C92

UNITED STATES
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
WASHINGTON, D.C. 20545

JUL 25 1977

L. Joe Deal, ADFO

ERDA RADIOLOGICAL CRITERIA FOR CLEANUP AND REHABILITATION OF ENEWETAK ATOLL

By memo of July 7, 1977, Dr. W. W. Burr transmitted to Dr. Liverman a statement prepared by an ad hoc group attending the Marshall Islands Workshop conducted at LLL during the week of July 4. See Enclosure 1. Mr. Roger Ray made a presentation to those attending urging that the Enewetak cleanup criteria are not supportable and seeking a complete reevaluation of the soil cleanup portion of these guidelines. The objections to the criteria that were stated involved concerns for environmental damage and cost of implementation. Health and safety of people was not mentioned. The number of attendees supporting this proposal was never determined.

My concerns for this action are as follows:

1. The guidelines being questioned, namely, guidance for cleanup of plutonium in soil, are the basis for the overall determination that cleanup of the Atoll is feasible. All planning to date rests on the premise that these criteria remain viable and acceptable.

2. The Enewetak cleanup criteria were developed by an AEC Task Group of which I was a member, established in July 1973. Enclosure 2 is a collection of material on the Task Group's formation. The proposed guidelines were reviewed both within AEC and its contractors and by staff of other agencies such as DOI, DOD, NRC, EPA, and HEW. Enclosure 3 is copies of letters from Bill Rowe, EPA, Bernie Schleien, HEW, and Chet Richmond, LASL, that serve as examples of comments received from those who agreed with or were acquiscent toward the proposed guidelines. These guidelines were approved by AEC and transmitted to DOD and DOI.

3. AEC guidelines for cleanup of Enewetak were an essential part of the Environmental Impact Statement which has been through the review and approval process. The approved EIS was the key element in the defense of the project to obtain funding from Congress. Enclosure 4 is a copy of a letter from EPA providing their approval of the EIS.

4. It can be expected that any decision by ERDA to withdraw and revise these cleanup guidelines will have a considerable impact on field operations and plans of DOI and DOD and on ERDA's credibility as advisor to these agencies.

5. If the question of plutonium cleanup criteria is reopened, EPA can be expected to argue that their "Guidance on Dose Limits for the Transuranium Elements in the General Environment," now nearing final review, be used for Enewetak cleanup. Experience in working with staff at that agency indicates they would not care to be seen recommending less conservative radiation protection criteria than that developed by AEC. The prospects of any review leading to an interagency agreement on significantly higher (less restrictive) cleanup criteria are bleak. Therefore, any revision of the numerical criteria for cleanup of plutonium in soil can be expected to be in the direction of lower allowable concentrations. This will require more extensive cleanup, more unavoidable damage to the environment, and greater cost. Such results would run counter to Mr. Ray's stated objection for present criteria.

6. If the Task Group's recommendations for cleanup of plutonium are to be reviewed on the basis of a serious question of whether they are "supportable," the next logical question is whether the other recommendations (the annual and 30-year guidelines) for protection of the Enewetak people are still acceptable. While the issues raised by Mr. Ray are expressed in vague terms, having gone this far, one should ask the $64 question. Is cleanup of Enewetak still considered to be a feasible project? Admittedly, the Task Group's recommendations are 3 years old and therefore fragile as with any past ad hoc effort, but they do have key approvals.

7. While various alternatives were listed in its report, the AEC Task Group made no specific recommendations on disposal of contaminated debris at Enewetak. It was stated in the report that the assumption had been made that this disposal would be done in such a way that no consideration of additional radiation exposure of the returning people from this source would be needed. The decision for disposal in Cactus Crater was made by DNA following discussions with EPA staff and using their advice. ERDA had no voice in this decision.

8. Finally, there is, in my view, a high risk associated with the suggested review. Whether the lower level of the criterion for cleanup of plutonium in soil at Enewetak is 40 pCi/gm as recommended or some lesser figure like 15 to 20 pCi/gm would probably make little difference health-wise. But, from a practical viewpoint, such a change could mean the difference between being able to clean up the Atoll and dispose of the debris and not being able to do so. The Enewetak people stand to be the loosers if the cleanup project is rendered infeasible by our tampering with past agreements. Since the arguments calling for a review of criteria have not involved a question of the peoples' safety, should not the Enewetakese and their advisors have some input into the decision to risk trying to change the criteria in order to save our money and their environment?

