



Office of Pipeline Safety

Pipeline and Hazardous Materials Safety Administration

Accident Investigation



RRT 1 and 2
October 30, 2018
Burlington, VT

Investigate – Analyze – Prevent



U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

"To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives."





Objective



- Introduce PHMSA
- Introduce PHMSA's Accident Investigation Team
- Establish an understanding how PHMSA can be a resource

National Pipeline Incident Coordinator (NPIC)

– NPIC toll-free: (888) 719-9033

- **811**



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Who is the U. S. Department of Transportation (DOT)



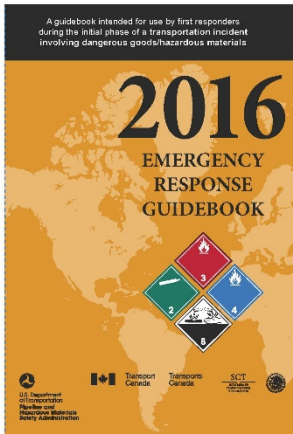
- **National Highway Traffic Safety Administration (NHTSA)**
- **Federal Aviation Administration (FAA)**
- **Office of Inspector General (OIG)**
- **Federal Highway Administration (FHWA)**
- **Federal Motor Carrier Safety Administration (FMCSA)**
- **Federal Railroad Administration (FRA)**
- **Saint Lawrence Seaway Development Corporation (SLSDC)**
- **Federal Transit Administration (FTA)**
- **Maritime Administration (MARAD)**

- **Pipeline and Hazardous Materials Safety Administration (PHMSA)**
 - **Office of Hazardous Materials**
 - **Office of Pipeline Safety**





Who is PHMSA?



Transportation Rail Incident Preparedness & Response

- Introduction & Planning
- Incident Management
- Problem Identification
- Hazard Assessment & Risk Evaluation
- Select Proper PPE
- Logistics & Resource Management
- Select & Implement Response
- Decon & Post-Emergency Operations
- Scenarios

§ 172.101 Hazardous Materials Table

Item No.	Hazardous materials descriptions and proper shipping names	Hazard Class or Division	Identification Numbers	PG	Label Codes	Special Provisions (§ 172.102)	(1) Package (§ 172.103)			(2) Quantity		(3) Vehicle	
							Equip. Tank	Non-Bulk	Bulk	Placard	Carton or Loading Unit	License Plat.	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Compressed liquids, water-reactive, n.o.s.	B	3029	II	A, 3	60.47	None	201	203	Exclusion	1.1, E		
G	Compressed solids, acidic, corrosive, n.o.s.	B	3023	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, acidic, non-corrosive, n.o.s.	B	3024	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, acidic, organic, n.o.s.	B	3025	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, basic, inorganic, n.o.s.	B	3026	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, basic, organic, n.o.s.	B	3027	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, flammable, n.o.s.	B	3028	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, flammable, n.o.s.	B	3029	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, n.o.s.	B	3030	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, oxidizing, n.o.s.	B	3031	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, water-reactive, n.o.s.	B	3032	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3033	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3034	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3035	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3036	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3037	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3038	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3039	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3040	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3041	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3042	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3043	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3044	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3045	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3046	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3047	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3048	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3049	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3050	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3051	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3052	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3053	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3054	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3055	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3056	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3057	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3058	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3059	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3060	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3061	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3062	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3063	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3064	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3065	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3066	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3067	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3068	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3069	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3070	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3071	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3072	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3073	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3074	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3075	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3076	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3077	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3078	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3079	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3080	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3081	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3082	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3083	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3084	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3085	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3086	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3087	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3088	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3089	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3090	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3091	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3092	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3093	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3094	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3095	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3096	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3097	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3098	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3099	II	A, 3	60.47	None	202	203	1.1, E			
G	Compressed solids, toxic, n.o.s.	B	3100	II	A, 3	60.47	None	202	203	1.1, E			



PHMSA Regional Offices





Did you know....



