Risk Modeling Methodologies Public Workshop

NAPSR Perspectives

Arlington, VA
September 9-10, 2015

NAPSR Overview

- The National Association of Pipeline Safety Representatives (NAPSR) is a non-profit organization representing State pipeline safety personnel who serve to promote pipeline safety in the contiguous United States as well as the District of Columbia and Puerto Rico. Through a partnership with the U.S. Department of Transportation, NAPSR members have oversight responsibilities for the safe and reliable transportation of natural gas and hazardous liquids through intrastate pipelines.
- NAPSR provides its membership with a venue to share best practices, enhance communications with our federal counterparts, raise new issues, and influence policy.
- NAPSR strives to strengthen State pipeline safety programs through the promotion of improved pipeline safety standards, education, training, and technology.

What is Risk Management?

Risk management means the systematic application, by the owner or operator of a pipeline facility, of management policies, procedures, finite resources and practices to the tasks of identifying, analyzing, assessing, reducing and controlling risk in order to protect employees, the general public, the environment and pipeline facilities.

(U.S.C. 60101)

Risk Modeling – NAPSR Perspective

- Operators must *know their systems*
- Risk models should be rational
- Risk models must be fully documented
- Risk models should be validated for reasonableness (SME's, Sensitivity)

Risk Modeling – NAPSR Perspective

- Risk models should be data driven and objective
  - Risk models should integrate and consider data from multiple sources
  - Lack of data may affect type of model
  - GIS should be incorporated into the model
  - Data quality is important to effective risk modeling
  - Risk models must be dynamic and consider new or changing information as it is discovered

Risk Modeling – NAPSR Perspective

- Risk models should be data driven and objective (Cont.)
  - Risk models must react to new and changing threats which may develop within their systems
  - Gap analyses should be performed to identify missing data
  - Plans must be developed and executed to obtain missing data

Risk Modeling – NAPSR Perspective

- Operators are expected to identify and incorporate all threats into their risk model
  - Operators must *know their systems*
  - Consider the nine threat categories (ASME B31.8S)
  - Operators must understand their risk model
  - Data integration is key to a robust model
  - Lack of knowledge does not justify threat elimination
  - Minimization of threats by operators must be fully documented and supported
  - No threat truly eliminated

Risk Modeling – NAPSR Perspective

- Operators are expected to identify and incorporate all threats into their risk model (Cont.)
  - Threats can and do change over time
  - Interactive threats must be considered
  - System or pipeline specific threats
  - Risk model drives preventative and mitigation measures

Risk Modeling – NAPSR Perspective

- Operator personnel involved with risk models and assessments must be experienced and knowledgeable of:
  - The pipeline system and operations
  - The risk model
  - The data discrepancies

Risk Modeling – NAPSR Perspective

- Operators should consider the implications of model complexity
- Documentation of model and decisions is imperative

Risk Modeling – NAPSR Perspective

- Effectiveness evaluations of program must include:
  - Determination of whether risk model is still appropriate
  - Data integration
  - Effectiveness of preventative and mitigation measures
  - Plan-Do-**Check**-Adjust

Risk Modeling – NAPSR Perspective

- Pipeline Safety Management Systems (PSMS) concepts must be embraced
  - Continuous process improvement (PDCA)
  - Risk management must be incorporated into the operator's daily activities
  - Pipeline safety culture and stakeholder communication channels must be supportive of risk model

CONCLUSION

- Risk models must be data driven and objective
- Risk models must consider all threats (anything that can go wrong)
- Risk models must be rational and documented
- Risk models drive P&M measures
- Operator personnel must be qualified
- Pipeline Safety Management System concepts must be embraced

CONCLUSION

Operators must know their systems!

QUESTIONS?