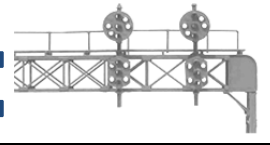


THE SIGNAL BRIDGE

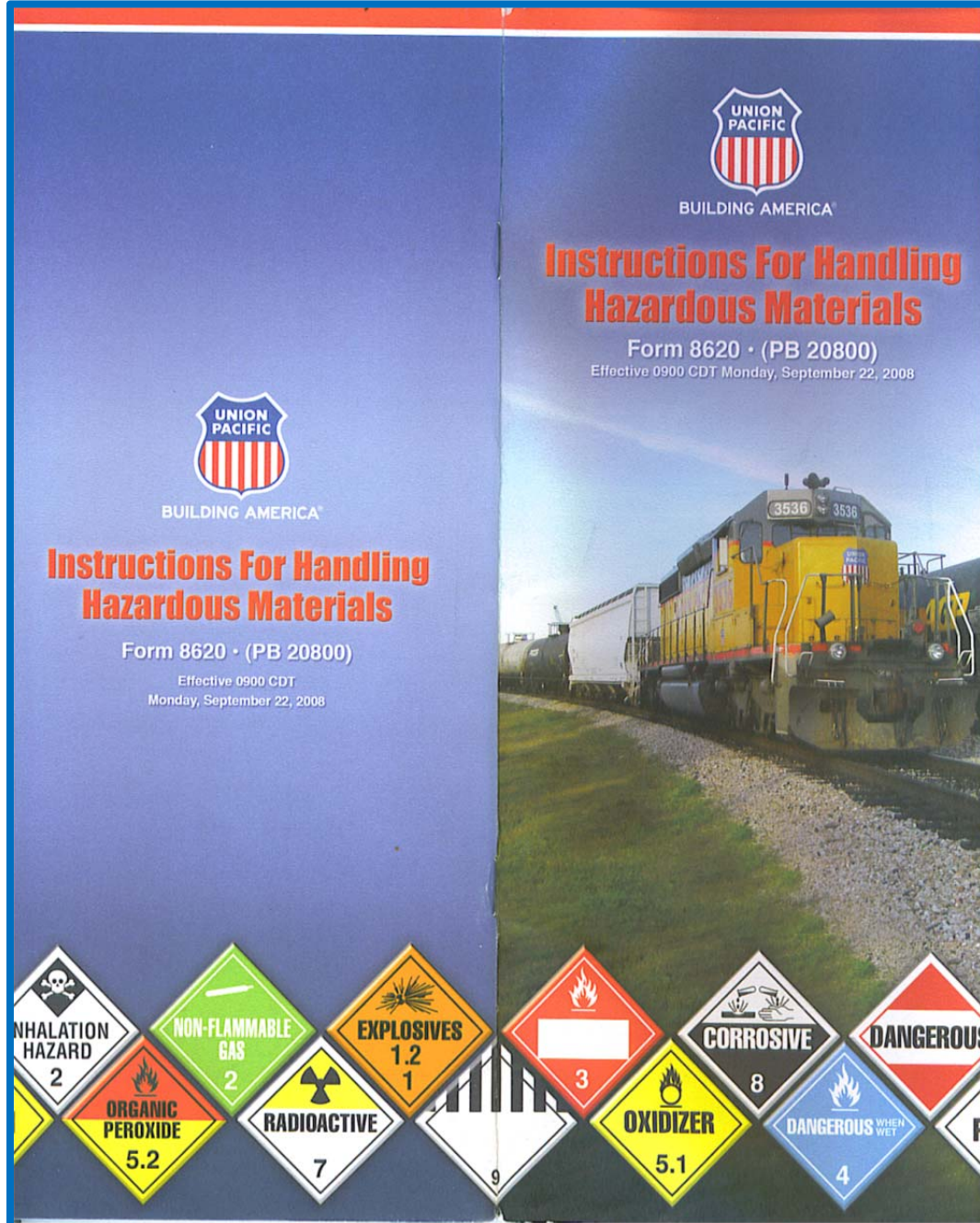


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Introduction

1. Policy

In addition to complying with other operating rules, Union Pacific Railroad (UPRR) employees will transport hazardous materials in compliance with UPRR's **Instructions for Handling Hazardous Materials Form 8620 (PB 20800)**.

These instructions describe how to perform your duties so that both you and UPRR comply with the **Hazardous Materials Regulations** of the United States Department of Transportation (DOT). These instructions are consistent with the **United States Hazardous Materials Instructions for Rail** written jointly by the major railroads and the Association of American Railroads (AAR), in conjunction with DOT.

UPRR employees who inspect or transport hazardous materials by rail must have either a printed or UPRR approved electronic version of, and comply with, the instructions in this document when:

- working on UPRR property; *or*
- operating over a foreign road unless that railroad's requirements are more restrictive.

2. Questions

For technical interpretation of the regulatory aspects of these instructions, call Hazardous Materials Management at 8-544-2345 (402-544-2345), 8-544-4981 (402-544-4981), or 8-544-3313 (402-544-3313). If no one answers, please leave a message:

- State your question.
- Give your name.
- Give a callback number or mailing address where someone can reach you with an answer to your question.

3. Effective Date

The instructions in this document take effect 0900 CDT, Monday, September 22, 2008. They replace all previous rules and instructions not consistent with this document.

4. Additions and Corrections

Changes to the instructions in this document will be made through general orders, the UPRR **System Special Instructions**, and applicable timetable special instructions.

D. J. Duffy
Executive Vice President - Operations

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Section I

General Information

1. Definition of Hazardous Materials

- a. Hazardous materials are defined as "a substance or material which the Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce."
- b. The term "hazardous material" includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.
- c. Hazardous materials are classified according to their chemical and/or physical properties. There are nine numbered classes, some of which are further divided into divisions, and there are two worded classes (see Table 1, page 5). A hazardous material is assigned to only one class, even if it meets the definition of more than one hazard class. In this document, "class" refers to both "class" and "division."

2. General DOT Requirements

- a. No person may offer, accept, or transport a hazardous material in commerce unless that material is properly classed, described, packaged, marked, labeled, and placarded and is in proper condition for transportation according to DOT and/or international regulations.
- b. No person may transport a hazardous material in commerce unless the hazardous material is handled and transported according to DOT regulations.

3. Expediting Hazardous Material Shipments

Loaded hazardous material shipments and both loaded and residue/empty time-sensitive hazardous material shipments (see Table 2, page 6) must be forwarded either:

- a. within 48 hours (excluding Saturdays, Sundays, and holidays) after accepting them at the shipper's facility or receiving them in any yard, intermediate (transfer) station, or interchange point; *or*
- b. when only bi-weekly or weekly service is performed, on the first available train toward the destination.

Note: The requirements in 3a and 3b above do not apply to shipments that are constructively placed or set out for repairs.

General Information

Table 1

Hazard Classes and Divisions

Numbered Classes and Divisions

1 -Explosives

- 1.1 – Explosive with mass explosion hazard
- 1.2 – Explosive with projection hazard
- 1.3 – Explosive with predominantly fire hazard
- 1.4 – Explosive with no significant blast hazard
- 1.5 – Very insensitive explosive; blasting agent
- 1.6 – Extremely insensitive detonating substance

2 -Gases

- 2.1 – Flammable gas
- 2.2 – Nonflammable, nonpoisonous/nontoxic, compressed gas
- 2.3 – Gas poisonous/toxic by inhalation

3 -Flammable Liquids

4 -Flammable Solids and Reactive Solids/Liquids

- 4.1 – Flammable solid
- 4.2 – Spontaneously combustible material
- 4.3 – Dangerous when wet material

5 -Oxidizers and Organic Peroxides

- 5.1 – Oxidizer
- 5.2 – Organic peroxide

6 -Poisonous/Toxic Materials and Infectious Substances

- 6.1 – Poisonous/toxic material
- 6.2 – Infectious substance

7 -Radioactive Materials

8 -Corrosive Materials

9 -Miscellaneous Hazardous Materials

Worded Classes

Combustible Liquids (*regulated in bulk packaging*)

ORM-D (Other Regulated Materials) (*regulated in air transportation only; not regulated in rail transportation*)

General Information

Table 2

Time-Sensitive Hazardous Material Shipments

20 Day

- (1) Chloroprene, stabilized – UN 1991
- (2) Ethylene, refrigerated liquid – UN 1038
- (3) Flammable Liquid, N.O.S. (Methyl Methacrylate Monomer, uninhibited) – UN 1993
- (4) Hydrogen chloride, refrigerated liquid – UN 2186
- (5) Hydrogen, refrigerated liquid – UN 1966
- (6) Vinyl fluoride, stabilized – UN 1860

30 day

- (1) Flammable Liquid, N.O.S (Recycled styrene) – UN 1993
- (2) Styrene monomer, stabilized – UN 2055

4. Exceptions for U.S. Government Material

- a. Department of Energy (DOE) and Department of Defense (DOD) shipments made for the purpose of national security **and** accompanied by escorts (personnel specifically designated by or under the authority of DOD or DOE) are **not** subject to DOT regulations or to the instructions in this document.
- b. Escorts must travel in a separate transport vehicle from the rail car carrying the hazardous material.
- c. Escorts must have, in their possession, a document certifying that the shipment is for the purpose of national security.

5. International Shipments

International shipments of hazardous material (including shipments to and from Mexico and Canada), moving with proper international documents and international placards, may be transported in the United States (U.S.):

- a. from a U.S. port of entry to their U.S. destination;
- b. when moving through the U.S. to a foreign destination;
- c. from a U.S. point of origin to the international port of entry, when the cars are either:
 - (1) returning residue/empty shipments; *or*
 - (2) regulated internationally but not in the U.S.

Section II

Required Documentation

1. General Documentation Requirements

The following documents are required when accepting and/or transporting a hazardous material shipment by rail:

- a. Acceptable **shipping papers** (see item 2 below and Table 3 on page 8);
- b. Appropriate **hazardous material response information** (see item 4 and Table 4, page 14); and
- c. Current **position-in-train document** (see item 5, page 14).

Notes:

1. This documentation provides railroad and emergency response personnel with accurate information about each hazardous material being transported, including its location in a train.
2. Update all documentation as soon as work assignments are completed. Be sure to keep all current hazardous material documents neat, orderly, and available on or near the train in case of an emergency or for inspection. Properly discard superseded documents to eliminate the possibility of confusing or inconsistent information.

