Union Pacific Hazardous Materials Management

“Working to keep your community and our railroad safe”

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Mark Newton, Hazardous Materials Manager, St. Louis, MO

- Union Pacific Railroad;
  Denver- Conductor, Engineer, Union Pacific Police
  Las Vegas- Union Pacific Police, hazmat responder
  St. Louis- Hazardous Materials Manager

- 22 years military, 16 years LE, 6 years FD
Building America for over 150 Years
Fast Facts

- Freight Revenue: $19.5 B
- Route Miles: 31,898
- Employees: 48,241
- Annual Payroll: $3.6 B
- Customers: 25,000
- Locomotives: 8,126
Hazardous Materials Management’s Mission

- **Prevention** – Prevent releases of hazardous materials in transportation.

- **Preparedness** - Develop internal and external assets for response and recovery.

- **Response** – Emergency response to releases to protect health minimize impact and stabilize the incident.

- **Recovery** – Progress incident to normal operations and to the point where closure work can begin.
Hazardous Materials 2014

- 1.41 M Total HM Loads
- 14.6% of Total Volume
- 260 NAR on Including 1 TIH
- 8 Accidental Releases UP
- 99.9998% Handled w/o Incident
Prevention

• Inspections
  – Tank car
  – Train
  – Crew audits

• Training
  – Employees
  – Customers

• Continuous Improvement
  – Industry committees
  – Equipment design improvements
Prevention Activities

<table>
<thead>
<tr>
<th>Prevention</th>
<th>YTD</th>
<th>Target</th>
<th>Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank Car Blitz</td>
<td>4</td>
<td>16</td>
<td>53</td>
</tr>
<tr>
<td>TC Inspections</td>
<td>715</td>
<td>5000</td>
<td>6049</td>
</tr>
<tr>
<td>Exception Ratio</td>
<td>11%</td>
<td>na</td>
<td>7%</td>
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Preparedness

- Response Plans
  - HMERP
  - Community-Right-to-Know
  - OPA-90

- Training-
  - Public Responders
  - Employees
  - Private/Industry

- Drills/Exercises

- Commodity Flow Data
Trained over 7000 Public responders and private industry in responding to railroad emergencies

Over 300 First Responders sent to CBR training in Pueblo, Colorado in 2014. 200 scheduled this year.
Preparedness - HMERP

To guide our actions:
Hazardous Materials Emergency Response Plan (HMERP)

- Company level plan
- Employee responsibilities
- Incident command system (NIMS) and responsibilities
- Emergency response personnel – roles, responsibilities & training
- Other actions
Pre-Planning – Before an incident occurs:

- Identify RR’s Operating in your area
- Obtain railroad emergency phone number(s)
- Map railroad mileposts/crossings
- Identify “At-Risk” Populations
- Understand what HM is moving through your community (Commodity Flow)
DOT #
Assigned to all crossings: at grade, over or underpasses
Public Information and Preplanning

• DOT / FRA Crossing Inventory Website:

• DOT / FRA GIS Website:
  http://fragis2.frasafety.net/GISFRASafety/default.aspx

• Rail Crossing Locator app
Response

- **Safety**
  - Employees
  - Community

- **Coordination of Responders**
  - Public Responders (IC)
  - Regulatory Agencies
  - Specialized Contractors

- **Response Duties**
  - Analyze the problem
  - Plan the response
  - Implement plan
  - Evaluate & adjust
Response – “It all starts here!”

