U.S. DOT
Pipeline and Hazardous Materials
Safety Administration

Integrity Management Systems

November 18, 2015
Chris McLaren

811 Know what's below. Call before you dig.

Management Systems

- A framework of policies, processes and procedures used to ensure that an organization can fulfill all tasks required to achieve its objectives.
- Include accountability (an assignment of personal responsibility) and a schedule for activities to be completed, as well as auditing tools to implement corrective actions, creating an upward spiral of continuous improvement.
- A simplified model is the P-D-C-A "Plan, Do, Check, Act" cycle of continuous improvement.
- A-D-D-I-E Model is another way to describe a continuous improvement cycle –
  - Analyze, Design, Develop, Implement, & Evaluate

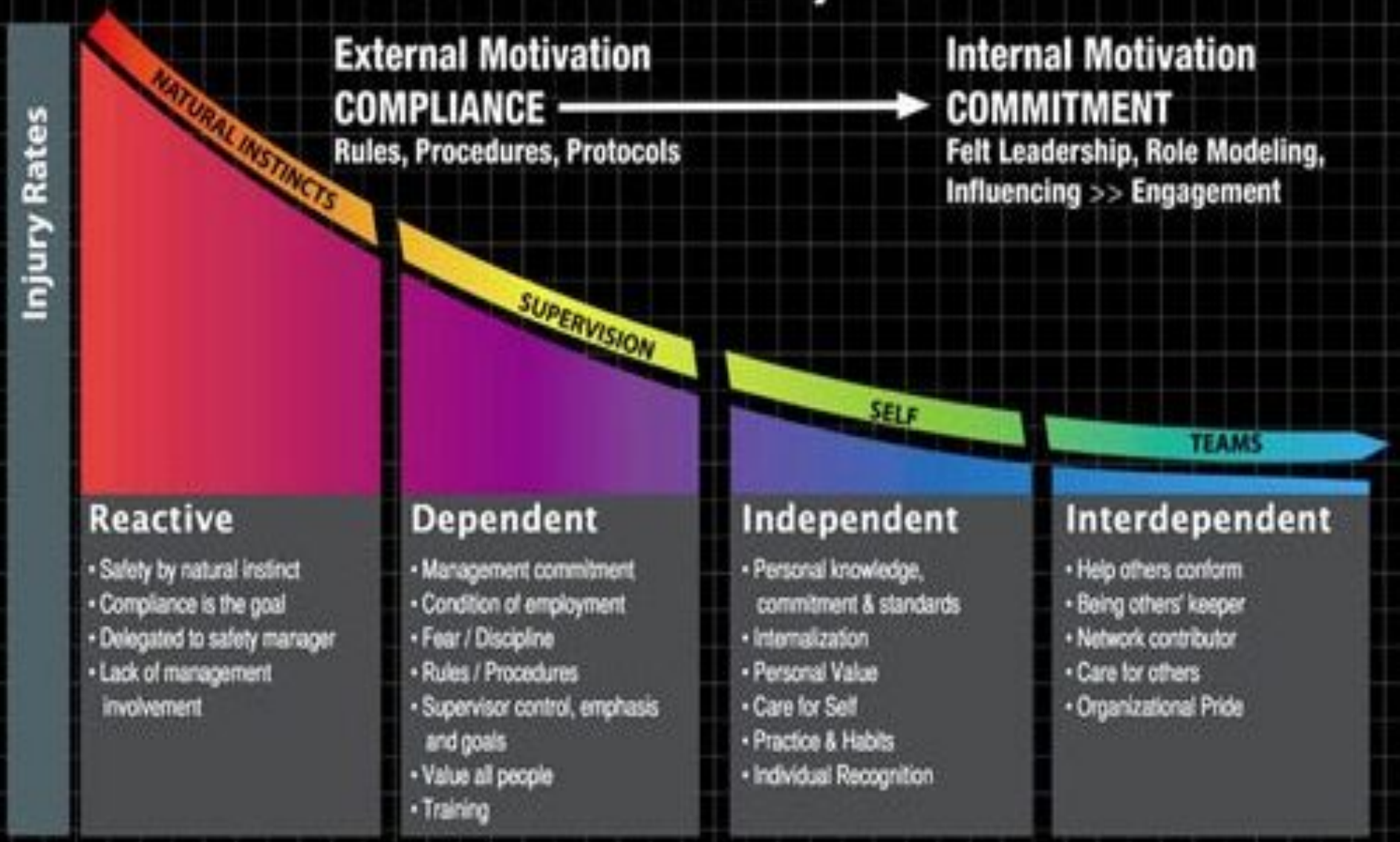
Management Systems

- PHMSA has worked on Pipeline Risk Management Systems since 1990's
- In the 1990's, PHMSA completed the Risk Management Demonstration & Systems Integrity Projects
- 2000's - Integrity Management (IM) Regulations promulgated for Hazardous Liquid and Gas Transmission pipelines
- 2010's – IM Regulations promulgated for Gas Distribution and Hazardous Liquid Gathering pipelines
- PHMSA has continuously evaluated the implementation of the IM regulations and sought to clarify and improve them thru Rulemaking and Stakeholder Communication