2. Checking for Acceptable Shipping Papers

- a. A member of the crew must have, in their possession, a paper copy of an **acceptable shipping paper** (see Table 3, page 8) with the required shipping description entries (see item 3, pages 9-13) for each hazardous material in the shipment, whether loaded or residue/empty, when:
 - (1) **accepting/pulling** a hazardous material shipment from a customer's facility, interchange point, or other location (pick-up point);
 - (2) **switching** a hazardous material shipment **outside** a yard;

Exception: When moving a hazardous material shipment within a yard or at a customer's facility, interchange point, or other location, crews are not required to have shipping papers in their possession.
 - (3) **moving** a hazardous material shipment in a train;
 - (4) **setting out** a hazardous material shipment at a customer's facility, interchange point, or other set out point.

Exception: Although they may remain placarded and/or marked, **residue/empty** tank cars of Class 9 and Elevated Temperature Materials do **not** require hazardous material shipping papers and hazardous material response information.

Required Documentation

Table 3

Acceptable Shipping Papers

Any one of the following documents is acceptable as a shipping paper for a hazardous material shipment. The document must include the required shipping description entries and be legible and printed (manually or mechanically) in English (see item 3, pages 9-13).

1. **Railroad-produced documents** — for example: Train Lists, waybills, work orders, or other similar documents;
2. **Connecting carrier's documents;**
3. **Hand-printed document** (printed, not cursive letters).
Note: This hand-printed document is **not** acceptable when pulling a hazardous material shipment at a customer's facility, interchange point, or other location; **however**, a hand-printed document is acceptable to correct a problem found during transportation (see item 2c, page 9); **or**
4. A United Parcel Service (UPS) produced document or a copy thereof.

b. **When accepting/pulling a shipment** from a customer's facility, interchange point, or other location (pick-up point) and the shipping papers are not available/present:

- (1) Do **not** accept/pull any shipment, hazardous material or not, unless the car is listed on your work order **and**, if that shipment is a hazardous material, the proper shipping description entries are listed after the "HAZARDOUS MATERIALS RESPONSE INFORMATION" section on the Train List under "ANTICIPATED PICKUP AT . . .".

Note: When accepting/picking up an interchange train outside of a yard and a shipment without acceptable shipping papers is found, move the train to the first location where the shipment(s) without shipping papers can be set out and then set out the shipment(s) without shipping papers. If entries are available from the train dispatcher, follow the instructions under item 2c on page 9.

- (2) Leave the first shipment **not** listed on your work order **and all** following cars in that cut behind at the customer's facility or interchange point within a yard.

Note: This instruction does **not** apply to intraplant switching or to cars left off-spot by UPRR crews. It applies **only** to the cut of cars listed on the work order to be pulled.

Required Documentation

c. **During transportation** when the shipping papers are not available, contact the train dispatcher or your supervisor, and request the shipping papers.

- (1) If the actual shipping papers **cannot** be provided, but the required entries (see item 3, pages 9-13) are available, legibly print the entries on a sheet of paper or on your Train List and keep them available during transportation.
- (2) If, after checking, the shipping description entries are still not available, move the train to the first location where the shipment(s) without shipping papers can be set out and then set out the shipment(s) without shipping papers.

3. **Reviewing Shipping Description Entries**

- a. Review the shipping description entries for each hazardous material on the shipping papers and make sure that the following entries (see items a-g in the boxes on pages 10-12) are present. (Figure 1 on page 10 shows the railroad standard format for displaying shipping description entries.)
- b. **When accepting/pulling a shipment** from a customer's facility, interchange point, or other location **and** all required shipping description entries are not present, do **not** accept/pull the shipment. Leave the first shipment without the required shipping description entries and **all following cars in that cut** behind at the customer's facility or interchange point (see Note under item 2b(2) on previous page).
- c. **During transportation** when all required hazardous material shipping description entries are not present on the shipping paper, contact the train dispatcher or your supervisor and request the required shipping description entries.

- (1) If the required shipping description entries (see item 3, pages 9-13) are available, legibly print the entries on a sheet of paper or on your Train List and keep them available during transportation.
- (2) If, after checking, the shipping description entries are still not available, move the train to the first location where the shipment(s) without shipping papers displaying the appropriate shipping description entries can be set out and then set out the shipment(s) without shipping papers displaying the appropriate shipping description entries.

Required Documentation

Figure 1

Shipping Description Entries

Vertical Format (Railroad Standard)

GATX 12345 ^(a)	1/TC ^(b)
***** ^(h13)	SULFURIC ACID ^(c)
* DANGEROUS *	8 ^(d)
*****	UN1830 ^(e)
EMERGENCY CONTACT:	PG II ^(f)
800-424-9300 ^(g)	RQ (SULFURIC ACID) ^(h3)
	HAZMAT STCC = 4930040 ^(h11)

Notes: Items^{(a)-(g)} are required entries for the basic hazardous material description. Item^(h) refers to additional entries that may appear. Typically, items^{(b)-(f)} are in the sequence shown; however, certain items (technical name and subsidiary hazard class) may appear in parentheses between items^{(b)-(f)}. The identification number^(e) may be found either before the proper shipping name^(c) or after the hazard class^(d) until January 1, 2013 when the identification number must appear before the proper shipping name^(c).

a. Reporting Marks (Initials) and Number

The shipping paper for a rail car, freight container, transport vehicle, or portable tank must include the reporting mark and number **only** when the reporting mark and number are displayed on the rail car, freight container, transport vehicle, or portable tank.

b. Total Quantity Notation

- (1) For empty packagings, bulk packagings, or cylinders of Class 2 materials, an indication of the total quantity must be shown. Some abbreviations are acceptable; for example, "1/TC" (1 tank car), "1/CL" (1 car load), or "10 CYL" (10 cylinders).
- (2) For non-bulk packaging, the total quantity is given by both the:
 - (a) weight or volume (including the unit of measure); for example, "100 LB", "55 GAL", "5 KG", or "208 L"; and
 - (b) number and type of package; for example, "12 drums", "12 drums (UN 1A1)", "15 4G", or "UN 3H1JERRICAN".
- (3) For Class 1 materials, the quantity must be the net explosive mass.

Required Documentation

Figure 1

Shipping Description Entries (continued)

c. Proper Shipping Name

- (1) The proper shipping name of the hazardous material may be one or more words, such as "CHLORINE" or "SULFURIC ACID". The proper shipping name may include a number that indicates the concentration of the material.
- (2) When a N.O.S. (Not Otherwise Specified) shipping name appears, the technical name of the product may appear in parentheses immediately after the N.O.S. shipping name; for example, "CORROSIVE LIQUID, N.O.S. (CAPRYL CHLORIDE)".
- (3) Residue/empty shipments in tank cars will begin with "RESIDUE: LAST CONTAINED," followed by the proper shipping name.
- (4) For waste shipments, the word "WASTE" will precede, or be part of, the proper shipping name of the material.

d. Hazard Class – numeric or worded (See list of hazard classes and divisions in Table 1, page 5.)

- (1) For certain hazardous materials, a subsidiary hazard class will appear in parentheses after the primary class. For example, Ethylene Oxide is listed as "2.3 (2.1)".
- (2) The worded hazard class need not be repeated for COMBUSTIBLE LIQUIDS, N.O.S. shipments.
- (3) Classes 1.1, 1.2, 1.3, 1.4, 1.5, and 1.6 may show a compatibility group letter after the class (for example, 1.1A). The letter has no significance in rail transportation.

e. Identification Number

The 4-digit identification number must include the prefix "UN" (United Nations) or "NA" (North America) as appropriate.

Note: The identification number^(e) may appear either before the proper shipping name^(c) or after the hazard class^(d) in the shipping description entries until January 1, 2013 when the identification number must appear before the proper shipping name^(c).

Exception: Identification numbers are not required when the proper shipping name is "gas generator assemblies for aircraft."

Required Documentation

Figure 1
Shipping Description Entries (continued)

f. Packing Group

The packing group must appear on the shipping papers in Roman numerals ("I", "II", or "III"). The packing group may be preceded by the letters "PG" ("PG I", "PG II", or "PG III").

Exception: Classes 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 4.1 (self-reactive liquids or solids, types B-F), 5.2, 6.2, 7, and ORM-D do not require the packing group notation.

g. Emergency Response Telephone Number

Shipping papers for hazardous material shipments must show a 24-hour emergency response telephone number. This telephone number must include the area code or international access code.

Exception: Emergency response telephone numbers are not required when the hazardous material is shown as a "LIMITED QUANTITY", "LTD QTY", or its proper shipping name is:

- (1) battery powered - equipment or vehicle;
- (2) carbon dioxide, solid or dry ice;
- (3) castor - bean, meal, flake, or pomace;
- (4) consumer commodity;
- (5) engines, internal combustion;
- (6) fish - meal or scrap, stabilized;
- (7) fumigated unit;
- (8) refrigerating machine;
- (9) wheelchair, electric;
- (10) vehicle, flammable gas powered or vehicle, flammable liquid powered.

h. Additional Description Entries

Some hazardous material shipping descriptions also may require one or more of the following entries:

- (1) "Residue: Last Contained ..." (for packages emptied to the maximum extent possible);
- (2) "HOT" notation added before a proper shipping name for elevated temperature materials;
- (3) "RQ" for Reportable Quantity notation of a hazardous substance;
- (4) "MARINE POLLUTANT" notation;

Required Documentation

Figure 1
Shipping Description Entries (continued)

- (5) "POISON" or "TOXIC" notation;
- (6) "POISON(TOXIC)-INHALATION HAZARD (PIH or TIH)" or "INHALATION HAZARD (IH)" notation;
- (7) Hazard Zone notation ("ZONE A," "ZONE B," "ZONE C," or "ZONE D");
- (8) "LIMITED QUANTITY" or "LTD QTY" notation;
- (9) FRA Movement Approval (for example, "FRA 0109123"), DOT Special Permit (for example, "DOT-SP 9271", Special Approval Number (for example, "SA 920403"), or Competent Authority Number (for example, "CA 9701001");
- (10) DOT-113 notation - "DOT-113, Do Not Hump or Cut-Off in Motion";
- (11) Hazardous Materials Response Code - STCC numbers "48xxxxx" or "49xxxxx";
- (12) certain shipments described using Canadian regulations may contain both an Emergency Response Plan number and its activation telephone number [for example, "ERP-2-1008 (800-555-5555) // SPECIAL COMMODITY"];
- (13) box of asterisks with or without wording (not required by DOT, but may appear on railroad-produced documents);
- (14) Shipper's Certification (see Glossary, item ae, page 53);
- (15) additional radioactive material entries;
- (16) name and address of the place of business in Canada of the consignor/consignee;
- (17) additional hazardous waste shipping description;
- (18) for international shipments, the following additional information may be present - "DANGEROUS GOODS IN EXCEPTED QUANTITIES" with an indication of the number of packages.

