

Distribution Integrity Management Best Practices & Updates

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- Dominion Energy Ohio
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Education

- BSCE University of Akron
- Six Sigma Blackbelt
- Certified Project Management Professional

24+ Years in Industry

- Transmission Integrity
- Distribution Integrity
- Underground Storage Integrity
- Compliance/Pipeline Safety
- Regulatory Issues

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Dominion Energy Ohio

- ~20,00 miles of Distribution
- ~1,000 miles of Transmission

Dominion Energy Footprint

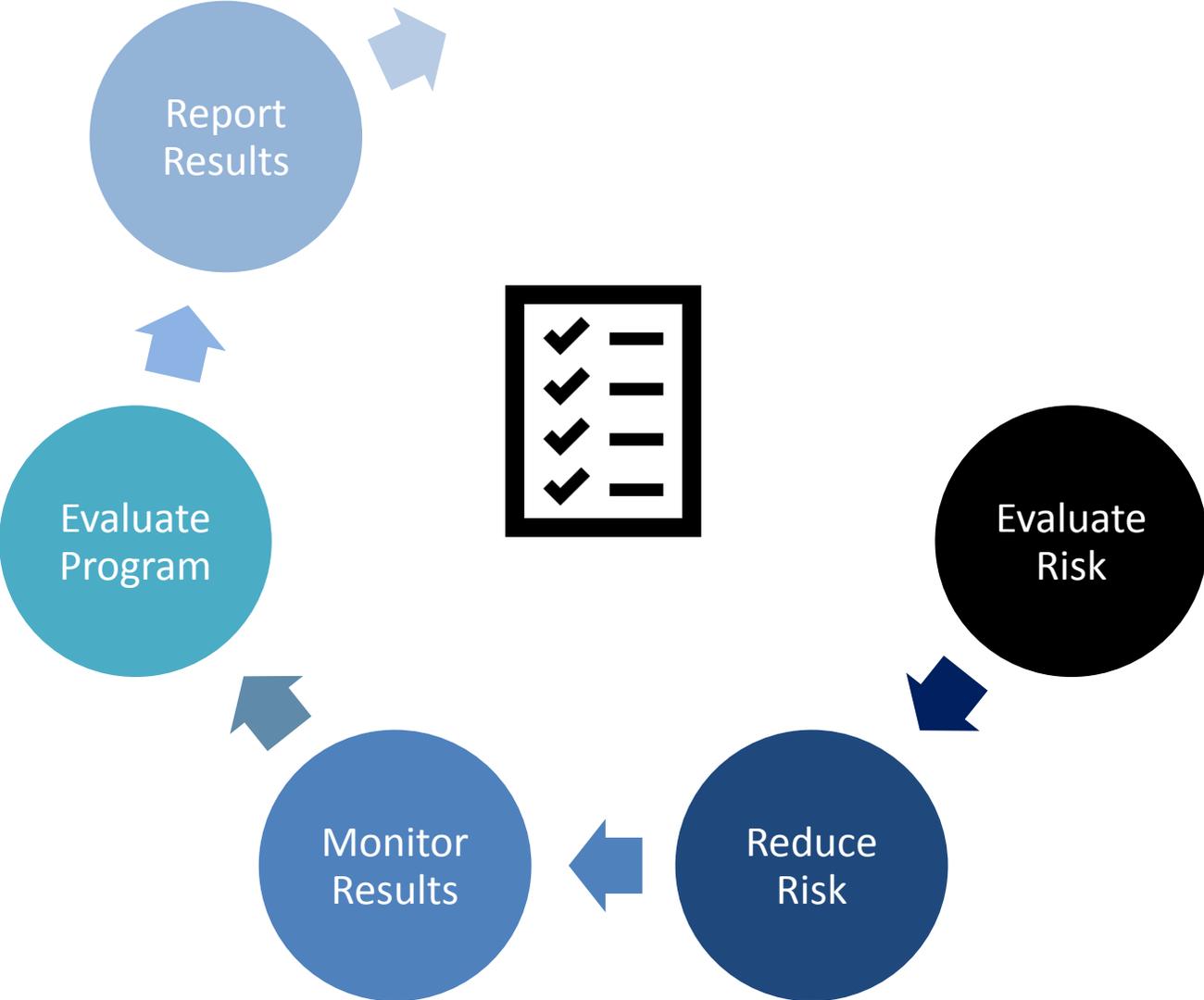
- Over 65,000 miles of pipelines
- Over 3.3 Million services



