



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DEC 1 1983

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MEMORANDUM FOR: C. J. Heltemes, Jr., Director  
Office for Analysis and Evaluation  
of Operational Data

AEOD/N306

THRU: Kathleen M. Black, Chief  
Nonreactor Assessment Staff, AEOD

FROM: Samuel L. Pettijohn  
Nonreactor Assessment Staff, AEOD

SUBJECT: ENGINEERING EVALUATION REPORT: POTENTIALLY LEAKING  
AMERICIUM-241 SOURCES CONTAINED IN AMERSHAM CORPORATION  
ION CHAMBERS

The subject report is a review by the Nonreactor Assessment Staff of a report from the Department of the Air Force, McConnell Air Force Base, (NRC License Number 15-13812-01) of three leaking americium-241 sources manufactured by Amersham Corporation. The sources are contained in ion chambers which are used in gas analysers for detecting explosive gases.

The program in which the sources are used is scheduled to be phased out in 1987 and no additional sources will be procured by the Air Force. Our review revealed that there may be a higher than normal probability for additional sources in McConnell's possession to become leakers. It is our understanding that McConnell's license is in the renewal process. We suggest that NMSS specifically review McConnell's leak detection program during the license renewal process because the sources have higher than normal leakage probability (as a result of the brazing operation and exposure to a corrosive atmosphere).

We recommend that AEOD transmit a copy of the Engineering Evaluation with a cover letter from Kathleen Black (copy enclosed) to John Hickey, Section Chief, (Industrial) Materials Licensing Branch, NMSS.

Samuel L. Pettijohn  
Nonreactor Assessment Staff, AEOD

Enclosure:  
As stated

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