Note: Voluntary January 1, 2009; mandatory January 1, 2010.

Required Documentation

4. Checking for Hazardous Material Response Information

- a. Before accepting and transporting a hazardous material shipment, make sure a copy of the hazardous material response information is available for the shipment (see Table 4 below).

Note: Hazardous material response information is not required to be in the switch crew's possession when moving a hazardous material shipment within a yard or at a customer's facility.

- b. When hazardous material response information is **not** available, do **not** accept or transport the car.

Table 4
Acceptable Hazardous Material Response Information

Either of the following documents is acceptable as hazardous material response information:

- a. Hazardous material response information printed as part of the Train List, /RD Track List, or TTH inquiry;

Note: Information for another shipment of the same hazardous material already on the Train List is acceptable.

or

- b. *Emergency Response Guidebook* (ERG).

5. Checking for Position-in-Train Document

- a. Before moving a hazardous material shipment in a train, make sure a member of the crew has a Train List or other document showing the current position in the train of each hazardous material shipment (loaded and residue/empty). This document may be computer-generated or hand-printed.

When making pickups or setouts, update the position-in-train document before proceeding.

Note: The train crew can update the position-in-train document with hand-printed notes or by attaching another document to it.

- b. If the document indicating the current position-in-train of each hazardous material is **not** available:
- (1) Update the documents already in your possession;
 - or
 - (2) Create a hand-printed list showing the position-in-train of each hazardous material shipment.

Note: The list must show the reporting marks and number for each hazardous material shipment in the train and its actual position in the train.

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Required Documentation

6. Handling Hazardous Waste Shipping Papers and Manifests

- a. The shipping paper for a hazardous waste shipment must have the following entries in addition to those required for other hazardous material shipments:
- (1) proper shipping description;
 - (2) name, address, and telephone number of the hazardous waste generator;
 - (3) name and address of the hazardous waste disposal facility;
 - (4) name of transporter(s);
 - (5) waste manifest number;
 - (6) special handling instructions.

- b. When accepting/pulling a hazardous waste shipment, pick up the car containing hazardous waste as long as you have railroad-produced shipping papers containing the manifest entries (see item 6a above) even though you do **not** have a copy of the hazardous waste manifest.

Note: If given the hazardous waste manifest:

- (1) Sign the hazardous waste manifest as requested.
- (2) Return a copy of the hazardous waste manifest to the person requesting the signature.
- (3) Mail the remaining copies of the hazardous waste manifest to the National Customer Service Center (NCSC).

7. Handling Requests for Shipping Papers or Hazardous Material Response Information

When receiving a request for shipping papers or hazardous material response information from a railroad employee, regulatory enforcement officer, or emergency response personnel in an emergency:

- a. Share **all** the information on the shipping papers for the shipment.
- b. Share **all** available hazardous material response information.

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Section III

Inspection

1. General Requirements

Hazardous material shipments must be inspected to make sure they are in acceptable condition for transportation.

- a. Inspect **all** loaded and residue/empty hazardous material shipments at the following points:
 - (1) Before accepting them from the shipper;
 - (2) When receiving them in interchange;

Note: Run-through trains received in interchange may continue to the next location where an inspection is required.
 - (3) When placing them in a train.
- b. Accept or transport **only** those hazardous material shipments that conform to these instructions. For shipments that do not conform, notify your supervisor and note the shipment as "Work Not Done" on the work order.

2. Inspection Procedures

In addition to inspecting rail cars for compliance with air brake and train handling rules, visually inspect each loaded or residue/empty hazardous material shipment (including flat cars transporting placarded or marked trailers or containers) **from ground level** (do not climb on or go under the car) and check for:

- (1) leaking contents;
- (2) required placards and markings (including stenciling, car certificates, and tank car qualification dates when appropriate) (see Section IV - Placards and Markings, page 21);
- (3) secure fastening of closures and intact condition of seals; **and**
- (4) signs of tampering - such as suspicious items or items that do not belong, the presence of an "Improvised Explosive Device" (IED), and other signs that the security of the car may have been compromised.

Note: Where an indication of tampering or a foreign object is found, take the following actions:

- (a) Do not accept or move the rail car.
- (b) Immediately move yourself and others to a safe location away from the rail car before using radios and cell phones to make notifications.

Inspection

- (c) For cars at a customer's facility, immediately contact local plant personnel. If local plant personnel are not available or cannot explain what you see, immediately contact the train dispatcher or the Response Management Communications Center (RMCC) at 1-888-877-7267 for instructions.
- (d) For cars on interchange tracks or in the yard, immediately contact the yardmaster, train dispatcher, or the RMCC at 1-888-877-7267 for instructions.

a. Inspecting All Hazardous Material Shipments (*from ground level*)

- (1) In addition to completing other inspection requirements in this section, make sure that the hazardous material shipment is not leaking.
 - (a) Look for leaking contents – drips, wetness, or material on the car or on the ground.
 - (b) Look for a vapor cloud.
 - (c) Listen for hissing sounds of the contents escaping.
 - (d) **Take these actions when there is any sign of leakage:**
 - (i) Follow the instructions in Section VIII - Emergency Response, pages 44-46.
 - (ii) Do **not** accept a hazardous material shipment or allow one to continue in transportation until the leak is controlled.

Note: Leaking hazardous material shipments may be moved without repair or approval, with proper railroad authority, **only** as far as necessary to reduce or eliminate the immediate threat of harm to human health, the environment, or railroad operations within a yard. If further movement of a leaking hazardous material shipment is required, a written Movement Approval must be obtained from DOT authorizing the conditions of the move.
 - (iii) When it is necessary to move a leaking hazardous material shipment, use an adequate number of buffer cars between the locomotive and the leaking car to prevent chemical exposure.

(Item "a" continues on next page)

Inspection

a. Inspecting All Hazardous Material Shipments

(continued)

- (2) Make sure placards and markings are appropriate for the shipment and displayed correctly (see Section IV, Placards and Markings, pages 21-34).
- (3) Before accepting a hazardous material shipment from the shipper, make sure that:
 - (a) all customer loading and unloading lines are disconnected;
 - (b) derails, chocks, and blue flags are removed;
 - (c) all platforms are raised or are in the clear.

b. Inspecting Placarded/Marked Tank Cars (from ground level)

In addition to completing other inspection requirements in this section, check placarded tank cars or tank cars marked with an identification number to see that:

- (1) protective housing covers are closed;
- (2) manway cover swing bolts are up and in place;
- (3) all valves and fittings appear to be closed and secure;
- (4) visible plugs or caps (including bottom outlet caps) or other fittings are securely in place;

Note: When heater coil caps are provided and the shipment is a load, the heater coil caps must be applied.
- (5) each car is equipped with “double shelf couplers” and roller bearings.

c. Inspecting Placarded/Marked Gondola Cars (from ground level)

In addition to completing other inspection requirements in this section:

- (1) Look for loosely fastened gondola covers.
- (2) Make sure the cover or tie downs do not foul any safety appliances.

d. Inspecting Placarded/Marked Hopper Cars (from ground level)

In addition to completing other inspection requirements in this section, check that hopper car discharge gates are closed and secured.

e. Inspecting Shipments Placarded EXPLOSIVES 1.1 or 1.2 (from ground level)

- (1) In addition to completing other inspection requirements in this section, check shipments

Inspection

Figure 2

Text of Car Certificate

Railroad

No 1 _____ Station _____ 20__
I hereby certify that I have this day personally examined Car Number _____ and that the car is in condition for service and complies with the FRA Freight Car Safety Standards (49 CFR Part 215) and with the requirements for freight cars used to transport explosives prescribed by the DOT Hazardous Materials Regulations. (49 CFR Part 174)

Qualified Person Designated Under 49 CFR 215.11

No 2 _____ Station _____ 20__
I have this day personally examined the above car and hereby certify that the explosives in or on this car, or in or on vehicles or in containers, have been loaded and braced; that placards have been applied, according to the regulations prescribed by the Department of Transportation; and that the doors of cars so equipped fit or have been stripped so that sparks cannot enter.

Shipper or authorized agent

Qualified Person Designated Under 49 CFR 215.11

No 3 _____ Station _____ 20__
I hereby certify that I have this day personally supervised the loading of the vehicles or containers on, and their securement to, the above car.

Shipper or railway employee inspecting loading and securement

Note 1: A shipper must decline to use a car not in proper condition.
Note 2: All certificates, where applicable, must be signed.

placarded EXPLOSIVES 1.1 and EXPLOSIVES 1.2 for the following:

- (a) Look for indications of damage to the contents
- (b) Make sure that completed “car certificates” (see Figure 2 above) are displayed on both sides of the rail car.
 - (i) Car certificates must be removed after the rail car, trailer, or container is unloaded.
 - (ii) Car certificates are either 7.1 by 7.1 inches or 5.9 by 7.9 inches in size.
- (2) Do not accept or transport the car until all damage has been corrected and car certificates are in place
- (3) When car certificates are lost in transit, inspect the shipment and replace the car certificates at the next terminal where the train is classified. (Use Union Pacific Form 29065 or other format similar to Figure 2 above.)

Inspection

f. Inspecting Placarded/Marked Intermodal Shipments
(from ground level)

In addition to completing other inspection requirements in this section:

- (1) Make sure that an intermodal tank container of hazardous material is not transported with a container above or below the tank.
- (2) Make sure that placards are fully visible when containers are loaded in a well.
- (3) Make sure that intermodal tanks are placed so that the bottom outlet valve points toward the ends of the well or platform.

3. Handling Defects

When a hazardous material shipment does not appear to be prepared for transportation:

- a. Do **not** accept or pull the hazardous material shipment or allow it to continue in transportation.
- b. Notify the customer, train dispatcher, yardmaster, or your immediate supervisor, as appropriate, and explain the problem.

Section IV

Placards and Markings

1. General Requirement

Hazardous material shipments, whether loaded or residue/empty, must **not** be accepted for transportation or transported unless they are properly placarded and marked. Not all hazardous material shipments require placards.

2. Placard Requirements

Each rail car, freight container, trailer, transport vehicle, or bulk packaging containing a hazardous material must be placarded on each side and each end in accordance with the instructions below.

Note: Unless the shipping papers indicate that the shipment is a limited quantity, all international (including Canada and Mexico) shipments of hazardous material require placards.

Placard - a sign measuring 10.8 in (273 mm) by 10.8 in (273 mm) square-on-point, communicating a hazard by symbol, color, and words or numbers (when displayed). (See Figure 4, pages 24 and 25 for pictures of placards.)

