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DIMP

South Dakota / North Dakota Pipeline Safety Seminar

April 2009

Rapid City, South Dakota

Wayne St. Germain

U.S. DOT/PHMSA T&Q

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Distribution Integrity Management Program (DIMP)

DIMP 2007(8)(9?)

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NPRM

- Notice of Proposed Rulemaking (NPRM)
  - June 25, 2008
- Public Comment Period Extended
  - Oct. 23, 2008
- Final Rule
  - Fall 2009 (?)

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NPRM

"AGA views the proposed rule as the most extensive rulemaking for gas utilities since the code was codified in the 1970's"

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Motivation for DIMP

- Hazardous liquid IM rule published in 2000
- Gas transmission IM rule published in 2003
- AGF study (in 2004) concluded that distribution safety is consistent with transmission
- DOT IG testified to Congress (in 2004) that DOT should pursue distribution system safety improvements
- DOT required to report to appropriations committees (in 2005) on how IMP elements can be applied to distribution

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DIMP – Phase 1

- OPS Formed DIMP Team after IG Challenge
- DIMP Team met March and May, 2005
- Report to Congress filed June ’05
- Public Meeting June 16 – EFV’s
- DIMP public meeting Sept., 2005
- GPTC asked to Develop Guide Material during Rule Development

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Legislation

PIPES Act of 2006

- Mandated DIMP by 12/31/07
- Mandated EFVs by 6/01/08
- Promoted Improvements to One-Call Legislation and 3rd Party Damage Prevention
- Provided Funds to Promote 811

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Integrity Management

Distribution Integrity Management (DIMP)

- HCA Concept Does Not Apply
- ILI, Hydro Test & ECDA Do Not Apply
- Focus on Damage Prevention
- Focus on Leak Evaluation/Management

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Guidance

- DIMP Guidance:
  - GPTC Guidelines
  - APGA (SHRIMP)
    - Simple Handy Rule based Integrity Management Plan
    - Guidance for Small Operators, MMO's
  - Local Workshops and Seminars

"Performance Based" Regulations

New Initiative ~ IMP, OQ, PA, DIMP

- Formal Written Program
- Management Commitment & Support
- Defined Roles & Responsibilities
- Use of Industry Standards/Guidelines
- Long-term vs. Short-term Approach
- Monitoring Progress
- Periodic Formal Evaluation & Review
- Management of Change
- Continuous Improvement

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Rule Requirements

- DEVELOP WRITTEN PLAN
  - Within 18 months of Final Rule
- IMPLEMENT WRITTEN PLAN
  - Within 18 months of Final Rule

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Written Plan

- Develop Written Plan
  - Address 7 Program Elements
  - 5 for Master Meter Operators
- Tailor Plan to Fit Operator's System(s)
- Use Available Guidance (GPTC, SHRIMP)
- Include Application/Use of EFVs
- Include Plastic Pipe Reporting (?)
- Don't Procrastinate

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EXCESS FLOW VALVES (EFV)

GENERAL REQUIREMENTS.—Applies to new or replaced service lines serving single family residences

- EFV's must be installed on service lines installed or entirely replaced after [date: 90 days from publication of Final Rule] (Fall 2009 ?), unless:

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EXCESS FLOW VALVES (EFV)

- The service line does not operate at a pressure of 10 psig or greater throughout the year, or
- The operator has prior experience with contaminants in the gas stream that could interfere with the EFV's operation or cause loss of service, or

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EXCESS FLOW VALVES (EFV)

- An EFV could interfere with necessary operation or maintenance activities, such as blowing liquids from the line; or
- An EFV meeting the performance requirements of §192.381 is not commercially available to the operator

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7 Key Elements

1. Know the Infrastructure
2. ID Threats
3. Evaluate and Prioritize Risks (Not MMO's)
4. ID and Implement Measures to Manage Risks
5. Measure Performance, Monitor Results, and Evaluate Effectiveness of Program
6. Periodically Evaluate and Improve Program
7. Report Results (Not MMO's)

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Element 1: Know the Infrastructure

- Review data from Construction and O&M records, field surveys and patrols
  - * Leaks
  - * Maintenance
  - * Damages
  - * Work Orders
  - * Repairs
  - * Failures
  - * Pipe condition
  - * Corrosion Inspect's

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Element 1 : Know the Infrastructure

- Materials
- Construction Methods, Installation Dates
- Operating Conditions (pressure, design)
- Soil Conditions
- Other relevant factors within surroundings
- Use best information available
- Do not have to dig up system to collect data
- Update information as new or better data becomes available

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Element 2 : Identify Threats

Eight Primary Threats

1. Corrosion
2. Natural forces
3. Excavation Damage
4. Other outside force damage
5. Material or welds Failure
6. Equipment Malfunction
7. Inappropriate Operation
8. Other

