

DMB

# PURDUE UNIVERSITY

OFFICE OF HEALTH PHYSICS AND  
RADIOLOGICAL CONTROL

June 17, 1983

Region III  
Office of Inspection and Enforcement  
USNRC  
799 Roosevelt Road  
Glen Ellyn IL 60137

ATTN: Mr. D. Sreniawski

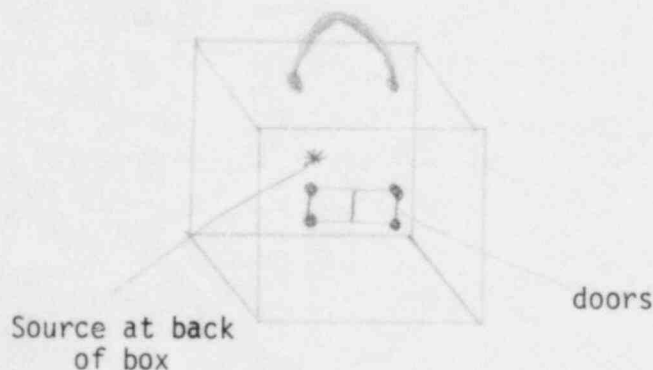
Dear Sir:

The following summary is forwarded to report a leaking sealed source which was discovered as a result of a routine 6-month leak test survey.

On June 14, 1983 a Ruthenium-106 (Ru-106) sealed source, owned by Argonne National Laboratory and on loan to Dr. E. Shibata of the Physics Department at Purdue University, was leak tested. The results of the June 14, 1983 leak test showed 0.005  $\mu\text{Ci}$  of activity was removed by the smear. A second leak test on the nearest accessible surface, when the source is in use, was performed on June 16, 1983. The results showed 0.00016  $\mu\text{Ci}$  were removed. The source was taken out of use June 16, 1983.

The Ru-106 source had a nominal activity of 100  $\mu\text{Ci}$  on February 22, 1979. The decay corrected activity is 5.2  $\mu\text{Ci}$  as of June 14, 1983 ( $T_{1/2}$  - 368 days).

The source is enclosed in a box with a sliding door opening which allows exposure of the source. The June 14, 1983 leak test was performed inside the box. The June 16, 1983 leak test was performed on the outside of the "doors".



Pharmacy Building  
West Lafayette, Indiana 47907

8306230282 830617  
PDR ADDCK 05000182  
S PDR

JUN 20 1983

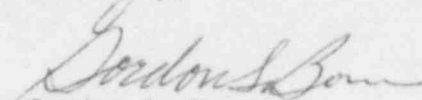
110 IS.07

Mr. D. Sreniawski  
Page 2  
June 17, 1983

A gamma analysis of the June 14, 1983 leak test varified that the contamination was Ru-106. The identification was made since peaks with energies of 0.512 and 0.622 Mev were present and are associated with Ru-106 daughter decay.

Dr. Shibata stated on June 17, 1983 that he would like the source returned to Argonne National Laboratory. Argonne National Laboratory was called June 17, 1983 and arrangements finalized to allow return of the source.

Sincerely,



Gordon S. Born  
Radiological Safety Officer

GSB/cg

cc