Figure 3

Types of Placards



Placard



Placard displaying identification number



Placard on a square white background

- a. Placards are required when transporting **any quantity** (bulk or non-bulk) of the following hazard classes:
 - 1.1 Explosive with mass explosion hazard;
 - 1.2 Explosive with projection hazard;
 - 1.3 Explosive with predominantly fire hazard;
 - 2.3 Gas poisonous/toxic by inhalation;
 - 4.3 Dangerous when wet material;
 - 5.2 Organic peroxide, Type B, liquid or solid, temperature controlled;
 - 6.1 Material poisonous/toxic by inhalation;
 - 7 Radioactive Yellow III shipments or exclusive use shipments of low specific activity (LSA) materials and surface contaminated objects.

(continues on next page)

Placards and Markings

- b. Placards are required when transporting a total weight of **1001 lb (454 kg) or more** (bulk or non-bulk) of the following hazard classes:
- 1.4 Explosive with no significant blast hazard;
Note: Placards are not required for Class 1.4S materials.
 - 1.5 Very insensitive explosive; blasting agents;
 - 1.6 Extremely insensitive detonating substances;
 - 2.1 Flammable gas;
 - 2.2 Nonflammable, nonpoisonous/nontoxic compressed gas;
 - 3 Flammable liquid;
 - 4.1 Flammable solid;
 - 4.2 Spontaneously combustible material;
 - 5.1 Oxidizer;
 - 5.2 Organic peroxide, other than "organic peroxide, Type B, liquid or solid, temperature controlled" (item 2a on the previous page);
 - 6.1 Poisonous/toxic material (other than material poisonous/toxic by inhalation);
Note: For U.S. transportation of Class 6.1 PG III materials, a PG III placard may be used in place of a POISON/TOXIC placard.
 - 8 Corrosive material;
 - 9 Miscellaneous hazardous material;
Exception: For U.S. transportation, Class 9 placards are not required; however, bulk shipments of Class 9 materials in the U.S. must be marked with the identification number (see item 4a, pages 28-29).
- Combustible Liquids [see item 2c(7) on the next page for non-bulk packaging];
- Mixed hazardous material classes in this item (see item 2f on the next page).
- c. Placards are **not** required for:
- (1) Hazardous material shipments with less than 1001 lb (454 kg) total weight, when the classes are included in item 2b (above);
 - (2) ORM-D (Other Regulated Materials-D);
 - (3) Class 6.2 (Infectious Substances);
 - (4) Class 9 (U.S. transportation) materials that display the identification number;
 - (5) Limited Quantity (LTD QTY) shipments when identified as such on shipping papers;

Placards and Markings

- (6) Cryogenic atmospheric gases, other than Oxygen (for example, Argon);
 - (7) Combustible liquids in non-bulk packaging (for example, drums), usually found in intermodal shipments, unless the material is a hazardous substance or hazardous waste;
 - (8) Rail cars and intermodal tanks that previously transported hazardous materials but have been cleaned and purged;
 - (9) Shipments listed as Radioactive White I or Radioactive Yellow II on shipping papers;
 - (10) Class 1.4S;
 - (11) Shipments of molten sulfur moving to the United States from Canada, provided the identification number and the words "MOLTEN SULFUR" appear on each side of the tank car.
- d. Placards may be displayed on a hazardous material shipment, even when not required, provided the placard is appropriate for the contents of the shipment.
Note: If displayed, then all instructions for that placard apply.
- e. When required to be affixed to a rail car, certain hazard classes require the display of the primary placard on white square background, including: (See Figure 3, page 21.)
- (1) Class 1.1 or Class 1.2 explosives;
 - (2) Class 2.3 Zone A or Class 6.1 Hazard Zone A poisonous-inhalation hazard material, including tank cars containing only a residue of the material;
 - (3) Class 2.1 flammable gas in cryogenic form loaded in DOT-113 tank cars, including tank cars containing only a residue of the material.
- f. When a rail car, trailer, or container is loaded with 1001 (454 kg) or more of non-bulk packages involving two or more classes of hazardous materials from item 2b, page 22, either the DANGEROUS placard or the separate placards for each hazard class may be displayed.
Note: When the DANGEROUS placard is displayed and 2205 lb (1000 kg) or more of one class of material is loaded at one loading facility, the placard for that class as specified in item 2b, page 22, must also be displayed.

(continues on page

Placards and Markings

Figure 4
Placards for Hazardous Materials by Hazard Class

Class 1 (Explosives)

Division 1.1 (Explosive with Mass Explosion Hazard)

Division 1.2 (Explosive with Projection Hazard)

Division 1.3 (Explosive with Pre-dominantly a Fire Hazard)

Division 1.4 (Explosive with No Significant Blast Hazard)

Division 1.5 (Very Insensitive Explosive)

Division 1.6 (Extremely Insensitive Explosive)

Class 2 (Gases)

Division 2.1 (Flammable Gas)

Division 2.1 (Flammable Gas in cryogenic form in DOT 113 Tank Car)

Division 2.2 (Nonflammable Gas)

Canadian Anhydrous Ammonia

Division 2.3 Zone A (Poison Gas)

Division 2.3, Zone B, C or D (Poison Gas)

Oxygen

Notes: The word "TOXIC" can be used in place of the word "POISON." May appear in conjunction with U.S. "POISON" GAS placard (INHALATION HAZARD CLASS 2) on Canadian or International Shipments.

Class 3 (Flammable Liquids)

Class 3 (Flammable Liquid)

Combustible Liquids

Combustible Liquid

Placards and Markings

Class 4 (Flammable Solids & Reactive Solids/Liquids)

Division 4.1 (Flammable Solid)

Division 4.2 (Spontaneously Combustible Material)

Division 4.3 (Dangerous When Wet Material)

Class 5 (Oxidizers & Organic Peroxides)

Division 5.1 (Oxidizer)

Division 5.2 (Organic Peroxide)

Valid through 2010 U.S. & Canada Only

Class 6 (Poisonous Materials)

Division 6.1 Zone A (Poison Inhalation Hazard or PIH)

Division 6.1 Zone B (Poison Inhalation Hazard or PIH)

Division 6.1 PG I, PGII (Poison) or PG III

Division 6.1 PG III

Note: The word "TOXIC" can be used in place of the word "POISON."

Class 7

Class 7 (Radioactive Material)

Class 8

Class 8 (Corrosive Material)

Class 9 (Miscellaneous Hazardous Materials)

Class 9 (Miscellaneous Hazardous Material)

Mixed Load

U.S.

Canadian

Text indicating the hazard is not required on placards other than the DANGEROUS and RADIOACTIVE placards. Worded hazard class text, except for DANGEROUS and RADIOACTIVE, does not have to be in English as long as the size, color, hazard class, and symbol are correct.

Placards and Markings

- g. Some shipments of hazardous material require subsidiary placards that represent secondary hazards. Subsidiary placards must **not** display a 4-digit identification number, but will display the class number at the bottom.

Note: Subsidiary placards must be displayed when the subsidiary hazard class is 2.3 or 6.1 with the notation Poison-Inhalation Hazard or Toxic-Inhalation Hazard present on the shipping papers or when the subsidiary hazard class is 4.3.

- h. For residue/empty hazardous material shipments, the rail car, trailer, or container must remain placarded in the same manner as the loaded shipment, unless the packaging:
- (1) has been cleaned of residue; *or*
 - (2) has been purged of vapor to remove any hazard; *or*
 - (3) has been refilled, with a material requiring different placards or no placards, to such an extent that any residue remaining in the packaging is no longer hazardous; *or*
 - (4) contains a residue of an elevated temperature material;

Note: This material may remain placarded in the same manner as when it contained a greater quantity even though the material no longer meets the definition of an elevated temperature material.

or
 - (5) contains a residue of a Hazardous Substance, Class 9, that does not meet the definition of another hazard class/division and is not a hazardous waste or marine pollutant.

Note: This materials may remain placarded in the same manner as when it contained a greater quantity even though the material no longer meets the definition of a Hazardous Substance, Class 9.

Inspecting for Placards

- a. Make sure that all required placards are:
- (1) consistent with the shipping description entries on the shipping papers;
 - (2) on both sides and both ends of the shipment;
 - (3) in placard holders or securely attached to the rail car, trailer, or container;
 - (4) not damaged, faded - color should be similar to the color printed in this document (see Figure 4, Placard Chart, pages 24-25), or obscured by dirt or car part;

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Placards and Markings

- (5) oriented horizontally, so you can read them from left to right;
 - (6) readily visible from the direction they face, except from the direction of another rail car, trailer, or container to which the placarded rail car, trailer, or container is coupled.
- b. When **picking up** a hazardous material shipment at the customer's facility or siding, and a placard is not correct, does not meet the standards above, or is missing:
- (1) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
 - (2) Do not accept the hazardous material shipment until corrections have been made.
- c. When a placard does not meet the standards above or is discovered missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next terminal or inspection point.

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Placards and Markings

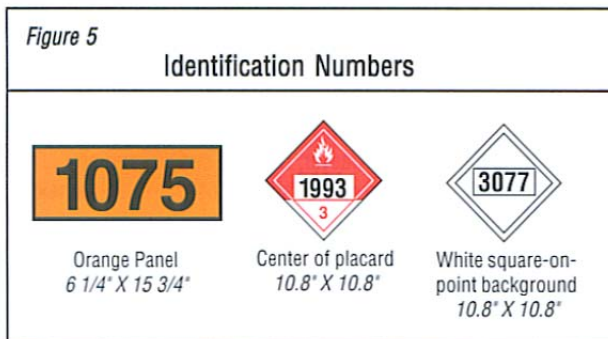
Inspecting for Markings

Marking - a descriptive commodity name, identification number, caution, such as INHALATION HAZARD, HOT, MOLTEN, MARINE POLLUTANT, FUMIGANT, NON-ODORIZED (NOT ODORIZED), or tank car qualification date displayed on hazardous material shipments.

Make sure the markings listed above are displayed on bulk packagings of hazardous material as follows:

a. Inspecting for Identification Number Marks

- (1) Identification numbers can be displayed in one of three ways, as Figure 5, below shows:



- (2) Identification number markings must appear on the placard or in proximity to the placard, when placard is displayed, on both sides and both ends of a:

- (a) **bulk package** of hazardous material (includes Class 9 materials when no placard is required);

Note: Identification number markings are not required on the ends of multi-compartmented tank cars transporting more than one hazardous material having different DOT identification numbers.

- (b) rail car, trailer, and container loaded with 8820 lb (4000 kg) or more of **non-bulk packages** of hazardous material meeting the following conditions:

- (i) Non-bulk packages when all contents have the same proper shipping name and identification number;
- (ii) Packages were loaded at one location; and
- (iii) The transport vehicle does not contain any other hazardous or non-hazardous material.

