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From: Meredith Brown <racer@lanl.gov>  
Subject: Blue Alert: Transportation Considerations

**TITLE: Radioactive Material Transportation Considerations**

IDENTIFIER: 1998-LA-LANL-ESH7-0002 DATE: March 27, 1998

**LESSONS LEARNED:** Although site radiological control requirements did not dictate that the small quantity of depleted uranium involved in this incident be labeled or stored as radiological material, more rigorous Department of Transportation (DOT) requirements that establish a two nanocurie per gram threshold applied because the material was transported over public roads and on a commercial airline. The applicability of both internal and external requirements must be considered whenever radiological materials are transported to ensure compliance.

**DISCUSSION:** A Los Alamos National Laboratory researcher recently hand carried two depleted uranium samples to an offsite location via his private vehicle and a commercial airline. The uranium salt samples contained about 20 milligrams of depleted uranium with a combined activity of approximately 10 nanocuries. The researcher, who was on a tight schedule because of the unexpected but limited availability of some research equipment, believed that such a small quantity of depleted uranium could be hand carried.

Although the quantity involved was exempt from the Laboratory's onsite radiological control storage and labeling requirements, it exceeded the DOT threshold for handling as radioactive material. DOT defines any substance with specific activity greater than 2 nanocuries per gram as "radioactive material." DOT requires that specific activity be calculated using only the mass of the substance being shipped, not the associated container or packaging. The material involved in this incident had a specific activity of about 360 nanocuries per gram. Because the material was transported over roads generally accessible to the public, it was subject to these DOT requirements.

Laboratory employees may not, under any circumstances, transport DOT-defined radioactive materials as personal baggage on any privately owned, rented, or commercial vehicle (automobile, truck, aircraft). All such movement must be as a consigned, DOT-compliant shipment. Additionally, all DOT-defined radioactive material must be prepared for shipment by a properly trained hazardous materials employee before it is transported over public roads, whether between technical areas or offsite.

**RECOMMENDED ACTIONS:** At the Laboratory, Hazardous Material Packaging and Transportation specialists are available to categorize radiological materials shipments and provide DOT-approved packaging, marking, labels, and shipping papers. Laboratory personnel are encouraged to utilize the Materials Management Group's Mobile Packaging Van services to take advantage of reduced government shipping rates and ensure that hazardous, classified, and international shipments are shipped in compliance with applicable laws. Laboratory personnel can call 667 4127 to request packaging service. Personnel at other Department of Energy sites

are encouraged to work with their local transportation organizations to ensure that all applicable requirements are met whenever radiological materials are transported over public roads.

**ORIGINATOR:** Los Alamos National Laboratory

**CONTACT:** Meredith Brown, 505-667-0604

**AUTHORIZED DERIVATIVE CLASSIFIER:** Meredith Brown, 505-667-0604

**REVIEWING OFFICIAL:** Richard Brake, 505-665-0033

**FUNCTIONAL CATEGORY:** Business and Support Service, Travel and Transportation

**KEYWORDS:** DOT, radiological materials, labeling, transportation

**REFERENCES:** Master Management Memo MM695/ADS815: "Transporting Radioactive Material?"

**FOLLOW-UP ACTIONS:** Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is appreciated. Meredith Brown ESH Lessons Learned Program Manager 505 667 0604