

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS  
WASHINGTON, D.C. 20555

June 27, 1997

NRC INFORMATION NOTICE 97-42:      MANAGEMENT WEAKNESSES RESULTING IN  
FAILURE TO COMPLY WITH SHIPPING  
REQUIREMENTS FOR SPECIAL NUCLEAR  
MATERIAL

Addressees

All fuel cycle conversion, enrichment, and fabrication facilities.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice to alert addressees to three recent events involving the inadvertent shipment of Special Nuclear Material (SNM) to or from NRC-licensed fuel facilities and the apparent root causes of these events. It is expected that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. However, this notice does not contain any NRC requirements; therefore, no specific action nor written response is required.

Description of Circumstances

The first event involved an NRC licensee's unintentional shipment of a low enriched uranium fuel assembly to a foreign country. The unirradiated assembly was part of a larger shipment that had previously been received by the licensee for non-routine pellet downloading and reclamation. However, one assembly was never removed from its original shipping container and was subsequently returned to the country of origin, in a supposedly empty transport container. This assembly was not confirmed as missing by the licensee until about 6 weeks later. NRC considered this event to be significant in that it involved deficiencies in several program areas. The apparent root cause of the event was determined to be a deficiency in the management oversight of special processes. Contributing causes included the failures to: (1) follow plant procedures for the downloading process; (2) provide adequate and detailed procedures for the downloading process; (3) adequately evaluate the results of the container radiological survey; (4) comply with numerous requirements for the shipment of licensed material; and (5) implement adequate material control and accounting (MC&A) procedures and practices to verify the presence of the fuel assembly.

The second event involved the unexpected receipt of SNM from another country in a shipment of shipping containers that had been designated empty. An initial examination of the inner shipping containers by the NRC licensee indicated two containers were not empty. The two containers were quarantined after being opened and a third container was later

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identified by radiation surveys and also placed in quarantine. The foreign shipper identified the cause and incorporated corrective actions to prevent this or similar events from recurring. The shipper's corrective actions included procedural, physical instrumentation, and systems-related improvements.

In the third event, an NRC licensee mistakenly placed two fuel rods in a replica assembly that was shipped to a foreign country for training purposes. In this case, facility procedures involving the handling of rejected uranium bearing rods were not followed, resulting in the two fuel rods being mixed with non-uranium bearing rods and loaded into the replica assembly. The licensee did not discover that the two fuel rods were missing for approximately 5 months. This event raised several concerns, including but not limited to the apparent failure of MC&A practices to confirm the presence of SNM on inventory and in transit and the apparent failure to provide adequate resources and management attention to control of special processes.

#### Discussion

The inadvertent shipments of SNM concerns NRC because of the apparent lack of management oversight and lack of attention to non-routine work involving special processes and the inadequately implemented MC&A programs. Based on the root-cause analyses of these events, the major contribution to the failure of prevention and detection of the unauthorized shipment was a failure to evaluate off-normal operations with the same level of review accorded normal activities. Although the reduced protection to the public safety was very minimal during these events, the potential for public concern and for risk of radiation exposure and contamination exists. The inadvertent shipment of SNM should have been avoided, in some cases, if discrepancies between package radiation levels and contents (e.g., greater than background levels on "empty" packages) were investigated before the package was offered for transport. Further, licensee personnel involved with the receipt of SNM packages should be aware of the possibility of mislabeled containers and be provided with appropriate guidance for conducting inspections and surveys within an appropriate time period after receipt. Licensee management should actively encourage the analysis, evaluation, and preparation for off-normal operations, and provide the attention and resources to assure adequately implemented safety and safeguards programs. The same emphasis placed on safety and safeguards for normal operations must be equally applied to off-normal operations.

This information notice requires no specific action nor written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate regional office.