- PHMSA does not have response authority
- Regulates interstate pipelines
 - Natural Gas
 - Hydrocarbons
 - Ammonia
 - Carbon Dioxide
 - And more
- Has federal reporting requirements
 - Initial
 - 48-hour



Hazardous Liquid Pipeline

212,635 miles

7,864 b.o.tanks

514 pipeline operators

Gas Transmission Pipeline

300,324 miles

1033 pipeline operators

Gas Gathering Pipeline

17,605 miles

367 pipeline operators

Gas Distribution Pipeline

Mains and Services

2,210,066 miles

1,361 pipeline operators

Liquefied Natural Gas

152 plants

223 tanks

84 operators

Pipeline Facilities by System Type – CY 2016
PDM's data as-of 11/1/2017

Regulated Facilities, Entities and Commodities

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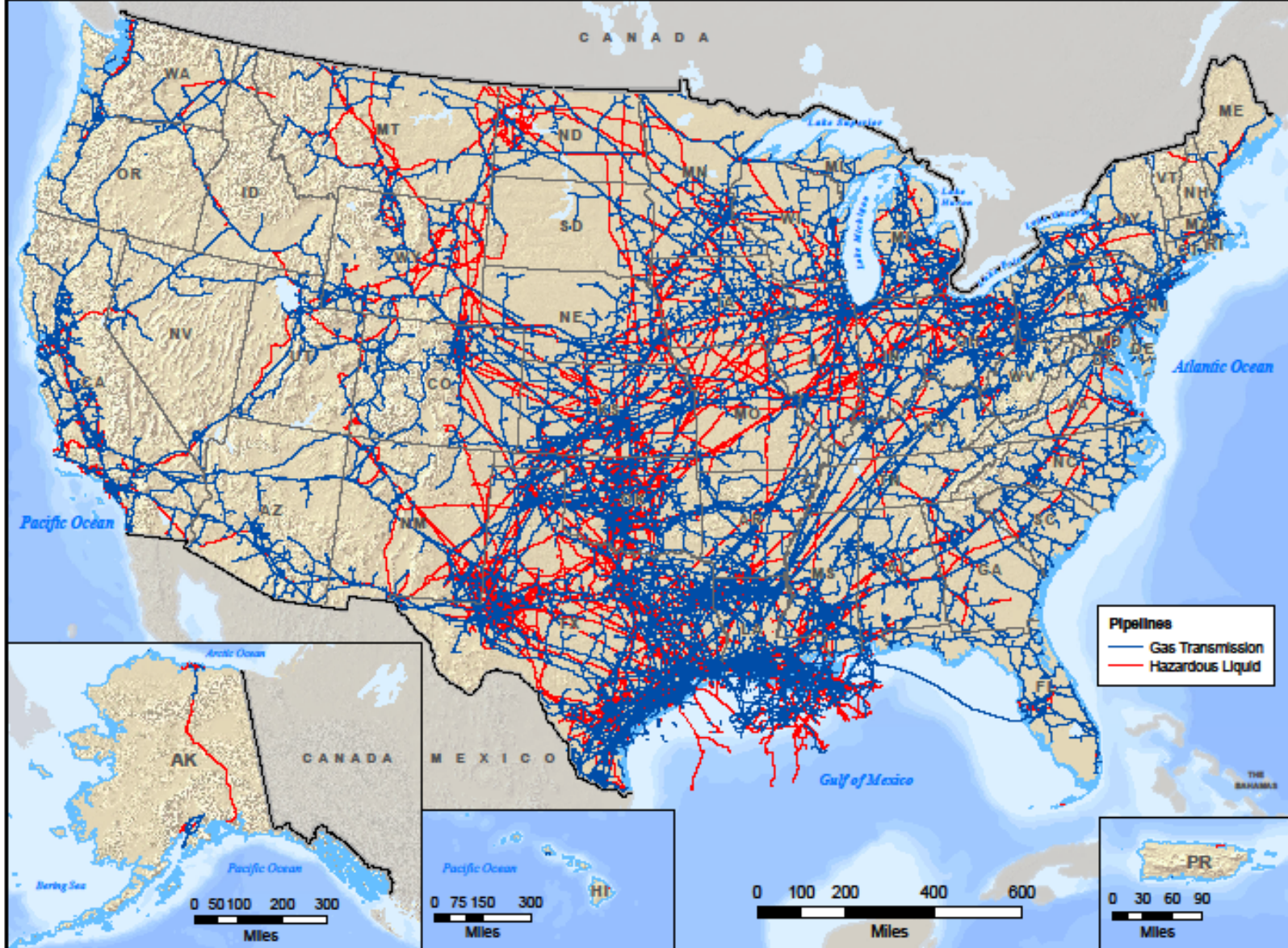
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U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
PHMSA-2016-0000001

