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UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

DEC 14 1973

WITHOUT ENCLOSURES/ATTACHMENTS

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AUTHORITY DOE/SA-20  
BY D. R. GILSON. DATE 6-16-94  
ADD *[Signature]*

Dr. Robert Conard  
Brookhaven National Laboratory  
Upton, New York 11973

Dear Bob:

You will recall that during our last meeting we agreed to pull from the files reports on past survey activities that may be helpful in planning the next field trip. There is a large amount of information that could be reviewed.

Enclosure 1 contains such material developed in preparation for the 1970 AEC survey of Bikini that was conducted by the Division of Operational Safety. The first part was developed to compare the 1967 precleanup and 1969 post-cleanup survey results. The question at that time was whether anything found during cleanup would significantly change Phil Gustafson's predictions which had been used by the Ad Hoc Committee in making their recommendations. We were trying to determine if there were any areas where more data were needed. You can see from the comparison of external radiation levels that the 1967 results for Bikini Island would not be changed by the 1969 findings. On the other hand, for internal emitters, the 1969 samples indicate somewhat higher levels of <sup>90</sup>Sr in Pandanus, Arrowroot, and Coconut Crab. If you want to review the data on this, it is published in SWRHL 111r by Smith and Moore and in NVO-269-8 by Edward Held.

Another question in our minds at the time of the 1970 Bikini survey was what exposures would occur if the Ad Hoc Committee's recommendations for measures to reduce exposures were not followed. Table V shows how Gustafson's estimates would be changed by updating the 1967 survey results with the 1969 samples, the effect of leaving crabs in the diet with no calcium supplement and conversely with a supplement, and the effect of no further precautions.

The major increase in whole body and bone doses for the case of no precautions is due to <sup>90</sup>Sr and <sup>137</sup>Cs in Pandanus. One alleviating factor for the present is that there are no edible Pandanus in Bikini Atoll. However, such levels could occur if the precautions for planting this food are not taken and if a calcium supplement is not used. Also, note that the five-year bone dose could be almost four

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times Gustafson's predictions even with no Pandanus in the diet if Arrowroot and Crab are left in (these are now available) and if the diet is deficient in calcium (i. e., 0.42 gm/day).

The next part of Enclosure 1 gives a brief report on the trip to Kili in 1968 to talk with the Bikini people and their Council and to answer their questions. Also, in this section are the Q's and A's developed for the 1970 field trip. A limited number of copies of this were given to Trust Territory officials we met during the trip.

The last section of Enclosure 1 presents some information on radioactivity in Copra and the ultimate destination for copra products.

Enclosure 2 is a trip report written following the 1970 Bikini survey. It contains a record of daily activities and some of the problems one typically faces in carrying out such a survey. You will note there was very little contact with the Bikini workers for this visit due to their early departure from the atoll.

One word regarding the updating of Gustafson's estimates. I have tried to keep Phil informed of what has happened since he left DBER. We have considered the revised estimates in Enclosure 1 as preliminary and unconfirmed and would be more than happy to see anyone else make an independent set of estimates using the same data. I do feel that considering the findings since the 1967 survey and since the Ad Hoc Committee's recommendations, and considering the increased general concern for radiation exposures, that measures to reduce exposures of Bikini residents, and to keep such exposures as low as feasible, must be considered more than something desirable to do, i. e., an extra or bonus benefit. I would urge that the precautions for Pandanus planting and calcium supplement for the diet be considered firm requirements and priority items in the followup of the Ad Hoc Committee's recommendations. It is, in my view, most important for someone who knows conditions in the Marshalls to determine the most effective way to introduce the calcium supplement, to pin down who is responsible for conducting and funding this effort, and to make sure that those Trust Territory officials who have to do with agricultural rehabilitation of the atoll know of the importance of the recommendation on planting Pandanus and that they implement it.

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We can discuss this further if you wish. If there is any other information from the past that would be helpful, please let me know.

Sincerely,

*Tommy F. McCraw*

Tommy F. McCraw  
Special Assistant to the  
Assistant Director for  
Health Protection  
Division of Operational Safety

Enclosures:  
As stated

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