

# FRA Office of Safety Hazardous Materials Division



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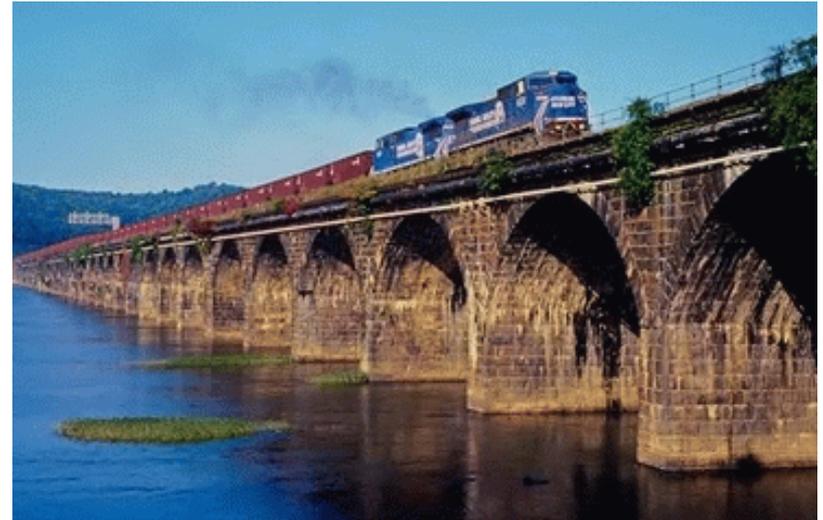
# Introduction

## HM Division Background

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- Staffing

## HM Division Activities

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- Oil Spill Response Plans
- Real-time Hazmat Information Sharing
- LNG Movements by Rail
- ARI Railworthiness Directive
- RSAC Regulatory Review



# HM Authority

Within the U.S. DOT, the Pipeline and Hazardous Materials Safety Administration (PHMSA) is the operating administration responsible for promulgating the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180).

FRA is the operating administration responsible for enforcing the HMR related to the movement of hazardous materials by rail.

# HM Division Goal

The goal of FRA's HM safety program is to manage the risks inherent to the transportation of HM by rail. Achievement of this goal requires reducing and eliminating risk, where possible, to protect the public and ensure the continuing economic viability of the Nation. The goal is cultivated through a variety of compliance tools including:

- Education
- Inspection
- System assessments
- Enforcement

# HM Staffing

## Headquarters

- Staff Director (Vacant)
- HM Specialists (6)
- QA Specialists (4)
- Packaging Engineers (2)