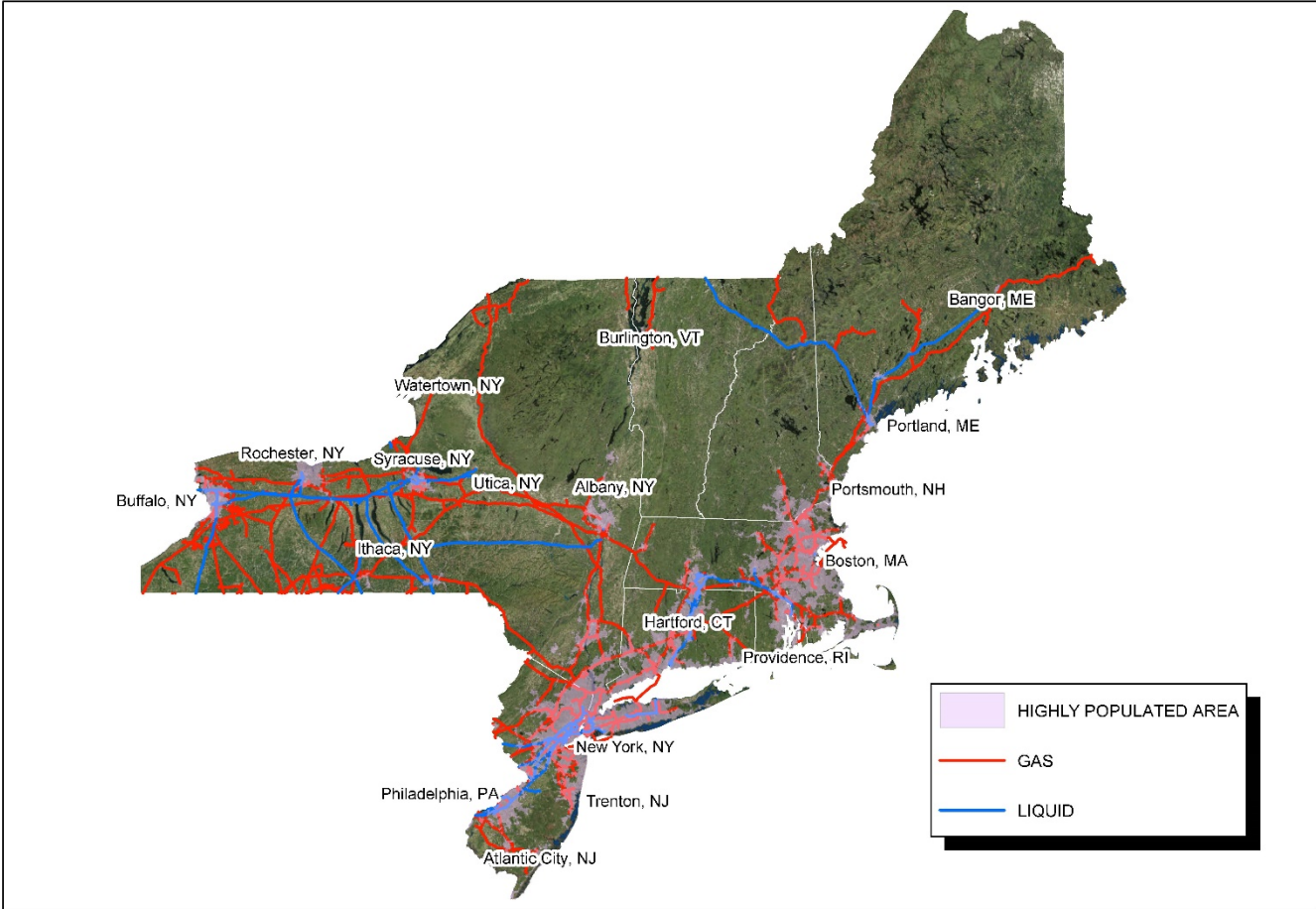
Gas Transmission and Hazardous Liquid Pipelines in the United States

