

DUPLICATE ORIGINAL

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USNRC

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

'90 NOV -6 A11:32

ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

Before Administrative Judge
Peter B. Bloch

In the Matter of)
)
THE CURATORS OF)
THE UNIVERSITY OF MISSOURI)
)
(Byproduct License)
No. 24-00513-32;)
Special Nuclear Materials)
License No. SNM-247))

Docket Nos. 70-00270
30-02278-MLA

RE: TRUMP-S Project

ASLBP No. 90-613-02-MLA

CORRECTION TO LICENSEE'S
SUBMITTAL OF OCTOBER 30, 1990

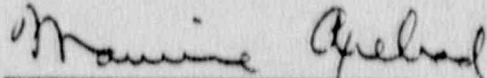
Licensee's Submittal in Accordance with "Memorandum (Memorandum of Conference Call of October 19, 1990)" that was filed on October 30, 1990 included the Affidavit of Dr. J. Steven Morris Regarding Plutonium Content (Oct. 29, 1990), which contained 12 attachments.

Although Attachment 6 to Dr. Morris' affidavit consisted of 4 pages, the copies that were served on October 30 inadvertently omitted the last 2 pages (pages 6-3 and 6-4). Copies of these omitted pages are provided herewith to all recipients of Licensee's Submittal. ±/ Licensee regrets any

±/ They were also telecopied to Judge Bloch and to Mr. Green on November 5, 1990.

inconvenience that such omission may have caused to the Presiding Officer or to the parties.

Respectfully submitted,



Maurice Axelrad

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Date: November 5, 1990

Am-241 Calculation

To calculate the Am-241 in the CRM 127 material, it is conservatively assumed that there is no loss of Am-241 due to decay from September 1970 to September 1990. Therefore, the total amount of Am-241 present as of September 1990 is the sum of the amount produced from the 20 year decay of Pu-241 plus the amount of Am-241 present as of September 1970. The number of Am-241 atoms produced per gram of CRM 127 material over the 20 years equals the number of Pu-241 atoms that would have decayed, or:

$$\begin{aligned}N_{\text{New Am-241}} &= (N_{\text{Pu-241}})[1 - e^{-(0.0481\text{y}^{-1})(20\text{y})}] \\&= (7.7 \times 10^{18} \text{atoms/g})(1 - 0.38) \\&= 4.8 \times 10^{18} \text{atoms per g of CRM 127 material}\end{aligned}$$

The number of Am-241 atoms present as of September 1970 can be calculated from =146 $\mu\text{g/g}$ value given in the CRM 127 Certificate:

$$\begin{aligned}N_{\text{Old Am-241}} &= \frac{(146 \mu\text{g/g})(6.023 \times 10^{23} \text{atoms})(10^{-6} \text{g}/\mu\text{g})}{(241 \text{g})} \\&= 3.6 \times 10^{17} \text{atoms per g of CRM 127 material}\end{aligned}$$

Therefore, the number of Am-241 atoms as of September 1990 would be estimated to be:

$$\begin{aligned}N_{\text{Am-241}} &= N_{\text{Old Am-241}} + N_{\text{New Am-241}} \\&= 3.6 \times 10^{17} \text{atoms/g} + 4.8 \times 10^{18} \text{atoms/g} \\&= 5.2 \times 10^{18} \text{atoms per g of CRM 127 material}\end{aligned}$$

and the estimated mass would be:

$$\begin{aligned}\text{Mass}_{\text{Am-241}} &= \frac{(5.2 \times 10^{18} \text{atoms/g})(241 \text{g})}{(6.023 \times 10^{23} \text{atoms})} \\&= 0.0021 \text{g per g of CRM 127 material}\end{aligned}$$

Since the Am-241 decay constant is:

$$\lambda_{\text{Am-241}} = (\ln 2)/(432.2\text{y}) = 0.00160\text{y}^{-1}$$

then the corresponding activity of Am-241 would be:

$$\begin{aligned} \text{Act}_{\text{Am-241}} &= \frac{(0.0021\text{g/g})(6.023 \times 10^{23}\text{atoms})(0.00160\text{y}^{-1})(1\text{Ci})}{(241\text{g})(3.16 \times 10^7\text{sec/y})(3.7 \times 10^{10}\text{dps})} \\ &= 0.0072\text{Ci per g of CRM 127 material} \end{aligned}$$

Again, because the calculated values for Pu-241 in September 1990 are less than values, then the values estimated to one significant figure for Am-241 are:

$$M_{\text{Am-241}}(\text{Sep 90}) < 0.002\text{g Am-241/g of CRM 127 material}$$

and

$$\text{Act}_{\text{Am-241}}(\text{Sep 90}) < 0.007\text{Ci Am-241/g of CRM 127 material}$$

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ASLBP No. 90-613-02-MLA

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Response to 'Intervenors' Motion For Reconsideration of Memorandum and Order of October 15, 1990 (Motion For Order Concerning Documents)' And Licensee's Related Motion To Strike," "Correction To Licensee's Submittal Of October 30, 1990," and M. Axelrad letter dated November 5, 1990 to Lewis C. Green were served upon the following persons by deposit in the United States mail, postage prepaid and properly addressed on the date shown below:

The Honorable Peter B. Bloch
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Gustave A. Linenberger, Jr.
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Chief, Docketing & Service Section
(Original plus two copies)

Office of the General Counsel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing Appeal Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
(Three Copies)

Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Lewis C. Green, Esq.
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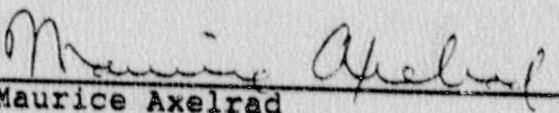
Missouri Coalition for the Environment
c/o Mr. Henry Ottinger
511 Westwood Avenue
Columbia, Missouri 65203

Mid-Missouri Nuclear Weapons Freeze, Inc.
c/o Mr. Mark Haim, Director
804 C East Broadway
Columbia, Missouri 65201

Physicians for Social Responsibility/
Mid-Missouri Chapter
c/o Robert L. Blake, M.D.
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University of Missouri at Columbia
Columbia, Missouri 65212

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Dated this 5th day of November, 1990.


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