API RP 1175

PIPELINE LEAK DETECTION-PROGRAM MANAGEMENT
IMPLEMENTATION KICK-OFF WEBINAR

NOVEMBER 3RD, 2016, 10 AM TO 11:30 AM CT
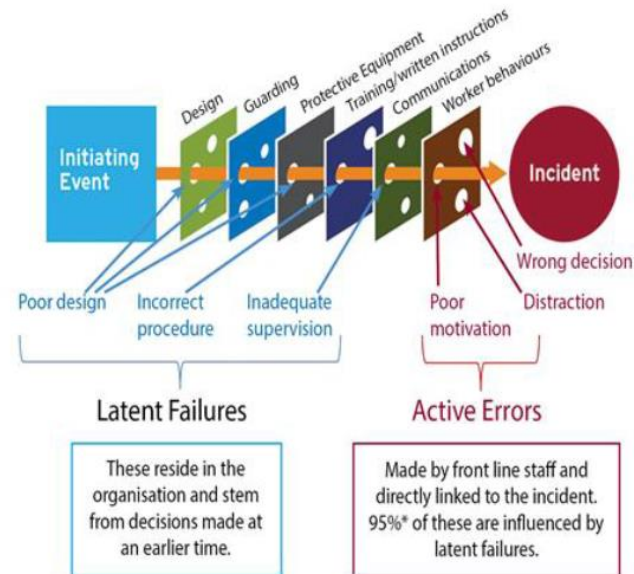
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Human Behavior Analysis
Foundation to Success or Failure: Technology, Process, People

Humans don't intentionally make errors. They are often set up to fail by the way the brain processes information and hidden latent failures; such as:

- Inappropriate design,

- Lack of training or misleading procedures, and even,

- The culture within our organization.

Human Error is not RANDOM! There are patterns and types.

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SAFETY MOMENT

Historical Data
Understand the source of your Data

- Two Graphs
  - Graphs look similar, but they give us a different impression
    - Small leaks are slightly Higher
    - Are Med and Large leaks going Up? or Down?

- What are Differences in Graphs?
  - PPTS vs PHMSA
  - No./1000miles vs No. of Leaks
  - Size of leaks
    - <50bbl, 50-500, and >500bbls
    - < 5bbl, 5- 50, and > 50bbls
  - ROW vs Facility
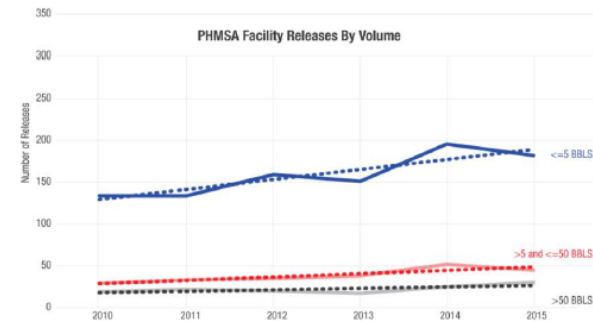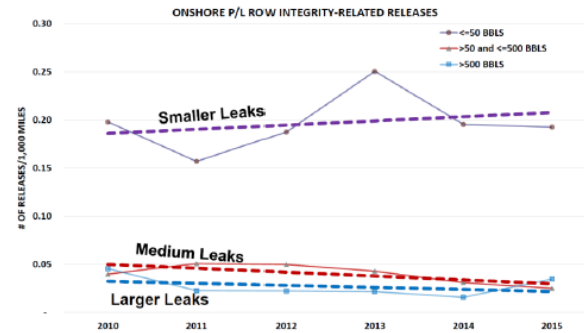
If it confuses us, imagine what it does to the Public.

Safety Moment

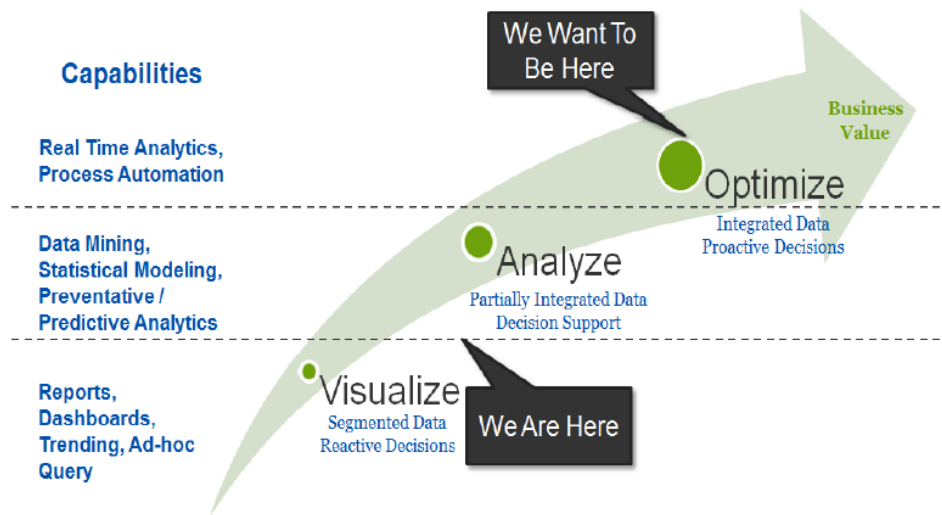## CPLs Vision to Knowing….

