



Control Room Management Inspection Program Roll-Out

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Program & Inspection Information

- Inspection Guidance and Forms on the Web
- Topical Presentations
- Reference Materials and Research

<http://primis.phmsa.dot.gov/crm/index.htm>



Inspector Training Program

- 175 Trained
- Federal and State Inspectors
- 4 Classes in 2011
- 2 Classes in 2012
- 2 Classes scheduled in 2013



Frequently Asked Questions

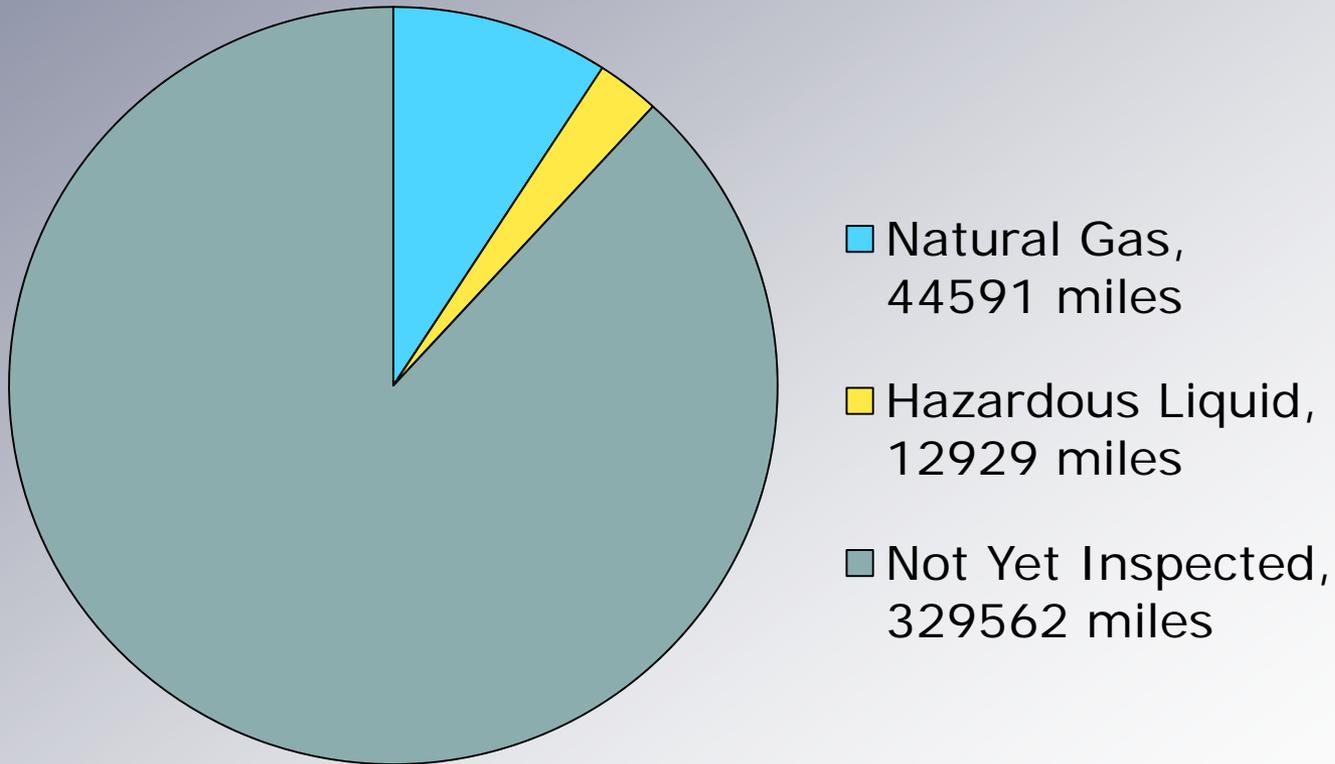
Last Updated 06-20-2012

■ Applicability	23	
■ Adequate Information	19	} 71
■ Alarm Management	17	
■ Fatigue Management	14	
■ Roles & Responsibility	5	
■ All Others	16	