**Dominion
Energy**

Natural Gas Distribution
Technical Services

Distribution Integrity Management⁺ Program Elements



Know Your System

Distribution Integrity Partners Meeting

- **Who**: DIM and associated partners
 - Damage Prevention, Pipeline Safety, Corrosion, Operations, etc.
- **What**: Meeting to discuss distribution related topics, led by DIM team
- **When**: periodically
- **Why**:
 - Best connection to the field
 - Discuss potential threats, risks, and accelerated or additional actions
 - Ensure engagement with those closest to the pipe
 - Ensure understanding of DIM responsibilities

QUESTION:

What are other sources of system knowledge?

Identify Threats

Outside Threat Database

- **Who**: Integrity & Pipeline Safety, with support where needed
- **What**: Threats to the pipeline system are identified
 - PHMSA Advisory Bulletins, NTSB reports, major industry incidents, topics identified by other Dominion Energy companies
- **When**: regularly scheduled meetings
- **Why**: review for applicability to the Dominion Energy systems
- **How**:
 - Any action items are identified and assigned
 - Actions are tracked to completion
 - Threats, reviews, and actions are documented in SharePoint
- **Examples**: Duraline small diameter pipe, Merrimack Valley over-pressure

Evaluate Risk

Low probability/
high consequence
events

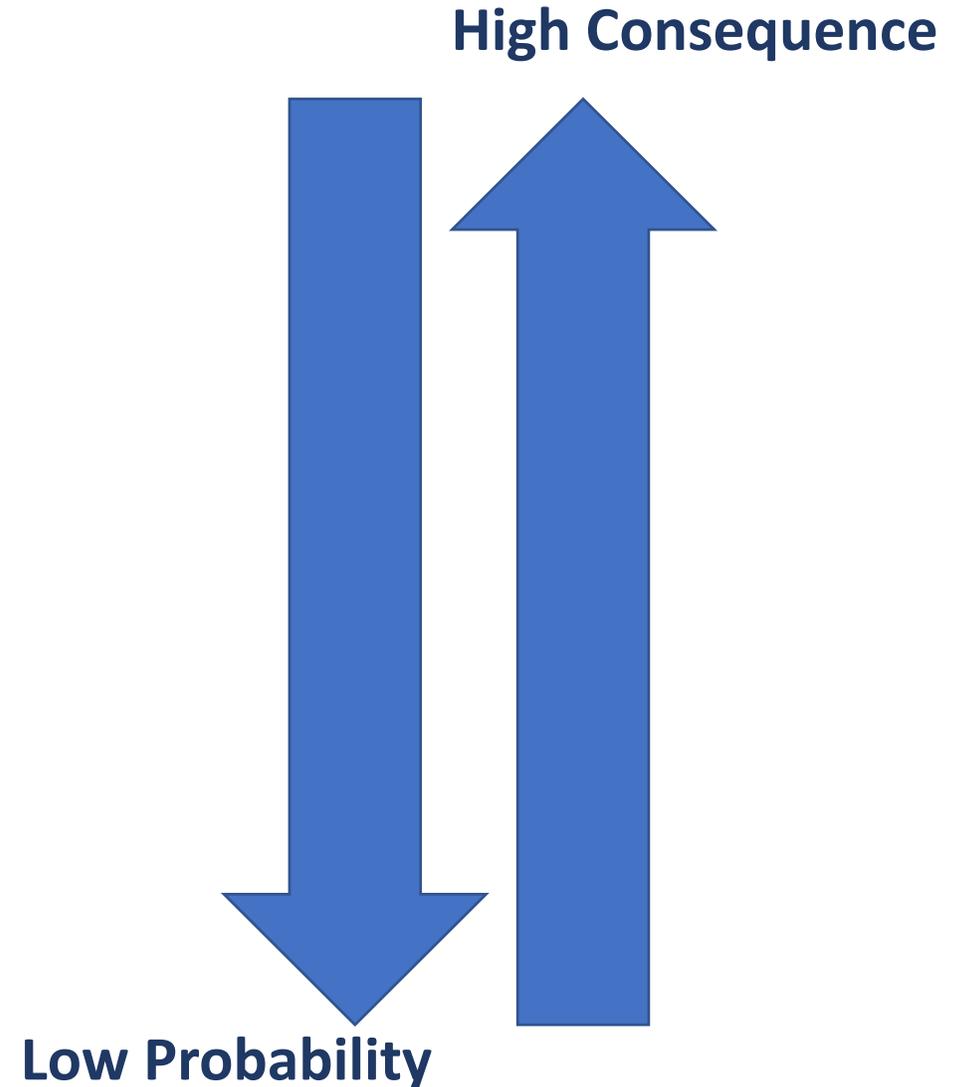
Consider these in risk evaluation
Sources: past incidents, industry
incidents