Tommy F. McCraw

Tommy F. McCraw
Surveillance Projects Branch
OES

Enclosures:
As stated

Enclosure 1

July 7, 1977

James L. Liverman, AES

MARSHALL ISLANDS WORKSHOP AT LLL

Last week we revieved at Livermore the present AES activities in the Marshall Islands and spent a day and a half discussing program needs and management. One item emerged that I agreed to bring to your attention at the earliest possible opportunity and that item deals with the planned crater disposal. There has always been considerable dissatisfaction with this approach and it came up again at this meeting. An ad hoc group prepared the attached statement to you and asked that I bring it to your attention. I think it would be useful if Bill Forster, Tommy McCraw, Joe Deal and I could discuss this with you when you have had a chance to look over the statement.

W. W. Burr, Jr., M. D.
Deputy Director
Division of Biomedical and
Environmental Research

Enclosure:
As stated

DEP.DIR.	DPPMC	DAA
WWBurr,Jr:lmb	JCWhitnah	HHollister
7/7/77	7/ /77	7/ /77

(93)

We, as concerned citizens and scientists participating in the ERDA-Marshall Islands Workshop on June 27-29, 1977, have reviewed the imminent decontamination program for Enewetak Atoll. We call your attention to the following matters, since we feel that many aspects of the proposed program are economically and environmentally unacceptable.

The rationale for removing plutonium-contaminated soil is based on assumptions regarding resuspension of Pu that are not validated by empirical data. Additionally we question whether the guidelines which have been established for soil removed are supportable.

However, we accept that certain contaminated material does have to be removed and agree that this can be placed under control on Runit islet.

The present total inventory of plutonium in the terrestrial environment at Enewetak available for resuspension and resultant dose commitment cannot be significantly altered by the proposed course of action.

The removal of soil from Engebi and other islets would cause a serious loss of the atoll's most valuable terrestrial resource (humus layer), which cannot readily be replaced.

The placement of contaminated concrete slurry into cactus crater does not remove this material from environmental interaction, since direct ocean water connections into the crater exist; and present knowledge indicates breakdown and remobilization of Pu will occur.

We therefore recommend that the projected soil removal aspect of the Enewetak cleanup should immediately be re-evaluated. We recommend that you re-evaluate specifically the basis for soil removal and the disposition of that which is removed.

MARSHALL ISLANDS WORKSHOP
JUNE 27, 28, 29, 1977
LAWRENCE LIVERMORE LABORATORY
LIVERMORE, CALIFORNIA

ATTENDEES

Bradshaw, Gail	- US Energy Research & Development Administration
Brechbill, Ray	- San Francisco Operations Office - Oakland
Brunk, Jim	- Lawrence Livermore Laboratory
Buddemeier, Robert	- University of Hawaii
Burke, William	- Lawrence Livermore Laboratory
Burr, William	- US Energy Research & Development Administration - Headquarters
Church, Bruce	- Nevada Operations Office
Clegg, Bruce	- Lawrence Livermore Laboratory
Cohn, Stan	- Brookhaven National Laboratory
Conard, Robert	- Brookhaven National Laboratory
Deal, Joe	- US Energy Research & Development Administration - Headquarters
Dunaway, Paul	- Nevada Operations Office
Eagle, Rodney	- Lawrence Livermore Laboratory
Forester, William	- US Energy Research & Development Administration - Headquarters
Goldman, Marv	- University of California, Davis
Greenhouse, Nat	- Brookhaven National Laboratory
Helfrich, Phil	- University of Hawaii
Homan, Don	- Lawrence Livermore Laboratory
Jackson, William	- Bowling Green State University
Johnson, Arthur	- University of Washington
Jokela, Terrence	- Lawrence Livermore Laboratory
Koranda, John	- Lawrence Livermore Laboratory
Lee, Janet	- San Francisco Operations Office - Oakland
Marsh, Ken	- Lawrence Livermore Laboratory
McCammon, Helen	- US Energy Research & Development Administration
McCraw, Tom	- US Energy Research & Development Administration Headquarters
Mendelsohn, Mort	- Lawrence Livermore Laboratory

