

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

December 31, 1990

NRC INFORMATION NOTICE NO. 90-82: REQUIREMENTS FOR USE OF NUCLEAR REGULATORY COMMISSION-(NRC-)APPROVED TRANSPORT PACKAGES FOR SHIPMENT OF TYPE A QUANTITIES OF RADIOACTIVE MATERIAL

Addressees:

All registered users of NRC-approved packages.

Purpose:

This notice is to inform registered users of NRC-approved packages of pertinent NRC and Department of Transportation (DOT) requirements for the use of NRC-approved Type B packages for shipment of Type A quantities of radioactive materials. This notice applies to levels of radioactive materials that are not required to be shipped in an NRC-approved package, under the exemption granted in 10 CFR 71.10.

It is expected that registered users of NRC packages will review this information for applicability to their shipping and transportation programs and consider actions, as appropriate, to avoid problems in transport of radioactive materials. However, suggestions contained in this information notice do not constitute any new requirements; therefore, no specific action or written response is required. In addition, no specific written response is required by DOT.

Description of Circumstances:

On March 8, 1990, Amersham Corporation (Amersham), Burlington, Massachusetts, an NRC licensee authorized to manufacture and distribute sealed sources for use in industrial radiography, received an "empty" Model No. 500 SU source changer from its Korean product distributor. Amersham subsequently discovered that the source changer was not empty, but contained a 2.4-curie cropper source in the unshielded portion of the source changer. The incident was investigated by an NRC incident investigation team and the results reported in NUREG-1405 (published in May 1990), "Inadvertent Shipment of a Radiographic Source from Korea to Amersham Corporation, Burlington, Massachusetts."

During the investigation, it became apparent that clarification concerning the use of NRC-approved Type B packages for shipment of Type A quantities of radioactive materials was needed. Since the special form iridium-192 source involved in the incident was 2.4 curies, it was exempted under 10 CFR 71.10 from the requirement that it be shipped in an NRC-approved package. However, DOT regulations (49 CFR 173.415) authorize the use of NRC-certified Type B packages, such as the Model No. 500 SU, to ship Type A quantities of radioactive materials.

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Discussion:

NRC and DOT share primary responsibility for approving package designs for transportation of radioactive materials within the United States. NRC regulations for the transportation of radioactive materials are codified in 10 CFR Part 71, "Packaging and Transportation of Radioactive Material." DOT's hazardous materials regulations, which include radioactive material, are codified in 49 CFR Parts 100-199. Requirements for shippers of radioactive materials are given in 49 CFR 173.400 through 173.478. In addition, a provision in the NRC regulations, 10 CFR 71.5, requires that NRC licensees comply with DOT's hazardous materials regulations.

In general, pursuant to 10 CFR Part 71, NRC approves package designs for shipment of fissile and greater than Type A quantities of radioactive material. The design for packages up to Type A quantities is subject to the requirements of DOT in 49 CFR Part 173.

In authorizing the use of NRC-approved packages for transportation of Type A quantities of radioactive material, DOT regulations specify, in 49 CFR 173.415, that certain conditions be met. One condition (49 CFR 173.471) is that the shipment of the package be made in compliance with the terms of the NRC approval, i.e., that the shipper comply with all terms and conditions in the NRC certificate of compliance (certificate). For example, a radiographic source changer authorized for a Type B quantity of a specific radionuclide in special form is also authorized for a Type A quantity of the same specific radionuclide in special form, provided that all the terms and conditions of the certificate are met. Note that NRC approvals include the type and form of material, the maximum quantity of material per package, and operating instructions and maintenance procedures for the package.

Alternatively, an NRC-approved package may be shipped under the provisions of 49 CFR 173.415(a), as a DOT Specification 7A package. In this instance, the shipper (if requested) must provide DOT with a complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with DOT Specification 7A. The shipper is required to maintain this documentation on file at least 1 year after the latest shipment. Thus, a radiographic source changer approved by NRC for shipment of a specific radionuclide in special form could be used to ship a Type A quantity of a different nuclide, provided that the package is re-evaluated under the provisions of 49 CFR 173.415(a).

When an NRC-approved package is used as a DOT Specification 7A package, the NRC package identification marking should be covered and new markings ("USA DOT 7A TYPE A" and "radioactive material") affixed to the package, pursuant to 49 CFR 173.415(a).

Users of the NRC-approved packages should be aware of the requirements for using NRC-approved packages for low-level radioactive materials exempted under 10 CFR 71.10. In particular, users of NRC-approved packages should:

1. Determine what provision of 49 CFR 173.415 applies.
2. When the shipment is made pursuant to 49 CFR 173.415(a), comply with all requirements in 49 CFR 173.415(a) and 49 CFR 178.350. Note that the use of an NRC-approved package pursuant to 49 CFR 173.415(a) requires that the package be re-evaluated as a DOT Specification 7A Type A package, and that the shipper maintain the evaluation on file for 1 year after the last shipment.
3. When the shipment is made pursuant to 49 CFR 173.415(c), comply with all terms and conditions in the NRC certificate.

No written response is required by this information notice. If you have any questions about this matter, please contact the appropriate NRC regional office, or this office. Questions concerning DOT requirements should be directed to the Radioactive Materials Branch, Office of Hazardous Materials Technology, DOT (202) 366-4545.



Robert F. Burnett, Director  
Division of Safeguards and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Technical Contact: Earl P. Easton, NMSS  
(301) 492-0462

Attachment: List of Recently Issued NMSS Information Notices

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NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
90-81	Fitness for Duty	12/24/90	All U.S. Nuclear Regulatory Commission (NRC) and non-power reactor licensees.
90-75	Denial of Access to Current Low-Level Radioactive Waste Disposal Facilities	12/5/90	All Michigan holders of NRC licenses.
90-71	Effective Use of Radiation Safety Committees to Exercise Control Over Medical Use Programs	11/6/90	All NRC licensees authorized to use byproduct material for medical purposes.
90-70	Pump Explosions Involving Ammonium Nitrate	11/6/90	All uranium fuel fabrication and conversion facilities.
90-38, Supp. 1	License and Fee Requirements for Processing Financial Assurance Submittals for Decommissioning	11/6/90	All fuel facility and materials licensees.
90-67	Potential Security Equipment Weaknesses	10/29/90	All holders of OLs or CPs for nuclear power reactors and Category 1 fuel facilities.
90-63	Management Attention to the Establishment and Maintenance of A Nuclear Criticality Safety Program	10/03/90	All fuel cycle licensees possessing more than critical mass quantities of special nuclear material.
90-62	Requirements for Import and Distribution of Neutron-Irradiated Gems	09/25/90	All irradiated gemstone importers and distributors, and all non-power reactor licensees.

OL = Operating License  
CP = Construction Permit

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NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

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\*See previous concurrence.

OFC: SGTB	per SGTB	OGC	EEJ	NRR/OGCB*	SGTR	SGTR
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