



# **Control Room Management**

## **Roll-Out of the Initial Inspection Program**

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**USDOT/PHMSA**



# Objective of CRM

- **Help assure Controllers will continue to be successful in maintaining pipeline safety and integrity**
  - Verify that procedures, systems and equipment are well thought out, and function as designed
  - Assure pipeline operators are addressing fatigue risks in the control room



# SCADA Systems

- Current CRM regulations do not require the use or acquisition of SCADA Systems
- If an operator does not have a SCADA System, then the CRM regulations are not applicable
- If an operator has a SCADA System and CRM regulations are applicable, then the SCADA System must comply with the regulations
- CRM regulations do not require a back-up SCADA System, but if a back-up is in place, then it must comply with the regulations



# Control Rooms

- CRM inspections are conducted on Control Rooms. So one Operator may receive multiple CRM inspections
- CRM Inspectors may be able to transfer certain inspection results from one Control Room to another, if an Operator has more than one Control Room using similar or identical programs and procedures
- CRM regulations do not require a back-up Control Room, but if a back-up is in place, then it must comply with the regulations
- Jurisdictional Gathering Lines are subject to CRM Regulations



# Inspection Forms & Guidance

- Inspection Forms and Guidance is posted at:
  - <http://primis.phmsa.dot.gov/crm/index.htm>
- 2011 Inspections were performed with the 09-30-2011 Inspection Form
- The most current form is dated 03-01-2012



# Frequently Asked Questions

■ Applicability	23	
■ Adequate Information	19	} 69
■ Alarm Management	17	
■ Fatigue Management	12	
■ Roles & Responsibility	5	
■ All Others	16	



