



UNITED STATES
 ATOMIC ENERGY COMMISSION
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 FOLDER BIKINI SURVEY
Jan. Term Dec. 1970

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Dr. Martin B. Biles, Director
 Division of Operational Safety, HQ

BIKINI FINAL REPORT

Enclosed are final reports of the Environmental Sampling Program conducted during the Bikini clean-up effort. These reports present the results of the external radiation surveys and the concentrations of radionuclides in marine and plant food on the atoll as well as concentrations of radionuclides in soils and ground water samples.

The data obtained during 1969, although more extensive in some areas, are essentially in agreement with those obtained in 1967. In addition the radiation levels are not expected to change appreciably except by radioactive decay. Dose estimates which were made utilizing the earlier data for both external and internal exposure will not be significantly altered as a result of the recent surveys. The recommendations of the Ad Hoc Committee would thus remain valid with minor alteration and amplification. Specifically, the following suggestions are made:

1. Only the following six islands have background exposure rates higher than those found on Bikini:

Tare (Eneman)
 Uncle (Enidrik)
 Victor (Luko)
 William (Jelete)
 Charlie (Nam)
 Fox (Lomlik)

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It is recommended that these islands of the atoll not be considered radiologically safe for rehabilitation.

2. Coconut crabs, except those from Eneu, should not be eaten.
3. The recommendations of the 1968 Ad Hoc Committee should be followed with respect to the planting of pandanus to attempt to reduce the ⁹⁰Sr concentration.

4. Since the ^{90}Sr concentration in pandanus represents the largest single contributor to the internal dose, the effectiveness of the protective measures referenced in No 3, above, should be evaluated by appropriate resampling.
5. Since certain foods not presently growing on the atoll (e.g. squash) may be planted following the return of the Bikinians, it is suggested that a test plot of such garden variety foods be established on Bikini Island during the agricultural development phase. The mature crops and soils in which they are growing should be sampled periodically.
6. It is suggested that a small number (approximately 100) of coconut trees and a few pandanus be planted in the near future on Nam, Enidrik or other islands which may be used as plantations. This will provide samples useful in evaluating the feasibility of the unrestricted use of the atoll.
7. One of the major uncertainties in the estimation of the potential internal dose is that associated with the actual composition of the diet. To help to remedy this deficiency it is suggested that:
 - a. A record be maintained of the kinds and amounts of food imported.
 - b. The Trust Territory representatives attempt to arrive at better estimates of the daily diet than are currently available.
8. The recommendations of the Ad Hoc Committee for the determination of body burdens and the assurance of a balanced and adequately nutritious diet should be followed. A calcium supplement would be particularly important.
9. A minimum monitoring program to verify predictions of exposure rate reduction, to assess new items of foods and to evaluate the impact of clearing and covering the village area on the exposure rate should be established. This program would include, but need not be limited to:
 - a. Monitoring of external exposure rates on Bikini, Eneman and Nam.

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- b. Sampling of land grown foods, reef fish and clams at Bikini.
- c. Sampling of reef fish at Nam.
- d. Sampling of any new wells.

Although the frequency of surveys may be modified by the results obtained by each survey, present information would suggest that every one to two years would be sufficient.

- 10. Long term studies of the transport of radionuclides at Bikini Atoll should be undertaken. These studies should be designed to also satisfy the monitoring and prediction requirement.

ORIGINAL SIGNED BY
ROBERT E. MILLER

Robert E. Miller
Manager

OTM-FDC-26

Enclosures:

- 1. USPHS/SWRHL Report of the Radiological Cleanup of Bikini Atoll
- 2. Univ of Wash. Radiological Resurvey of Animals, Soils and Groundwater at Bikini Atoll, 1969

cc: (w/encs)

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