



# EG&G ENERGY MEASUREMENTS

Las Vegas Area Operations

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February 2, 1990

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Mr. Harry U. Brown  
Deputy Program Manager  
Office of Emergency Response and  
Program Analysis  
U. S. Department of Energy  
Nevada Operations Office  
P. O. Box 98518  
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SUBJECT: ADDITIONAL THOUGHTS ON MARSHALL ISLANDS RADIATION  
SURVEY OPTIONS

Dear Mr. Brown:

During our meeting in early December with the representatives of the Marshall Islands, several options were discussed on ways to obtain data on radiation levels throughout the Marshalls. Our recommendation was to perform a number of ground measurements using high-purity germanium detectors versus conducting another aerial survey. This was primarily based on the extensive logistical requirements to perform an aerial survey and the fact that the 1978 survey had already provided the required data on those atolls where residual contamination from direct fallout could still be measured.

This recommendation appeared to be well received. It was pointed out, however, that the Marshallese would prefer to perform these measurements on their own and were considering purchasing the required equipment. The ultimate decision on how to proceed is, of course, up to the Marshallese. However, based on our experience at Enewetak Atoll from 1977 to 1979 with these types of detector systems, we don't feel that this approach is the best way to go.

To support the Enewetak cleanup, we purchased four detectors in order to assure that two would be operational at all times. As a result of numerous problems created by the high humidity and continuous salt spray on the islands, however, we often were down to one system during the initial phase of the project. It was finally necessary to utilize two additional detectors originally bought to support a similar measuring system at the Nevada Test Site in order to get through the three-year project. I am enclosing an appendix from our final Enewetak report which documents some of the problems we had trying to operate in these harsh conditions.

We feel that for a short period of time, such as two to three months, and with daily maintenance procedures, it should be possible to operate these systems without any serious damage and with a reasonable assurance of success. We

*Harry Brown's Files, NV  
Enewetak*

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don't feel, however, that these are the best systems for the Marshallese to buy for long-term field use.

A better alternative would be to purchase three or four hand-held survey meters for each atoll, preferably those using sodium iodide detectors to enhance sensitivity. These types of instruments run on flashlight batteries and can be purchased in weatherproof and, in some cases, waterproof housings. They will not provide quantitative data, nor do they have the sensitivity of the germanium systems but they are extremely easy to operate, rugged, and much cheaper. They can provide relative data between the atolls that should satisfy most of the Marshallese requirements. In addition, every atoll would have their own set of instruments that could be used at any time.

If this approach is taken, we would recommend training at least two or three people on each atoll in the operation of the instruments. As part of the training, each atoll could be provided with samples taken from all the other atolls, as well as places like Pohnpei, Truk, Guam, Hawaii, and even the United States to use as a comparison. This would put the readings obtained on their own atoll in much better perspective.

If quantitative data on the other atolls are still required to tie in with the results from the 1978 survey, we would be willing to provide the limited use of our germanium in situ system resources. Sampling location determinations and final conclusions from the data could be provided by the Marshallese advisors. We would insist on taking the measurements to insure proper equipment maintenance and data quality control procedures are followed. Other than that, the survey could be under the direction and control of the Marshallese. This should be consistent with their desire to obtain their own data.

I'm sorry it's taken me so long to provide these comments, but I hope perhaps they may still be of some value in helping the Marshallese best solve their problem.

If you have any questions or need additional information, please let me know.

Very truly yours,



W. John Tipton  
Assistant Operations Manager  
Aerial Measurements Operations

WJT:nss

Enclosure: a/s