National Pipeline Mapping System



U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration
Projection: Albers Equal Area Conic
Map created August, 2016

DOT Regulated Pipelines in RRT 1 & 2 Areas



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Did you know....



- Have agreements and partners with States to implement rules
- PHMSA has PREP guidelines
- PHMSA regulates pipeline operators readiness and response effectiveness
- PHMSA has FRP repository for pipelines
 - Often fixed facilities are also regulated by EPA and/or USCG
 - Available to OSCs by request
- Made up of primarily field staff
 - Highly technical
 - Engineers and Transportation Specialist



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PHMSA Reporting requirements



- PHMSA has NRC reporting requirements for pipeline systems
 - Initial (within earliest practical moment following discovery but no later than 1 hour
 - Gas
 - An event involving a release of gas
 - » A death, or personal injury necessitating in-patient hospitalization
 - » Greater than \$50,000 estimated property damage
 - » Unintentional estimated gas loss of 3 million cubic feet or more
 - An event that results in an emergency shutdown of an LNG facility or natural gas storage facility
 - An event that is characterized as significant by operator
 - Hazardous Liquids
 - An event involving the release of a liquid
 - » A death, or personal injury necessitating in-patient hospitalization
 - » Incident involved a fire or explosion
 - » Greater than \$50,000 property damage including the cost of the cleanup, value of product
 - » Resulted in pollution of any stream, river, lake, reservoir or similar body of water
 - » An event that is characterized as significant by operator
 - 48-hour
 - Must provide an update to confirm/revise initial information reported.





Available PHMSA OPS resources



- Have agreements and partners with States to implement rules
- PHMSA has PREP guidelines
- PHMSA regulates pipeline operators readiness and response effectiveness
- PHMSA has FRP repository for pipelines
 - Often fixed facilities are also regulated by EPA and/or USCG
 - Available to OSCs by request
- Made up of primarily field staff
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 - Engineers and Transportation Specialist





PHMSA Accident Investigation Division (AID)



Motto: Investigate – Analyze – Prevent

Established April 1, 2017





Readiness



- 8 Accident Investigators
 - 4 located in OKC
 - 2 located in Minnesota
 - 1 located in Ohio
 - 1 located in Washington DC
- PHMSA SMEs in Accident Investigation: Tanks, Welding, Propane, Corrosion and LNG
- Cold weather response gear
- Training program
 - Includes TQ and Hazmat Training
 - Includes outside training
 - Latent Cause
 - Leadership, Conflict Resolution and Emotional Intelligence
 - Crisis communication
 - NTSB courses
 - OSHA HAZWOPER 40 HR trained
 - Incident Command



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PHMSA Accident Investigation Division



- **PURPOSE**

- Evaluates all reports of incidents/accidents
 - Investigates all PHMSA regulated pipeline incidents
 - Consider details of report
- Conducts Accident Investigations
- Conducts Root Cause Determinations to determine causal and contributing factors to pipeline and liquefied natural gas facility incidents
- Captures and actively shares lessons learned safety finding with internal and external stakeholders.
- Conducts education and outreach to help advance pipeline safety
- Evaluates and identify emerging safety trends
- Coordinates incidents with state and federal partners





National Pipeline Incident Coordinator (NPIC)

