

## **PACKAGING AND PREPARATION FOR SHIPMENT**

### **1.0 Objective**

The objective of this surveillance is to evaluate the effectiveness of the laboratory's programs for packaging radioactive and hazardous wastes for shipment. The Facility Representative or Environmental, Safety, and Health Support Specialist examines packages ready for shipment, observes preparation of packages, and reviews documents that establish the acceptability of packages. The Facility Representative or Environmental, Safety, and Health Support Specialist verifies compliance with DOE requirements including requirements established by 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 10 CFR 71, *Packaging of Radioactive Material for Transport*
- 2.5 49 CFR 109-199, *Hazardous Materials Regulations*

### **3.0 Surveillance Activities**

In performing this surveillance, the Facility Representative or Environmental, Safety, and Health Support Specialist will examine packages ready for shipment and observe preparation of packages for shipment. The Facility Representative or Environmental, Safety, and Health Support Specialist may examine packaging of radioactive or hazardous materials or wastes. Specific requirements for each category of package may differ, requiring adaptations of the specific lines of inquiry identified below. During the surveillance, the Facility Representative or Environmental, Safety and Health Support Specialist completes the following activities:

- 1. Examine Packages Ready for Shipment
- 2. Observe Preparations of Packages for Shipment
- 3. Review Records and Documents

**Surveillance Guideline**  
**PACKAGING AND PREPARATION FOR SHIPMENT**

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

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

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

YES    NO    N/A

**Activity 1 - Examine packages**

The Facility Representative or Environmental, Safety, and Health Support Specialist selects a package that is ready for shipment offsite containing radioactive materials or waste in quantities of Type A or greater in 49 CFR 173.435.

- |    |  |       |       |       |
|----|--|-------|-------|-------|
| 1. | Does the package exterior incorporate a feature (such as a seal) that is not readily breakable and clearly indicates that the package has not been opened by unauthorized persons?   | _____ | _____ | _____ |
| 2. | Does the package feature a containment system that is securely closed by a positive fastening device which cannot be unintentionally opened?   | _____ | _____ | _____ |
| 3. | Are all valves or other devices that could allow radioactive materials to escape the package protected against unauthorized operation <u>and</u> provided with an enclosure to retain leakage? (This does <u>not</u> apply to relief valves) | _____ | _____ | _____ |
| 4. | Are all accessible surface temperatures below 122° F for non-exclusive use shipments? (In determining the temperature, the package should be in the shade and ambient temperature should be 100° F or less)                                  | _____ | _____ | _____ |
| 5. | Is the package designed so that there is no continuous venting during shipment?  | _____ | _____ | _____ |
| 6. | For a non-exclusive use package, are radiation levels at all points on the external surface of the package below 200 millirem per hour and 10 millirem per hour at a   | _____ | _____ | _____ |

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of one meter?

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
7. Has the laboratory ensured that the package with its contents conforms to design requirements and conforms to the conditions established in existing Certificates of Compliance for the package?	_____	_____	_____
8. Is the package in unimpaired physical condition except for superficial marks or dents?	_____	_____	_____
9. Are systems for containing liquid sealed and have provisions been made for possible expansion of liquids?	_____	_____	_____
10. Are pressure-relief devices operable and set in accordance with written procedures?	_____	_____	_____
11. Has the level of removable radioactive contamination on the package been determined and verified to be as low as reasonably achievable?	_____	_____	_____
12. Is the package marked conspicuously and durably with its model number?	_____	_____	_____
13. Do shipping documents and papers include the following information:			
a. Proper shipping name for the material?	_____	_____	_____
b. Hazard class or division?	_____	_____	_____
c. Identification number for the material?	_____	_____	_____
d. Packing group in Roman numerals?	_____	_____	_____
e. Total quantity of material?	_____	_____	_____
f. Description of materials?	_____	_____	_____
g. Any additional descriptions or information such as limited quantities, hazardous substance, radioactive materials, empty packaging, transportation mode, dangerous when wet information, technical names, marine pollutants, poisonous materials, and materials at elevated temperatures?	_____	_____	_____
h. Copies of labels affixed to packages?	_____	_____	_____
i. A valid emergency response telephone number?	_____	_____	_____



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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
14. Has the shipper provided required certification that materials have been classified, described, packaged, marked, and labeled in accordance with applicable regulations?	_____	_____	_____

**Activity 2 - Observe Preparation of Packages for Shipment**

15. Is the package loaded in accordance with written procedures?	_____	_____	_____
16. Does documentation exist to substantiate the activity levels loaded in the package?	_____	_____	_____
17. After the package is sealed, are effective surveys performed to determine radiation levels at all points on the surface of the package?	_____	_____	_____
18. Are surveys performed by personnel or radiological control technicians with appropriate training?	_____	_____	_____
19. Are instruments used in the surveys within the approved calibration interval?	_____	_____	_____
20. Is the package correctly labeled with its transport index and other information necessary to identify materials, hazards, and methods to control hazards?	_____	_____	_____
21. Do the labels on packages match the information on shipping papers regarding materials, hazards, transport index and other necessary information?	_____	_____	_____
22. Does the laboratory ensure that materials included in the package do not contain and cannot generate toxic gases, vapors, or fumes?	_____	_____	_____

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
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**Activity 3 - Review Documentation**

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|--|-------|-------|-------|
| 23. For the packages examined in activities 1 and 2, is certification available demonstrating that testing has been satisfactorily performed to verify that the package will retain its integrity? | _____ | _____ | _____ |
| 24. Are results of inspections completed before the first use of the package?  | _____ | _____ | _____ |
| 25. Did the inspections show that there were no cracks, pinholes, or other defects that could compromise the effectiveness of the package?   | _____ | _____ | _____ |

OTHER:

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NOTES/COMMENTS:

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**Surveillance Guideline**  
**PACKAGING AND PREPARATION FOR SHIPMENT**

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

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**IF MORE SPACE IS NEEDED FOR FINDINGS, OBSERVATIONS, AND FOLLOWUP  
ITEMS - USE ADDITIONAL SHEETS**

FINDINGS:

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

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

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

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

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

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

**OBSERVATIONS:**

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

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

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

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

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

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\_\_\_\_\_

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**FOLLOWUP ITEMS:**

Followup Item No.: \_\_\_\_\_

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

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Followup Item No.: \_\_\_\_\_

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

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Followup Item No.: \_\_\_\_\_

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

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LABORATORY MANAGEMENT DEBRIEFED AND RESULTS: \_\_\_\_\_

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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Facility Representative or  
Environmental, Safety, and Health Support Specialist