

Laboratory, Dr. K. McCrellan of Lovelace Biomedical and Environmental Research Institute, Inc., and Dr. B. Wachholz of DOE. Also accompanying the group were Mr. Roger Ray of DOE-NV00, Mr. Tommy McCraw of Hqs DOE, Col Sanchez of FC-DNA and myself. The following summarizes my observations and views obtained thru participation in the group's discussions and by individual conversations with the members.

2. 22 August 1978: Shortly after arrival, the Commander of JTG presented a briefing in which the operation to date was reviewed. This consisted of a brief overview of the mobilization phase with the major emphasis on current status of soil and debris removal, the bulk haul operation, the Runit operation, and a brief overview of the demobilization timing. Col. Bauchspies indicated a desire to benefit from the groups advice and opinions on several issues previously identified and these were individually covered by Col. Sanchez. These issues were:

- a. Contaminated Bunker Guidance
- b. Aomon Crypt Guidance
- c. Soil clean-up-Criteria
- d. Preciseness of 40-80-160 pci/gm criteria
- e. Lujor Cover
- f. Fourth Criterion Category if 160 pci can't be met
- g. Surface hot spots-minimum areas, levels.
- h. Subsurface contamination of 160 pci or greater and the 1/16th hectare area
- i. Soil profiling-15 cm vs 20 cm?
- j. Plowing advisability
- k. Island average vs. maximum value
- l. Clarification of 40-80-160 pci/gm guidelines.

BEST COPY AVAILABLE

will be forthcoming via a report to Mr. Hollister of Environment and Safety of DOE and at this time, nothing official has been written. Further, all the members of the group were not present for this trip, thus these comments necessarily represent preliminary thoughts.

5. a. Issue-Bunker Guidance: The committee felt that the present course was adequate and did not disagree with the action planned. My understanding of this is that several bunkers that were contaminated have been decontaminated as much as possible and will be left intact. Some hot spots remain on some. However, the data available indicated to the group that strenuous efforts had been expended to clean the bunkers, that remaining levels were low enough or in areas where access by people was difficult enough to preclude any significant exposure levels, and that the bunkers would be valuable to the returning people for storm shelters or other uses, and that following the ANSI standard for surface contamination for shipping of material was rather conservative in this particular instance. Thus, there appears, in their mind, no problems with leaving them as planned. This is in reference to the Aomon and Enjebi crypts. It was also voiced that the Aomon deadmen should be left to provide a valuable future precise marker or reference point in the event there is reason to return to the atoll for further surveys, rework, etc.

b. Issue-Aomon Crypt Guidance: There is not enough radiological data available at this time on which to formulate a definitive stand; however, the group indicated that the 40-80-160 pci/gm guidance was not intended to be applied to special situations such as this crypt. What they would like is further information reference the radioisotopes, materials and levels of activity present. The group was fully aware of the necessity of positive guidance being issued as quickly as possible.

c. Issue-Soil Clean-up Criteria: The group indicated there was no doubt that the 40-80-160 pci/gm for residential, agricultural and picnic islands was precise, i.e., that every effort has to be expended to reach these levels. Only if it is clearly shown that these levels can't be reached should a reconsideration be made.

d. Issue-Preciseness of 40-80-160 pci/gm: covered under c above.

e. Issue-Lujor cover: This issue is moot in that the mixing of the soil which occurred with debris removal and other activities apparently has resulted in surface readings less than the guidance (as shown on a re-IMP).

f. Issue-Fourth Criterion Category if can't meet 160: see c above.

g. Issue-Surface hot spots and minimum area levels: The preliminary view was that the minimum area which should be considered for surface clean-up of a hot-spot was that area covered by one IMP view, i.e., 90% of a 25 meter square. This was based upon treatment of data and analysis by the DOE contractor (Desert Research Institute) and was believed that it would result in the necessity for removal of less soil and would be more beneficial than averaging over the fractional hectare area as presently done.

h. Issue-Subsurface contamination: Subsurface contamination is that radioactivity below the depth recorded by the IMP system, i.e., below about 2 cm. The group was not ready to offer guidance because of the importance of this issue and the absence of several members. However, they recognize the need for early guidance and discussed several possible approaches. The general concept was to determine some procedure that would take into account the intended use for the island (residential, agricultural, picnic), the depth at which the hot spot was located, and the concentration (pci/gm), i.e., have an averaging factor as a weighting factor. The preliminary view was that when a subsurface hot spot was found (greater than 160 pci/gm) several core samples should be taken in a circle around it to the depth of highest activity in the profile sample and the average concentration determined in the core samples.

