Safe Transport of Hazardous Materials by Rail

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Company Overview

- Over 2.2 million product shipments, worldwide
- 150 manufacturing sites in 37 countries
- 3,200 products to 45,000 customer locations in 160 countries
- 20% of shipments involve an international border crossing with Customs clearance:
  - 7th largest exporter from USA
  - 64th largest importer to USA
- Two-thirds of volume by land / one-third by marine
- Largest bulk chemical shipper in North America
- 26,000 railcars – 2nd largest private fleet in the world
- 80% not hazardous / 1% highly hazardous
- 99.97% incident-free across all modes
Our Position

• The transportation of hazardous materials is vital to our nation’s economy and critical infrastructure
• Our industry’s record for safely transporting hazardous materials is excellent
• Existing safety, security and risk management programs provide a solid foundation for addressing public concerns
• New initiatives are being implemented to further improve rail safety and security
• Continued collaboration between government and industry is essential
Rail Hazmat Transportation in Perspective

• Roughly 34 million freight rail shipments each year:
  • 1.6 million (5%) hazmat
  • 100,000 (0.3%) TIH
• Three materials account for 90% of TIH shipments:
  • Anhydrous ammonia (45%)
  • Chlorine (35%)
  • Ethylene oxide (10%)
• Rail is the safest and most efficient way to transport large volumes, long distances over land
Why We Need TIH Materials

• Anhydrous ammonia:
  • Nitrogen fertilizers – an essential crop nutrient (70%)
  • Industrial applications (30%)
• Chlorine:
  • 98% of drinking water systems
  • 93% of pharmaceuticals
  • 86% of crop protection chemicals
  • Affordable, energy-efficient building materials
• Ethylene oxide:
  • Aircraft deicers, automotive anti-freeze and brake fluids
  • Soaps, cosmetics and pharmaceuticals
Why We Need to Transport TIH Materials

- Essential building block materials
- Manufacturing efficiencies and economies of scale
- Diverse users and end-use applications
- Geographically dispersed producer and user operations – reflecting 100 years of evolution:
  - Commodities near feedstock and low-cost energy
  - End-use products near consumers
- Transportation economics and sustainability
A Safe and Secure Rail Transport System

• Over one million hazardous material shipments each year, with 99.998% reaching their destination without incident
• A robust framework of federal laws, regulations and initiatives for rail safety and security, including the following recent actions:
  • The 9/11 Commission Act of 2007 (PL 110-53)
  • The Rail Safety Improvement Act of 2008
  • Department of Transportation:
    » Interim standard for TIH tank cars
    » Rail hazmat routing rule
  • Department of Homeland Security:
    » Rail transportation security rule
    » Tank car vulnerability study
    » GPS tracking program
A Commitment to Continuous Improvement

- Expanding the TRANSCAER® program
- Improving shipment visibility and situational awareness
- Developing the Next Generation Rail Tank Car
- Improving chemical supply chain design
- Eliminating non-accident releases
- Deploying communication-based train control / anti-collision systems
- Reducing non-essential dwell time in High Threat Urban Areas
- Improving rail operations safety:
  - Reducing “human factor” causes of accidents
  - Improving track maintenance and inspection
  - Enforcing risk-based speed limits and operational controls
  - Reducing dark territory by expanding use of signal technology
  - Continuing the emphasis on grade crossing safety
Improving Chemical Supply Chain Design

- A long-term business strategy for improved safety, security and sustainability
- Methods:
  - Avoid new, long-term shipments of highly hazardous materials
  - Alternate sourcing through exchanges, swaps, contract manufacturing and purchases
  - Alternate modes of delivery (e.g. pipeline vs. rail)
  - Facility rationalization / optimization of producer-user operations
  - Business rationalization / customer selection-qualification
  - Conversion to less hazardous derivatives before shipment

Proof Point:
As the world’s largest chlorine producer, Dow has achieved an 80% reduction in chlorine rail shipments since 1999
Priorities for Government

• Emphasize risk-based, performance-oriented solutions
• Build on successful private sector initiatives and leverage industry “best practices”
• Promote strong public-private partnerships and stakeholder collaboration
• Provide adequate funding to enable DHS and DOT to carry out current mandates
• Foster innovation, research and development to maximize the benefits of technology
• Establish incentives to encourage positive voluntary behavior:
  • Grants to support local emergency responder training
  • Tax incentives to promote facility and supply chain modifications
  • Public infrastructure projects to reduce grade crossing risks
• Ensure proper balance to achieve a prudent level of safety and security, without unduly hindering productivity, trade and economic growth
• Ensure strong, even-handed enforcement of rail safety and security regulations
Thank You!

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