

COMMENTS ON DRAFT EIS
CLEAN-UP, REHABILITATION, RESETTLEMENT
OF ENEWETAK ATOLL - MARSHALL ISLANDS

The analysis of this proposed action is divided into two sections: (1) Radiological Aspects; and (2) Other Environmental Aspects.

Radiological Aspects

Current Sampling Needs

A great amount of sampling and analysis has been done and the magnitude of the radioactive contamination has been relatively well defined. However, there are two areas in which more information is needed to aid in decision making:

- (a) The water quality of the brackish water lens needs to be determined for those islands to be inhabited before a decision is made to use the water. Radiological, bacteriological, and chemical quality should be determined for a period of at least 12 months.
- (b) Airborne radioactivity, especially plutonium, needs to be determined over a period of at least a year on all islands to be inhabited and on other heavily contaminated islands after clean-up and before lifting of quarantine. Due to the large amount of plutonium on the atoll and the uncertainties in predicting resuspension factors it is very important that the actual conditions be determined rather than calculated.

It is surprising that uranium isotopes were not detectable in air filter samples. Were analysis made for uranium?

Future Sampling

It is apparent (and recognized in the Draft EIS) that regular monitoring will be necessary for many years after resettlement and should include air, water, food, and body burdens of the Enewetakese. This requires some agency to accept the responsibility and obtain the funding for this necessary follow through.

Recommended Clean-Up and Disposal Plan

It is agreed that soil significantly contaminated with plutonium should be removed from islands in the atoll. EPA (letter of May 17, 1974) has previously accepted, in general, the radiation protection criteria and clean-up criteria prepared by AEC. However, these criteria should be considered as upper limits and the clean-up levels and population doses should be maintained as low as practicable. The Draft EIS appears to recognize this concept but there is uncertainty on how it is to be applied. For example, the Statement is vague on when a 40 pCi/gm limit will be applicable and when 400 pCi/gm will be satisfactory. This uncertainty should be clarified in the Final EIS.

The choice of crater entombment for disposal of contaminated soil appears to be the most feasible alternative and provides some degree of retrievability. The fact that this is only a semi-permanent solution should be recognized. Several other points that should be addressed in the Final EIS are: (1) more discussion on the technical advantages and disadvantages of ocean disposal rather than a rejection based on purely legal and international difficulties; (2) the remedial action that will be taken if the volume of Cactus and La Crosse craters is insufficient to contain all the contaminated soil; and (3) the action that will be taken if the Enewetakese reject the entombment option.

Recommended Rehabilitation and Resettlement Plan

The recommendation that habitation be limited to the Southern Islands is sound and the Statement quite properly does not promise an early end to restrictions on use of the Northern Islands. However, there are several aspects of the plan that have not been adequately explained.

The decision to permit subsistence coconut production on the northeastern islands is not justified in the EIS. Virtually all of the predicted dose received by the Enewetakese under the proposed plan is due to this decision. When using an "As Low as Practicable" concept a dose should be accepted only if it cannot be avoided by practicable means, regardless of whether the total dose is still under the RCG being used. This use should be deferred unless it can be shown that there is no practicable alternative to providing an adequate diet or that radionuclide contamination is actually much lower than predicted.

The possible marketing of copra produced on the atoll needs to be evaluated in an "As Low as Practicable" context prior to decision making in order to determine if the economic benefits to the Enewetakese outweigh the radiological cost of the population dose delivered to off-island populations.

The total quantity of plutonium and strontium radionuclides estimated to be present in lagoon sediments are somewhat greater than are present on the islands of the atoll. Apparently, the majority of the contamination is in the northwest portion of the lagoon. The Draft EIS does not discuss the short and long range implications of this source, nor does it indicate whether any consideration was given to the feasibility of minimizing the future radiation dose that will be obtained from the seafood pathway.

There is no discussion of the decision to permit fishing in all of the lagoon. Apparently, this recommendation came from the conclusion on page II-43 that there was "no statistically significant difference for dose estimation purposes between samples taken in different parts of the lagoon." The data depicted in Figures 160-161 suggests that ^{137}Cs , ^{90}Sr , ^{239}Pu concentrations in convict sturgeon may be somewhat higher near Belle and Irene, where bottom sediment concentrations are also highest.

The recommendation to ban coconut crab collection in the Northern Islands is perhaps prudent but was reached without actually sampling any crabs in that part of the atoll. Also, the possibility of this restriction being observed is uncertain because it is a delicacy, in short supply, and the islands would be open for picnicing and fishing.

Clean-Up Operation

We have no specific comments to make about this phase except to note that there will be significant possibilities for inhalation exposures to workers and transport of radioactive material from greater to lesser contaminated portions of the atoll. Constant health physics support will be needed.

Other Environmental Aspects

Sewage Disposal During Clean-Up

The proposed discharge of raw sewage is of serious concern to EPA. The Trust Territory standards of water quality do not permit raw sewage discharges into surface waters. Although the discharge may not be subject to TTPI jurisdiction, it would be inappropriate for a Federal agency to carry out a discharge contrary to TTPI policy. In addition, the raw sewage may result in public health hazards to any users of these waters.

It is possible that these crude sanitary facilities may continue to be used for years. The later stages of clean-up may well occur after many of the Enewetakese have returned. There is a possibility that some tourism will develop and the environmental statement mentions that these existing facilities could be used.

EPA recommends that some form of sewage treatment be provided for the wastewaters generated by the clean-up personnel and subsequent visitors to the atoll.

Garbage and Trash Disposal During Clean-Up

Garbage and trash residue should not be dumped off the end of the island for the same reasons noted above. Burial may be an appropriate method of disposal provided it does not interfere with the brackish water lens that may be used for water supply.

Water Supply and Waste Disposal

The plan to extensively use roof catchment with large cisterns at individual residences and community buildings is good. However, it is probable that supplemental supplies will be needed. Plans to use septic tank leach fields and to bury garbage must be evaluated with great care due to the potential to contaminate the brackish water lenses which may serve as the source of supplemental water supply.

The environmental statement should discuss this serious potential conflict and present evidence that wastewater and garbage disposition will not degrade the drinking water supply. The Department of Health Services, Environmental Health Division of the Trust Territories should have a fundamental role in deciding on the water supply and waste disposal systems that are selected.