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UNITED STATES
ATOMIC ENERGY COMMISSION

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R. E. Hollingsworth, GM

THRU: John A. Erlewine, AGMO

FOLLOWUP ON BIKINI MONITORING RESULTS

CONFIRMED TO BE UNCLASSIFIED
AUTHORITY: DOE/SA-20

BY H.R. SCHMIDT, DATE:

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Background:

In a memo to you dated March 19, 1970, entitled "Environmental Monitoring Results from Bikini Cleanup Operations" it was stated that somewhat higher levels of plutonium-239 and plutonium-240 were found in samples of Bikini Island soil than previously reported. These new data appear in draft reports by the Southwestern Radiological Health Laboratory (SWRHL) and the University of Washington. The results were to be rechecked through an exchange of soil collections between SWRHL and the University of Washington and analyses of samples collected in 1967-1969 surveys for which plutonium determinations have not been made. (These results are to be available in about two weeks.) A possible need to collect additional soil samples and to sample plutonium in air was cited.

Meeting on Followup Actions:

A meeting was held on March 25, 1970, to discuss possible followup actions to be taken on the matter of the Bikini soil samples. Those attending were:

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|----------------------|--------------------|
| Dr. Spofford English | Dr. Gordon Dunning |
| Mr. John Erlewine | Dr. Nathaniel Barr |
| Dr. John Totter | Mr. Tommy McCraw |
| Dr. Martin Biles | Mr. Marion Johnson |
| Mr. Robert Catlin | Mr. William Hughes |
| Mr. Herman Roser | Mr. Robert Newlin |

The discussion centered on steps to be taken to confirm the higher levels, the need to increase the number of soil samples available for analysis and to obtain air sampling data, the disposition of the two draft reports which contain the most recent soil data (the higher levels obtained in 1969), the approach to be taken in planning for collection of additional soil samples and air samples, the need to coordinate any field trips with the Department of Interior, and the need to develop statements for use in answering any questions about the field trip.

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In the meeting I explained that the new levels of plutonium-239 in soil of Bikini Island are higher than those in Colorado for which some members of the scientific community have expressed concern. While the plutonium levels in themselves would not be expected to add significantly to the risk evaluated by the Ad Hoc Committee, this is presently a sensitive subject and the number of available soil samples for which plutonium analyses could be performed is minimal. While it is expected that results will probably be negative, it is desirable also to collect air filter samples for alpha analysis. There was a body of opinion in the meeting that additional sampling of soil and the collection of air filter samples should be conducted, preferably before the construction of housing which is to begin in about two months.

The discussion next turned to the question of who would plan and conduct the survey. There was a consensus that the Nevada Operations Office (NV) should plan field operations to collect soil and air samples at Bikini Atoll as soon as feasible with assistance of representatives from groups such as the University of Washington, SWRHL, Health and Safety Laboratory, Division of Biology and Medicine, and the Division of Operational Safety. NV should call a meeting of the representatives to plan the survey, to determine the numbers and types of samples to be collected, to develop a tentative schedule for the survey, and to obtain an agreement on the membership of the field team. The objective of this team would be to document, just prior to return of the natives, levels of radioactivity in soil, air, and water. For this survey, the primary effort would be given to alpha radioactivity.

The 1964 data reported for plutonium in soil and in foods at Bikini Atoll did not suggest any significant intake of plutonium through ingestion or inhalation. The 1969 soil data can be expected to raise questions on pathways to man including inhalation. The questions concerning the levels of plutonium in soils and in air for Bikini must be resolved before the two draft reports are released. Those in the meeting agreed with this approach.

Before the logistics aspects of the field trip can be planned, the staff of the Trust Territory of the Pacific must be informed of the purpose and objectives of the survey. To avoid any misunderstanding and to be able to answer any questions, it has been suggested that this coordination should be accomplished in a meeting between AEC and Trust Territory personnel rather than by correspondence. Such a meeting would probably be held in Honolulu, Hawaii or Majuro Atoll immediately after the NV planning meeting.

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While it is not contemplated that a press announcement would be made for this field trip, it is considered desirable to prepare a reply for questions that may arise. Staff of EM, OS, and PI should prepare such answers and copies should be provided Trust Territory staff when they are informed of the need for the field trip.

Subsequent Information:

Since the meeting of Headquarters personnel, a brief report was obtained from Dr. Robert Conard who spent several hours on Bikini during his recent trip to Rongelap. Dr. Conard stated that the Bikini workers in the Atoll are collecting nonferromagnetic metals (copper, brass, aluminum), which are very valuable, with the intent of sale as scrap metal. These materials are being stacked in piles for later transport out of the Atoll. The question has been raised whether these collections of metal scrap should be monitored for radiation and whether the material should be checked by AEC before it is sold.

The draft SWRHL report entitled "Report of the Radiological Cleanup of Bikini Atoll" states that "All scrap metal or concrete with contact readings greater than 100 micro-R per hour (mR/hr) was treated as radioactive waste and buried at sea." Even so, one cannot guarantee that scrap will not be found buried underground or underwater showing levels this high or higher. It has been suggested that on the next field trip to Bikini, provisions be made to monitor the collected scrap.

Guidance on contamination and radiation levels developed by AEC staff for "Sale, Abandonment, or Destruction of Personal Property" could be used for approval of sale of scrap. Trust Territory officials should be informed that scrap metals must be monitored before sale to insure that an item is not found containing radioactivity above acceptable levels. If this approach is acceptable, provisions could be made for monitoring scrap collected over each one year interval in order to allow Bikinians to benefit from sale of this property in a timely manner.

The High Commissioner of the Trust Territory has recently asked whether their earlier question regarding use of the Peter-Oboe-Tare complex in the agricultural rehabilitation program can now be answered. AEC had given an interim reply on July 2, 1969, that if the radiation and radioactivity levels in this area were comparable with those on Eneu and Bikini, it would be in order to review the judgement of the 1967 Ad Hoc Committee. This question will likely be raised when Trust Territory officials are informed of the team visit. A statement on this question should be developed for use in that meeting if by that time a formal answer has not been given.

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Proposed Action:

The following list of actions is proposed:

1. Evaluate additional available soil samples for plutonium, first results to be available the middle of April.
2. Planning meeting in NV between staff of NV, HQ, University of Washington, SWRHL, and HASL.
 - a. Evaluate results of additional sample analysis.
 - b. Develop plan for field trip.
3. HQ and NV staff meet with Trust Territory staff.
4. Followup meeting at NV.
 - a. Review Trust Territory response.
 - b. Finalize field trip plans.
5. Conduct field trip to Bikini Atoll.
6. Sample analysis and evaluation.
7. Finalize 1969 survey reports.
8. Reevaluate Bikini situation if needed.

J. B. Biles

Martin B. Biles, Director
- Division of Operational Safety

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