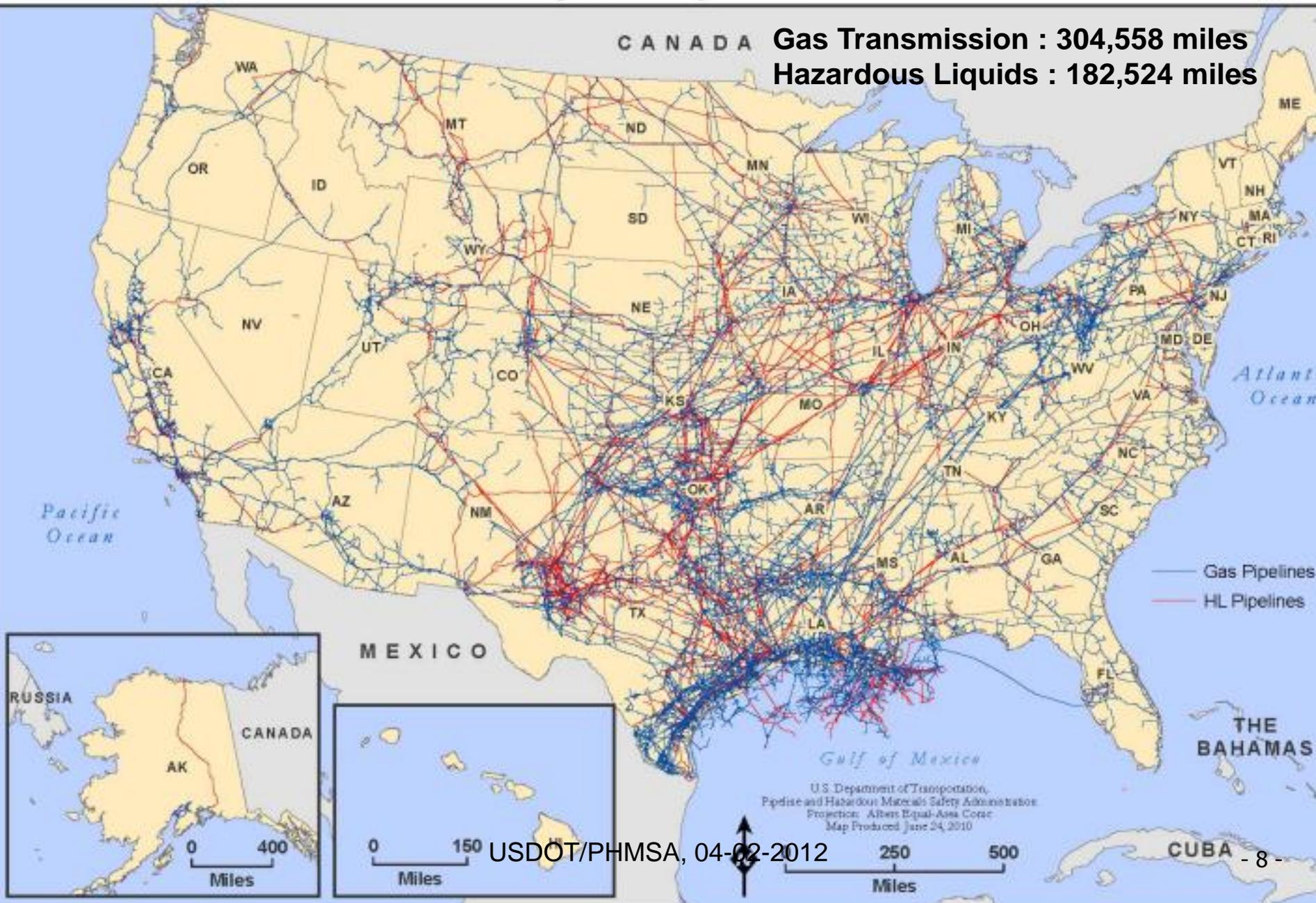
# Critical Dates

- October 1, 2011
  - Implementation of “Procedural” Items
  - Implementation of less complex Requirements
  - B, C5, D2/D3, F, G, I, J
  - H: Training for these Items
  - Procedural Framework for Aug-2012 Requirements
- August 1, 2012
  - Implementation of more complex Requirements
  - C1-4: Displays, P-P, Comm-Plan, Back-Up
  - D1/D4: Schedules and Hours of Service
  - E: Alarm Management
  - H: Training for these Items

# 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

USDOT/PHMSA, 04-02-2012



# Completed 2011 CRM Inspections

	Inspections	Mileage Represented	% National Mileage
Nat. Gas	5	44,591	15%
Haz. Liquid	5	12,929	7%
2011 Total	10	57,520	12%