Regulatory Enhancements

- In the Late 2000's, PHMSA began developing regulatory improvements based on IM inspection experience and enforcement as well as technology improvements (e.g., GIS, Data Models, Risk Models, Pipeline Inspection tools).
- Advanced Notice of Proposed Rulemaking (ANPRM)
  - 2010 – Hazardous Liquid IM ANPRM
  - 2011 – Gas Gathering and Transmission IM ANPRM
- Notice of Proposed Rulemaking (NPRM) was issued for Hazardous Liquid IM on October 1, 2015. The comment period for this NPRM ends January 8, 2016
- The issuance of the NPRM for Gas Gathering and Transmission IM is projected for November 12, 2015 http://www.transportation.gov/regulations/report-on-significant-rulemakings

DuPont Bradley Curve

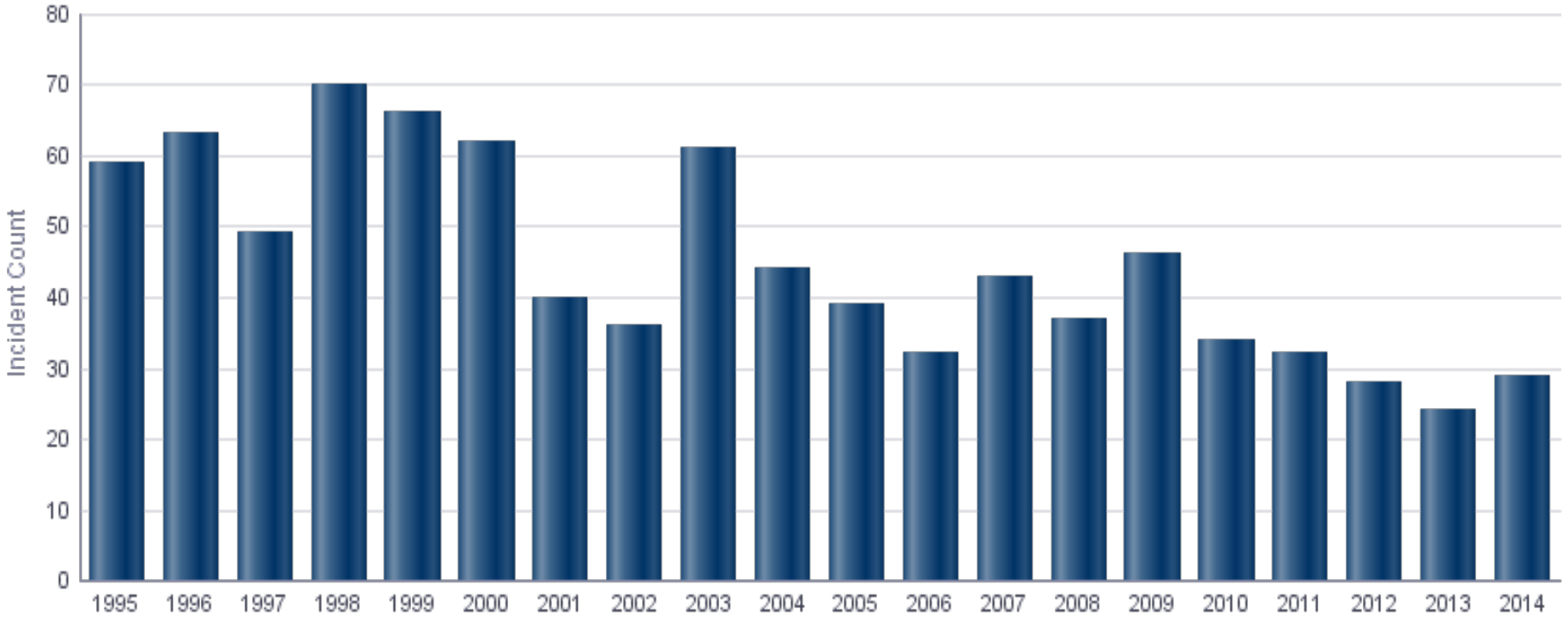


"I follow the rules because I have to"

