Law Offices
DAVOR Z. PEVEC
HONOLULU, HAWAII

HONOLULU OFFICE
1001 BISHOP STREET
SUITE 2300, PAUAHI TOWER
HONOLULU, HAWAII 96813
TELEPHONE (808) 599-3655
FACSIMILE (808) 739-3944

MARSHALL ISLANDS OFFICE
GIBSONS CENTER
P.O. BOX 1777
MAJURO, MARSHALL ISLANDS 96960
TELEPHONE (692) 625-3120
FACSIMILE (692) 625-3120

December 7, 1998

VIA FACSIMILE
(301) 903-1413

Paul Seligman, M.D., M.P.H.
Deputy Assistant Secretary
for Health Studies
Office of Health Studies
United States Department of Energy
19901 Germantown Rd.
Germantown, Maryland 20874-1290

Re: Information from Lawrence Livermore Laboratory ("LLL")

Dear Dr. Seligman:

This is to follow-up on one of the issues discussed with you during our meeting in Honolulu on November 15, 1998. That issue concerns obtaining information in a cost effective and efficient manner. LLL has accumulated a tremendous amount of data concerning the radiological conditions at Enewetak, which includes, among other things, information of radionuclide concentrations, soil status, and plant uptake. You told me that you strongly support our efforts at having an independent analysis done on the radiological conditions at Enewetak. We thank you for that support. However, we need you assistance in obtaining information from LLL. The information we require is twofold: One is a request from Dr. John Mauro of Sanford Cohen and Associates; the other is a request from Dr. Ben Hajek of Auburn University.

Dr. Mauro's required information from LLL. Dr. Mauro has requested information informally from LLL since September. I also made a request on Dr. Mauro's behalf by letter to you dated September 28, 1998. The information requested has not been provided. The information Dr. Mauro requires is itemized in the two page memorandum to me, which I attach hereto. Points 1, 3, and 4 of Dr. Mauro's memo concerns information required directly from LLL. Point 2 addresses digitizing maps of each of the islands by Remote Sensing Laboratory which could be of great use not only to Dr. Mauro but also to LLL and other researchers.

Dr. Hajek's required information from LLL. Dr. Hajek also requested information

from LLL. LLL's response was that the request would need to be sent to Frank Hawkins at DOE before they would respond. A copy of LLL's response to Dr. Hajek is attached. I do not now have Dr. Hajek's request available to me but will have it tomorrow and will send it to you. Please instruct LLL to provide Dr. Hajek with the information he requires.

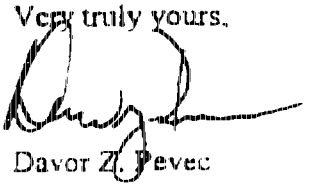
I ask that you instruct LLL to be responsive to the information requests of Drs. Mauro and Hajek. In addition, it would be much more efficient and cost effective if LLL was instructed to have an ongoing dialogue with Drs. Mauro and Hajek and others working with us to provide requested information necessary for our experts to help us determine the radiological conditions at Enewetak and the options for remediation.

Please note that the information from LLL is required for a presentation before the Enewetak leadership and people at a community meeting to occur in early January, and for a presentation before the Nuclear Claims Tribunal in early February. Consequently, this information is required now.

Please respond to this letter at your earliest convenience.

Thank you for your support and anticipated assistance.

Very truly yours,



Davor Z. Pevec

cc: Senator Ismael John
Mayor Neptali Peter

To: Davor Pevec

From: John Mauro

Subject: Information Needs

Our assessment of the exposures and the costs and benefits of alternative remedial strategies for the islands of Enewetak Atoll have reached the point where we need additional information from Lawrence Livermore Laboratory and some assistance from the Remote Sensing Laboratory in Las Vegas. The following describes our needs.