(Original Signed by E.W. Brach for)  
 Elizabeth Q. Ten Eyck, Director  
 Division of Fuel Cycle Safety  
 and Safeguards  
 Office of Nuclear Material Safety  
 and Safeguards

Technical contacts: Charles A. Hughey, Region II  
 (804) 847-7343  
 E-mail: cah2@nrc.gov

D. L. Whaley, NMSS  
 301-415-8108  
 E-mail: dlw1@nrc.gov

Attachments:

1. List of Recently Issued NMSS Information Notices
2. List of Recently Issued NRC Information Notices

*Attachment filed in Jacket.*

DOCUMENT NAME: 97-42.IN

\* SEE PREVIOUS CONCURRENCE

OFC	FCOB	FCOB	OGC	TECH ED	FCSS
NAME	DLWhaley:th*	PTing*	RFonner* (by email)	EKraus*	ETen Eyck*
DATE	06/05/97	06/06/97	6/03/97	6/04/97	06/18/97

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 E-mail: cah2@nrc.gov

D. L. Whaley, NMSS  
 (301) 415-8108  
 E-mail: dlw1@nrc.gov

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DOCUMENT NAME: INFONOT6.DLL

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OFC	FCOB	FCOB	OGC	TECH ED	FCSS
NAME	DLWhaley:th*	PTing*	RFonner* (by email)	EKraus*	ETen Eyck
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NAME	DLWhaley:th <i>DLW</i>		PTing <i>PTing</i>		RFonner* (by email)	EKraus*	E Ten Eyck
DATE	6/15/97		6/16/97		6/03/97	6/04/97	1/97

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LIST OF RECENTLY ISSUED  
NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
96-39	Inadequate 10 CFR 72.48 Safety Evaluations of Independent Spent Fuel Storage Installations	06/26/97	All holders of operating licenses or construction permits for nuclear power reactors. All holders of licenses for independent spent fuel storage installations
96-53, Supp. 1	Retrofit to Amersham 660 Posilock Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/23/97	All industrial radiography licensees
97-35	Retrofit to Industrial Nuclear Company (INC) IR100 Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/18/97	All industrial radiography licensees
97-30	Control of Licensed Material During Reorganizations, Employee-Management Disagreements, and Financial Crises	06/03/97	All material and fuel cycle licensees
97-24	Failure of Packing Nuts on One-Inch Uranium Hexafluoride Cylinder Valves	05/08/97	All U.S. Nuclear Regulatory Commission licensees and certificates authorized to handle uranium hexafluoride in 30- and 48-inch diameter cylinders

**LIST OF RECENTLY ISSUED  
 NRC INFORMATION NOTICES**

<b>Information Notice No.</b>	<b>Subject</b>	<b>Date of Issuance</b>	<b>Issued to</b>
97-41	Potentially Undersized Emergency Diesel Generator Oil Coolers	06/27/97	All holders of OLs or CPs for boiling-water reactors
97-40	Potential Nitrogen Accumulation Resulting from Backleakage from Safety Injection Tanks	06/26/97	All holders of OLs or CPs for pressurized-water reactors
97-39	Inadequate 10 CFR 72.48 Safety Evaluations of Independent Spent Fuel Storage Installations	06/26/97	All holders of OLs or CPs for nuclear power reactors. All holders of licenses for independent spent fuel storage installations
97-38	Level-Sensing System Initiates Common-Mode Failure of High-Pressure-Injection Pumps	06/24/97	All holders of OLs or CPs for nuclear power reactors
96-53, Supp. 1	Retrofit to Amersham 660 Posilock Radiography Camera to Correct Inconsistency in 10 CFR Part 34 Compatibility	06/23/97	All industrial radiography licensees
97-37	Main Transformer Fault with Ensuing Oil Spill into Turbine Building	06/20/97	All holders of OLs or CPs for nuclear power reactors
97-36	Unplanned Intakes by Worker of Transuranic Airborne Radioactive Materials and External Exposure Due to Inadequate Control of Work	06/20/97	All holders of OLs and CPs permits. All licensees of nuclear power reactors in the decommissioning stage and fuel cycle

OL = Operating License  
 CP = Construction Permit