Example

Over-pressure events

QUESTION:

What are other examples of low probability/high consequence events?

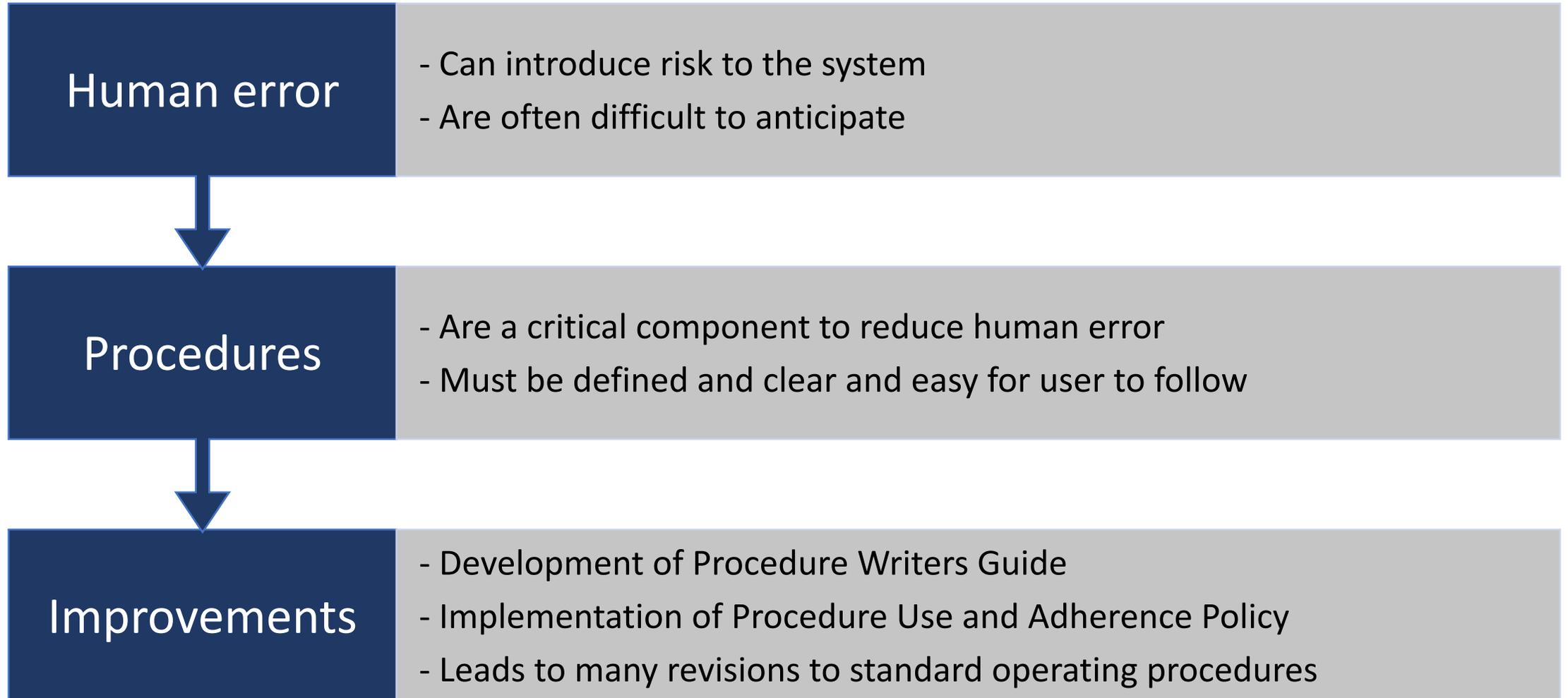


Reducing Risk

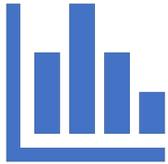
Prevention of Over-Pressure Events

- Review initiated following Merrimack Valley
- Considered
 - Internal SME reviews
 - AGA Leading Industry Practices
 - NTSB recommendations
- Developed recommendations
 - Process improvements
 - Checklists added
 - Station upgrades and regulator replacements
 - Meter move-out program

Risk Reduction: Considering Human Factors



Monitoring Results



Review metrics



Are they the right metrics?