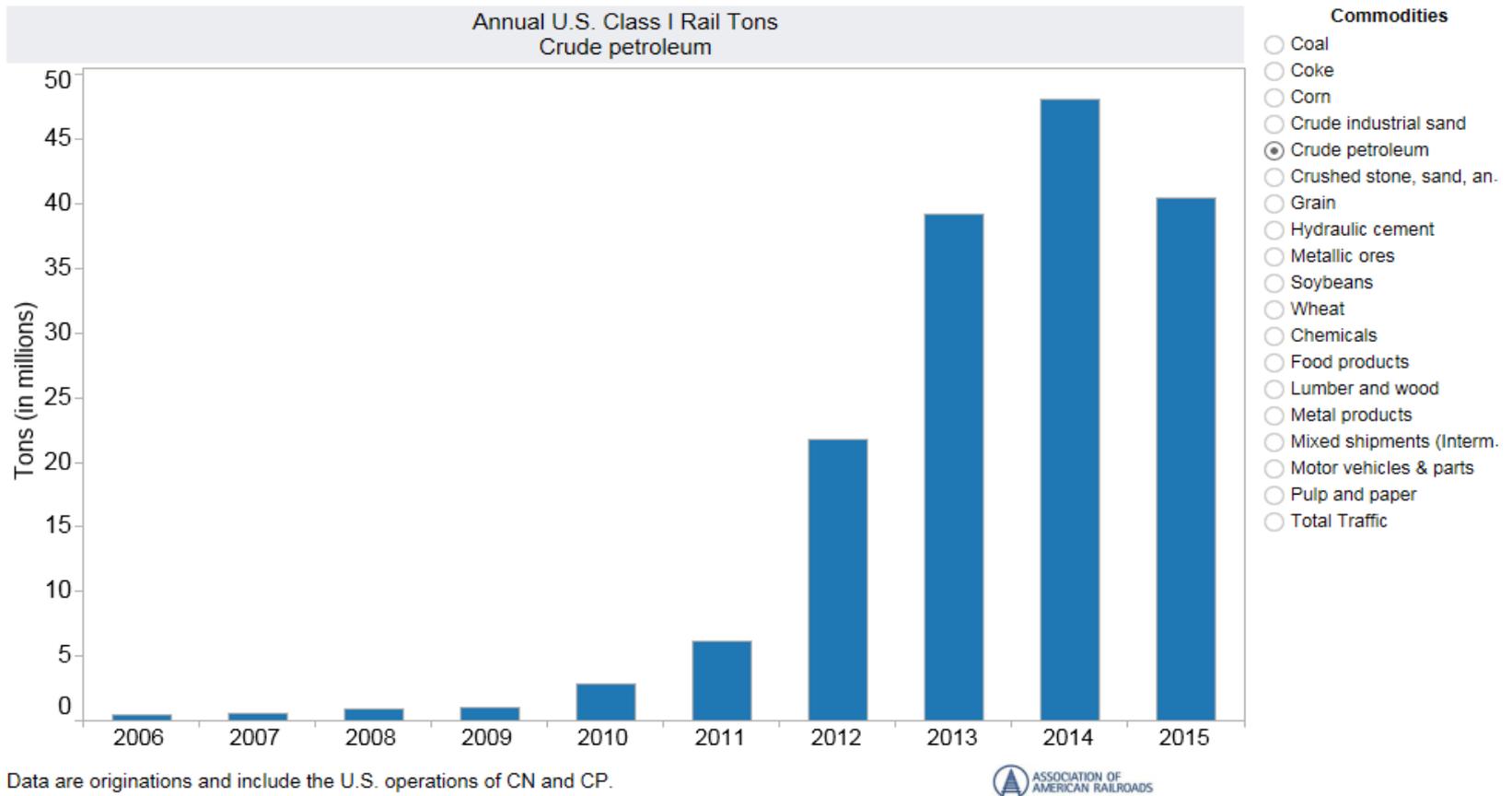
## Eight Regions

- Regional Specialist (8)
- Federal HM Inspectors (63)
- State Inspectors

# Crude Oil Trends

## ANNUAL RAIL TRAFFIC DATA

SHARE



Office of Safety Assurance and Compliance - HAZMAT Division

11/21/2016



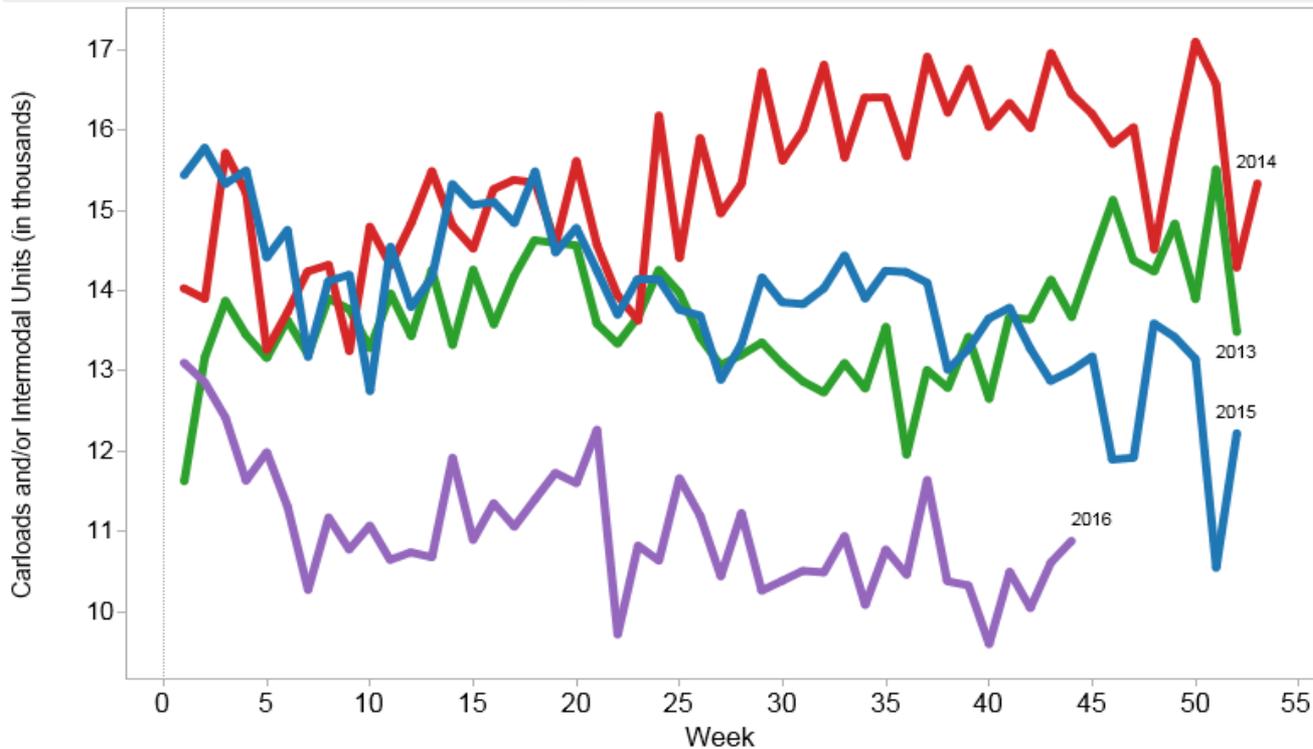
U.S. Department  
of Transportation  
**Federal Railroad  
Administration**

# Crude Oil Trends

## WEEKLY RAIL TRAFFIC DATA

SHARE

United States\*\* | Petroleum & Petroleum Products  
Originated Rail Traffic



### Country

- Canada\*
- Mexico
- United States\*\*

### Commodities

- Total Carloads & Intermodal
- Total Intermodal
- Total Carloads
- Total Carloads Excl Coal
- Total Carloads Excl Coal & Grain
- Chemicals
- Coal
- Food & Farm Products Excl Grain
- Forest Products
- Grain
- Metallic Ores & Metals
- Motor Vehicles & Parts
- Nonmetallic Minerals
- Petroleum & Petroleum Products

\*Canada - Figures for Canada include the U.S. operations of Canadian railroads.



