C101

November 3, 1978

BRIEF REVIEW

RADIOLOGICAL CONDITIONS IN THE MARSHALL ISLANDS

Background

In 1945 the decision was made by the President to conduct U.S. nuclear explosives tests in the Northern Marshalls. One hundred sixty-six Bikinians and one hundred thirty-six Enewetakese were moved from their home atolls. Twenty-three nuclear tests were conducted at Bikini and forty-three at Enewetak between 1946 and 1958. All tests were conducted by a joint military/civilian task force that reported to the Department of Defense and the Atomic Energy Commission. The nuclear detonations left a legacy of contaminated islands and the people of nearby Rongelap and Utirik Atolls were left with both prompt and delayed injuries. Radioactive contamination in soils and sediments is being taken up by plants and animals used for food. With current cleanup technology, part but not all of this contamination can be removed for disposal.

Current Conditions

Bikini

Responding to an inquiry from the Secretary of Interior as to whether or not the Bikinians could return home, the AEC conducted a radiation survey of Bikini Atoll in 1967. A panel of radiation and medical experts was appointed to evaluate the return of the people. Their judgement was that the people could return if certain precautions were taken. These recommended precautions included cleanup of contaminated debris, restrictions on use of land and local foods, and conduct of a followup radiological monitoring program. The first houses and food crops were to be placed on Eneu Island, the second largest (and one of the least contaminated) islands. The Bikinians later objected and wanted houses on Bikini Island instead where all had land rights and where all would benefit equally. Subsequently, 43 houses were built on Bikini Island and 85,000 coconut trees were planted on Bikini and Eneu Islands. Following cleanup conducted jointly by the Department of Defense and AEC in 1969, and agricultural rehabilitation and housing construction by DOI in the 1970 to 1974 period, a number of families moved to Bikini Island

Followup monitoring of these people and their environment in 1974 produced the first measurements of radioactivity in their bodies. These levels were very low, were not significantly different from people in other parts of the world, and were well within Federal standards. Repeat body burden measurements of Cesium-137 (a fission product radionuclide similar to Potassium) in 1977 showed a 10-fold increase. These measurements indicated exposures were rapidly approaching the accepted Federal Radiation Protection Standard values. With these findings, officials of the Department of the Interior (DOI) were briefed and recommendations made that local foods grown on Bikini Island should not be eaten. DOI instituted a program for alternate food supplies to be brought to Bikini Island. In April 1978, the third set of body burden measurements indicated a three-fold increase above 1977 values and twelve persons out of about 140 people had body burdens that exceeded the Federal standards. DOI was again briefed and a decision to remove the people from the atoll resulted.

The people left Bikini Atoll in late August 1978 and returned to Kili Island to the south where they had lived previously. Removed from a diet of locally produced foods on Bikini Island, it can be expected that the peoples' body burdens of Cesium-137 will be rapidly reduced. This will be checked by a fourth set of measurements. A radiological assessment will be made by DOE of whether Eneu Island, the second largest in the atoll, is an acceptable place for the people to live. This will be ready in late January or early February 1979.

Enewetak

Cleanup of Enewetak Atoll is midway to completion. Physical cleanup operations are to be finished at the end of September 1979. Following a seven-month demobilization period, Defense Nuclear Agency (DNA) plans to leave the atoll in April 1980. DOI responsibility for rehabilitation, which is in the form of facility construction and agricultural rehabilitation, will continue. DOE, acting as advisor to both these agencies, will continue its radiological surveillance programs for the returning people and their environment after cleanup and rehabilitation is completed.

DOE provided needed radiological criteria for use in planning cleanup. During the buildup phase at Enewetak, DOE provided advanced technology instrumentation systems for rapidly measuring levels of transuranium elements and other gamma emitting radio-

nuclides in soil. These systems can be taken ashore on islands requiring soil pickup and removal. Additionally, a laboratory was established at Enewetak Island to support cleanup field operations. The mobile systems and laboratory have operated successfully for the past year in support of DNA soil and debris cleanup operations. DOE systems and support personnel will continue to work with DNA until field operations are completed. DOE is also providing a full-time representative/advisor on the atoll to support the DNA clean-up commander. Despite the complications of this difficult project, cooperation among the various agencies and the people of Enewetak has been exceptional.

Northern Marshall Survey

Considering that the Trust Territory of the Pacific Islands is to terminate in 1981, and recognizing there is insufficient radiological information to categorize conditions on a number of islands and atolls in the Northern Marshalls impacted by U.S. nuclear tests, AEC/ERDA/DOE staff have worked to obtain needed information. DOI, the Department of the Navy (DON), and DOE are now cooperating to conduct the survey. DOI is funding logistics support provided by DON, and DOE is funding the technical aspects of the survey which began in mid-September 1978. The survey is being conducted from the USNS Wheeling which supports land and marine survey teams, and also an aerial survey team using instrumentation in helicopters. Visits to the survey atolls were planned in three parts to allow periodic resupply of the ship at Kwajalein Atoll. Two of the three parts of the survey were completed October 30, 1978. The last part of the field work will be completed in mid-November 1978. Preliminary information will be available in January 1979 showing external radiation levels in the atolls.

Some of the survey atolls and islands are inhabited while others are not now but may be in the future. A complete assessment including the radiation dose received by people living on the 13 atolls and islands and who eat local terrestrial and marine foods will be available in about 2 years from initiation of the survey. Much of the time required is for laboratories to process and analyze a very large number of collected environmental samples. The report of this survey will be a valuable documentation of radiological conditions in the Northern Marshalls and the findings are expected to facilitate status negotiation discussions related to the Marshall Islands portion of the U.S. Trust Territory.