What are they telling you?



Do they make sense?

Required Distribution Integrity Metrics

- # of hazardous leaks eliminated or repaired, by cause
- # of excavation damages
- # of excavation tickets
- # leaks eliminated or repaired, by cause
- # of hazardous leaks eliminated or repaired, by material
- Additional metrics as identified by the operator

QUESTION:

What additional metrics do companies track?

Program Evaluation

Have you considered data accuracy?

- Know your System

Have you looked at other DIM programs?

- What are some best practices?

Have you considered an independent review of your program?

- A third-party viewpoint may identify gaps

QUESTION: *what other methods do companies use to evaluate their programs?*

Report Results

Annual reporting

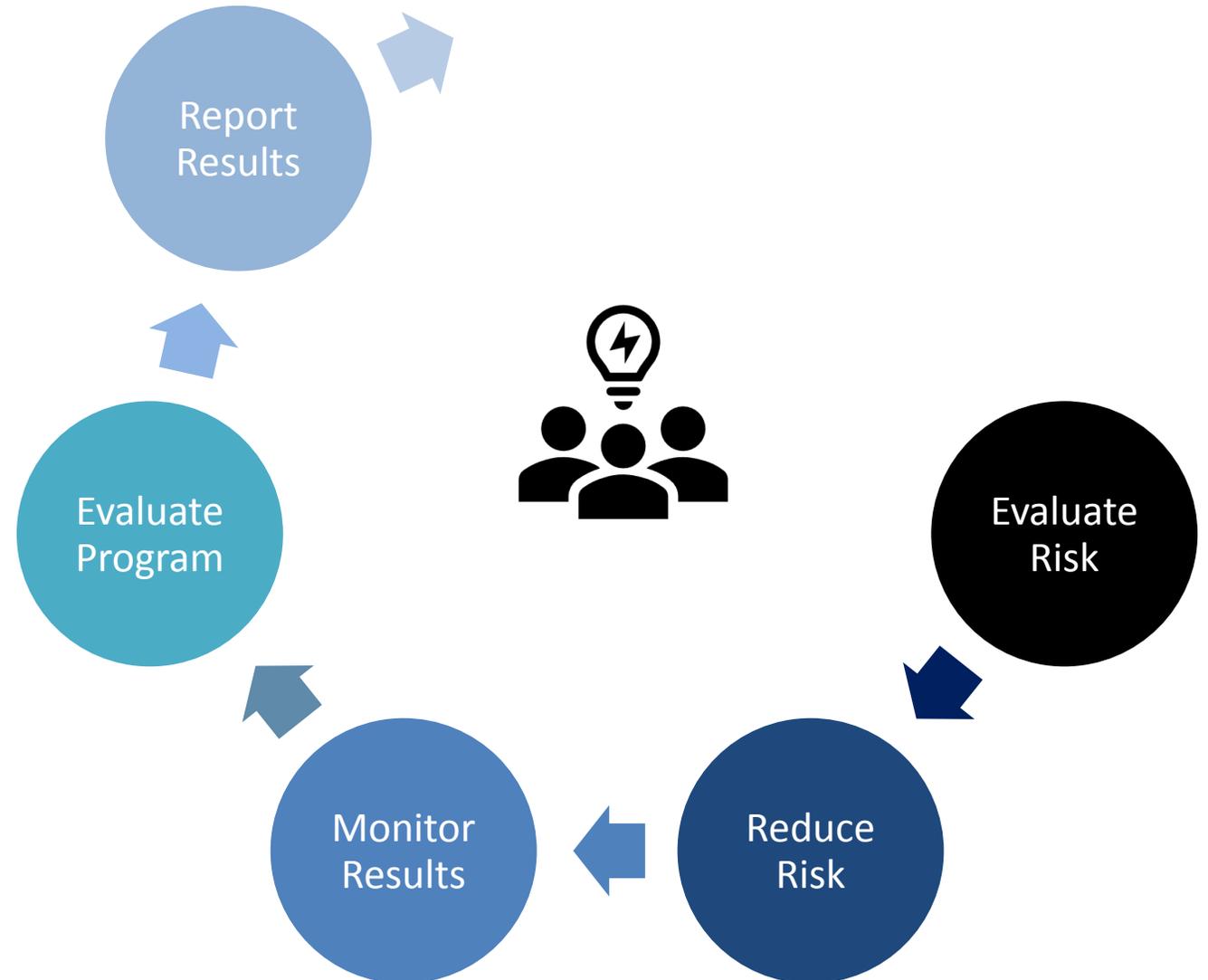
- Ensure data accuracy
- Trend your own data