"I follow the rules because I want to"

Serious Incidents

All System Types show downward trend with slight rise in 2014

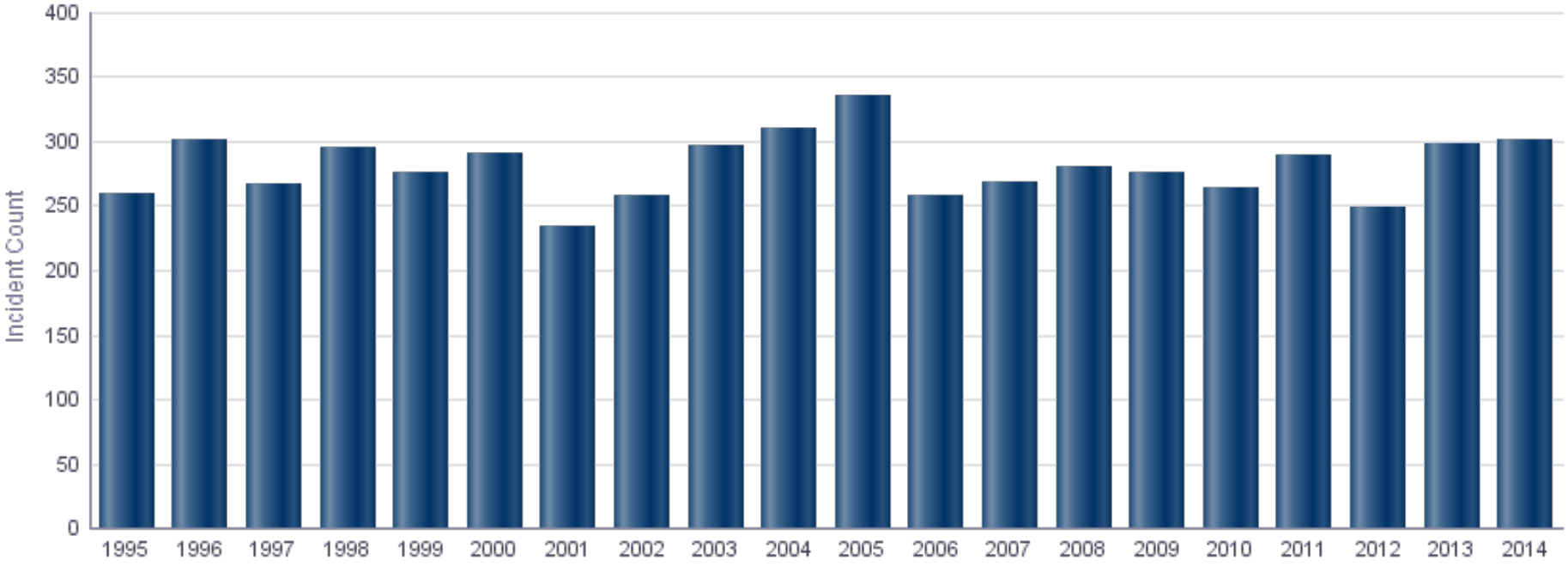


data as-of 2/2/2015

Serious – fatality or injury requiring in-patient hospitalization

Significant Incidents

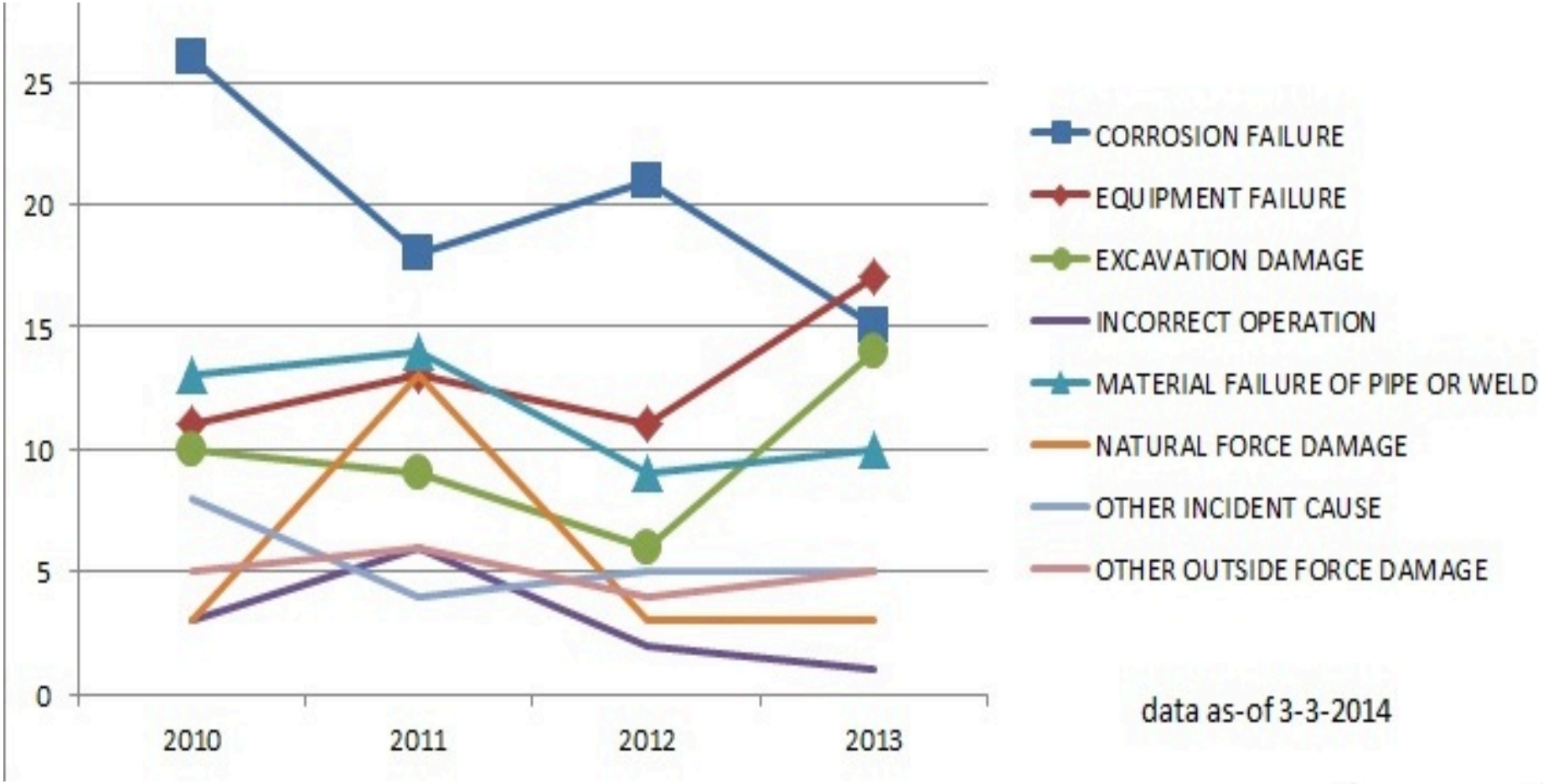
All System Types seems to have plateaued



data as-of 2/2/2015

Significant includes Serious incidents as well as incidents costing $50,000 or more in total costs, measured in 1984 dollars; Highly volatile liquid (HVL) releases of 5 barrels or more; Non-HVL liquid releases of 50 barrels or more; or Liquid releases resulting in an unintentional fire or explosion