Miller, David F.	- Nevada Operations Office
Miller, Jim	- Pacific Area Support Office
Miller, Lowell	- San Francisco Operations Office - Oakland
Moore, Milton	- San Francisco Operations Office - Public Relations
Morimoto, Edward	- Lawrence Livermore Laboratory
Naidu, Jan	- Brookhaven National Laboratory
Nevissi, Ahmad	- University of Washington
Noshkin, Victor	- Lawrence Livermore Laboratory
Phillips, William	- Lawrence Livermore Laboratory
Ray, Roger	- Nevada Operations Office
Reese, Ernst	- University of Hawaii
Rehder, John	- Lawrence Livermore Laboratory
Robison, William	- Lawrence Livermore Laboratory
Seymour, Al	- University of Washington
Stuart, Marshall	- Lawrence Livermore Laboratory
Templeton, William	- Battelle Pacific Northwest Laboratory
Thompson, Stanley	- Lawrence Livermore Laboratory
Watters, Robert	- US Energy Research & Development Administration
Wong, Kai	- Lawrence Livermore Laboratory

Enclosure 2

MAY 9 1973

R. E. Hollingsworth, General Manager
THRU: Julius H. Rubin, Assistant General Manager for Environment and Safety

Signed by
Julius H. Rubin

CLEANUP AND REHABILITATION OF ENIWETOK ATOLL

The purpose of this memorandum is to inform you of the steps to be taken in providing advice and recommendations to the Department of Defense (DOD) and Department of the Interior (DOI) on rehabilitation of Eniwetok Atoll and to establish a schedule for AEC action in this matter.

A memorandum dated January 26, 1973, from the AGMA informed the Commission of activities, history and funding of actions leading to the transfer of Eniwetok Atoll from the DOD to the Trust Territories of the Pacific Islands, at the end of 1973.

The field portion of the radiological survey at Eniwetok was completed February 14, 1973; the report is to be completed September 1, 1973, and published October 1, 1973. The radiological survey report will provide:

1. data on the distribution of radioactivity, including transuranics in the Eniwetok environment;

2. information on the living habits and diet of the Eniwetok people;

3. estimates of internal and external exposures arising from various patterns of rehabitation and land use; and

4. estimates of the effectiveness of actions to reduce exposures to as low as practical.

The survey results, as well as information generated by DOD on the location of radioactive scrap, will permit the development of recommendations for cleanup and recommendations on whether and under what conditions the individual islands of the atoll can be made safe for permanent habitation.

In accordance with usual functions, the Division of Operational Safety is undertaking the development of recommendations described above in conjunction with the Divisions of Biomedical and Environmental Research, Environmental Affairs, Military Application, and Waste Management and Transportation. Field office, laboratory, and contractor assistance will be utilized. Federal health and environmental agencies, including the Environmental Protection Agency and the Department of Health, Education, and Welfare, will be consulted. Judgements and recommendations will be limited primarily to radiological considerations and will include:

1. the feasibility of making the Eniwetok Atoll radiation environment safe for return of the native population, including areas immediately adjacent to islands that could be used for food production;

2. cleanup and disposal actions, including specific numerical guidance;

3. specific recommendations on agricultural rehabilitation, land and land use, use of local foods, other dietary considerations, and housing construction, as these will modify the radiological situation and contribute to as low as practicable exposures; and

4. followup requirements and plans.

These recommendations will be transmitted to the DOD and DOI. The Atomic Energy Commission plans to assess the radiological situation of the atoll during and following DOD and DOI cleanup and rehabilitation. The Department of Defense is responsible for conducting and for funding cleanup operations but has no funds budgeted for this purpose in fiscal year 1974. It is to be noted that the DOD proposes to conduct the Pacific Cratering Experiments (PACE) prior to cleanup.

Recommendations for radiological aspects of cleanup and rehabilitation of Eniwetok Atoll are to be developed by November 1, 1973. Upon Commission approval, these recommendations will be transmitted to DOD and DOI.

The Division of Military Application will prepare a letter to DOD and DOI informing them of steps AEC plans to follow in developing its recommendations. The Divisions of Biomedical and Environmental Research, Environ-

mental Affairs, Military Application, Operational Safety, and Waste Management and Transportation concur that these actions are essential for the development of cleanup and habitation recommendations for use in an overall plan for rehabilitation of the atoll by the DOD and DOI.

ORIGINAL SIGNED BY
MARTIN B. BILES
Martin B. Biles, Director
Division of Operational Safety

					BER	WMT
					5/ /73	5/ /73
OS:SA:ADHP	OS:ADHP	OS:DIR	AGMES		EA	MA
TFMcCraw/nr						
X3015	Deal	Biles				
5/ /73	5/ /73	5/ /73	5/ /73		5/ /73	5/ /73