Evaluate Results as Compared to Peer Companies

- Leaks per mile
- Leaks per # of services
- Miles of pipe by material
- % of leaks, by cause
- Excavation damages

Annual Report data for all companies is available on PHMSA's website

Distribution Integrity Management⁺ Program Elements



What Comes Next?

Proactive Approach to Regulatory Changes

DEO monitors pending regulatory items

2020 Pipes Act contains many DIM related items

Most topics expected to follow normal regulatory processes and are dependent on PHMSA

AGA provided a summary of 2020 Pipes Act

AGA Summary of Pipes Act (DIM related)

- ***Updating Distribution Integrity Management Plans.*** Within 2 years, PHMSA will require DIMP plans to include an evaluation of risks that could lead to over-pressurization. Operators must consider factors other than past observed abnormal operating conditions and avoid “zero” risk rankings unless supported by engineering or operational knowledge. Operators will make significant DIMP updates available to PHMSA/state authorities within 60 days. PHMSA and states have 2 years to review updated plans and PHMSA may conduct proceedings if an updated plan is inadequate. (Section 202)
- ***Updating Emergency Response Plans.*** Within 2 years, PHMSA will require operator emergency response plans to include written procedures for communicating with first responders, public officials, and the public as soon as practicable after confirmed discovery of an incident that results in a fire related to an unintended release of gas, explosion, or fatality, or an unscheduled release of gas and shutdown of gas service to a significant number of customers. (Section 203)

AGA Summary of Pipes Act (continued)

- ***Update O&M Plans.*** Within 2 years, PHMSA will require O&M manuals include procedures for (1) responding to possible over-pressurization, including actions and an order of operations for immediately reducing pressure in or shutting down portions of the system; and (2) “management of change” applied to technological, construction, equipment, and organizational changes to distribution system operations and ensure qualified personnel review and certify construction plans. (Section 204)
- ***Pipeline Safety Management Systems (PSMS).*** Within 3 years, PHMSA will report to Congress on operator PSMS progress and ways PHMSA could encourage further adoption. PHMSA and state authorities will assess existing operator PSMS frameworks and promote PSMS adoption industry wide. (Section 205)

AGA Summary of Pipes Act Pipeline Safety Practices (Section 206)

- **Records.** Within 2 years, PHMSA will require distribution operators to identify and manage traceable, reliable, and complete records critical for proper pressure controls and ensure these records are accessible to personnel responsible for relevant construction or engineering work.
- **Qualified Employees.** Within 180 days, PHMSA will require at least one individual to monitor gas pressure and have the capability to shut down gas flow or control over-pressurization during construction activities (some exceptions).
- **District Regulatory Station Upgrades.** Within 1 year, PHMSA will require operators to assess and as necessary, upgrade district regulator stations to minimize risk of over-pressurization from common-mode-of-failure, monitor low pressure system gas pressure at or near the location of critical pressure-control equipment, and ensure regulator stations have secondary or backup pressure relief or over-pressure protection technology. Where regulator stations employ primary-and-monitor regulator design, regulation will seek to eliminate common-mode-of-failure or provide backup protection capable of either shutting off or relieving gas, or other means. If PHMSA determines an operator cannot implement these regulations, the operator must identify actions minimizing the possibility of over-pressurization.

Summary

- Review the elements of DIM
- Consider “what else”?
- Challenge your current mindset
- Focus on continuous improvement
- Think ahead

Questions?