CRM Inspections in 2011

Gas Transmission and Hazardous Liquid Pipeline Mileage



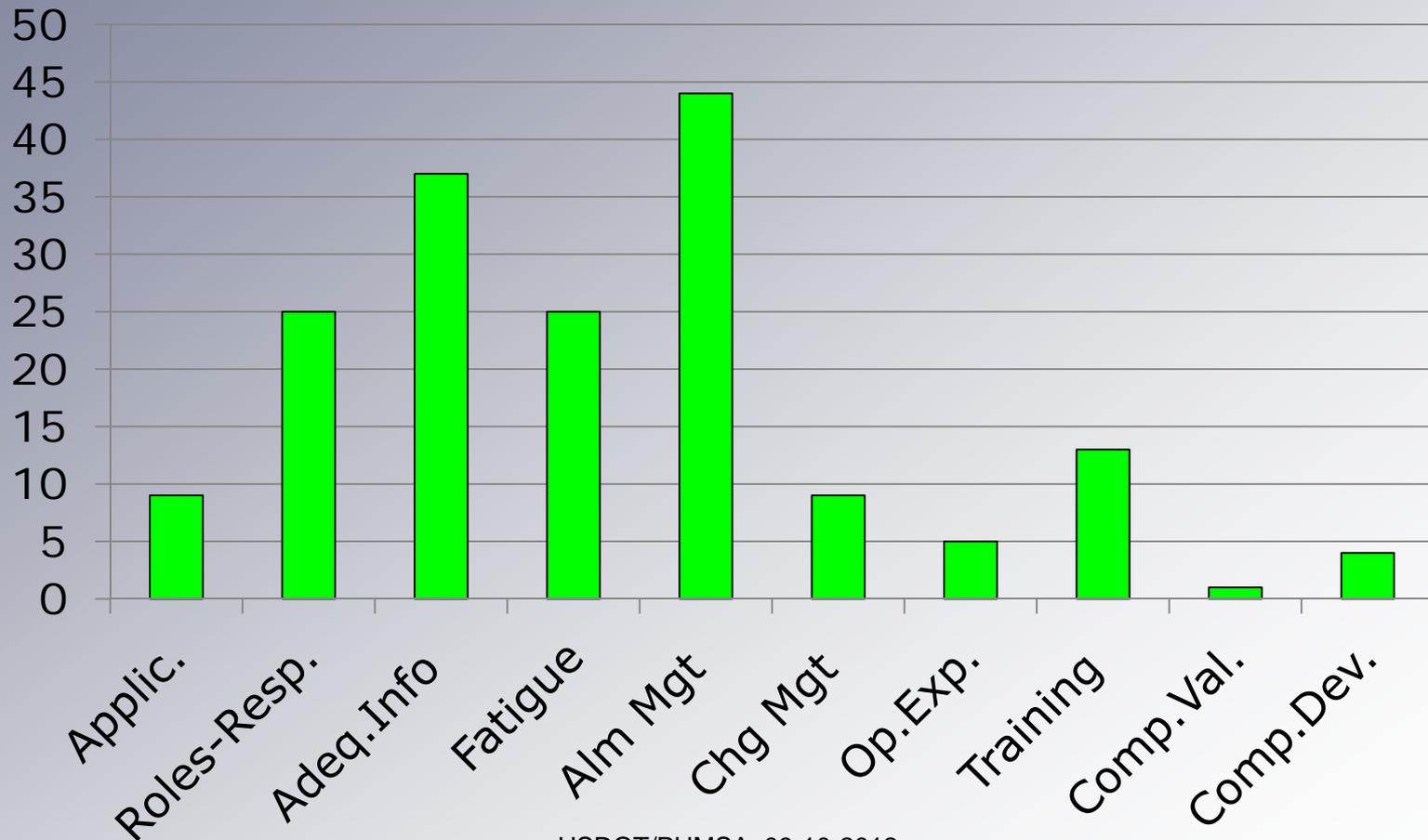


CRM Inspection Results in 2011

- Initial Requirements October 1, 2011
- 7 Inspections completed in 4Q-2011
- Natural Gas & Hazardous Liquids Operators
- 172 Findings Identified
- Findings from 67 different Inspections Questions



2011 - Distribution of Findings across (7) Inspections



USDOT/PHMSA, 09-10-2012



2011 CRM Inspections Procedures

- Procedural issues were identified in all seven Inspections
- 92% of Findings referenced Procedures



