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IN REPLY REFER TO MEDEC-ZOI

28 May 1956

Dr. R. A. Conard
Medical Department
Brookhaven National Laboratory
Upton, Long Island, New York

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Dear Dr. Conard:

There is no longer any question about the identity of the radioactivity in the sample we've processed from the Marshalese urine. In the oxalate precipitate from the 57 liter sample of urine we have found strontium -90 in the amount of 64.± 4. dpm (a like amount of yttrium -90 is also present, of course). We have definitely found cerium -144 as well, in the amount of 700.± 10. dpm and a like amount of its praseodymium -144 daughter.

The strontrium -90 and the cerium -144 were conclusively identified by the isolation of the yttrium and praseodymium daughters respectively. Decay curves, absorption curves, specific chemistry and gamma spectroscopy (in the case of the Ce^{144} - Pr^{144}) gave us the necessary evidence for identification.

The average volume for 24 hour urine specimens two years ago was about 580 ml. This means our 57 liter sample represents approximately 100 24 hour specimens. If you accept this, then the activity per 24 hour specimen is 0.6 dpm of strontium -90 and 7.0 dpm of cerium - 144.

Merrill Eisenbud tells me they have found about 5. dpm of strontium -90 per 24 hour specimen in the hottest samples they received. They did not check for cerium - 144 and I'm wondering if they might not be mistaking some of the cerium-praseodymium activity for strontrium - yttrium activity.

Should you desire any specific data on decay curves, absorption curves, chemistry, etc. we will be glad to supply it.

Sincerely yours,

ARIEL G. SCHRODT,
1st Lt, MSC
Department of Biophysics

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