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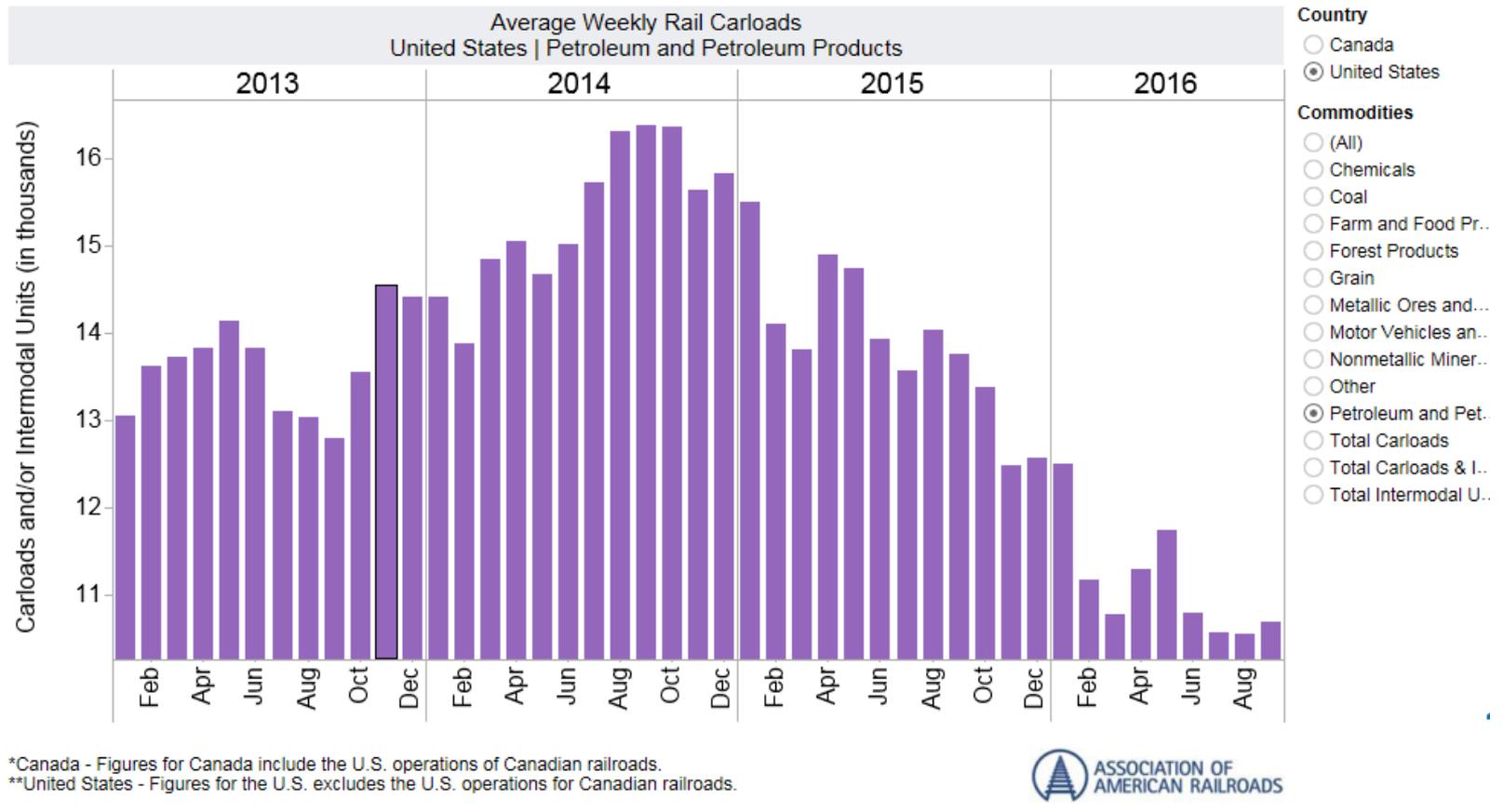


U.S. Department of Transportation  
Federal Railroad Administration

# Crude Oil Trends

## MONTHLY RAIL TRAFFIC DATA

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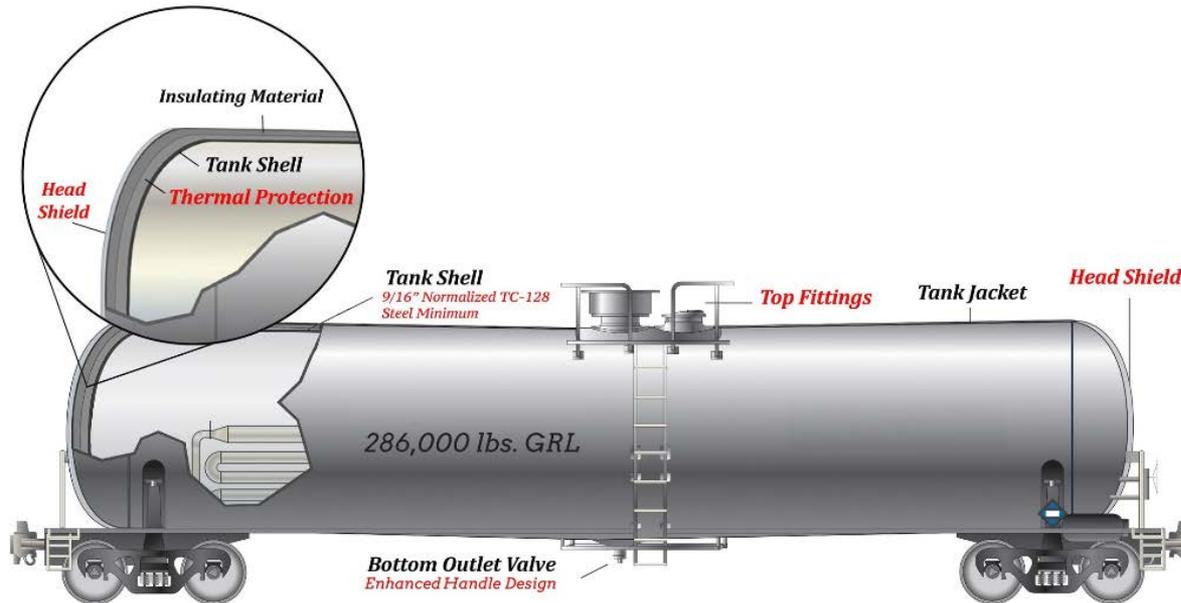
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# DOT-117 Tank Cars for Flammable Liquids

