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## State of Wisconsin

Department of Health Services

# DHS REGULATORY ISSUE SUMMARY 2010-01

## SHIPPING REQUIREMENTS FOR EXCEPTED PACKAGES

### ADDRESSEES

All Department of Health Services (DHS) radioactive material licensees, except fixed gauges and self-shielded irradiators.

### INTENT

Wisconsin is issuing this regulatory issue summary (RIS) to inform licensees who ship radioactive material or who prepare packages for shipment of existing requirements related to Excepted Packages (UN 2910 and UN 2911). No specific action or written response is required.

### BACKGROUND INFORMATION

Shipping and package receipt requirements for radioactive materials licensees are contained in DHS 157.29(6) and DHS 157.92(3). These regulations, in part, incorporate by reference federal Department of Transportation (DOT) requirements contained in 49 CFR 171-177.

An Excepted Package is regulated in transportation. Due to the small amount of radioactive material present (usually a few millicuries or less), Excepted Packages must follow certain packaging and marking requirements. Common Excepted Packages include instruments and articles such as x-ray fluorescence (XRF) devices (49 CFR 173.424) and limited quantities of radioactive material such as return shipments of medical isotopes to radiopharmacies (49 CFR 173.421). Isotope specific limits for packages that may be shipped as Excepted Packages are defined in 49 CFR 173.425.

Several licensees who ship Excepted Packages have queried DHS recently regarding the requirements for DOT Hazardous Materials training, and the requirements for performing radiation exposure and contamination surveys on Excepted Packages.

### SUMMARY OF ISSUE

#### DOT Hazardous Materials Training

49 CFR 172.704(c) requires hazmat employees to receive training within 90 days after employment and at least once every three years thereafter. DOT Hazardous Materials training requires the same elements for all hazmat employees. "Hazmat employee" is defined in 49 CFR 171.8 to include, in part, individuals who:

- 1) Load, unload or handle hazardous materials,
- 2) Prepare hazardous materials for transportation,
- 3) Are responsible for safety of transporting hazardous materials, or
- 4) Operate vehicles used to transport hazardous materials.

Examples of preparing shipments of hazardous materials for transportation include: loading an XRF device into a vehicle, placing a “pig” with a used syringe into a transportation container to be returned to a radiopharmacy, and labeling the outside of a package (i.e. ensuring the appropriate UN number is visible).

DOT Hazardous Materials training is required for all persons who prepare packages for shipment, including Excepted Packages [49 CFR 173.422(d)]. As described in 49 CFR 172.702-704, DOT Hazardous Materials training must include general awareness training, function-specific training, security awareness training, safety training, and a test on these topics. DHS wants to ensure that licensees understand training requirements because transportation is a potential security vulnerability.

- General awareness training must include, in part, how to recognize and identify hazardous material. Examples include recognizing package labels and shipping papers.
- Function-specific training requires the licensee to train an employee on the specific tasks the employee will perform. Examples include appropriately labeling the outgoing package and performing radiation surveys.
- Security awareness training must include, in part, how to identify and respond to a potential security threat. Examples include identifying appropriate couriers, locking storage and drop off locations, and typical corridor occupancy.
- Safety training for each hazmat employee must include emergency response information, measures to protect the employee from hazardous materials, and methods and procedures for handling hazardous materials.
- Licensees must ensure that each of its hazmat employees is tested by appropriate means on all of the above training subjects.

#### Survey requirements for Excepted Packages

The radiation level at any point on the external surface of an Excepted Package must not exceed 0.5 mrem/hr. The shipper must ensure that the package is under this limit when offered for transportation and transported. This generally implies that it is necessary for the shipper to conduct an exposure rate survey to ensure compliance. However, there may be other acceptable means of ensuring compliance (for example, an XRF user may rely on the XRF manufacturer’s dose evaluation if the XRF is shipped in its original package, and neither the gauge nor the package shows any signs of damage).

The removable contamination on the external surface of an Excepted Package must not exceed the limits specified in 49 CFR 173.443(a) [22 dpm/cm<sup>2</sup> for most radionuclides]. The shipper must ensure that the package is under this limit when offered for transportation and transported. This generally implies that it is necessary for the shipper to conduct a contamination survey to ensure compliance. However, there may be other acceptable means of ensuring compliance (for

example, when shipping a sealed source, the shipper may have a copy of the most recent leak test indicating <0.005 microcurie of removable contamination).

Caution should be exercised when manufacturer's data is used to assess instruments or articles (i.e., XRFs) which are not new due to their potential for damage. It is critical for licensees to retain evidence of their process for analyzing packages for dose rate and contamination, even if the analysis does not include a direct survey with instrumentation.

It is essential that licensees have procedures in place to ensure compliance with the exposure and contamination level limits for Excepted Packages. If a package is later found to exceed these limits, the licensee may be cited per DHS and DOT regulation.

#### Other Packages shipped as Excepted Packages

DHS is aware that some licensees may be asked to ship packages as Excepted Package-Limited Quantity (UN 2910) even if the package does not contain radioactive material. Packages that do not contain radioactive material may be shipped as Excepted Packages. However, any package shipped as Excepted Package-Limited Quantity must follow the requirements in 49 CFR 173.421, regardless of its contents.

#### **CONTACT**

This RIS requires no specific action or written response. Licensees are encouraged to contact the individuals listed below with questions about the content of this RIS.

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#### **REFERENCES**

1. DOT Radioactive Material Regulations Review (December 2008).  
[http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/RAM\\_Regulations\\_Review\\_12-2008.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/RAM_Regulations_Review_12-2008.pdf)
2. Hazardous Materials Regulations (Title 49 CFR Parts 100-185):  
<http://www.phmsa.dot.gov/regulations>
3. Free DOT Hazardous Materials training resources:  
[https://hazmatonline.phmsa.dot.gov/services/Pub\\_Free.aspx](https://hazmatonline.phmsa.dot.gov/services/Pub_Free.aspx)
4. DOT interpretation of 49 CFR 173.424 (Reference No. 02-0152)  
<http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Interpretation%20Files/2002/020152.pdf>
5. DOT interpretation of 49 CFR 173.421 (Reference No. 09-0286)  
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