**UPRR’s Response Management Communications Center**

1-888-UPRR-COP
(1-888-877-7267)

*For Emergencies Dealing with:*

- Criminal Activities
- Crossing Accidents/Accidents, Not at Crossings
- Derailments
- Fires
- Hazardous Material Spills/Environmental Incidents
- Injured Parties/Fatalities
- Track Obstructions
Railroad Resources

“RMCC”

- Stay in contact with the emergency center - you are their eyes and ears.
- They are staffed 24 hrs/day.
- They make reports/calls to CHEMTREC®, National Response Center and shippers.
- They make mandatory notifications to state and federal agencies.
RAILROAD INCIDENT COMMAND STRUCTURE

- Railroad Operations Commander
- Incident Support Team
- HAZMAT INCIDENT COMMANDER
- RMCC
- Public Information
- Safety Officer
- Law
- Finance
- Planning
- Operations
- Logistics
- HM Emergency Response
- Claims
- Engineering
- Mechanical
- Transportation
- Haz Mat
- Environmental
- Police
Unified ICS Model

Municipal Fire Chief  Sr. RR Operating Mgr

Joint Safety  Joint PIO

Planning  Logistics  Operations  Finance

Railroad Branch

Transportation  Engineering  Mechanical  ER Support

Fire Branch

Fire  Rescue
Assets Being Deployed

- Specialty Contractors
  - Hazmat Emergency Response (OSRO)
  - Environmental Professionals
  - Toxicological
    - Advanced air monitoring
    - MD’s
    - Toxicologists
    - CIH’s
- RR Rerailing Contractors
Assets continued

- Fire fighting equipment / fire trailers
- Foam caches
- Chemical transfer equipment
- Hazmat specialists (tank car specialists)
- Industrial partners
- Specialty equipment
  - Air trailers, heavy equipment, frac tanks, steam units, etc
UP Fire Fighting Response Trailers
UP CAMP Locations
UP Recovery Assets

- Transfer Truck (All Liquids and Compressed Gas)
- Transfer Trailers (Flam & Corrosive Liquids)
Enter Equipment ID ex. UP00...

Equipment Id is a set of letters (up to 4) and numbers (up to 6) on the side of every freight car. See the example below outlined in red.

ID: GATX41667
LD/MTY: LOADED
HAZARDOUS
UN/NA ID: UN1203
PSN: GASOLINE
Hazard Class: 3
Railroad: CPRS
Railroad Phone: (800) 716-9132

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Other Types of Responses

- Responses are not always derailments
- Non-Accidental Release – NAR
- Diesel fuel release from locomotive or refrigerated cars
- Oil spill
- Crossing accidents
Recovery

• Product/Container Fate
  – Product Removal/Transfer
  – Container decontamination/cleaning

• Incident Termination
  – Debriefing
  – Post Incident Analysis (PIA)
  – Critique
  – Required Reporting

• Site Remediation/Restoration
Crude Oil Traffic

• 13 routes –
Crude Oil Preparedness

- FD Inventory – Inventorying all FD’s along designated route’s
- FD Training –
- Contractor Preparedness – Locations
- UPRR Assets
  - FFF Trailers
- HMERP – provides emergency response information to personnel who may become involved in a hazardous materials incident.
Crude Oil by Rail
API-AAR Response Safety Course
Course Outline

- Why crude oil by rail?
- Recognizing the hazards
- Understanding crude oil
- Rail cars that carry crude oil

- Fire response
- Spill response
- Incident command during a rail incident
Mitigation: Tank Car Standards

Rail industry voluntarily adopted stronger tank car standards in Oct. 2011 & November 2013:

“New” 1232 Cars vs. “Old” DOT 111 Cars

- 1/2” or 7/16” jacketed shell vs. 7/16”
- 1/2” extra protective head shield
- Roll over protection (top fitting protection)
- Larger pressure release valve
- 47 - 77% better crashworthiness
Mitigation: “Next Generation Tank Car” NGTC

EVOLUTION OF RAIL INDUSTRY TANK CAR STANDARDS FOR CRUDE OIL

The railroad industry is proposing to increase the federal tank car design and construction standards for new tank cars used to transport crude oil. This proposal comes after a previous upgrade proposal which the industry voluntarily adopted and has been observing since October 2011. This graphic shows the additional tank car components included in the latest rail industry proposal.

- Require jackets and thermal protection on the 1232 tank car
- BNSF NGTC RFP issued to accelerate the tank car design, production, and to bring more certainty to the crude-by-rail tank car market
Thank You!