If this exceeded the surface value for the intended use of the island, then the area would be excised. This might (will) require the taking of additional core samples to define the specific area for removal.

i. Issue-Soil profiling-15 cm vs. 20 cm: The group did not see this as a significant issue in that they are somewhat skeptical of the preciseness, despite the engineers claims, that an actual 6 inch layer is being removed. Thus, 20 cm is close enough to the 6-8 inches of soil being removed or disturbed to not justify going up to a 15 cm sample level.

j. Issue-Plowing Advisability: Little discussion was given this because the group felt too little data was available to be meaningful at this time. They are anxious to get further information on preplowing and post plowing IMP readings, soil profiles, etc. They did note that visual inspection revealed the top-layer of soil appeared to be turned about 18 inches under; whether this would be true for soils of a character different than that at Enjebi was questioned, i.e., would soil more sandy and with less organic matter than that at Enjebi tend to mix rather than turn under.

k. Issue-Island average vs. maximum value: This issue apparently relates to the recent draft paper by FC-DNA on dose assessment projections for the fission products especially. The group was not prepared to address the FC-DNA paper at this time as Livermore is making additional assessments. They did note that the fission products ^{90}Sr and ^{137}Cs have been of concern for years, that the farm at Enjebi was set-up to specifically obtain a better understanding of food chain importance and that resettlement of the northern islands of the atoll may have to be deferred for a number of years. Although not addressed as a specific topic by the group, it was mentioned on several occasions as a whole and in individual conversations that less than optimal or desirable advantage is being taken to obtain fission product measurements. At the least, the spectra being obtained should be analyzed.

l. Issue-Clarification of 40-80-160 pci/gm guidelines: Covered under c above. The view is that these guidelines are clear.

6. Mr. McCraw of DOE also brought forth several issues; however, these essentially paralleled those addressed above and are not separately listed here.

7. 25 August 1978: The Commander, JTG morning briefing was attended by the group; subsequently, the Chairman met with CJTG. At approximately noon, the group departed via Kwajalein.

8. This was primarily an orientation trip for the advisory group to provide them a first hand picture of the atoll, the environment and the operation being conducted. It was not intended to be a session in which definitive discussions leading to immediate recommendations would occur. However, the group was amenable to going over the above topics and did provide to the Commander, JTG, a preliminary draft of their comments. My impression is that the group came away with appreciation for the warm hospitality, cooperation and logistical support provided by JTG, was impressed by the progress to date, has a better understanding of the many problems inherent to an operation of this nature, and a better awareness of the urgency for guidance and decisions.

Edwin T. Still

EDWIN T. STILL
LTC, USAF, VC
Research Program Coordinator

1245-1300	Enroute to Enjebi	2 UH1
1300-1500	Tour Enjebi Soil Excision Areas, Plow X Bunkers IMP in Operation	
1500-1515	Enroute to Boken	2 UH1
1515-1545	Tour Boken Subsurface site, Bunkers	
1545-1625	Enroute Enewetak, overfly NW & SW islands	
1625-1635	Enroute Quarters	ERSP/JTG
1635-1900	Open, Dinner	
1900-	Meet at HQJTG for tour of MPML.	ERSP/JTG

24 Aug 78

0800-1000	Tour ERSP Lab Facility	
1000-	Conference, Discussions	HQJTG Operations Center
1700-1800	Cocktails	Bldg 667

25 Aug 78

0800-0830	Standup	HQJTG Operations Center
0830-	Pack, Check-in, Open	

REPOSITORY PNNL
COLLECTION Marshall Islands
BOX No. 5686
FOLDER Enwetak Aug. 1978

DOCUMENT DOES NOT CONTAIN ECI
Reviewed by [Signature] Date 4/30/97