

Liquids Pipeline SMS Workshop



API RP 1173 Risk Management



April 26th, 2016 | Houston, TX

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Risk Management - General

The pipeline operator shall maintain (a) procedure(s) for the performance of risk management.

API RP 1173 provides definitions of:

- Risk
- Risk Analysis
- Risk Management
- Threat

The practice of risk management builds employee confidence in management's commitment to safety.

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Risk Management - Data Gathering

The pipeline operator shall maintain an inventory of the pipeline and environment in proximity to the pipeline that is required to define safe operating conditions as well as maintenance.

These data serve as the foundation of risk management and shall include available data over the pipeline life cycle and shall be updated based on work performed and as needed during the life of the pipeline.

The pipeline operator shall conduct a regular review to identify gaps and evaluate data quality as part of risk assessment.

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Risk Management - Identification & Assessment

Identification

- Risks to pipeline safety shall be identified based on data and information, as well as knowledge and experience with similar facilities;
- The operator shall maintain a process to identify threats including changes in conditions;
- Be mindful of “what can go wrong?”.

Assessment

- Consider likelihood and severity of threats;
- Performed and updated as information and conditions change;
- Supports the selection of prevention and mitigation measures.

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Risk Management - Prevention & Mitigation

Risk prevention and mitigation measures to reduce the likelihood and consequences of release shall be identified and evaluated to improve situational awareness.

Preference shall be given to prevention measures that eliminate or reduce the likelihood and/or consequence of incidents.

Operators shall implement the selected measures and evaluate their impact on risk.

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Risk Management - Periodic Analysis & Management Review

Risk assessments shall be reviewed at least annually and updated as warranted using data and information gained from operations and maintenance, inspection and testing, integrity related work, and incident investigations.

Risk management results, including selected risk mitigation methods and their intended effectiveness shall be reviewed, at least annually, with top management.

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Risk Management - Let's Discuss

- How do you develop & maintain the description of the assets comprising the pipeline, which includes attribute data, construction history, operational data and previous inspection results? What are the sources of data you use to acquire this information?
- How do you identify all potential threats including time dependent threats (such as corrosion), static threats (such as construction defects), time independent threats (such as third party damage) and human error?
- How do you consider the interactive nature of threats (i.e. more than one threat occurring on a section of pipeline at the same time).

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Risk Management - Let's Discuss

- What approach do you use to determine the likelihood & consequence of the identified threats on the pipeline and how do you prioritize segments that require mitigating action?
- How do you determine the most effective mitigation methods for the identified threats?
- What does a successful risk management program look like in your organization?