

## **RADIOACTIVE AND HAZARDOUS MATERIALS TRANSPORTATION**

### **1.0 Objective**

The objective of this surveillance is to evaluate the effectiveness of the laboratory's programs, policies, and procedures to transport radioactive and hazardous materials off-site or to receive such materials for routine operations, treatment, storage, or disposal.

The Facility Representative or Environmental, Safety, and Health Support Specialist observes preparation of materials for shipment and receipt of materials and reviews specific documents to determine compliance with requirements imposed by DOE and by applicable regulations from the U.S. Nuclear Regulatory Commission and the Department of Transportation.

### **2.0 References**

- 2.1 DOE O 460.1A, *Packaging and Transportation Safety*
- 2.2 DOE O 460.2, *Departmental Materials Transportation and Packaging Management*
- 2.3 DOE 5820.2A, *Radioactive Waste Management*
- 2.4 DOE/EH-0256T, *U.S. Department of Energy Radiological Control Manual, Rev. 1*
- 2.5 10 CFR 71, *Packaging of Radioactive Material for Transport*
- 2.6 49 CFR 109-199, *Hazardous Materials Regulations*

### **3.0 Surveillance Activities**

During this surveillance, the Facility Representative or Environmental, Safety, and Health Support Specialist focuses on transportation of hazardous or radioactive materials. Surveillance PTS 13.2 addresses packaging of these materials and preparation for shipment. In performing this surveillance, the Facility Representative or Environmental, Safety, and Health Support Specialist completes the following activities:

- 1. Observe Shipment of Materials
- 2. Observe Receipt of Materials
- 3. Review Transportation Records

**Surveillance Guideline**  
**RADIOACTIVE AND HAZARDOUS MATERIALS TRANSPORTATION**

Surveillance No.: \_\_\_\_\_

Facility: \_\_\_\_\_

Date Completed: \_\_\_\_\_

**Activity 1 - Observe Shipment of Materials**

The Facility Representative or Environmental, Safety, and Health Support Specialist observes loading of a truck or railroad car for shipment of hazardous materials or wastes.

<u>YES</u>	<u>NO</u>	<u>N/A</u>	
_____	_____	_____	1. Does the shipper complete a visual survey of the transport device to ensure:
_____	_____	_____	a. It is in good operating condition?
_____	_____	_____	b. It has the capability to transport the shipment?
_____	_____	_____	c. The estimated gross weight of the shipment does not exceed the authorized carrying capacity?
_____	_____	_____	2. Are radioactive and hazardous materials restrained to preclude load shifts or position changes that might damage packages?
_____	_____	_____	3. Are flexible tiedowns (Wire rope, strap, chain, etc) free from contact with objects when the tiedowns are taut? (Prevent chafing and damage)
_____	_____	_____	4. Is the transport vehicle safe?
_____	_____	_____	5. Do training records substantiate that the driver has the required qualifications?
_____	_____	_____	6. Has the recipient of the shipment been notified of the shipment date and expected arrival date?

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<u>YES</u>	<u>NO</u>	<u>N/A</u>	
_____	_____	_____	8. Is a comparison made of the package count in the vehicle and the package count in the shipping papers or hazardous material manifest to ensure accountability?
_____	_____	_____	9. Does the shipper complete an effective visual inspection of packages to ensure that packages are not damaged?
_____	_____	_____	10. Are transport conveyances radiologically surveyed before loading shipments of radioactive materials?
_____	_____	_____	11. For shipments by highway, does the driver of the vehicle have a copy of the emergency response plan or emergency response information?
_____	_____	_____	12. Have radiological surveys been performed to detect contamination on packages of radioactive materials or wastes?
_____	_____	_____	13. If the shipment is to another facility on-site and will be made over non-public roads, is the shipment completed in accordance with written procedures over pre-approved routes?
_____	_____	_____	14. For shipments of low-level radioactive wastes, has the shipper received advance approval from the receiving facility?
_____	_____	_____	15. For shipments of low-level radioactive wastes, has the shipper certified that the waste meets the waste acceptance criteria for the receiving facility?
_____	_____	_____	16. Has the shipper certified that hazardous materials to be transported are properly classified, described, packaged, marked, labelled, and in proper condition for shipment in accordance with Department of Transportation regulations?