Exception: For Canadian shipments of molten sulfur, the identification number marking is only required on both sides of the tank car.

Placards and Markings

- (3) Identification numbers must **not** be displayed on the following:

- (a) EXPLOSIVES 1.1, 1.2, 1.3, 1.4, 1.5, or 1.6 placards;
- (b) Class 7 (RADIOACTIVE) placards;
- (c) DANGEROUS placards;
- (d) Subsidiary placards.

- (4) Make sure the identification numbers appear as required above and agree with the shipping description entries on the shipping papers.

- (5) When **picking up** a hazardous material shipment at the customer's facility, a siding or an interchange point and the identification number is not correct, is not legible, or is missing:

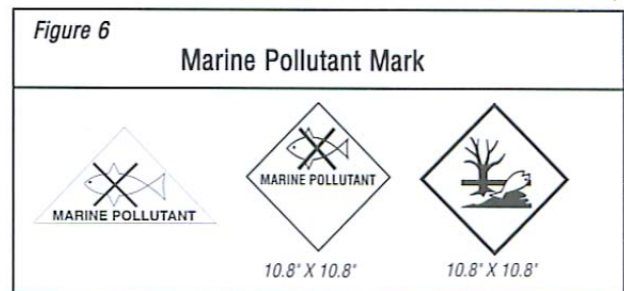
- (a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
- (b) Do not accept the hazardous material shipment until corrections have been made.

- (6) When an identification number is not correct, is not legible, or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

Note: Missing identification numbers must be replaced and may be entered on the appropriate placard, orange panel, or white square-on-point configuration by hand using a **black indelible** marker.

b. Inspecting for MARINE POLLUTANT Marks

- (1) For a material described on the shipping papers as a marine pollutant and the shipment does not require a placard, make sure the MARINE POLLUTANT mark appears on both sides and both ends of bulk packagings in one of the formats in Figure 6 below.



Note: In the U.S., MARINE POLLUTANT marks are **not** required when the bulk packaging is placarded.

Placards and Markings

- (2) When **picking up** a hazardous material shipment at the customer's facility or siding or at an interchange point, and a required MARINE POLLUTANT mark is not legible or is missing:
 - (a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
 - (b) Do **not** accept the hazardous material shipment until corrections have been made.
- (3) When a required MARINE POLLUTANT mark is not legible or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

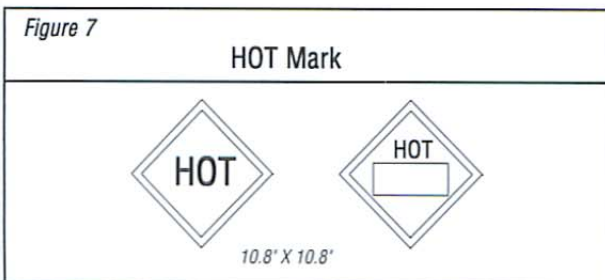
c. Inspecting for HOT Marks

- (1) For a material described on the shipping papers with the words "HOT," "ELEVATED TEMPERATURE MATERIAL," or "MOLTEN" and transported in a bulk packaging, the word "HOT" must be marked on two opposing sides of the bulk packaging, either:
 - (a) on a plain white square-on-point configuration having the same outside dimensions as a placard (see Figure 7 below); **or**
 - (b) on the packaging itself.

Note: The word "HOT" is **not** required for bulk packagings of molten aluminum or molten sulfur marked "MOLTEN ALUMINUM" or "MOLTEN SULFUR," as appropriate.

As information: A residue/empty shipment that last contained an elevated temperature material (HOT), such as asphalt, is not considered a hazardous material and does not require hazardous material shipping description entries on the shipping paper. When the shipping paper indicates empty, the shipment may be accepted and moved in rail transportation without the hazardous material shipping description entries, even though the HOT mark and identification number are displayed.

Figure 7



Placards and Markings

- (2) When **picking up** a hazardous material shipment at a customer's facility or siding or at an interchange point, and a HOT mark is not legible or is missing:
 - (a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
 - (b) Do **not** accept the hazardous material shipment until corrections have been made.
- (3) When a HOT mark is not legible or is missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

d. Inspecting for INHALATION HAZARD Marks

- (1) For a material described on the shipping papers as "Poison (Toxic) - Inhalation Hazard" or "Inhalation Hazard," make sure the words "INHALATION HAZARD" appear (in at least 3.9-inch high letters) on both sides of the rail car, trailer, or container, to the right as you face the car, near the placard.

Exception: When the words "INHALATION HAZARD" appear on the placards, the INHALATION HAZARD mark is not required on the bulk packaging.
- (2) When **picking up** a hazardous material shipment at the customer's facility or siding or at an interchange point, and the words "INHALATION HAZARD" are illegible or missing:
 - (a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
 - (b) Do **not** accept the shipment until corrections have been made.
- (3) When the "INHALATION HAZARD" mark is illegible or missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

Placards and Markings

e. Inspecting for Commodity Names

- 1) The commodity name is required on an intermodal tank transporting any hazardous materials and on a tank car transporting certain hazardous materials. The commodity name (3.9 inches in height for tank cars and 2 inches in height for intermodal tanks) must match the proper shipping name on the shipping papers and may include the technical name, although it is not specifically required. The commodity name must be on two opposing sides of the intermodal tank or tank car.
- 2) When **accepting** an intermodal tank or tank car of hazardous material from the shipper or in interchange and the commodity name is illegible or missing:
 - (a) Notify the customer, train dispatcher, yardmaster, or your supervisor, as appropriate.
 - (b) Do **not** accept the shipment until corrections have been made.
- 3) When the commodity name on an intermodal tank or tank car is illegible or missing **en route**, notify the train dispatcher, yardmaster, or your supervisor, as appropriate. Corrections must be made at the next inspection point.

f. Inspecting for Tank Car Qualification Dates

- 1) Make sure the stencils describing the tank car specification and qualification dates are legible. These stencils will appear on both sides of the tank car toward the end on the right as you face the car.
- 2) Check the tank car qualification dates for pressure relief devices (PRD), tank, and interior heater coils to be sure they are current. A tank car is overdue its periodic qualification date after the last day of the year shown in the DUE column. (See Figure 8 on the next page.)
 - (a) When the tank car was loaded after the end of the qualification year, do **not** accept the loaded tank car from the shipper.
 - (b) When the tank car was loaded before the end of the qualification year, it may be accepted from the shipper and transported beyond the qualification year for unloading purposes, but must be requalified before reloading.

Note: When a residue/empty tank car is overdue its periodic qualification date, the tank car may move and not be in violation of DOT

Placards and Markings

regulations. The regulations only address **loading** a tank car overdue for its periodic qualification.

- (3) When found in transportation, a tank car with an overdue qualification date may proceed to destination.

Figure 8

Tank Car Qualification Stencil

Tank Car Qualification Stencil (Example of new style)

DOT 111A100W1

	STATION STENCIL	QUALIFIED	DUE
TANK QUALIFICATION	ABC-1	2003	2013
THICKNESS TEST	ABC-1	2003	2013
SERVICE EQUIPMENT	ABC-1	2003	2013
PRD: VALVE	75 PSI	DEF-1	2003 2013
INT HTR	SPGR	FGL-1	2003 2008
LINING	ABC-1	IP	NONE
88.B.2 INSPECTION	ABC-1	2003	2013
STUB SILL INSPECTION	ABC-1	2003	2013

Tank Car Qualification Stencil (Example of old style)

DOT 112J340W

Safety Valve	280.5 LB
Tested 2006	Due 2016
Tank	340 LB
Tested 2006	Due 2016
Heater Pipes	200 LB
Tested 2006	Due 2011

g. Inspecting for Non-Odorized Marks

As information: A tank car or intermodal tank container shipment containing liquefied petroleum gas (LPG) that is unodorized must be legibly marked NON-ODORIZED or NOT ODORIZED on two opposing sides near the commodity name or near the placards.

The NON-ODORIZED or NOT ODORIZED marks may appear on a tank car or tank container used for both unodorized and odorized LPG.

Shippers may include on shipping papers the information that the shipment is not odorized, if they so choose.

Placards and Markings

h. Inspecting for FUMIGANT Marks

- (1) *As information*, the purpose of the FUMIGANT mark (see Figure 9 below) is to warn persons unloading the rail car, trailer, or container that it has been fumigated and that they must take appropriate precautions before unloading the car. The (*) on the mark will be replaced by the name of the fumigant.
- (2) The FUMIGANT mark must be in English. However, EPA regulations allow another language in addition to the English version on the same FUMIGANT mark or an additional one.
Note: The fumigant marking is required on each point of entry to a trailer or container.
- (3) Shipping paper entries for fumigated shipments:
 - (a) For U.S. shipments, shipping description entries are not required on the shipping papers.
 - (b) For international (including Canada) shipments, shipping description entries include: UN 3359, Fumigated Unit, name of the fumigant, amount of fumigant, date of fumigation, and any disposal information.

Figure 9

Fumigant Mark



Actual color of letters and symbol is red.

Section V

Switching

1. General Requirement

Switch placarded hazardous material shipments only in compliance with the restrictions on the Switching Chart (see Figure 10, pages 37-38).

Switching - "The operation of moving rail cars within a yard in order to place them in a train or on a classification, repair, or storage track." Switching also includes making pickups and setouts at a customer's facility or interchange point.

Switching does **not** include moving rail cars to or from a shipper's facility or on an industrial lead into or out of the yard.

Reminder: When moving rail cars to or from a shipper's facility or on an industrial lead into or out of the yard, comply with **both** the train placement restrictions in Section VI and the required documentation requirements in Section II.

When loaded placarded tank cars are cut off in motion, the coupling speed must not exceed 4 miles per hour.

2. Safety

Before coupling, position yourself toward the end of a tank car, if possible, away from the manway and valves. Contents of tank cars may splash during or immediately following coupling, due to either improperly secured closures or the impact of coupling.

3. When to Use the Switching Chart

Refer to the Switching Chart:

- a. when moving a placarded hazardous material shipment in a yard to place it in a train or on a classification, repair, or storage track;
- b. when making pickups or setouts of a placarded hazardous material shipment at a customer's facility, interchange point, or other setout point.

Switching

4. How to Use the Switching Chart

- a. Select the applicable column and row of the Switching Chart. To do so:
 - (1) Identify the placards and/or markings applied to the car, either from information on the shipping papers or from observation.

Note: When placards are displayed but are not required by regulation (permissive placarding), the rail car must be switched as required for the placard displayed.
 - (2) Determine whether the car is loaded or residue/empty.