- NPIC toll-free: (888) 719-9033
- PHMSAAccidentInvestigationDivision@dot.gov





Deployment Criteria



A release of product and one or more of the following:

- ✓ Death
- ✓ Personal injury necessitating hospitalization
- ✓ Property damage exceeding \$500K
- ✓ Hazardous liquid spill of 500 or more barrels
- ✓ Fire or explosion
- ✓ Major spill into a body of water
- ✓ Pipeline systems with recent failure history
- ✓ Significant media attention
- ✓ Release impacted:
 - an HCA
 - High Population Area
 - Other Populated Areas
 - Commercially navigable waterway, or major waterbody
 - Unusually Sensitive Area (USA) - (drinking water resource, ecological, threatened species)





Opportunities to work together



- Pipeline FRPs
 - Preplanning
 - RRTs
 - PREP Drills
- Incident coordination
 - Situational awareness
 - Common Operating Picture
 - Leverage resources
 - Pipeline mapping
 - Operator Contacts and Coordination
 - Evidence collection





Opportunities to work together



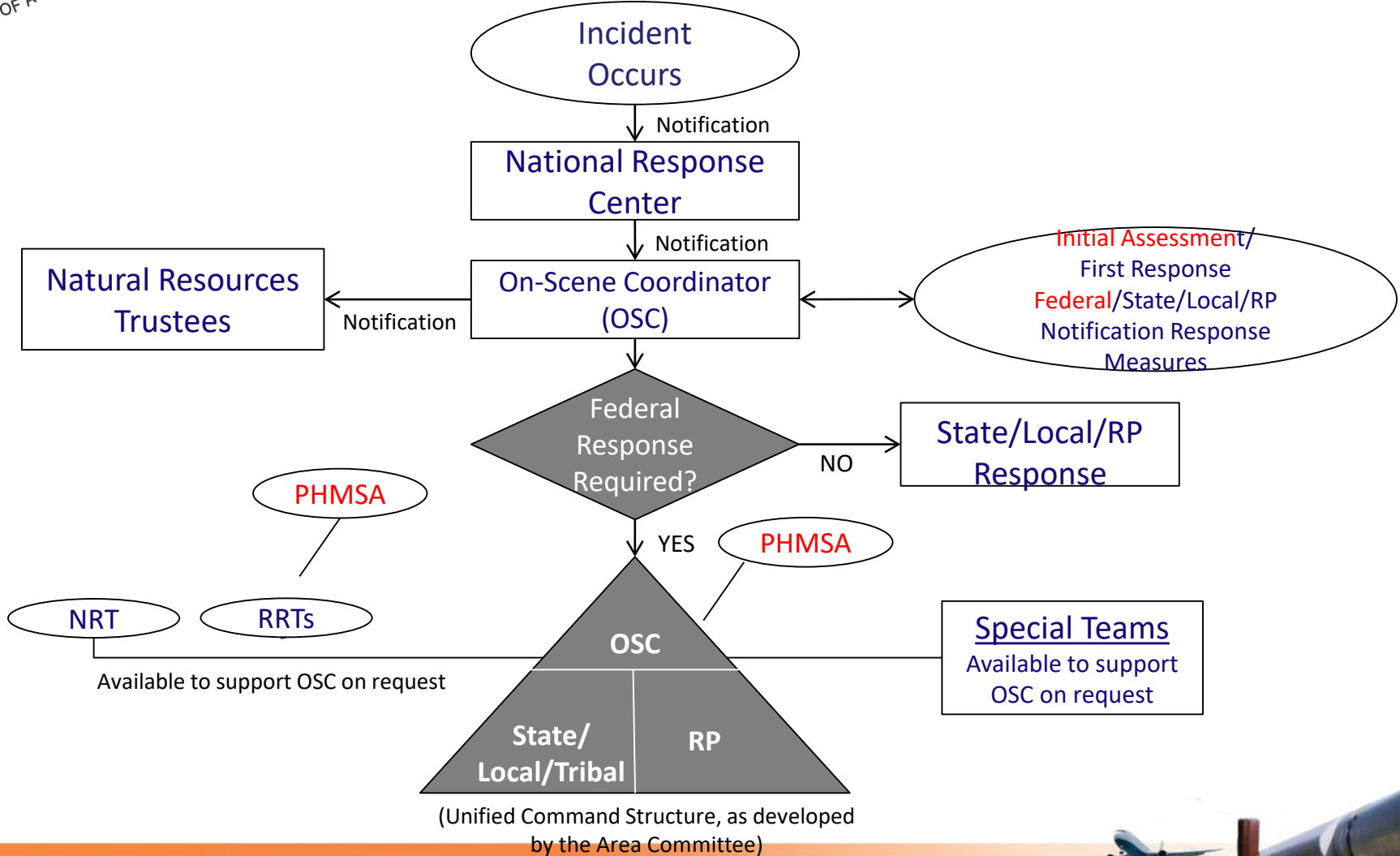
- Investigation
 - Equipment
 - Process
 - RP response effectiveness
- Pipeline Operation
 - Training
 - Pipeline expertise
- Disaster Response
 - Pad set up and waste packaging
 - Hazmat transport waivers
 - NTSB Investigation liaison