2011 CRM Inspections Implementation

- 24% of Findings referenced Implementation or the lack of Procedures
- Implementation issues were identified in four Inspections



Enforcement Guidance

- First Compliance Date : 10/01/2011
- Guidance formed on 4Q11 inspection results
- Mostly Notice of Amendments
- A few Stronger Actions
- More complex aspects required on 08/01/2012



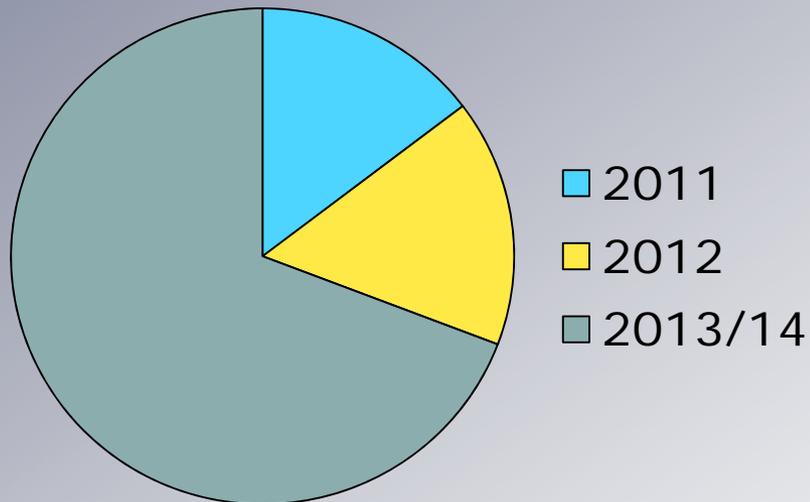
Some Other Enforcement Actions

- Review of alarm logs to identify candidates for simultaneous or sequence AOC's is not documented, but related training is occurring.
- Initial qualifications still in progress. Two controllers are scheduled to be qualified before Jan 1, 2012. The third is not yet scheduled.
- Number of displays not consistent between primary site and backup location. Operator could not adequately explain how limitation should not impact controller performance.

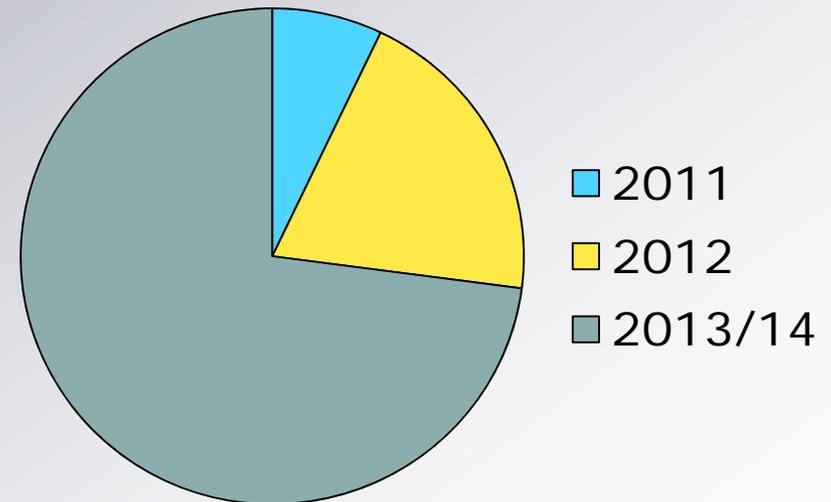


CRM Inspections Annual Inspection Forecast

Gas Transmission
304,558 miles



Hazardous Liquids
182,524 miles





Inspection Tips on Logistics

- Shift Change Content & Records
- Schedule Upsets & the Domino Effect
- Control Room Evacuations & SCADA Outages
- Autonomy in Control Actions
- Excessive or Cyclical Deviation



Inspection Tips on Fatigue

- Controller Commute Times
- Logging Controller Hours
- Controllers working “after hours”
- 7 day Sliding Window
- “Back-up” Controllers