## DOT 117 Specification Car



Safety enhancements of DOT Specification 117 Tank Car:

- Full-height ½ inch thick head shield
- Tank shell thickness increased to 9/16 inch minimum TC-128 Grade B, normalized steel
- Thermal protection
- Minimum 11-gauge jacket
- Top fittings protection
- Enhanced bottom outlet handle design to prevent unintended actuation during a train accident

# DOT-117 Tank Cars for Flammable Liquids

TABLE 2—PHASE-OUT SCHEDULE FOR DOT-111 TANK CARS IN CLASS 3, PG III SERVICE \*

Material	Jacketed or non-jacketed tank car	DOT-111 (including cars built to the CPC-1232 standard) not authorized on or after
<i>Class 3, PG III (flammable liquid) material</i> .....	Jacketed and Non-jacketed .....	May 1, 2029.

TABLE 3—PHASE-OUT SCHEDULE FOR DOT-111 TANK CARS IN CLASS 3, PG II AND III SERVICE

Material	Jacketed or non-jacketed tank car	DOT-111 Not authorized on or after	DOT-111 Built to CPC-1232 not authorized on or after
<i>Unrefined petroleum products (e.g., crude oil)</i> <sup>12</sup> .....	Non-jacketed .....	January 1, 2018 .....	April 1, 2020.
	Jacketed .....	March 1, 2018 .....	May 1, 2025.
<i>Ethanol</i> .....	Non-jacketed .....	May 1, 2023 .....	July 1, 2023.
	Jacketed .....	May 1, 2023 .....	May 1, 2025.
<i>Other Class 3, PG II and III (flammable liquid) material (other than unrefined petroleum products or ethanol).</i>	Jacketed and Non-jacketed	May 1, 2029 .....	May 1, 2029.

TABLE 4—PHASE-OUT SCHEDULE FOR DOT-111 TANK CARS IN CLASS 3, PG I SERVICE

Material	Jacketed or non-jacketed tank car	DOT-111 Not authorized on or after	DOT-111 Built to CPC-1232 not authorized on or after
<i>Unrefined petroleum products (e.g., crude oil)</i> .....	Non-jacketed .....	January 1, 2018 .....	April 1, 2020.
	Jacketed .....	March 1, 2018 .....	May 1, 2025.
<i>Class 3, PG I (flammable liquid) (other than unrefined petroleum products).</i>	Jacketed and Non-jacketed	May 1, 2025 .....	May 1, 2025.



# DOT-117 Tank Cars for Flammable Liquids

March 2016:

- Approx. 109,000 DOT-111 Tank cars transported Crude or Ethanol between 2013-2015\*

July, 2016

- 2,435 DOT-117s in Flammable Liquid Service\*
- 223 DOT-117Rs in Flammable Liquid Service\*

\*As Reported by AAR to DOT in Accordance with the Fast Act

# Oil Spill Response Plans

## July 29, 2016 Proposed Rule (HM-251B)

- Modify the Part 130 Oil Spill Prevention and Response Plan regulations.
- Responds to two NTSB Recommendations:
  - R-14-05, R-14-02
- Requires plans to be consistent with National Contingency Plan and Area Contingency Plans
- Identifies the person with full authority to implement removal actions, and requires immediate communications between Federal officials and response entities.
- Ensure the availability of personnel and equipment to respond to and remove, to the maximum extent practicable a worst-case discharge.
- Requires submission and Approval from FRA.

