trust Territory

Federal Radiation Council
Dr. Paul C. Tompkins
Mr. C. C. Palmiter

Health & Safety Laboratory, NYOO
Dr. John H. Harley

Division of International Affairs
William L. Yeomans

Division of Operational Safety
Dr. Gordon M. Dunning
Dr. Roy D. Maxwell
Mr. Tommy F. McCraw
Mr. Robert E. Allen

Division of Biology and Medicine
C. L. Dunham, M.D.
H. D. Bruner, M.D.
Dr. S. Allan Lough
Dr. John N. Wolfe
Mr. Arnold Joseph
Dr. Philip F. Gustafson
Dr. W.E. Lotz
Dr. Leonard Sagan

The meeting was opened with a review of the environmental radiation situation of the atoll based on the data obtained in the summer of 1964 by the University of Washington group. That 1964 survey was a reconnaissance operation to appraise the overall situation in the atoll. It included spot survey meter readings for external gamma and gamma-beta

exposure rates plus some spot sampling of soils, ground waters, food such as coconuts and arrow root, fish, birds, and land animals--rats, and coconut crabs. This sampling program was not designed with the objective of being a basis for making a decision as to whether or not the natives could properly be returned to the Island with or without restrictions for specific corrective measures being undertaken first; nevertheless, it provided a good basis for discussion. The data indicated that the Island of Enyu at the SE corner of the atoll contained the least radioactivity from the standpoint of tolerable external exposure and in plants and edible food samples. However, it was felt that the land area of Enyu was too small to sustain a coconut economy program for 200+ people. More area than Enyu alone is felt necessary. If this island were considerably larger there was every possibility that one might safetly return the whole group there. The largest land area is the Island of Bikini. Unfortunately, the Island of Bikini's external dose rate suggests an accumulated dose 3 ft. above ground slightly higher (by less than a factor of 2) than the 500 millirads per year considered acceptable for individuals by the FRC under ordinary circumstances.

The 1964 survey data indicated that certain foods were contaminated to some degree and some relatively free of contamination. Pandanas was relatively high but the few samples available were not appreciably higher than at Rongelap. The coconuts, edible parts including meat and juice, contained tolerable levels of strontium-90 and cesium on both Bikini and Enyu Islands; arrow root corms would probably also not be a problem. The one coconut crab sample from Bikini was quite high in strontium-90 as are coconut crabs at Rongelap, but there seemed to be very few on the atoll. The Island of Namu which has very sparse re-growth of bushy vegetation except on the periphery of the Island has apparently become quite spontaneously a bird sanctuary with thousands of nesting birds. Shore birds at Namu and elsewhere around the atoll had quite high levels of cesium and could constitute a problem for persons leaning heavily on these for their dietary intake.

It became obvious a decision regarding the advisability of returning the natives to Bikini was not going to be a simple one, although it was agreed that the radiation levels per se did not outrightly preclude sending the people back. A consensus feeling was that it may be possible; nevertheless, there would have to be some restrictions on their activities and/or specified countermeasures taken prior to their return.

Dr. Conard pointed out that he and the Medical Survey Group would be going to Rongelap the end of February for a medical check-up on the people and that the Trust Territory vessel would probably be available for a group to go to Bikini either then or about March 15. Mr. Milner indicated that this indeed was a likely possibility although he would have to check with the Trust Territory HQ at Guam.

From this point on the discussion concerned outlining plans for a future survey designed for the purpose of determining repopulation plans and the countermeasures needed. A primary part of this resurvey would be a comprehensive external radiation survey. This involves a competent health physicist* to be named by the Division of Operational Safety to plan and conduct a program of external gamma readings in transects across the two main islands. A DBM contractor-Laboratory of Radiation Ecology, the University of Washington, Seattle, would provide Ed Held who would collect some soil samples on the two main islands to correlate with the radiation survey. More terrestrial food samples, where available, also would be taken. In order to accomplish this work on the Islands of Bikini and Enyu, it will require a team with machetes to hack their way through the thick underbrush across the islands for each of these profiles. To ease access to the entire islands, it may be helpful to clear away along the now practically overgrown roads which run lengthwise more or less down the middle of the Islands. Dr. Conard agreed that he would at the time of his trip to Rongelap recruit some four sturdy Rongelapese to help carry out this work. Mr. Milner agreed to seek Trust Territory specialists to go along with the group, one knowledgeable in agricultural practices as well as the food habits of the Bikini people, and the other an anthropologist. He would make a real effort to entice Professor Mason of the Department of Anthropology, University of Hawaii, to accompany the group. Dr. Harley, HASL, offered any assistance he could give to the study. Dr. Gordon Dunning* and his people from DOS indicated they would assume the responsibility for developing a meaningful pattern of external gamma monitoring which might even include the placing out some fixed radiation dosimeters in strategic points for the several weeks' period. It was felt that it was particularly important to get information on that area of Bikini Island which had been occupied by the original community and which likely would be the village site again.

So far as this next go-round it would appear that it will not be excessively expensive and DBM will not have to ask for additional funds to defray the costs. It may well be that the most practical approach from the standpoint of planning would be to return one group of volunteers from Kili to Enyu to relieve the over-population problem at Kili. These people could help in undertaking rehabilitation of the Island of Bikini to receive the rest. As to Bikini itself it may be necessary to plow under several inches of soil or bulldoze off the top inch of the two islands in the entire areas where the new community would be established. This is to be expected to reduce very greatly the external exposure to those living in the community on a more or less 24-hour basis such as the women and small children. Unless they had totally forgotten how to fish

and rejected that as an activity to provide food one would expect the men to spend many hours a day on the water and thus reduce some of their exposure.

As it stands as of January 24, 1967, Ed Held is to plan the survey in consultation with Dr. Conard and the DOS representative. Dr. Held will also make arrangements for supplies and materials needed for the 8 to 10 man, one-month expedition. A. Joseph, of DBM's Environmental Sciences Branch, will aid in searching out logistic support channels and methods.

* On January 25, Dr. Gordon Dunning, DOS, designated Tommy F. McCraw as the man to be responsible for health physics aspects of the study.