Gas Transmission
Significant Incidents by Cause



data as-of 3-3-2014

Significant Gas Incident Rates Decreasing

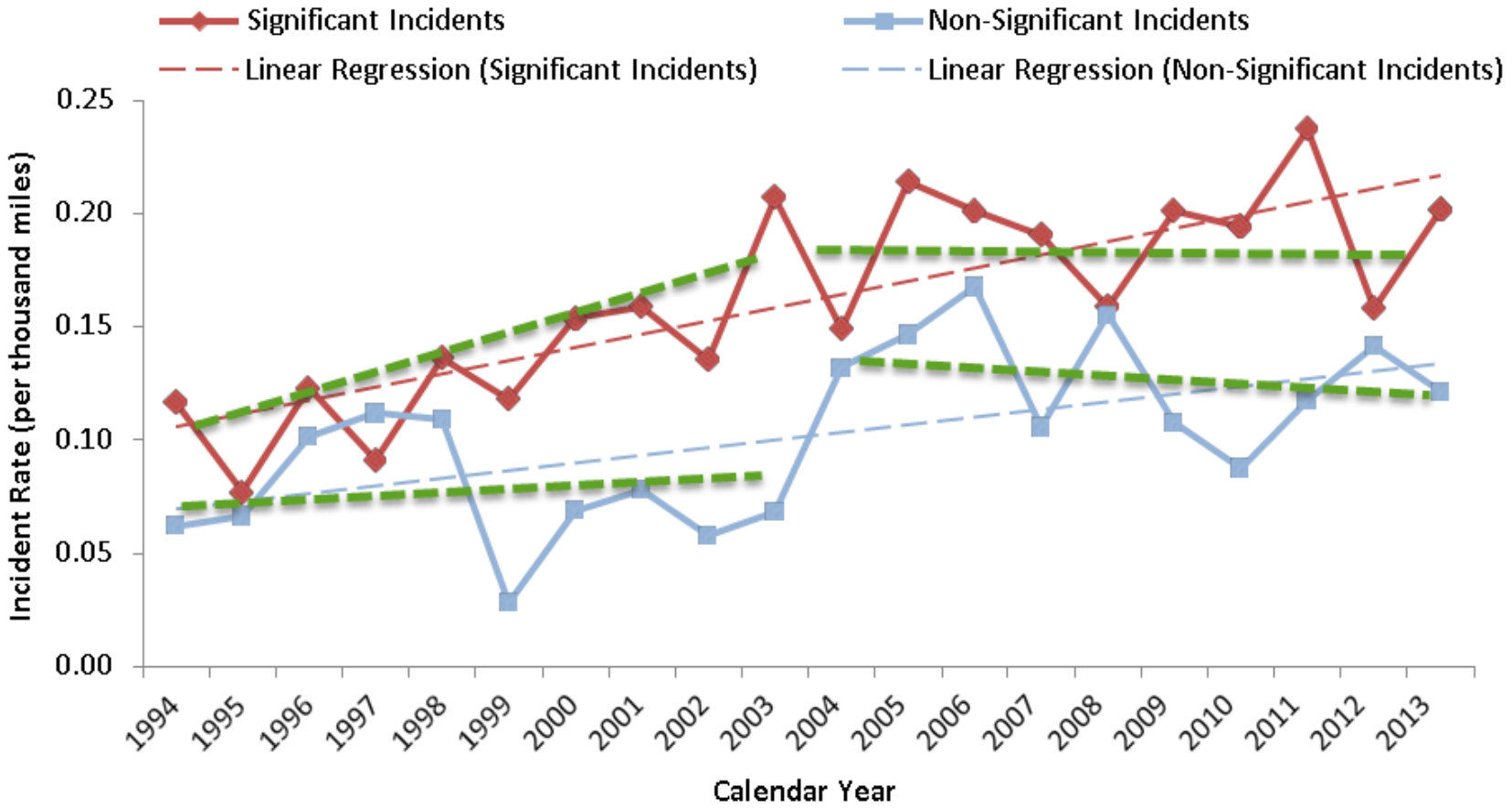


Figure 5. Incident rate (per 1,000 miles) for significant and non-significant incidents (1994–2012)

Actions by PHMSA to Enhance IM

- In addition to the NPRMs for IM of transmission pipelines, other rulemakings are in process that address congressional mandates and NTSB recommendations (San Bruno, CA ; Marshall, MI; etc.)
  - Amendments to Parts 192 and 195 to require Valve installation and Minimum Rupture Detection Standards
  - Performance Measurement of IM Programs and use of Meaningful Metrics in Conducting IM Program Evaluations
  - Integrity Verification Process to ensure Maximum Allowable Operating Pressures are based on verifiable records
  - Enhancements to NPMS data gathering for better mapping
  - Excess Flow Valves in Gas Distribution Systems
  - Stakeholder Workgroup on Risk Modeling and Threat Assessment initiated at Public Workshop in September, 2015

Management Systems are Effective

- Management Systems are an effective in reducing risks in many Industries – pipeline, nuclear, aircraft, processing, etc.
- PHMSA requires IM systems and has discussed the use of Quality and Safety Management Systems for pipelines.
- Integrity Management is a continuous improvement regulation for Operators and Regulators have been evaluating the Rule's performance and are acting within the rulemaking process
- IM Regulations have been in the process of being revised for several years, and it will take a few more years before current changes are implemented through the negotiated rulemaking process.
- PHMSA will continue to monitor the performance of operators and the pipeline industry to identify areas for improvement

NTSB Gas IM Safety Study

- On January 27, 2015, NTSB issued 28 Recommendations based on their study of implementation of the Gas IM Regulation. Twenty-two of the recommendations were directed at PHMSA
  - State Programs
  - Mapping and Geospatial Information Systems
  - High Consequence Areas
  - Threat Interactions and Threat Elimination
  - Risk Assessment Methodologies
  - Qualification of personnel performing IM tasks
  - Reporting Requirements
  - Required use of In-line Inspection (ILI) technologies
  - Removal of Direct Assessment as a sole integrity assessment method

Thank you for Your participation in Pipeline Safety

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DEPARTMENT OF TRANSPORTATION
UNITED STATES OF AMERICA