Note: Residue/empty tank cars are identified on switch lists, track lists, and track inquiries with an "E" or "DE" in the appropriate field. The notation "RESIDUE: LAST CONTAINED" on the shipping papers indicates a residue/empty shipment. If in doubt, treat as a load.
 - (3) Identify the car type involved by observation, for example, tank car, hopper car, gondola, etc.
- b. Find the applicable section on the chart, based on the placard or marking applied, the load/empty status, and the car type.
- c. Follow the restrictions listed in the applicable section of the chart.

Section VI

Train Placement

1. General Requirement

A placarded hazardous material shipment must be placed in a train in compliance with the instructions on the Placement in Train Chart (see Figure 12, pages 40-41). **Note:** Correct any hazardous material train placement errors at the first location that allows switching, once the error is identified.

2. When to Use the Placement in Train Chart

Use the chart to make sure hazardous material train placement is correct:

- a. before a train departs the initial terminal;
- b. before a train departs a location where pickups and setouts were made en route;
- c. when delivering cars to or picking cars up at interchange tracks owned and operated by another railroad.

3. How to Use the Placement in Train Chart

- a. Select the applicable column of the Placement in Train Chart, pages 40-41.
 - (1) Find the placard or marking applied to the car *or* find the placard endorsement on the shipping papers. If a placard displayed is not required (permissive placarding), place the car as required for the placard applied.
 - (2) Determine the load/empty status of the car (see note 3 on Placement in Train Chart, page 41):
 - (3) Identify the type of car involved by inspection.
 - (4) Find the appropriate column (A, B, C, D, E, F, G) based on the placard applied, load/empty status, and car type or by using Figure 11 below.
- b. Follow the instructions to the right as indicated by the colored squares or "X"s in that column.

Train - one or more engines coupled, with or without rail cars, displaying a marker, requiring an appropriate air brake test, and authorized to operate on a main track.

Note: This also applies to movements on an industrial lead.

Figure 11
Placard Endorsement Conversion Chart

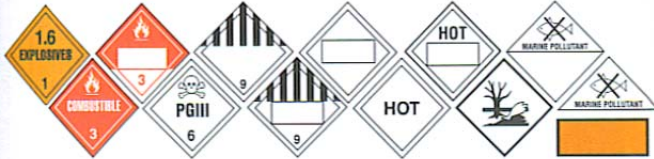
If the placard endorsement is:	Use Column
(No endorsement - empty box)	A
..... DANGEROUS	B, C, or D
..... RADIOACTIVE MATERIAL	E
..... POISON PG I ZONE A (1)	F
..... POISON GAS ZONE A (1)	F
..... EXPLOSIVES (1)	G
..... EXPLOSIVES AND POISON GAS (1)	G

Note: (1) Placard may have a square white background.

Switching

Figure 10: Switching Chart

A. There are no switching restrictions for hazardous material shipments placarded or marked:

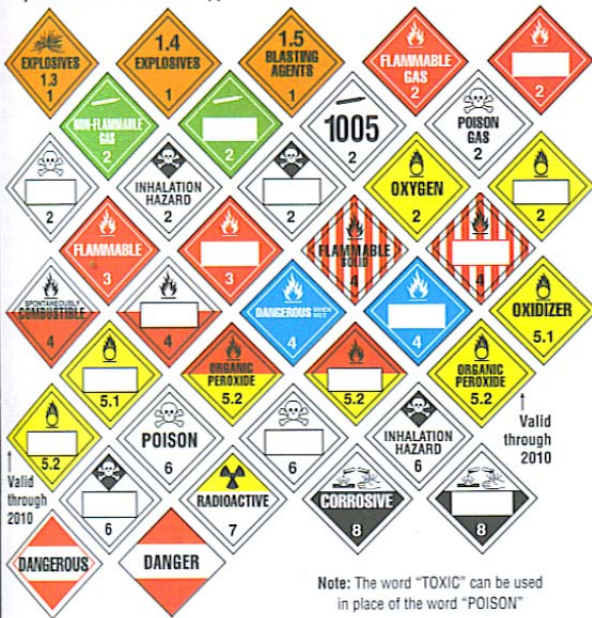


Residue/empty tank cars containing hazardous materials have no switching restrictions. [See Section V, Item 4 a (2), page 36.]

Exception: Residue/empty DOT 113 tank cars placarded FLAMMABLE GAS must be switched according to the restrictions in C below. These shipments can be identified by the notation "DESC" in the "SPCD" (Special Conditions) column of a switch list or track list or by the notation "DOT 113, DO NOT HUMP OR CUT OFF CAR WHILE IN MOTION" on the shipping paper.

B. For hazardous materials shipments placarded:

Note: For flat cars or articulated flat cars carrying freight containers, trailers, tote bins, portable tanks, or IM portable tanks with placards in this section, only restriction 1 in C below applies.



Note: The word "TOXIC" can be used in place of the word "POISON"

Restrictions:

1. When moving over a hump,
 - a. Release any loaded placarded cars (not subject to the restrictions in C below) to roll free only in cuts of two cars or less.
 - b. Release any rail cars to be coupled into a loaded placarded car only in cuts of two cars or less.
 - c. For loaded TIH/PIH tank cars shown on a switch list as "NK," "FLAT YARD-DO NOT KICK" or displaying INHALATION HAZARD placards or markings:
 - (1) release these tank cars **only** when any preceding cars are clear of the track these cars will enter **and** the switch is lined for that track.
 - (2) release any cars to follow into a different track or group only after these tank cars have cleared the lead and the switch is lined for the next move.
2. Except when moving over a hump, shove to rest any loaded TIH/PIH tank cars shown on the switch list as "NK", "FLAT YARD - DO NOT KICK" or displaying INHALATION HAZARD placards or markings - do not kick these cars or cut them off in motion.
3. For loaded tank cars of flammable gas:
 - a. When allowed to roll free, release them in cuts of two cars or less.
 - b. For cars allowed to roll free directly into these loaded tank cars, release them in cuts of two cars or less.

C. For any hazardous material shipments placarded:

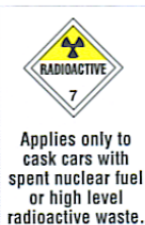
Note: Restriction 1 also applies to any loaded placarded rail car including flat cars or articulated flat cars carrying freight containers, trailers, tote bins, portable tanks, or IM portable tanks with placards shown in B above.



Any DOT 113 tank car (load or residue/empty) placarded



Any car carrying rocket motors placarded



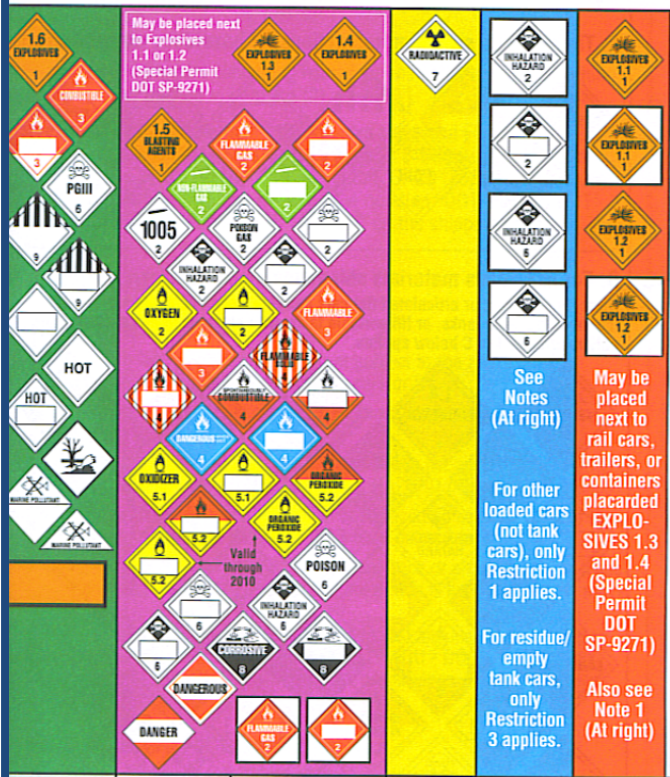
1. Follow these restrictions:

- Do not kick or hump these rail cars.
- Do not cut off these rail cars in motion.
- Do not couple into these cars with any more force than necessary to make the coupling.
- Do not allow a rail car moving under its own momentum to strike these rail cars.

2. Follow these additional restrictions for any car placarded EXPLOSIVES 1.1 or EXPLOSIVES 1.2:

- Separate these rail cars from an engine by at least one buffer car, either
 - a non-placarded rail car; or
 - a rail car with a placard or marking shown in A above.
- Do not place or leave these rail cars where there is any probable danger of fire (for example, switch heater).
- Do not place or leave these cars under bridges, under overhead highway crossings (overpasses), or along passenger stations.

Figure 12: Placement in Train Chart



Any loaded or residue/empty cars	Other loaded cars (not tank cars)	Tank cars		Any loaded cars	Loaded tank cars	Any loaded cars
		Residue/empty	Loaded			
A	B	C	D	E	F	G
No Restrictions			X		X	X
		X	X	X	X	X
			X		X	X
			X		X	X
			X		X	X
			X		X	X

Train Placement

General Information

- A. For train placement purposes, each platform or well of an intermodal rail car is counted as one car.
- B. There are no train placement restrictions for end-of-train devices.
- C. A buffer car for train placement purposes is a:
 - non-placarded rail car,
 - placarded/marked rail car from Column A (green),
 - placarded rail car, other than a tank car, provided it complies with all applicable restrictions below, or
 - placarded residue/empty tank car, provided it complies with Restriction # 3 below.
- D. Diamond-shaped placards without a square white background may have different restrictions than those with the square white background. For example, the INHALATION HAZARD (2) diamond-shaped placard (without the square white background) is found in the purple column. The INHALATION HAZARD (2) placard with a square white background is found in the blue column.

Notes

- 1. If the placard on a rail car is displayed on a square white background – EXPLOSIVES 1.1, EXPLOSIVES 1.2, INHALATION HAZARD (2), or INHALATION HAZARD (6), the car must be placed next to and ahead of any car occupied by guards or technical escorts accompanying the car. If the rail car occupied by guards or technical escorts is equipped with a lighted heater or stove, there must be at least three cars between the escort car and a rail car placarded EXPLOSIVES 1.1 or EXPLOSIVES 1.2.
- 2. The word "TOXIC" can be used in place of the word "POISON."
- 3. Residue/empty tank cars are identified on train consists/Train Lists and /RD Track Lists by the notation "RESIDUE: LAST CONTAINED." If in doubt, treat the car as a load.
- 4. For helper units and distributed power units, see Section VII, Item 3.