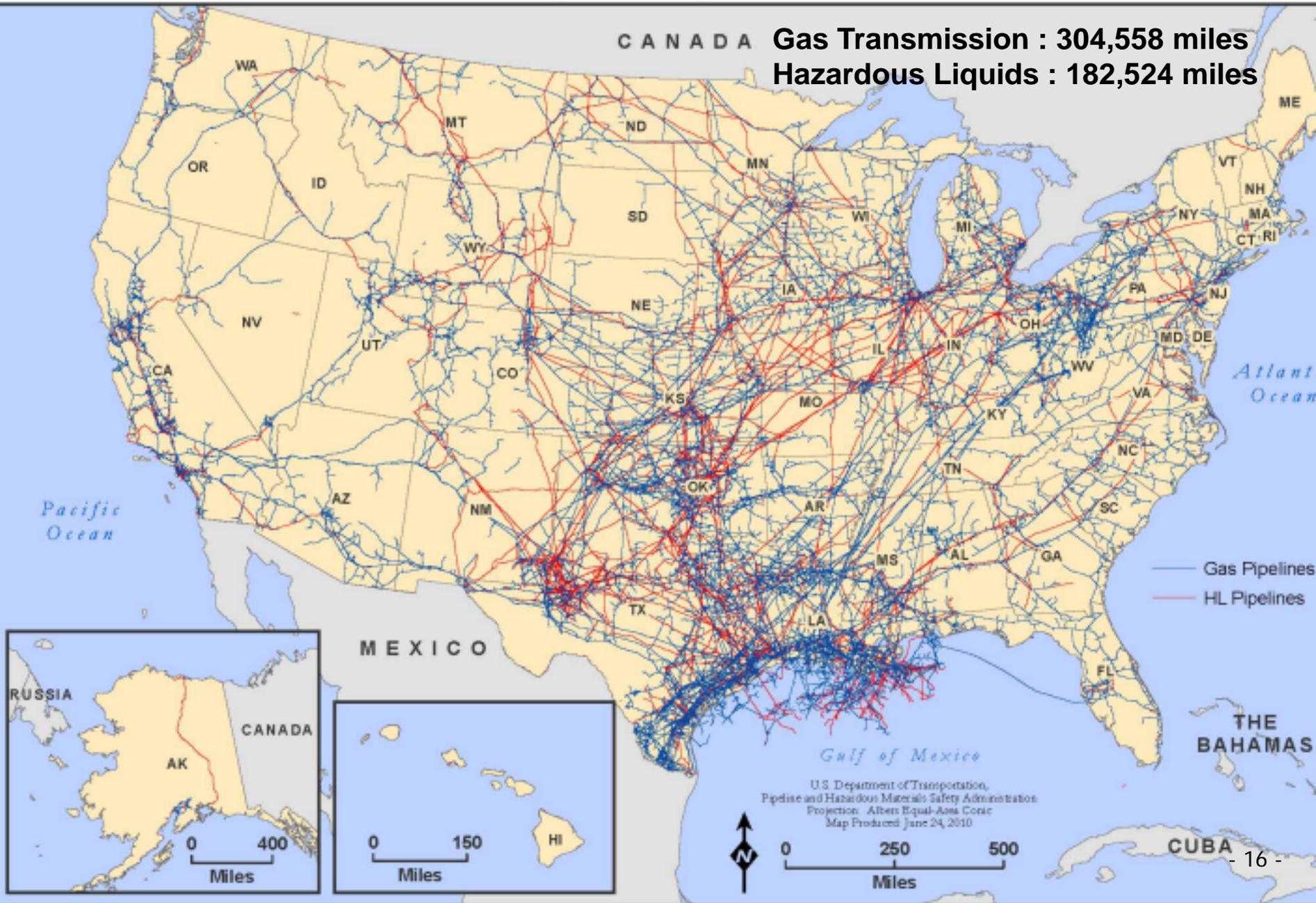
Inspection Tips on Design Parameters

- Dependence on Color Acuity
- Consistent Use of Colors
- Definitive / Consistent Safety-Related Data Points
- Alarm Descriptor Clarity and Consistency

Hazardous Liquid and Gas Transmission Pipelines

Pipelines as of June 2010

Gas Transmission : 304,558 miles
Hazardous Liquids : 182,524 miles



U.S. Department of Transportation,
Pipeline and Hazardous Materials Safety Administration
Projection: Albers Equal-Area Conic
Map Produced June 24, 2010