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Element 2 : Identify Threats

Things to Consider

- **Does the threat exist throughout the system (general) or is it limited to a certain geographic region or material (local)?**
- **Consider subdividing the primary threats into sub-categories to better assess the relevance of a threat**
- **Ask questions to define or eliminate a threat**

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Examples of Corrosion Sub-Category Threats

- External corrosion – bare steel
- External corrosion – cast iron
- External corrosion – coated & wrapped pipe
- External corrosion – other metallic materials
- Internal corrosion
- Atmospheric corrosion

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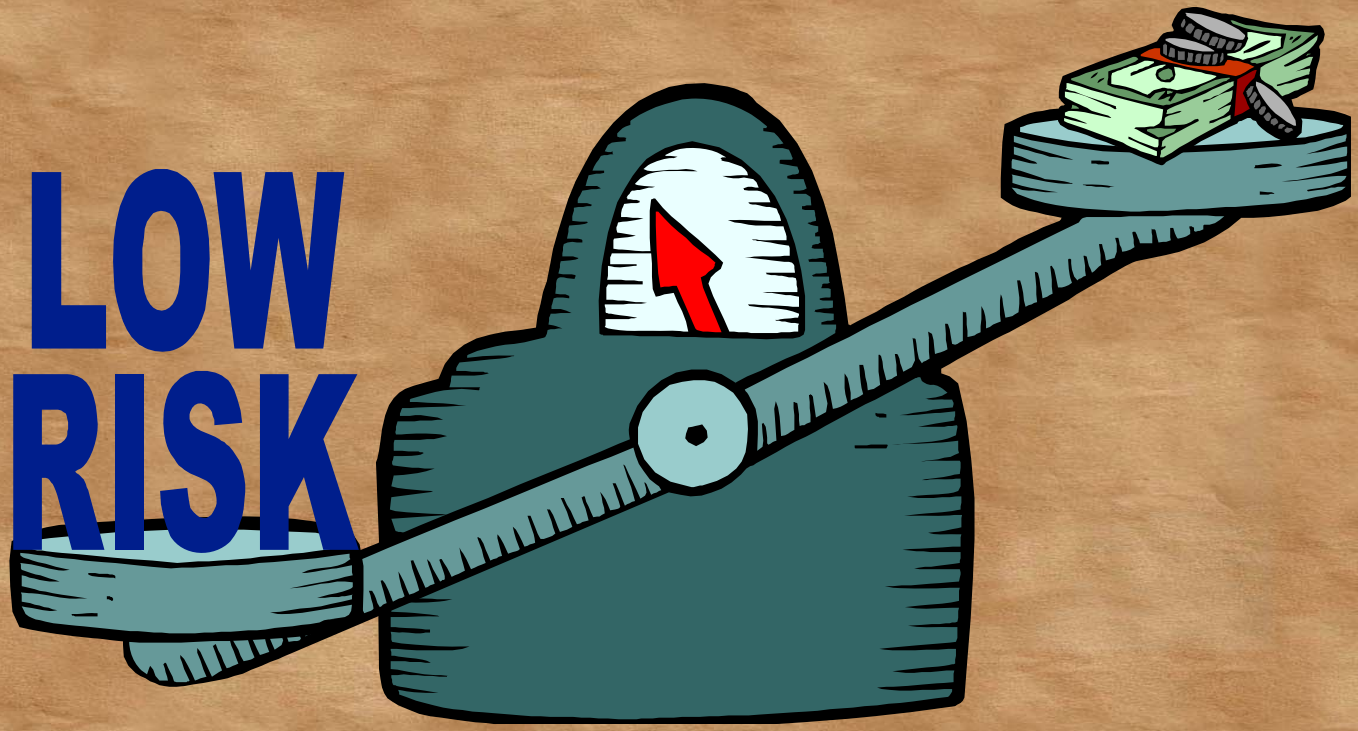
Element 3 : Evaluate and Prioritize Risks

(Not MMO's)



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What is Risk?

Risk is the product of the likelihood of a problem occurring and the consequences that could be caused by the problem if it occurs.

Risk = Likelihood x Consequences

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Purpose of Risk Evaluation

- **Determine if additional risk management practices are needed for the identified threats,**
- **Result should show relative risk ranking of facilities (pipe or components) relative to other facilities or groups of facilities. (i.e. bare steel versus coated steel or plastic)**
- **Two general approaches:**
  - **Use of subject matter experts (SMEs)**
  - **Use of mathematical methods (algorithm)**

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Sample Relative Risk Calculation

Consequence Factor (Multiplier*)	Frequency Factor (Multiplier*)		
	Low (1)	Medium (2)	High (3)
Low (1)	1 x 1	1 x 2	1 x 3
Medium (2)	2 x 1	2 x 2	2 x 3
High (3)	3 x 1	3 x 2	3 x 3

