Agenda

• (Revisit) Technical approach
• Successes
• Opportunities
• Discussion
Integrity Management – Technical Approach
Technical Approach

- Concept of High Consequence Areas
- Risk Management
- Process driven life cycle
High Consequence Areas

Hazardous Liquids

• 49 CFR 195.450, Definitions, HCAs:
  – A **commercially navigable waterway**, which means a waterway where a substantial likelihood of commercial navigation exists;
  – A **high population area**, which means an urbanized area, as defined and delineated by the Census Bureau, that contains 50,000 or more people and has a population density of at least 1,000 people per square mile;
  – An **other populated area**, which means a place, as defined and delineated by the Census Bureau, that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area;
  – An **unusually sensitive area**, as defined in § 195.6 – A USA means a **drinking water** or **ecological resource area** that is unusually sensitive to environmental damage from a hazardous liquid pipeline release.
High Consequence Areas

Hazardous Liquids
High Consequence Areas

Natural Gas
Risk Management

- Integrate data
- Conduct Risk Analysis
  - Risk = Likelihood (Probability) of Failure x Consequence of Failure
High Consequence Areas

- Manage risk of assets
  - Assessments/Rehabilitation
  - P&MMs
Written Programs

Robust process drives successful Integrity Management Programs

- Who has responsibility
- Resources needed
- Frequency & triggers
- How the task is done
- Communication of outputs
- Documentation
- Links to other program elements
Integrity Management – Successes
Successes

• Evolution of:
  • Data integration and mapping capabilities
  • Inline inspection technologies and programs
• Operators use of flexibility allowed by the Rule(s) to manage system integrity
  • Variability in written IM programs
  • Scaled and varying approaches to IM strategies
• Anomalies repaired
Integrity Management – Where can we be better and what have we learned?
Opportunities

- Not all HCA studies are created equal
- Focus on collection data, not technology
- Need to advance Risk Assessments
- Build in time to study the why...
- Program Evaluation
HCA Studies – Hazardous Liquids

- Leak detection and shutdown times
  - Overly optimistic vs. realistic
- Application of buffers
  - Needs technical justifications
- Operator identified (non-NPMS) HCAs
  - Population areas
  - ECO areas
HCA Studies – Hazardous Liquids

• (1.01) The operator shall correctly identify and maintain up-to-date locations and boundaries of HCAs using NPMS and other information sources as appropriate for all states/regions in which it operates.
HCA Studies – Natural Gas

- Quality Control
- Structures!
- Year over year comparisons
Data Collection

- Technology doesn’t fix missing or incorrect data
  - Find out what you don’t know!
CAUTION - ALLIGATORS
DO NOT FEED OR APPROACH
STAY AT A DISTANCE
VENOMOUS SNAKES
EXIST IN THIS PARK
Risk Assessment

- Standard SME/Indexing models
  - Difficulty identifying actionable risk results
  - Qualitative (probabilistic)
- Risk Modeling Work Group
Risk Assessment

• (5.06.01) Risk results should point to areas posing the highest risks to HCAs. Operator risk analysis results should not only be the output of an automated algorithm, but should involve participation and review by knowledgeable operator field and headquarters personnel. In turn, operator conclusions regarding the highest risk locations should be verified by inspectors in light of common sense, inspector experience and knowledge, and available operating history. **One important output of operator risk analysis processes is the prioritization of segments for activities such as integrity assessments.**

§195.452 (e),(f),(g),(i)(2)
Why?

• Ask ourselves why at various IM element checkpoints
  • Why is this HCA off the list?
  • Why is risk... high/low?
  • Why are we having these anomalies?
Program Evaluation

• Is the program being implemented as written?
• Is the program effective in improving asset integrity?
Program Evaluation

- Self evaluation is critical in any safety program
  - Operators must identify goals and objectives
  - Operators must identify metrics to measure to those goals and objectives
  - Operators must measure program progress
Program Evaluation

• Written Program Reviews
  • Have a 3rd party/colleague review your written program
Guidance on the elements and characteristics of a mature program evaluation process that uses meaningful metrics.

Guidance for Strengthening Pipeline Safety through Rigorous Program Evaluation and Meaningful Metrics
Lessons Learned

• Not all HCA studies are created equal
• Focus on collection data, not technology
• Need to advance Risk Assessments
• Build in time to study the why...
• Program Evaluation
Questions?

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