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TRANSURANICS DATA, ENEWETAK

Over the past several weeks, NV (ERSP) has been evaluating a systematic error in the in situ measurement of Americium at Enewetak. This error derives from the improper use of a soil composition which is not representative of the actual. In calculating the attenuation of 60 KEV energy, the error is significant (in the range of 20-25%). Before introducing a wholesale correction in the Enewetak transuranics data base, ERSP is evaluating other uncertainties, both systematic and random. This may require a modest amount of additional field work.

Assuming that the current 20-25% (low) estimate is verified, all Imp transuranics numbers will require adjustment. At first look, it appears that this will place the certification of the following islands technically in question: Irene, Janet, Kate, Mary, Olive, Sally. On Janet (Engebi) for example, a total of twelve quarter hectare-sized areas cannot now be certified to be below the 40 pCi/gm residential standard. The highest average reading in any such quarter hectare will be somewhere between 40 and 50 pCi/gm. The total affected area (that which may exceed the standard) will be approximately 2.5% of the total island area; the island average, however, will remain well below 25 pCi/gm. This reflects the conservatism which has been built into ERSP application of the 40-80-160 standards.

As it turns out, the technicality of island-by-island certification remains ambiguous enough to accommodate even the current situation. This is because the terms "Residential", "Agricultural" and "Food Gathering", recommended for adoption by the Bair Committee have not been precisely defined. I drafted a definition paper (copy enclosed) which was telecopied to Tom McCraw on Jan 30, 1978. I later (June 12, 1979) telecopied it to you* for comment and/or staffing for approval. It took the form of a "strawman" of a DOE (Liverman) memo to me and to DOI and DNA. Since that strawman has not been acted upon, our certification document remains ambiguous in that it refers in Par III to the

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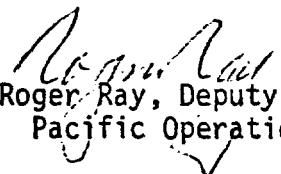
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DOE definition of a "Residence" (or "Agricultural", etc.) Island. Such DOE definition does not exist. In practice, we on our own initiative applied the 40 pCi/gm standard to each quarter hectare because that was the area module which we had adopted for cleanup guidance. This is probably far too fine-grained for land use decisions, wherefor island averages (or, for Engebi, quadrant averages) would make more sense.

At the present time, we are reviewing all of the uncertainties in the measurement and calculation of Imp derived transuranics numbers. We expect then to provide to Bill Robison a revised basis for his evaluation of the inhalation pathway. From preliminary conversations neither he nor we expect the effect on dose commitment to be significant. Never the less, I feel obliged to correct our certification documents. That task would be facilitated by the availability of the definition document referred to above. Now, however, with the radiological cleanup completed, I would suggest that the definition document contemplate use in considering resettlement options rather than cleanup criteria. It might thus deal with island averages or, for large islands or those with wide variations, in some subdivision of an island such as a zone or quadrant.

When a definition document is written, I strongly suggest that it incorporate the sense of the second paragraph of the earlier strawman, i.e.

1. The assignment of one of the three designators to an island should not be taken as an unconditional recommendation that the island be so used.
2. Earlier, designators were devised to assist in providing guidance for cleanup decisions. Resettlement decisions should be based upon all available information of all nuclides and pathways, upon dose assessments derived therefrom and upon continuing risk-benefit evaluation.


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FOLDER Enewetak Oct-Dec 1979

DOCUMENT DOES NOT CONTAIN ECI
Reviewed by R. Schuelke Date 4/30/97