

Chapter 52: [Hazardous Materials and Waste Transportation](#)

In Commerce Transport Procedure

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URL: <https://www-group.slac.stanford.edu/esh/eshmanual/referencess/hazmattransportProcedCommerce.pdf>

1 Purpose

The purpose of this procedure is to ensure the safe shipment *in commerce* of hazardous materials and waste in a manner that conforms to regulatory requirements and best practices. This procedure covers all off-site shipments of regulated *hazardous material*, *radiological material*, *hazardous waste*, *radioactive waste*, and *mixed waste* in commerce originating at the SLAC National Accelerator Laboratory (SLAC). It applies to all workers requesting shipment in commerce and groups responsible for preparing, packaging, scheduling, and approving shipments, including Shipping and Receiving, Chemical and Waste Management, Radiation Protection Field Operations and Radioactive Waste Management.

2 Procedures

2.1 Regulatory Background

Federal requirements to ensure the safe transport of hazardous materials in commerce are promulgated by the Department of Transportation's (DOT) Pipeline and Hazardous Material Safety Agency (PHMSA). The requirements are codified in the Title 49, *Code of Federal Regulations*, Parts 171 through 180 ([49 CFR 171–180](#)).

Internationally, requirements for the air transport of hazardous materials are established through a series of technical instructions ([ICAO Document 9284](#)) published by the International Civil Air Organization (ICAO), which are then re-written as regulations by the International Air Transport Association (IATA) and published and updated annually as the IATA Dangerous Goods Regulations ([IATA DRG](#)). The DOT recognizes the ICAO technical instructions by reference and accepts any shipments of hazardous material that are packaged, documented, and offered in accordance with the [IATA DRG](#) as compliant.

2.2 Organizational Responsibilities

In addition to the actual shipment and receipt of hazardous material, the DOT also regulates employers of hazmat employees. A *hazmat employee* is anyone who prepares, handles, or offers hazardous material packages and related documentation into commerce, or arranges for the shipment of hazardous waste. As a *hazmat employer*, SLAC is required to train and retain a record of current training for each hazmat employee whose job function impacts the shipment or receipt of hazardous materials in commerce the elements found in 49 CFR Parts 172 and 173. If offering dangerous goods via air carrier, the training in function-specific areas must be in accordance with IATA DGR 1.5.

Packaging materials used for hazardous materials shipments off SLAC property must meet DOT and/or IATA general packaging requirements, and the material’s special provisions and specific packing instruction(s). Work groups performing this service at SLAC are listed in Table 1.

Table 1 Organizational Responsibilities

Person	Responsibility
Shipping and Receiving	<ul style="list-style-type: none"> ▪ Confirms packaging, prepares and ships all hazardous materials ▪ Acts as SLAC eShipper verifier for requests of non-radioactive hazardous materials shipments ▪ Approves commercial transport firms (except for materials purchased through CMS) ▪ Confirms packaging, prepares and ships all return hazardous materials
Radiation Protection Field Operations (RPFO)	<ul style="list-style-type: none"> ▪ Packages and prepares all radioactive material before sending to Shipping and Receiving for shipment ▪ Acts as SLAC eShipper verifier for requests for radioactive hazardous materials shipments
Chemical and Waste Management (CWM)	<ul style="list-style-type: none"> ▪ Acts as SLAC eShipper verifier for requests for non-radioactive hazardous materials shipments ▪ Packages and prepares all hazardous waste for shipment ▪ Approves all hazardous waste haulers
Radiation Protection Radioactive Waste Management (RPRWM)	<ul style="list-style-type: none"> ▪ Packages and prepares all mixed and radioactive waste for shipment ▪ Approves all mixed and radioactive waste haulers

2.3 Hazardous Material Shipments in Commerce

Transport of chemicals in commerce from an off-site location to SLAC will be accomplished only through the [Chemical Management Services \(CMS\)](#) acquisition process.¹ Transportation of hazardous materials in commerce from SLAC to off-site locations will be managed and arranged by properly trained Shipping and Receiving personnel, using the appropriate shipping containers, labels, and other necessary equipment. To initiate this process SLAC employees and users must use the [SLAC eShipper](#) form for hazardous materials. Subcontractors must follow their own procedures.

Step	Person	Requirement
1.	Requester	Uses SLAC eShipper form for hazardous materials shipments
2.	SLAC eShipper verifier	Verifies the information meets DOT requirements
3.	Shipping and Receiving	Picks up, packages, prepares shipping papers, schedules transport with reputable transporters

¹ Any exceptions must be made on a case-by-case basis. Contact the DOT program manager and Shipping and Receiving manager for details.

