



RP 1175



Pipeline SMS

# PIPELINE LEAK DETECTION — PROGRAM MANAGEMENT

A Pipeline Safety Management System

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## A Holistic Framework to Leak Detection

While pipeline operators are taking significant steps to meet the goal of zero incidents, they must have a comprehensive mitigation strategy to reduce the impact should a release occur. Leak detection programs that operate 24 hours a day, 7 days a week are a critical piece of this strategy. In API RP 1175, operators are instructed to institute a holistic leak detection program that is comprehensive and can be measured to ensure opportunities for improvement are adequately and timely addressed.

- Guidance is given on development, implementation, and management of a comprehensive leak detection program.
- Also provided is enhanced direction and establishment of appropriate performance measures.
- Instruction is presented to help address identified gaps and use this data to make adjustments for building a complete leak detection program

API RP 1175 focuses on using a risk-based approach when instituting a leak detection program supporting a philosophy that all leak detection systems, which combined form a leak detection program, should be managed in a coordinated manner, with the goal being mitigation.

## The Necessary Culture

The document places appropriate emphasis on establishing a suitable leak detection culture, one that encourages ongoing management direction and support and an attitude of doing every task, the right way, every time. Also, this strong safety culture helps pipeline control room operators analyze potential signals objectively, shut down a pipeline when warranted, and only restart a pipeline when reasons for alarm are known and resolved.

There is also beneficial guidance on how control centers should recognize and respond during a suspected leak, including ensuring leak response procedures are documented.

A culture of “thinking to knowing” is reinforced, encouraging pipeline personnel to take the steps to know what is occurring rather than just assuming.

The RP states that all potential leak alarms should receive immediate attention and be evaluated to ensure any potential harm is mitigated. After the alarm is confirmed to be false, extra caution needs to be taken during the pipeline restart. Also, the leak alarm should be investigated to prevent similar incidents in the future.

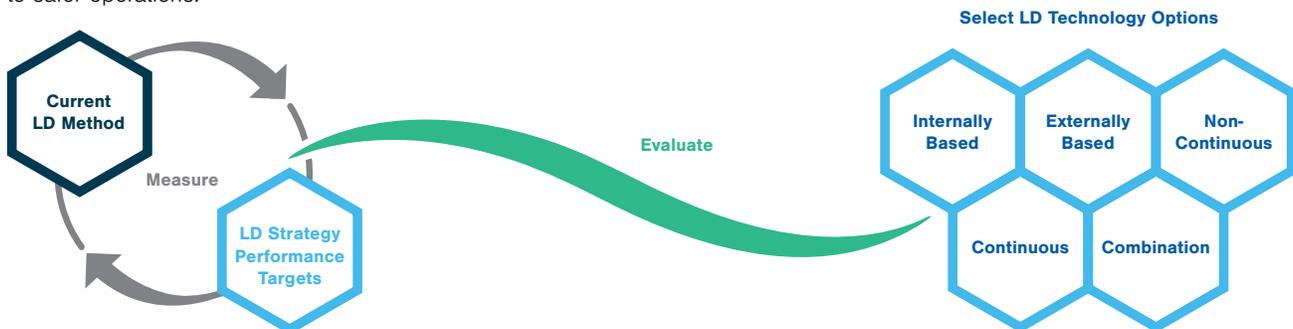
## Critical Content in API RP 1175:

- Direction on Selecting Appropriate Tools
  - Guidance is provided in the RP to pipeline operators on selecting and integrating their leak detection tools.
  - Some of the key questions operators need to ask when selecting include:
    - Does the tool's use align with a culture and strategy given in API RP 1175?
    - How does it support the systems performance and how can it be measured?
    - Does it meet regulatory requirements, industry best practices, and company requirements?
    - How is the overall risk assessment for the system affected by the tool?
- Essential Measures for Tools
  - API RP 1175 helps operators develop metrics to ensure the program in use is effective.
  - Reliability, sensitivity, accuracy, and robustness in a system should be measured and based on the findings, necessary adjustments made.
  - An example of using metrics is to assess and improve alarm frequency so that actual leaks consistently trigger alarms and false alarms are eliminated.

## Implementing API RP 1175 Leads to Beneficial Impact

With Industry willing to implement the guidance in API RP 1175, the valuable practices will be put into action.

Operators will begin to measure the effectiveness of their leak detection programs and adjust appropriately leading to safer operations.



*America's Pipeline Industry:  
Focused on Zero Incidents, Committed to Continuous Improvement*

## Stakeholders Collaborating to Improve Safety

API Recommended Practices (RPs) standardize and disseminate best practices across the industry

- Developed via open, accredited processes, with formal review and comment periods
- Provide all operators with the benefits of the industry's combined expertise in critical areas
- Once adopted and implemented, establish standard practices across the industry

## The Energy Pipeline Industry is Committed to Improving the Safety of America's Pipeline System

- Research
  - Advancing state-of-the-art technology for leak detection and mitigation tools
- Collaboration
  - Merging company data sets to understand industry trends
- Measurement
  - Tracking industry results to understand program effectiveness and appraise industry implementation