# HHFT Information Sharing Notification

## July 29, 2016 Proposed Rule (HM-251B)

Scope: Any railroad that handles HHFTs.

Notification: SERCs, TERC, or other appropriate state delegated agency for further distribution:

1. Estimate of number of HHFTs that the railroad expects to operate each week through each county or tribal jurisdiction within the state.
2. Routes.
3. Hazmat description including emergency response information
4. HHFT POC at the railroad .
5. Identify the qualified person responsible for oil spill response under the oil spill response plan.

# Real-Time Emergency Response Information

## December 4, 2015 FAST Act Section 7302 (HM-263)

Require each Class I Railroad transporting hazmat to:

1. Generate accurate, real-time, and electronic train consist information, including:
  - a) Identity, quantity, and location of hazmat.
  - b) Point of origin and destination of train.
  - c) Any emergency response information or resources required.
  - d) Emergency response POC designated by the RR.
  - e) Distribute information to applicable fusion centers
  - f) Require fusion centers to distribute the information to provide the information to State and local first responders, emergency response officials, and law enforcement personnel that are involved in response to or investigation of an accident incident or public health or safety emergency.

# LNG Transportation By Rail

## Currently

- Movement of LNG in Tank Cars is prohibited.
- Movement of LNG in intermodal cryogenic portable tanks is authorized
- Movement of LNG in intermodal cryogenic portable tanks by rail is only authorized if approved by the Associate Administrator, Office of Safety, FRA (Currently Robert Lauby). (See 49 CFR §174.63)

# LNG Transportation By Rail

## Alaska Railroad (AKRR)

- December, 2015 - FRA issued approval under § 174.63 to move LNG in cryogenic portable tanks (11,000 gallon volume) by rail.
- Route: Anchorage to Fairbanks, AK
- September 26, 2016 – First shipment completed – demonstration (2 tanks per train)
- 8 completed demonstration trips have been made with tanks on loan from Hitachi, which have since been returned.
- Routine revenue service is not expected until certain energy/economic decisions are made by the Governor.

# LNG Transportation By Rail

## Florida East Coast Railroad (FECR):

- FECR has requested approval to move LNG portable tanks in well cars.
- Route: Originating at Hialeah (Miami) yard and moving to Jacksonville, Port of Miami, and Port Everglades. Recently amended to only include Port of Miami and Port Everglades destinations.
- Currently under review.

# LNG Transportation By Rail

## Portable tank crashworthiness research:

- FRA initiated a research project at Volpe Research Center to evaluate the crashworthiness of LNG portable tanks subject to rail accident scenarios.
- The project is nearly complete. Tentative results of the analysis indicate that impacting the shell of the tank at 15 mph (relative speed) will cause a breach and impacting the head at a relative speed of 10 mph will cause a tank breach.

# ARI Railworthiness Directive

## September 30, 2016:

- May 9, 2014 – CTCX 736177 was discovered to be leaking ethanol in CP's Bensenville Yard in Franklin Park, IL.
- Scope: ARI/ACF DOT-111 tank cars built to the ARI 300/ACF 300 sill design, with two-piece cast sump and bottom outlet valve skid (14,800 tank cars).
- Sampling of cars (750 cars) showed 15% of these cars have defective non-compliant welds at the sump and bov attachments, similar to the defects that caused the leak.
- Combination of surface inspection and volumetric inspection of this internal weld surface.

# HM RSAC

November 5, 2015 – The RSAC approved establishment of the HM Working Group to conduct a thorough regulatory review of hazmat regulations specific to transportation by rail.

- Includes representation of RR labor, Class I RRs, shortlines, chemical shippers, PHMSA, FRA, DHS, NTSB, tank car industry, and other hazmat by rail stakeholders.
- Numerous meetings have been held over the past year to review, update, revise, clarify Federal regulations, as appropriate. Comprehensive regulatory review includes:

49 CFR Parts 171, 173, 174, 179, and 180.

Thank you!

