

OAK RIDGE NATIONAL LABORATORY

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UNION CARBIDE CORPORATION
NUCLEAR DIVISION



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September 13, 1978

Revised on 9/15/78
to reflect change on
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Dr. William J. Bair
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Dear Dr. *Bill* Bair:

Below are comments on draft material on Enewetak visit that I received from you on 5 September. Please excuse the delay in response.

Actually I have little to add to your summary, as items were discussed in considerable detail on 23 August at Enewetak.

1. Aomon Crypt--We simply do not have enough information about the Aomon Crypt to offer any useful guidance to the joint task group at this time. I suspect that no decision needs to be made now because I believe the overriding potential radiological problem after the TRU clean-up will be from fission products on parts of the Atoll that will require some remedial or surveillance action after the current JTG effort is completed. At present I cannot see much sense in moving unknown quantities of material from one hole to another.
2. Preciseness of clean-up guidance--The JTG should use the provided guidance as a goal realizing that the measurements used in determining contamination and subsequent soil removal techniques are not without error. I would hope that no one would be overly concerned about occasional 10% or so errors should they occur.
3. Hot Spots--I would suggest that common sense be used and that our committee not attempt to develop hot spot guidance.
4. Plowing--We need the experimental data analysis before we can offer meaningful advice. I believe the results will suggest that a single plowing will remove surface contamination to lower levels but repeated plowing will cause a general mixing down to plow depth. Thus plowing or frequency of plowing will depend on land use.
5. Averaging--Remedial action is based upon maximum values, but, I would expect that radiological dose assessment must be based on larger environmental units such as an entire island or perhaps groups of islands. Thus the answer depends on the function to be performed.

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6. Contaminated Bunkers--The proposed response is adequate. I would suggest we also recommend that the Kickapoo tower anchor blocks not be removed.

7. Subsurface contamination--I am not in favor of recommending criteria for subsurface contamination because I am not certain we have any meaningful estimates of the possible extent of subsurface contamination for the Atoll. I suspect this issue may best be handled as part of the larger problem I mentioned earlier--that is the uncertainty of dose contribution from the major fission products. I suspect some useful correlations may exist for cesium and plutonium for many of the test locations on the Atoll.

8. General comments--I hope we can avoid providing the JTG with advice that implies a level of precision or understanding or, in fact, R the existence of information that really does not exist. I am also very concerned that no organizational entity appears to have the responsibility for avoiding another Bikini situation. Once again the fission product problem. Why build houses and consider coconut planting if resettlement may be decades away? Are the Enewetak people aware of this possibility? Which agency has the responsibility for the next step? Who will perform a resurvey of the Atoll, and what is the time schedule for such action? More important perhaps is the question of who will tell Congress that the job was only partly done. An airing of these issues as soon as possible with DOE and others may be the most important function our committee can perform.

I am also concerned that the high level of interest shown at our Livermore meeting on the possibility of rediscussing ocean dumping with EPA was not recorded in our minutes or those of B. W. Wachholz. As I have indicated on previous occasions I believe the placement of transuranic elements in the crater on Runit island is a relatively short term remedial action and, in fact, less desirable than ocean dumping. The issue is not entirely academic because of the possibility of delaying decisions on what to do with the materials now in the Aomon Crypt. It is also possible that the 13 Atoll survey now underway may also indicate the need for additional remedial actions. In addition there may be other pieces of real estate in the Pacific and other locations that might require disposal of materials or soil contaminated with transuranic elements. I suspect that in the future people will question the wisdom of these expensive and rather heroic remedial measures to move large quantities of contaminated soil a few miles for fixation in Cactus crater for what may turn out to be relatively short periods of times. I wonder if the record is examined at some future date who would be held accountable for the current situation.

Sincerely, .



C. R. Richmond
Associate Director for
Biomedical and Environmental
Sciences