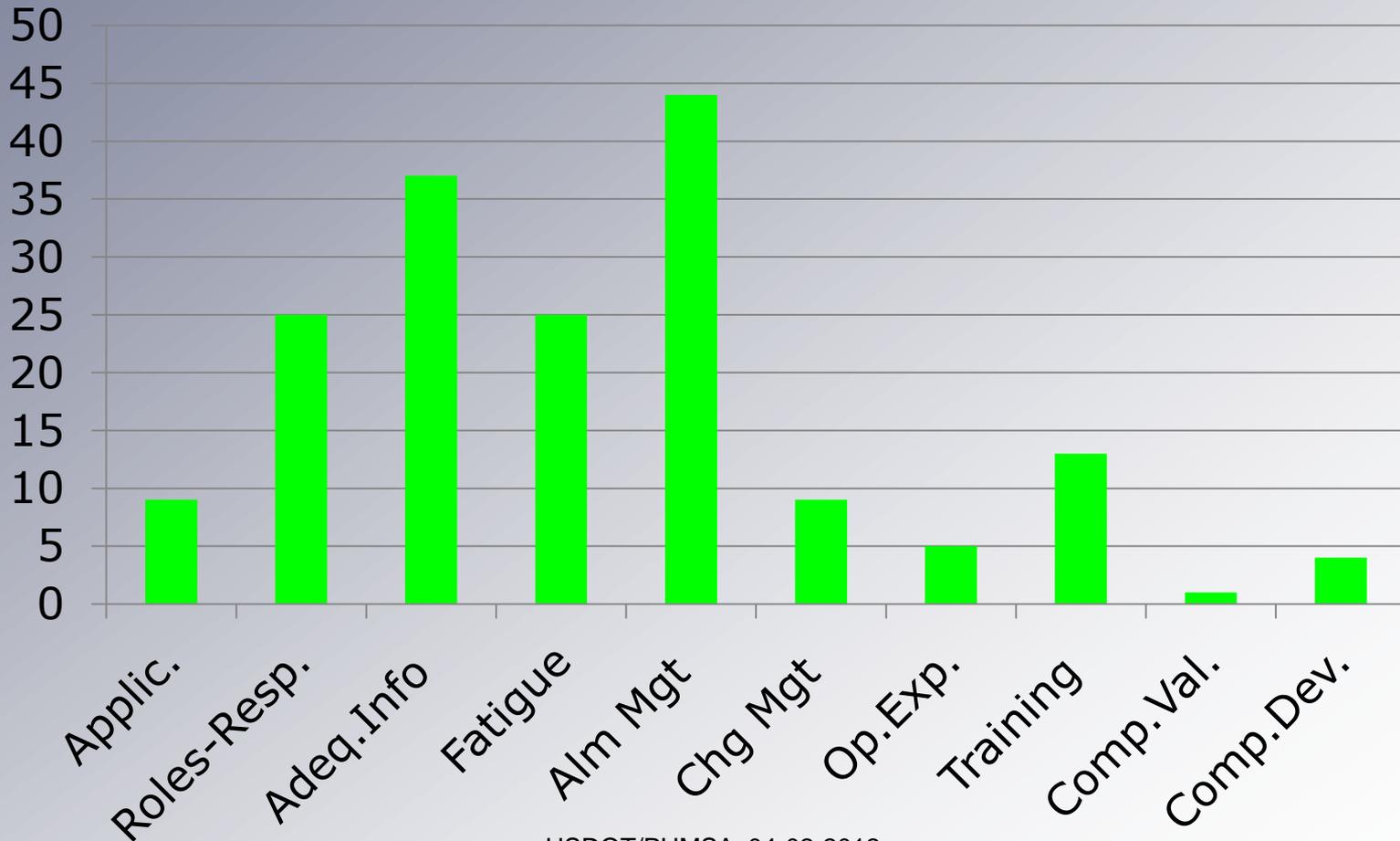
# 2011 CRM Inspections

## Summary of Findings for (7) Inspections

- 172 Findings Identified
- 67 different Inspections questions identified issues
- 92% of Findings referenced Procedures
- Procedural issues were identified in all seven Inspections
- 24% of Findings referenced Implementation
- Implementation issues were identified in four Inspections
- Some individual Findings referenced both Procedures and Implementation



## 2011 - Distribution of Findings, across (7) Inspections



USDOT/PHMSA, 04-02-2012



# 2011 CRM Inspections Enforcement Summary

- The majority of Findings will translate into “Notice of Amendment”
- There will likely be some “Letter of Concern” and “Warning Letter” compliance actions
- “Notice of Probable Violation” Letters will be issued
- Broader and more thorough programs will be expected after August 1, 2012



# Planned 2012 CRM Inspections

## PHMSA and Interstate Agents

	Inspections	Mileage Represented	% National Mileage
Nat. Gas	22	49,167	16%
Haz. Liquid	19	36,476	20%
2012 Total	41	85,643	18%



# Forecast for Completed Inspections by End of 2012

	Inspections	Mileage Represented	% National Mileage
2011 Nat.Gas	5	44,591	15%
2012 Nat.Gas	22	49,167	16%
2011 Haz.Liq	5	12,929	7%
2012 Haz.Liq	19	36,476	20%
Total	51	143,163	29%

