

Date: January 23, 1991

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-I-91-7C

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

Facility:  
Nuclear Sources and Services  
Houston, Texas  
Agreement State Licensee

Licensee Emergency Classification:  
 Notification of Unusual Event  
 Alert  
 Site Area Emergency  
 General Emergency  
 Not Applicable

Subject: UPDATE ON PNO-I-91-7, DAMAGE TO CONTAINER OF RADIOACTIVE MATERIAL ON BOARD A SHIP

Two NRC Region I inspectors, two Department of Transportation Investigators, and the Radiation Safety Officer of Nuclear Sources and Services (NSSI) met with representatives of the U.S. Coast Guard (USCG), Captain of the Port, New York, on the morning of January 17, 1991, and were transported by a Coast Guard cutter approximately 8 miles offshore to meet the MERKUR AFRICA to assess the status of the damaged radioactive material shipping container and potential radiological hazards. Of the 14 sources shipped, the following sources were immediately recovered, with their status noted below:

- 1 - 5 curie Americium 241 (shielded)
- 5 - 1.5 curie Cesium 137 sources (2 shielded; 3 unshielded)
- 3 - 100 microcurie Radium 226 sources (unshielded)
- 1 - 800 microcurie Cobalt 60 source (shielded)

The 3 unshielded Cesium 137 sources were returned to their damaged lead Type A shipping containers. The radium sources were originally shipped in a thin steel can. The can was not recovered. The radium sources were placed in a 5 gallon steel Type A shipping container. A subsequent search and survey of the ship located 2 additional radium sources and 1 cesium source. One cesium source and its shielded shipping container remains missing, apparently lost overboard. An extensive survey of the ship and crews' quarters revealed only background radiation levels.

On the morning of January 18, new Type A shipping containers and 3 thirty gallon drums (for overpack containers), previously shipped by NSSI, were received on the ship at the Red Hook Terminal, Brooklyn, New York, to replace those damaged as a result of the accident. The NSSI representative repacked and relabeled the radioactive material as necessary and placed all of the shipping containers inside the thirty gallon drums. The 30 gallon drums were secured in the ship for continued transport to Houston, Texas.

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E-34

The ship's crew was interviewed about their handling of the radioactive sources. Although the actual exposure is believed to be below regulatory limits, in the worst case, one individual may have received an extremity dose of 23 rems to the hands. The maximum whole body exposure was calculated to be 300 millirems. NSSI is conducting a detailed dose assessment. The results of the NSSI assessment will be forwarded to the shipper (Schlumberger International), the ship's owner, and NRC Region I.

A representative of NSSI and an NRC Region II inspector met the ship at the next port of call, Richmond, Virginia, on January 20, 1991, to monitor the unloading of Cargo Hold I to verify that the source was not trapped below the contents of the hold. A NSSI representative plans to meet the ship in Houston, Texas, on January 24, 1991, to do a final survey of the entire ship to confirm that the remaining, unaccounted for source is not on board.

CONTACT: John White  
346-5120

Glenn Roberts  
346-5272

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