*Determined by Operator

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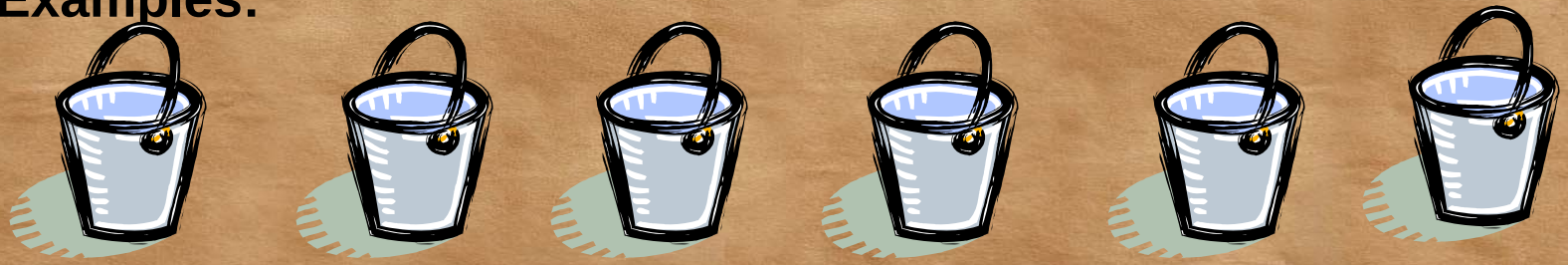
Example: Group Facilities

Group facilities into categories (buckets) based on common traits and problems.

Examples:



Cast Iron

Bare Steel (without CP)

Bare Steel (with CP)

Coated Steel (with CP)

Good PE

Problem Plastic

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Element 4:

Identify and Implement Measures to Manage Risk

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Must Include:

- Implementation of an Effective Leak Management Program
- Enhanced Damage Prevention Program
- Section “Assuring Individual Performance”
  - Evaluate and Manage Human Error
  - Prevention through People (PTP)

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Element 5 :

Measure Performance and Monitor Results

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Performance Measures

- Determine if risk management techniques or practices are effective.
- Develop performance measures that match the risk management technique or practice in your DIMP.
- Measures may be gathered and tracked for an entire system, specific geographic areas, material type, each facility or group of facilities or other reasonable organization.

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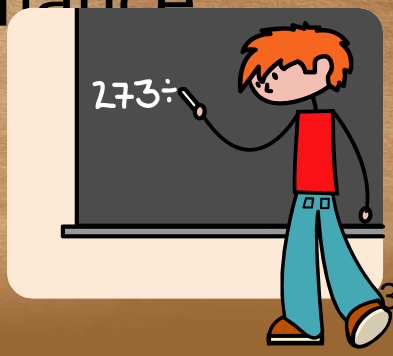
Performance Measures

- Should address specific RM (Risk Management) practices in the DIMP.
- Should be something that can be counted, tracked, monitored and supported.
- Select “a critical few” measurements.
- Develop or select performance measures that can use data already collecting or have accumulated.
- Where practical, use numeric performance measures.
- Do not ignore non-numeric methods.



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Example

Corrosion

- Leaks due to external or internal corrosion
- Exposed pipe condition reports that found corrosion or coating damage
- Repairs required due to non-leaking pitting damage
- CP zones found with low protection levels

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Example

Excavation

- Excavation caused damages (1st/2nd/3rd party)
- Damages per 1,000 tickets (normalized damages)
- Ratio of ticket no-shows to total tickets received
- Failure by notification center to accurately transmit tickets to the operator
- Damages by cause, facility type (mains, services) and responsible party

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Element 6 : Periodic Evaluation and Improvement

Must Include:

- Complete Program Review and Evaluation at least every 5 years
  - Operator must determine interval based on complexity of system and changes in risk factors
- Continual Re-Evaluation of Threats and Risks
- Must Include Periodic Evaluation of Program for "Assuring Individual Performance"

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Element 7 : Report Results

Annually to PHMSA by March 15th

(Not MMO's)

1. **Number of Hazardous Leaks Eliminated or Repaired**
   1. *Categorize by Cause*
2. **Number of Excavation Damages**
3. **Number of One Call Tickets**
4. **Number of EFV's Installed**

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- DIMP FR publish (Expect August/September 09).
- Final Rule is in clearance with PHMSA Legal office. Since we are in ex parte phase, we can not discuss details of the Rule.
- We can tell public that the Advisory Committee (TPSSC) voted and have accepted our intent to:

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- remove PTP
- remove Plastic pipe failure reporting except that compression coupling failures reporting would still be required
- simplify and remove lot of documentation and recordkeeping requirements
- considering MM and LPG operators to rank risks and
- require EFVs for new installations
- Time to implement would be 18 months after the final rule gets published

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