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September 12, 1984

Mr. Roger Ray
c/o John Rudolph
Office of Deputy Assistant
Secretary for Military
Application, DP-224
Department of Energy
Germantown, MD 20545

Dear Roger:

The following is a brief report on the meeting to review the dosimetric data from the Marshall Islands held in Richland on August 28, 1984.

SUMMARY

Date: August 28, 1984

Participants:

- | | |
|-------------------|--|
| Barbara Boccia | Brookhaven National Laboratory |
| Keith Eckerman | Oak Ridge National Laboratory |
| Jack Healy | Los Alamos National Laboratory |
| Edward Lessard | Brookhaven National Laboratory |
| Roger Ray | DOE Nevada Operations Office |
| William Robison | Lawrence Livermore National Laboratory |
| William Templeton | Pacific Northwest Laboratory |
| Roy Thompson | " " " |
| William Bair | " " " |

Purpose:

To review the current status of predicted and actual radiation exposures of Marshall Islanders, particularly as these might relate to potential resettlement of Eneu Island in the Bikini Atoll.

Summary of the Discussion and Conclusions:

Comparisons presented of radiation doses based on in-vivo counting measurements versus doses predicted from radionuclide intake models for Marshall Islanders at Utrik and the southern islands of Rongelap

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showed excellent agreement. This agreement between measured and predicted levels constitutes an important overall validation of models employed in the predictions -- including physical, biological, and cultural aspects of these models. Publication of this validation was recommended. The accumulation of data and the validation of models in recent years would seem to remove any reluctance to apply applicable U.S. limits to the Marshall Islanders.

An area of remaining uncertainty relates to the transuranic elements, principally plutonium and americium, where very limited bioassay data on plutonium excretion yielded much higher radiation dose values than predicted by models. This is not considered a serious complication because the transuranics are not predicted to contribute importantly to the total radiation dose, and analytical problems involving natural polonium in the urine samples seem to offer a plausible explanation of the bioassay problem. This problem is being intensively studied and a resolution may be anticipated within 3 to 6 months -- perhaps sooner. To assist in this, information on plutonium bioassay methods and the Leggett and Moss dosimetric models is being forwarded to Dr. Lessard.

With respect to the potential resettlement of Eneu, based on the best current evidence, it still seems unlikely that an Eneu resident, consuming a mix of local and imported foods (but no significant quantity from the Island of Bikini), would exceed an exposure of 500 mrem per year.

Sincerely yours,

W. J. Bair, Ph.D.
Manager
Environment, Health and
Safety Research Program

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cc: Tom Clark, NVO
Participants