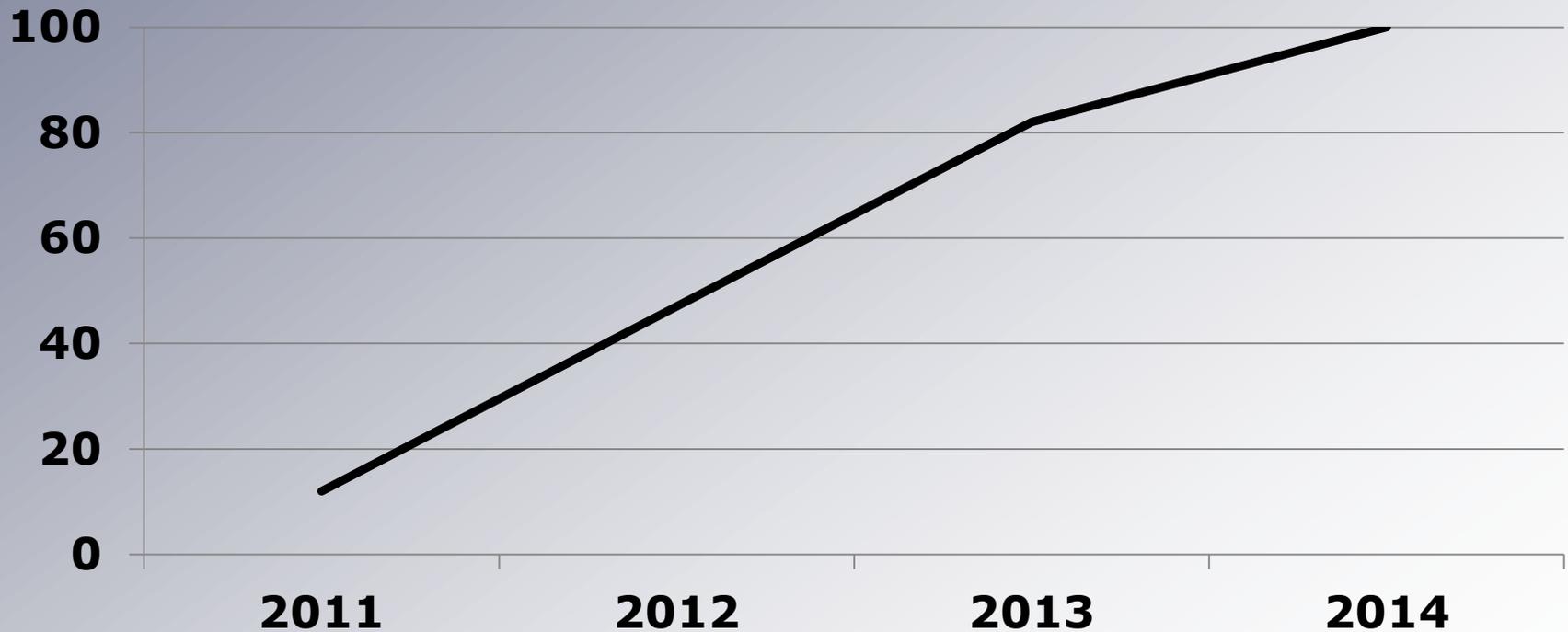


USDOT/PHMSA, 04-02-2012



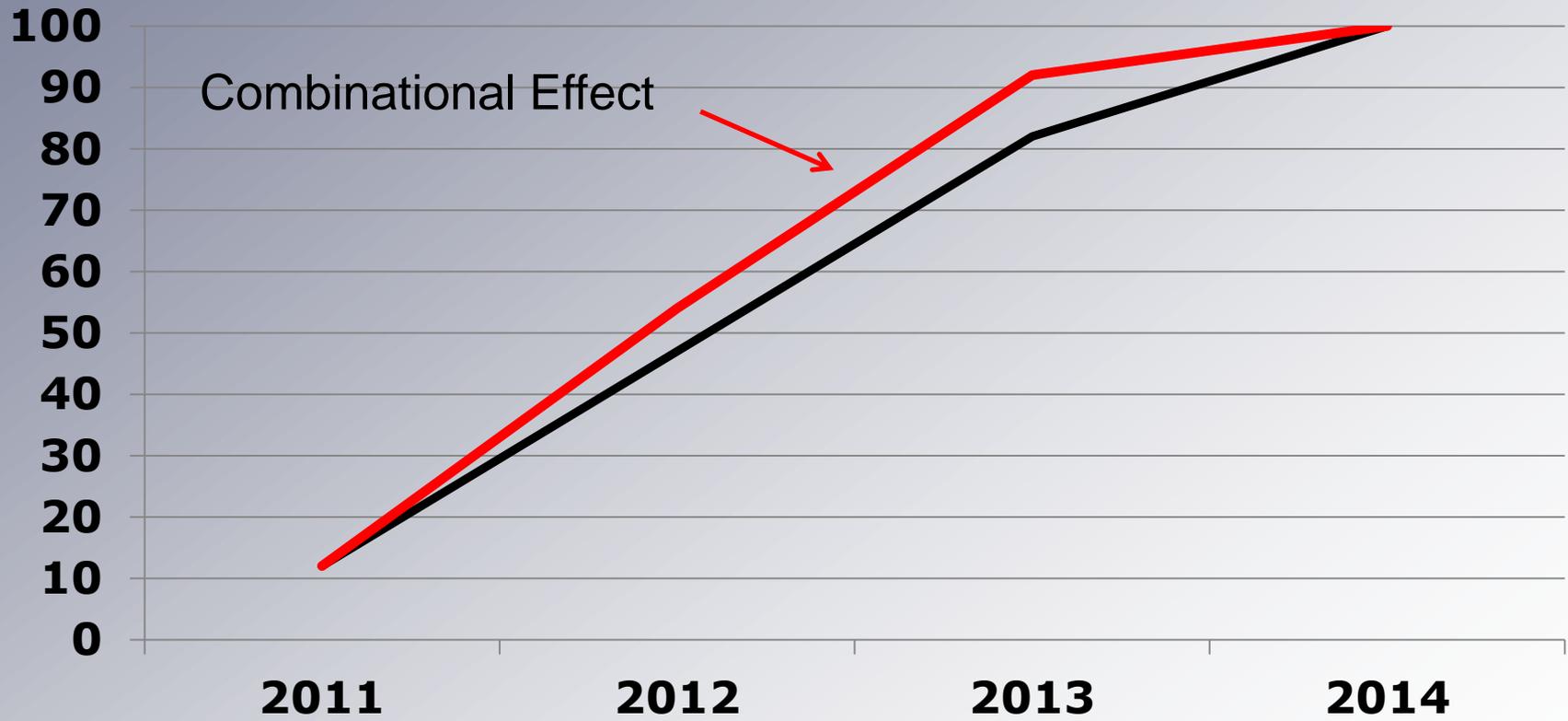
# Forecast for Completion of 1<sup>st</sup> Round based on Percent of National Mileage

**% Complete at End of Year**





# Forecast for Completion of 1<sup>st</sup> Round based on Percent of National Mileage





# A Few Inspection Tips - 1

- Dependency on Color Acuity
- Consistent Use of Colors
- Shift Change Content & Records
- Schedule Upsets & the Domino Effect
- Controller Commute Times



## A Few Inspection Tips - 2

- Logging Controller Hours
- Controllers working “after hours”
- 7 day sliding window
- Tracking Hours of ‘back-up’ Controllers
- Excessive or Cyclical Deviations



## A Few Inspection Tips - 3

- Control Actions : autonomy or mgt involvement
- SCADA Outages
- Control Room Evacuations
- Definitive and Consistent Safety-Related Data Points
- Alarm Descriptor Clarity and Consistency
- Evolution of Procedures



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