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NRS NOTIFICATION & DECISION PROCESS



Investigate – Analyze – Prevent





Where does PHMSA's role in ICS



- Agency Representative
 - Liaison Officer
- Operations
 - Investigation Unit
- Public Information Officer
- Technical Specialist
- Operates outside ICS
 - Accident Investigation





Columbia Gas of Massachusetts Lawrence, Andover and North Andover Natural Gas Distribution over pressurization, 1 fatality, 25 injuries, 120+ structure fires



NTSB Investigating

Occurred Sept. 13, 2018
150,000 residents affected
Est. restoration is Nov. 19, 2018

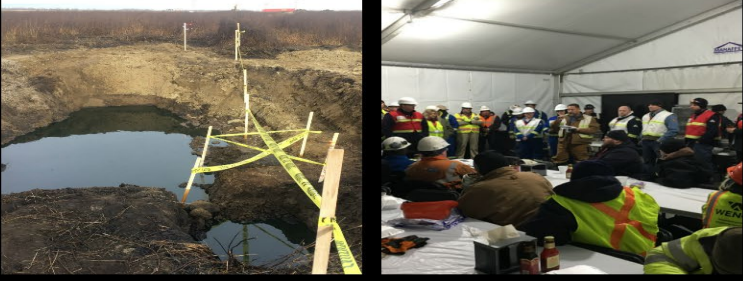


Buckeye Energy Terminal Port Reading, NJ



USCG, USEPA R2 responded
PHMSA sent personnel to initiate investigation





Amherst, SD

10,000 barrels of crude oil spilled



EPA R8 deployed





- 8/7/17, Minneapolis, MN
- 3rd Party Damage
- 100+ people evacuated (60 kids)
- Stub knocked off by bulldozer 3' below grade. Pipeline was marked earlier in the day.



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Natural Gas Pipeline Explosion

Dixon, IL

Occurred when agricultural equipment struck pipeline
2 fatalities, 2 injuries



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AMERICAN PETROLEUM INSTITUTE

API Recommended Practice 1174

Recommended Practice for Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response

FIRST EDITION | DECEMBER 2015 | 48 PAGES | \$93 | PRODUCT NO. D11741

This Recommended Practice (RP) provides to operators of onshore hazardous liquid pipelines a framework that promotes the continual improvement of emergency planning and response processes, including identification and mitigation of associated risks and implementation of changes from lessons learned. This RP assists the operator in preparing for a safe, timely, and effective response to a pipeline emergency.

For ordering information:

Online: www.api.org/pubs

Phone: 1-800-854-7179
(Toll-free in the U.S. and Canada)

(+1) 303-397-7056
(Local and International)



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PHMSA

Emergency Contact Information

NPIC toll-free: (888) 719-9033

PHMSAAccidentInvestigationDivision@dot.gov

DOT Crisis Management Center (202) 366-1863

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