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<u>YES</u>	<u>NO</u>	<u>N/A</u>	
_____	_____	_____	17. Is each non-bulk package marked to identify:
_____	_____	_____	a. Proper shipping name and identification number?
_____	_____	_____	b. Technical name (if different than shipping name)?
_____	_____	_____	c. Exemption number (if required)
_____	_____	_____	d. Shipper's name and address (or consignee's name and address)?
_____	_____	_____	18. Are markings durable, in English, and affixed on a label, tag, or sign with a background color sharply contrasting with the lettering?
_____	_____	_____	19. Are labels, tags, or signs plainly visible?
_____	_____	_____	20. Are labels on the package consistent with labels required by the shipping paper?
_____	_____	_____	21. For packages containing radioactive materials, are the following additional requirements met:
_____	_____	_____	a. For packages in excess of 50 kg, is the gross weight plainly and durably marked on the outside of the package?
_____	_____	_____	b. Are Type A and Type B packages marked as such?

**Activity 2 - Observe Receipt of Materials**

The Facility Representative or Environmental, Safety, and Health Support Specialist observes receipt of hazardous or radioactive materials or wastes. The Facility Representative or Environmental, Safety, and Health Support Specialist observes all activities associated with receipt from initial arrival of the shipment to release of the transport conveyance.

_____	_____	_____	22. For shipments of low-level radioactive waste, has the receiving facility previously provided approval for the shipper to transport the materials to the facility?
_____	_____	_____	23. Is an inspection performed of each package to ensure that

t a e e not damaged and that no leakage of materials has  
 h c s occurred?  
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<u>YES</u>	<u>NO</u>	<u>N/A</u>	
_____	_____	_____	24. Is a package count performed and the results compared with the shipping manifest?
_____	_____	_____	25. Are any packages that are suspected to be damaged or leaking promptly checked for external surface contamination?
_____	_____	_____	26. If external surface contamination is detected, are the delivering vehicles and areas in which the packages were unloaded or stored surveyed to detect possible contamination?
_____	_____	_____	27. If the delivering vehicle departs the facility before contamination of packages or leakage is detected, is the delivering carrier promptly notified of the possibility that the vehicle and other packages in the vehicle may be contaminated?

**Activity 3 - Review of Transportation Records**

The Facility Representative or Environmental, Safety, and Health Support Specialist selects three shipments of radioactive materials within the past two years in amounts of Type A or greater as defined in 49 CFR 173.435 and reviews associated records.

_____	_____	_____	27. Are records of each shipment maintained showing:
_____	_____	_____	a. Identification of the package for the shipment by model number and with the certificate of compliance number?
_____	_____	_____	b. Details of any significant defects in the packaging?
_____	_____	_____	c. Means employed to repair defects and to prevent recurrence?
_____	_____	_____	d. Type and quantity of material in each package?
_____	_____	_____	e. Total quantity in each shipment?

f. Date of shipment?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

g. Name and address of transferee?

h. Address to which shipment was made?

i. Results of tests or inspections to ensure the integrity of the packaging?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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YES      NO      N/A

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_      28. Are shipping papers for each shipment available and do the papers include the following?

- |       |       |       |  |
|-------|-------|-------|--|
| _____ | _____ | _____ | a. Proper shipping name?                 |
| _____ | _____ | _____ | b. Hazard class?                         |
| _____ | _____ | _____ | c. Unique identification number?         |
| _____ | _____ | _____ | d. Activity levels?                      |
| _____ | _____ | _____ | e. Isotopes present?                     |
| _____ | _____ | _____ | f. Copy of label(s) applied to packages? |
| _____ | _____ | _____ | g. Shipper's certification?              |
| _____ | _____ | _____ | h. Emergency response telephone number?  |
| _____ | _____ | _____ | i. Exclusive use instructions?           |

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_      29. Did the recipient of the shipment provide a return receipt verifying arrival of the shipment within one month of the anticipated arrival date?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_      30. Did the shipper follow up on status of the shipment if the required return receipt was not received within one month of the anticipated arrival date?

OTHER:

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NOTES/COMMENTS: \_\_\_\_\_

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PERSONNEL CONTACTED: \_\_\_\_\_

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FINDINGS:

Finding No.: \_\_\_\_\_

Description: \_\_\_\_\_

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\_\_\_\_\_

Finding No.: \_\_\_\_\_

Description: \_\_\_\_\_

\_\_\_\_\_

OBSERVATIONS:

Observation No. : \_\_\_\_\_

Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Observation No. : \_\_\_\_\_

Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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FOLLOWUP ITEMS: \_\_\_\_\_  
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LABORATORY MANAGEMENT DEBRIEFED AND RESULTS:  
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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Facility Representative or  
Environmental, Safety, and Health Support Specialist