1. Digitized data characterizing the radiological conditions of each of the islands of Enewetak Atoll

We currently have hard copy of about 500 pages of 1978 data characterizing the radionuclide concentrations in surficial and subsurface soil on each of the islands of Enewetak Atoll following cleanup. We obtained these data from microfiche and understand from conversations with Dr. Robison (through DOE) that these are the best data available characterizing the post-cleanup radionuclide concentration in soil at Enewetak. We need these data to estimate areas and volumes of soil that may require remediation in order to achieve alternative dose-based cleanup criteria. It is feasible for us to manually load these data into our Geographic Information System, which would then be used to identify the areas and volumes of soil that may require remediation. However, given the amount of data, the level of effort required to load and verify the data files manually will be burdensome. Based on my discussions with Dr. Hamilton of Lawrence Livermore Laboratory, these data are available electronically; however, we have not yet been able to contact Drs. Robison or Hamilton to obtain these data.

2. Digitized maps of Enewetak Atoll

Our analyses also requires digitized maps of each of the islands. We require these maps in order to build base maps onto which we will load the digitized radiological database. The marriage of the digitized radiological data base with the maps will allow us to readily assess the potential costs, benefits, and feasibility of alternative dose-based cleanup criteria. My discussions with Dr. Hamilton revealed that such a data management and display system would also be of great use to Lawrence Livermore and other researchers. We have determined that excellent areal photos of each of the islands of Enewetak Atoll are available from Thane Hendricks, Remote Sensing Laboratory, 5401 Gipsy Ave, Las Vegas, Nevada, 89107 (702-295-8778). Conversations with Mr. Hendricks revealed that he could provide us with hard copy of the maps which we could digitize, or alternatively, he could also digitize the maps for us. He indicated that they are probably in the best position to digitize the maps cost-effectively. He is currently looking into the costs of providing us with the assistance we need.

3. Grid Locations

The hard copy database that we obtained from the microfiche identifies the location of each soil sample according to a grid/coordinate system. However, we have not been able to determine how to superimpose the grid system onto maps of the islands. We need assistance in understanding the coordinate system used in the sampling program and interpreting some of the notation used in the data tables.

4. Other questions

Many questions have arisen during the performance of our work which can probably be readily answered by Lawrence Livermore researchers. The following are some of these questions:

1. Since EPA cleanup criteria are expressed in terms of exposures above natural and ubiquitous manmade background (i.e., worldwide fallout), what are appropriate radionuclide concentrations to use as the ubiquitous background levels of Cs-137 in soil at Enewetak Atoll. We are currently using 0.7 pCi/g.

2. What inhalation and ingestion dose conversion factors were used by Lawrence Livermore to derive doses in units of mrem/yr per pCi/g.

3. Is there any information available addressing the cost of the rehabilitation of soil following the removal of surficial soil?

Questions like these continually arise, and it would be helpful if we could open an ongoing dialogue with Lawrence Livermore to not only answer some of our questions, but to review our work.

W.L. Robison and/or Terry Hamilton

Dear Sirs:

John Moura, SC&A, gave me your FAX # and indicated you would know the answers to some questions I had about the most recent data on ^{137}Cs uptake by food crops on Enjebi and Bikini islands. In documents UCRL-53805, Enjebi Island Dose Assessment, July 1987, and in a Health Physics publication, The effect of potassium on the uptake of ^{137}Cs in food crops grown on coral soils: coconut at Bikini Atoll. Health Phys. 62(6): 496 - 511, statements were made about continuing studies with results to be published at a later time. John asked me to evaluate fertilization as a means to reduce ^{137}Cs dose from food grown on the islands. To do this I need some information about the island land and plant resources.

I have the following questions:

What is the current status of the "garden" plantings on Enjebi?
What are the yields of major food crops growing there?
What percent of the island has a vegetative cover, and the species?
Are there any native plant communities remaining on the island?
What is the total biomass (above ground plant parts)?
What percent of the island is suitable for adapted crop production under reasonable management.
Are the coconuts fertilized with KCl on Bikini Island still showing a 90% reduction in ^{137}Cs relative to the check plots?
And
Are the soils on Enjebi complex, that is , vary in thickness, depth to saturation, organic matter content of the surface?

References addressing these items would certainly help me respond to Mr. Mauro within a context of current data and conditions on the island.

Thanks.

Ben Hajek
Agronomy and Soils Department
Auburn University
Auburn, AL 36849

Phone 334 8443990
FAX 334 844 3945
bhajek@acsmail.auburn.edu