Restrictions

- 1. Do not place a placarded car next to any loaded rail car displaying a placard found in the columns with color indicated by the squares. For example: a placard shown in Column D (purple) must not be placed next to any loaded rail car placarded in Columns E (yellow), F (blue), and G (red).
- 2. Do not place a placarded car nearer than the sixth car from an engine (working or not working) or occupied caboose/business car. If the train does not have at least five buffer cars, the available buffer cars must be placed to protect the engine (working or not). If there is an occupied caboose/business car in the train, the buffer cars must be divided equally to protect both the engine and caboose/business car. At least one buffer car is required.
- 3. Do not place a placarded car next to an engine (working or not working) or occupied caboose/business car regardless of train length.
- 4. Do not place a placarded car next to a loaded flatcar **except** closed TOFC/COFC equipment, auto carriers, and other specially-equipped cars with tie-down devices for handling vehicles.
- 5. Do not place a placarded car next to a loaded bulkhead flatcar or open top car when any of the lading protrudes beyond the car ends or, if shifted, would protrude beyond the car ends. **Note:** Do not place a placarded car next to flat cars designed for wheel sets or traction motors or flat cars with tote bins without bulkheads extending more than half the height of the tote bins.
- 6. Do not place a placarded car next to any rail car, transport vehicle, or freight container with an open flame device or an internal combustion engine in operation. **Note:** Does not apply to cryogenic refrigerated equipment, but does apply to mechanical reefer equipment in protective service.

Section VII

Train Operations

General Requirement

Trains transporting hazardous materials will be operated in compliance with the DOT regulations and UPRR rules.

Operating Key Trains

Trains carrying a specified number of loaded rail cars, trailers, and containers of hazardous material will be operated as "key trains."

a. Definition:

A "Key Train" is any train that meets one or more of the following three conditions:

- (1) one (1) or more **loads** of spent nuclear fuel (SNF) or high level radioactive waste (HLRW) moving under the following Hazardous Materials Response Codes -- 4929142, 4929143, and 4929144; *or*
- (2) five (5) or more car **loads** of **any combination** of either hazardous material shipments that require the phrase "Poison/Toxic-Inhalation Hazard" (PIH or TIH) (Hazard Zone A, B, C, or D) on the shipping papers **and/or** shipments of anhydrous ammonia (Identification Number 1005); *or*
- (3) twenty (20) or more car **loads** or intermodal portable tank **loads** of hazardous materials [including less than 5 car loads under (2) above].

Exception: Do **not** count shipments carrying mixed loads of hazardous materials (MXHAZD) in box cars, trailers, or containers when determining key train status.

b. Identifying Key Trains

- (1) A computer-generated Train List will identify Key Train status in the header block on the first page.
- (2) When a computer-generated Train List is not available or hazardous material cars are added to a train, the conductor must review the shipping papers for all hazardous material cars and determine Key Train status.
- (3) After picking up or setting out hazardous material shipments **en route**, the Key Train status may change. The conductor must determine whether or not Key Train status has changed and, if so, promptly notify the train dispatcher.

c. Instructions for Operating Key Trains

- (1) The maximum authorized speed for Key Trains is 50 MPH, unless further restricted (see next page).

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Train Operations

Note: Where lower speed restrictions are in effect, or when the Key Train is restricted to a lower speed for other reasons, the lower speed governs.

- (2) Only cars equipped with roller bearings will be allowed in a Key Train.
- (3) When a train defect detector reports a defect in a Key Train, refer to **System Special Instructions**, Item 13.
- (4) All cabooseless key trains must be equipped with an operable end-of-train telemetry device when operating on main track.

Note: When an EOT device fails en route, a Key Train can pick up a hazardous material shipment and continue to the next terminal where the EOT device can be repaired or replaced. At this terminal, the EOT device must be repaired or replaced before the Key Train can be moved farther. All other End of Train (EOT) rules in the **Air Brake and Train Handling Rules** remain in effect.

- (5) When operating a Key Train or a train transporting one or more PIH/TIH shipments on a foreign road, the crew operating the train must notify the foreign road's train dispatcher that their train is a Key Train as defined by UPRR's **Instructions for Handling Hazardous Materials** or is a train transporting one or more PIH/TIH shipments. **Note:** This notification must occur at the earliest opportunity, unless relieved of the requirement to do so by the UPRR train dispatcher.

3. Helper Units

- a. A train with distributed power (DP) or a manned helper must comply with Restriction 2 on Figure 12: Placement In Train Chart (pages 40-41).
- b. In an emergency, a train with a placarded rail car on the rear of the train may be helped as long as one buffer car is placed between the placarded rail car and the helper unit.

Note: A buffer car is not required if the placarded rail car on the rear is from one of the following columns in Figure 12: Placement in Train Chart (pages 40-41).

- (1) Column A,
- (2) Column B,
- (3) Column F and is "other than a tank car."

4. Movements on Excepted Track

Do not operate a train that contains more than five placarded hazardous material cars on any track designated as "FRA Excepted Track."

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Section VIII

Emergency Response

General Requirement

When an emergency occurs, **SAFETY IS OF FIRST IMPORTANCE.**

- a. Make an emergency call as radio rules require.
- b. Look for a fire or vapor cloud.
- c. Determine the status of crew members in the area.
- d. Warn everyone to keep at a safe distance.

Actions to Take When a Fire or Vapor Cloud is Visible

- a. Take the shipping papers (including the emergency response information) and move yourself and other crew members uphill and upwind (in the direction from which the wind is blowing) at least one half mile. Stay out of ditches and low areas.
- b. Do not smoke or use fuses.
- c. Provide the train dispatcher or yardmaster with as much of the following information as is available:
 - (1) Specific location of the emergency (station, mile post location, nearest street or crossing);
 - (2) Type of emergency;
 - (3) Status of crew members;
 - (4) Cars involved, including the initials and numbers of each car involved, and each car's condition, for example, leaking, derailed, or on fire;
 - (5) Surroundings, for example, proximity to populated areas, local bodies of water, nearby drainage ditches, or storm sewers; description of terrain; location of access roads; weather conditions;
 - (6) Resources necessary to handle the situation, for example, fire, ambulance, and law enforcement agencies;
 - (7) Location where a crew member with shipping papers will meet arriving emergency response personnel.
- d. Once you are in a safe location:
 - (1) Identify yourself and cooperate with the local emergency response personnel as described in item 4, page 46.
 - (2) Review your shipping papers and emergency response information.

Emergency Response

- (3) If necessary, move to the farthest distance recommended in:
 - (a) the Evacuation Section of the emergency response information accompanying the shipping papers; *or*
 - (b) information from the **Emergency Response Guidebook.**

3. Actions to Take When No Fire or Vapor Cloud is Visible

- a. Review the shipping papers for hazardous material shipments.
- b. Take the shipping papers (including the emergency response information) and inspect the train to identify the rail cars, trailers, or containers involved, and look for indications of the release of hazardous materials.
- c. If you encounter a hazardous material release, unusual smells, or noises during this inspection:
 - (1) Avoid contact with the material and its vapors.
 - (2) Move yourself and other crew members uphill and upwind (in the direction from which the wind is blowing) at least one-half mile. Stay out of ditches and low areas.
 - (3) Eliminate any ignition sources (no smoking, no fuses).
 - (4) Warn all bystanders to stay away.
- d. After completing the inspection, notify the train dispatcher or yardmaster with as much of this information as is available:
 - (1) Status of crew members;
 - (2) Cars involved, including the initials and numbers of each car involved, and each car's condition, for example, leaking, derailed, or on fire;
 - (3) Surroundings, for example, proximity to populated areas, local bodies of water, nearby drainage ditches, or storm sewers; description of terrain; location of access roads; weather conditions;
 - (4) Resources necessary to handle the situation, for example, fire, ambulance, and law enforcement agencies;
 - (5) Location where a crew member with shipping papers will meet arriving emergency response personnel.

(continues)

Emergency Response

- e. Once you are in a safe location:
- (1) Identify yourself to and cooperate with the local emergency response personnel as described in item 4 below.
 - (2) Review your shipping papers and emergency response information.
 - (3) If necessary, move to the farthest distance recommended in:
 - (a) the Evacuation Section of the emergency response information accompanying the shipping papers; *or*
 - (b) information from the **Emergency Response Guidebook**.
4. **Cooperating with Local Emergency Responders**
- a. Share any requested information from the shipping papers with emergency response personnel.
 - (1) Provide an extra copy of the Train List, when available. If an extra copy is not available, share the copy you have with the emergency response personnel.

Note: Retain any waybills and a copy of the Train List until you can deliver them to the first railroad manager on the scene.
 - (2) Provide a copy of the emergency response information provided with the shipment.
 - b. Help emergency response personnel identify cars and the commodities involved. Use shipping papers or observations from a safe location to accomplish this task.
 - c. Give the first railroad manager on the scene an oral description of the incident and indicate any assistance you provided emergency responders.
 - d. Remain at the scene, at a safe distance, until a railroad manager relieves you.
 - e. A railroad spokesperson will handle discussing the incident with the media or other non-emergency response personnel.
5. **Handling Leaking Hazardous Material Shipments**
- See Section III, item 2a(1)(d) on page 17 for the instructions regarding the handling of leaking hazardous material shipments.

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Appendix

Special Permit Authorization DOT-SP 9271 (Eleventh Revision)

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

**SPECIAL PERMIT AUTHORIZATION
DOT-SP 9271
EXPIRATION DATE: February 28, 2010**

GRANTEE: Union Pacific Railroad Company
Omaha, NE

In response to your February 27, 2006 application for renewal of DOT-SP 9271, the grantee status to DOT-SP 9271 for Union Pacific Railroad Company is hereby renewed in accordance with 49 CFR § 107.109.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permit/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

If you have questions regarding this action please call the Office of Hazardous Materials Special Permits and Approvals at (202)366-4535.

Issued in Washington, D.C. on **March 17, 2006**.

for Robert A. McGuire
Associate Administrator for Hazardous Materials Safety

This appendix is published here in compliance with the DOT special permit regarding car separation requirements for Division 1.1, 1.2, 1.3, and 1.4 explosives.

**DOT-SP 9271
(ELEVENTH EDITION)
(FOR RENEWAL, SEE 49 CFR § 107.109)**

1. **GRANTEE:** Union Pacific Railroad Company - Omaha, NE
2. **PURPOSE AND LIMITATION:**
 - a. This special permit authorizes the deviation from car separation requirements for transportation in commerce of packages prescribed herein of Division 1.1, 1.2, 1.3, and 1.4 explosives. This exemption provides no relief from any Hazardous Materials Regulation (HMR) other than as specifically stated herein.
 - b. The safety analysis performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.

