

Bikini Atoll Rehabilitation Committee

Report No. 1

Resettlement of Bikini Atoll: Feasibility and Estimated Cost of Meeting the Federal Radiation Protection Standards

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*Available on request, circa January 15, 1985, from: BARC, 1203 Shattuck Avenue, Berkeley, CA 94709.

ABSTRACT

The Bikini people wish to resettle Bikini Atoll, from which they were removed in 1946 to make way for a U. S. nuclear weapons testing program.

The hazard of resettlement stems almost entirely from cesium-137, a radionuclide in the soil which may contaminate the ground water and food crops. The waters of the lagoon and surrounding ocean are "clean". Strontium-90 plays a minor role, but some details are still under investigation.

Contamination aside, only two of the atoll's 23 islands are physically and historically suitable for permanent settlement, Bikini (2.4 km²), the traditional site, and Eneu (1.2 km²) which has been an ancillary one.

On the basis of the Federal radiation protection standards, all islands may be visited now. Eneu may be resettled, but depending on population size some food at least would have to be imported, especially during the initial years of resettlement. Bikini may be resettled with the proviso that no foods are to be grown nor ground water consumed for a period of 80 years, by which time spontaneous decay will have reduced cesium-137 to permissible levels.

The Bikini-Kili Council has informed the Committee (August 14, 1984) that the foregoing alternatives are unacceptable because Bikini Island would not be decontaminated.

The Committee has considered courses of action that attack the problem directly by removing the top 30 cm of Bikini's soil. The spoil would be disposed of either by the creation of a narrow, peripheral land strip on the seaward side of the island, or by dumping it into a crater in the lagoon. The execution of such plans would take 2-4 years and

cost \$36-42 million. They would entail perhaps 10 years for the mature revegetation of the denuded island at an additional cost of some \$6-8 million.

The Bikinians have requested that the spoil be used to build a causeway between Eneu and Bikini islands (September 21, 1984). Such construction would double the overall cost and has been questioned environmentally.

Some additional information will be required to assist the United States and the Bikinians to reach a final decision. A more refined estimate of external dose that specifically considers the beta-ray component should be made. The contribution to internal dose of strontium-90 in fish bone and in foliage should be examined further.

Pilot studies within the next two years are recommended to determine the following: (1) the cesium-137 content of plants grown in locations where 30 cm or more of topsoil have been removed; (2) if the loss of topsoil and the compacting effects of the excavation operation per se will materially impair the eventual productivity of Bikini soil; (3) the limitations of ground water supply on both Eneu and Bikini; (4) the possible loss of Bikini's seaward beach as a result of creating the peripheral landstrip; (5) the effectiveness of high-potassium fertilizer in blocking the uptake of cesium-137 by plants, a technique of potential ancillary use. However, preliminary civil engineering planning may begin now, as well as work on a proposed draft environmental impact statement.

Aside from the immediate problems of decontamination, the committee sees the need to initiate planning with the Bikinians for housing and community facilities, and for the eventual subsistence, agricultural and economic activities that will be essential for the maintenance of their community.

BIKINI ATOLL REHABILITATION COMMITTEE

MEMBERS:

HENRY I. KOHN, Ph.D., M.D., Chairman, David Wesley Gaiser Professor Emeritus of Radiation Biology, Harvard Medical School; current address: 1203 Shattuck Avenue, Berkeley, CA 94709 (415-526-0141)

ARTHUR S. KUBO, Ph.D., M.B.A., P.E., Assistant Vice President, Engineering Applications, The BDM Corporation, 7915 Jones Branch Drive, McLean, VA 22102 (703-827-7803)

FRANK L. PETERSON, Ph.D., Professor of Hydrogeology and Chairman of the Department of Geology and Geophysics, University of Hawaii, Honolulu, Hawaii 96822 (808-948-7897)

EARL L. STONE, Ph.D., Charles Lathrop Pack Professor Emeritus of Forest Soils, Cornell University; current address: Department of Soil Science, 2169 McCarty Hall, University of Florida, Gainesville, FL 32611 (904-392-1956)