2.4 Radioactive Material Shipments in Commerce

Transport of radioactive materials in commerce from and to an off-site location will be accomplished following the [Shipping and Receiving of Radioactive Materials](#) procedure. Transportation of radioactive materials in commerce from SLAC to off-site locations will be managed and arranged by properly trained Radiation Protection Department personnel, using the appropriate shipping containers, labels, and other necessary equipment. To initiate this process SLAC employees and users contact the Radiation Protection Field Operations.

Step	Person	Requirement
1.	Requester	Informs RPFO that there is a radioactive material to be shipped
2.	RPFO	Verifies the information and completes eShipper
3.	RPFO	Packages material and prepares shipping papers as needed
4.	Shipping and Receiving	Schedules transport with reputable transporters

2.5 Hazardous Waste Shipments in Commerce

Transportation of hazardous waste from SLAC to off-site locations will be managed and arranged by properly trained Field Services Waste Management personnel, using the appropriate shipping containers, labels, and other necessary equipment. All off-site transportation of hazardous wastes will be performed by properly licensed third-party subcontractors arranged and coordinated by Waste Management. No other off-site transportation is allowed.

Step	Person	Requirement
1.	Requester	Submits a Hazardous Waste Pick-Up and Empty Container Request Form to initiate pickup
2.	Waste Management	Consolidates packages, prepares shipping papers, and schedules shipment with approved waste hauler

2.6 Mixed and Radioactive Waste Shipments in Commerce

Transportation of mixed and radioactive waste from SLAC to off-site locations will be managed and arranged by properly trained Radiation Protection Radioactive Waste Management personnel, using the appropriate shipping containers, labels and other necessary equipment as prescribed in the [Radioactive Waste Manual](#).

Step	Person	Action
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1.	Requester	Notifies RPFO (ext. 4299) that waste is ready to transferred to an radioactive material low-level mixed-waste storage area
2.	RPRWM	Consolidates packages, prepares shipping papers, and schedules shipment with an approved waste hauler

3 Forms

The following forms and systems are required by these requirements:

- [SLAC eShipper](#). System for documenting DOT/IATA shipments
 - [User Guide for the New SLAC eShipper Page](#)
- [Hazardous Waste Pick-Up and Empty Container Request Form](#) (SLAC-I-800-0A08R-001). Form used to request from Waste Management delivery and pickup of waste containers
- [Mixed Waste Generation Request Form](#) (in Radioactive Waste Manual [SLAC-I-760-2A08Z-001])
 - [Mixed Waste Generation Checklist](#) (in Radioactive Waste Manual [SLAC-I-760-2A08Z-001])
 - [Radioactive Waste Management: Potential Mixed Waste Items](#)
- [Radioactive Material Declaration Form](#) (in Radioactive Waste Manual [SLAC-I-760-2A08Z-001])

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- There are no recordkeeping requirements for general staff and users. All records are kept by the responsible groups and program managers.

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 52, “Hazardous Materials and Waste Transportation”](#)
 - [Hazardous Materials and Waste Transportation: On-site Transportation Requirements](#) (SLAC-I-730-0A09S-037)
 - [Hazardous Materials and Waste Transportation: Non-commercial Hazardous Materials Transport Procedure](#) (SLAC-I-730-0A09C-006)
- [Chapter 17, “Hazardous Waste”](#)
- [Chapter 34, “Biosafety”](#)
- [Chapter 40, “Chemical Lifecycle Management”](#)
- [Chapter 53, “Chemical Safety”](#)
- [Chapter 58, “Laboratory Safety”](#)

Other SLAC Documents

- [Chemical Management Services \(CMS\)](#)
- [Radioactive Waste Manual](#) (SLAC-I-760-2A08Z-001)
- [Shipping and Receiving of Radioactive Materials](#) (SLAC-I-760-0A30C-002)
- [Nanomaterial Safety Plan](#) (SLAC-I-730-0A09M-008)

Other Documents

- Title 49, *Code of Federal Regulations*, “Transportation”, Subtitle B, “Other Regulations Relating to Transportation”, Chapter 1, “Pipeline and Hazardous Materials Safety Administration, Department of Transportation”, Subchapter C, “Hazardous Materials Regulations”, Parts 171, “General Information, Regulations, and Definitions”, through 180, “Continuing Qualification and Maintenance of Packagings” ([49 CFR 171–180](#)) (DOT requirements)
- Department of Transportation. [PHMSA – Registration](#)
- International Civil Aviation Organization (ICAO). Technical Instructions for the Safe Transport of Dangerous Goods by Air ([ICAO Document 9284](#))
- International Air Transportation Association (IATA). Dangerous Goods Regulations ([IATA DRG](#))