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Special Permit DOT-SP 9271

- REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
- REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 174.203(a) in that marking the shipping paper with the special permit number is waived; and § 173.302(c) in that marking the special permit number on the packaging is waived; and § 174.85(d) Table in that deviation from car separation requirements is authorized, except as specified therein.
- BASIS: This special permit is based on the application of Union Pacific Railroad Company dated August 21, 2002, submitted in accordance with § 107.109.
- HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name Hazardous Materials Description	Hazard Class/ Division	Identi- fication Number	Packing Group
Various explosives particularly Rocket motor and spacecraft assemblies	1.1	As appropriate	As appropriate
	1.2		
	1.3		
	1.4		

- 7. SAFETY CONTROL MEASURES: Prescribed packaging is as defined in 49 CFR Part 173, Subpart C.
- 8. SPECIAL PROVISIONS:
 - a. The car separation requirements of § 174.85 are waived in lieu of the following:
 - (1) Flatcars carrying loaded trailers or containers placarded EXPLOSIVES 1.1 or 1.2 may be placed next to flatcars loaded with trailers or containers placarded EXPLOSIVES 1.3 or 1.4 without a buffer car in between.
 - (2) Flatcars in trailer-on-flatcar or container-on-flatcar service with loads placarded EXPLOSIVES 1.1 or 1.2 may be placed next to non-placarded, loaded, specially equipped cars in trailer-on-flatcar service or container-on-flatcar service, or may be placed next to flatcars loaded with vehicles secured by means of a device designed for that purpose and permanently installed on the flatcar and of a type generally accepted for handling in interchange between railroad (i.e., bi-level and tri-level auto racks).
 - (3) Flatcars with rocket motors, placarded EXPLOSIVES 1.1, 1.2, 1.3 or 1.4, in trailers with automatic refrigerator or heating apparatus in operation may be placed next to flatcars with rocket motors, placarded either EXPLOSIVES 1.1, 1.2, 1.3 or 1.4, in trailers with automatic refrigerator or heating apparatus in operation. This apparatus must conform to DOT Special Permit 5022.
 - (4) Freight cars placarded EXPLOSIVES 1.1 or 1.2 may be placed next to a freight car placarded EXPLOSIVES 1.3 or 1.4 without a buffer car in between.

Special Permit DOT-SP 9271

- b. Carriers who receive packages covered by this exemption in interchange may transport the packages under the terms of this exemption provided a copy of this exemption is maintained at the carrier's principle place of business and is made available to a representative of the Department of Transportation upon request.
- c. Sections 172.203(a) and 172.302(c) are waived.
- 9. MODES OF TRANSPORTATION AUTHORIZED: Rail freight.
- 10. MODAL REQUIREMENTS: A current copy of this special permit or a current transcript of the complete text without the signature in a carrier provided document must be in the possession of a member of the train crew.
- 11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq.:
 - a. All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - b. Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - c. Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when the special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation, Equity Act: A Legacy for Users (SAFETEA-LU) - "The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.
- 12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under the terms of this special permit.

Issued in Washington, D.C.: Robert A. McGuire, Associate Administrator for Hazardous Materials Safety

Glossary

- a. **Buffer car** – a rail car used to meet the hazardous material separation requirements in either switching or train operations. (See Figure 10: Switching Chart, Row C, item 2, first bullet, page 38 or Figure 12: Placement in Train Chart, General Information, item C, page 41.)
- b. **Bulk packaging** - packaging with capacity greater than 119 gal (450 l) or 882 lb (400 kg), for example: bulk bags, intermodal (IM) portable tanks, portable tanks, portable bins, gondola cars, hopper cars, or tank cars.
- c. **Container** – any freight container, IM portable tank, portable tank, or portable bin.
- d. **Emergency** – an unforeseen combination of circumstances or the resulting state that calls for immediate action, for example, derailment and leaking rail car, trailer, or container).
- e. **Hazard class** - the category of hazard assigned to a material. A class may be subdivided into divisions for clarity. A class may be expressed as a number or with words.
- f. **Hazardous material** - a substance or material which the Secretary of Transportation has determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The term "hazardous material" includes hazardous substances, hazardous wastes, elevated temperature materials (HOT or MOLTEN), and marine pollutants.
- g. **Hazardous material shipment** - a hazardous material in rail cars, trailers, or containers in rail transportation. All hazardous material shipments require shipping papers. When moved in rail cars, trailers, or containers, hazardous material shipments may or may not be placarded or marked with an identification number.
- h. **Hazardous material response information** - hazard and response information for each hazardous material, contained in either the train documentation or the *Emergency Response Guidebook* (ERG), to assist response personnel at hazardous material incidents.
- i. **Hazardous waste manifest** - a document specifically for tracking hazardous wastes in transportation. It contains the shipping description and identifies the waste generator, each transporter, and the disposal facility.

Glossary

- j. **Hazard zone** - one of four levels of inhalation hazard (Hazard Zones A through D) assigned to gases, and one of two levels of hazard (Hazard Zones A and B) assigned to liquids that are poisonous/toxic by inhalation. For example, when the hazard zone is "A," it is shown on the shipping paper as "Zone A." Zone A is the most hazardous, and Zone D is the least hazardous.
- k. **Improvised explosive device (IED)** - is a device fabricated in an improvised manner incorporating explosives or destructive, lethal, noxious, pyrotechnic, or incendiary chemicals in its design. This device generally includes a power supply, a switch or timer, and a detonator or initiator.
- l. **Inhalation hazard** - term used to identify certain gases and liquids that may cause health problems if inhaled/breathed in very low concentrations for short periods of time.
- m. **Interchange** - the process of transferring rail cars to or from another railroad.
- n. **Label** - a sign, similar to a placard, measuring 4 by 4 inches square-on-point, communicating a hazard by symbol, color, and words or numbers.
- o. **Limited quantity (LTD QTY)** - a term used on shipping papers to indicate a hazardous material shipment which is allowed an exception to the labeling, packaging, and placarding requirements because the hazard associated with a small package is low.
- p. **Marking** - a descriptive commodity name, identification number, caution (such as INHALATION HAZARD, HOT, MOLTEN, or MARINE POLLUTANT), or tank car qualification date displayed on hazardous material shipments (see Section IV, pages 28-34 for marking requirements).
- q. **Movement approval** - one time authorization to move a non-conforming package (one that does not meet the applicable hazardous materials regulations). This Approval provides no relief of any regulations other than specifically stated in the Approval.
- r. **N.O.S.** - initials, found on shipping papers, which mean "Not Otherwise Specified."
- s. **Non-bulk packaging** - packaging with a capacity equal to or less than 119 gal (450 l) or 882 lb (400 kg), for example, bags, bottles, boxes, cylinders, or drums.

Glossary

- t. **ORM-D (Other Regulated Material - D)** - a material such as a consumer commodity that, due to its form, quantity, and packaging, presents such a limited hazard that it is not subject to the hazardous material regulations when transported by rail.
- u. **Packing group** - a grouping of hazardous materials according to the degree of danger:
- Packing Group I (shown as "PG I" or "I" on the shipping papers) indicates great danger.
 - Packing Group II (shown as "PG II" or "II" on the shipping papers) indicates medium danger.
 - Packing Group III (shown as "PG III" or "III" on the shipping papers) indicates minor danger.
- v. **Placard** - a sign measuring 273 mm (10.8 in) by 273 mm (10.8 in) square-on-point, communicating a hazard by symbol, color, and words or numbers (when displayed). Some placards must be displayed on a square background which is white with a black border (see Figure 4, pages 24-25 for pictures of placards).
- w. **Placarded car** - a rail car displaying placards in accordance with DOT regulations.
- x. **Placard endorsement** - a box of asterisks, with or without wording, printed on railroad-produced shipping papers only, to indicate the presence of hazardous material shipments. No longer required by DOT regulations.
- y. **Poison/Toxic Inhalation Hazard (PIH or TIH) or Inhalation Hazard** - term used to identify certain gases and liquids that may cause health problems if inhaled/breathed in very low concentrations for short periods of time.
- z. **Position-in-train document** - a document showing the current position of all hazardous material shipments within the train. This document could be the Train List or a separate document specifically for this purpose.
- aa. **Protective service** - condition associated with mechanical refrigerators where temperature control is required and provided by an internal combustion engine. The internal combustion engine may be controlled by an internal thermostat or remote control via satellite. Protective Service is indicated on the Train List as PS or PROTECTIVE SERVICE.
- ab. **Rail car** - equipment used in rail transportation, for example, box car, flat car, gondola car, hopper car, tank car, or caboose, but not an engine.

Glossary

- ac. **Residue** - the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent possible. It is indicated on the shipping papers by the phrase "RESIDUE: LAST CONTAINED" before the proper shipping name.
- ad. **Security inspection for PIH/TIH shipments** - a ground level inspection of a loaded Poison/Toxic Inhalation (PIH/ TIH) car for signs of tampering, including its seals and closures, any item that does not belong, suspicious items, or Improvised Explosive Devices (IEDs).
- ae. **Shipper's certification** - a signed (or electronically printed) declaration on the shipping paper provided by the shipper to the first transporter for a loaded hazardous material shipment. It indicates compliance with the DOT regulations. The certification must be signed by hand or mechanically. It may read either:
- "This is to certify that the above-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation."
- or*
- "I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name, and are classified, packaged, marked, and labeled/ placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations."
- Note:** A shipper's certification is required on any shipping paper that the customer provides to the crew for loaded hazardous material cars.
- af. **Shipping paper** - any document providing the appropriate entries for a hazardous material shipment (see Section II, pages 7-15, for shipping paper requirements).
- ag. **Special permit** - a document issued by DOT permitting a person to perform a function that is not otherwise permitted under the regulations.
- ah. **Switching** - the operation of moving rail cars within a yard, at a customer's facility, or at an interchange point, in order to place them in a train or on a classification, repair, or storage track. It does **not** include moving rail cars to or from a shipper's facility or industry track into or out of the yard.
- ai. **Technical name** - a recognized chemical name used in scientific and technical handbooks, journals, and texts to further identify a hazardous material.

Glossary

- aj. **Toxic Inhalation Hazard (TIH)** - term used to identify certain gases and liquids that may cause health problems if inhaled/breathed in very low concentrations for short periods of time.
- ak. **Train** - one or more engines coupled, with or without rail cars, displaying a marker, requiring an appropriate air brake test, and authorized to operate on a main track.
Note: This also includes movements on an industrial lead.
- al. **Yard** - a system of tracks, other than main tracks and sidings, used for making and breaking up trains and for other purposes, such as repair or storage of cars.