Real-time optimized processes that deliver CPL's integrated consequence assessment (the barrier model).

- Includes all aspects of integrity and operations.
- CPL knows the overall Company Risk (through Pipeline Integrity Management).
- Business decisions are based on insights from analytics and predictive models
- Validates that barriers are functioning and effective

Decisions are being made without a holistic view of Integrity information from the multiple functions of Reliability, Integrity, and Risk.

Capabilities

Real Time Analytics, Process Automation

Data Mining, Statistical Modeling, Preventative / Predictive Analytics

Reports, Dashboards, Trending, Ad-hoc Query

We Want To Be Here

Optimize
Integrated Data
Proactive Decisions

Business Value

Analyze
Partially Integrated Data
Decision Support

Visualize
Segmented Data
Reactive Decisions

We Are Here

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PURPOSE

(JASON DALTON, MARATHON PIPE LINE, SUPERVISOR OF HYDRAULICS AND LEAK DETECTION)

- Provide a defined start to the implementation of the Recommended Practice.

- API RP 1175 recognizes that high quality leak detection depends on People, Processes and Technology

- Formally introduce the eleven key elements of API RP 1175 to the Industry

- Leak Detection and Strategy
- Selection of Leak Detection Methods
- Performance Targets, Metrics and KPI
- Testing
- Control Center Procedures, Recognition and Response
- Alarm Management

- Roles, Responsibilities and Training
- Reliability Centered Maintenance for LD Equipment
- Overall Performance Evaluation of the LDP
- Management of Change
- Improvement Process

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AGENDA

- Introduction of the Implementation Team and Goals-Doug Sauer

- API Provided Resources-Stuart Saulters

- Gap Analysis Tool-Marieli Romero

- Next Steps-Jason Dalton

- Questions and Answers-Rick Bishop

IMPLEMENTATION TEAM AND GOALS

(DOUG SAUER-MANAGER OF LOGISTICS SERVICES, PHILLIPS 66)

- AOPL & API member leaders chose Implementation of RP 1175 to be a strategic initiative
  - Incorporated this initiative into the industry's strategic plan
  - Established goals and formed an industry team to lead this initiative

- Implementation Team:
  - Doug Sauer - Phillips 66 Pipeline
  - Rick Bishop - Buckeye Pipeline
  - Donny Chiasson - LOOP, LLC.
  - Jason Dalton -Marathon Pipe Line
  - Robert Morgan - Chevron Pipe Line
  - Ray Philipenko - Enbridge
  - Marieli Romero - TransCanada
  - Stuart Saulters - API

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IMPLEMENTATION TEAM AND GOALS

(DOUG SAUER-MANAGER OF LOGISTICS SERVICES, PHILLIPS 66)

Goals

1. Align industry on the benefits and need to implement RP 1175

2. Enhance industry understanding on creating a risk-based leak detection program (LDP)

3. Share pipeline companies best practices on LDP safeguards and responses regarding detecting leaks quickly and reliably

4. Demonstrate industry's proactive commitment to LD Program management

5. Describe the journey of industry's ability to recognize large and small leaks to address the concerns from public stakeholders

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1. Industry Alignment

- Align industry, both practitioners and leaders of hazardous liquid pipeline operators on the benefits and need to implement RP 1175.

- API RP 1175 should be used across the liquids industry to evaluate operator's leak detection program by conducting gap assessments

- API RP 1175 is a tool to strengthen each operator's LD program to a more consistent and robust level

- Provides flexibility to allow each operator to make leak detection program decisions based on their company's needs and risk tolerances.

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2. Enhance industry understanding

- Enhance the industries' understanding of a risk-based Leak Detection Program (LDP), which includes all forms of leak detection used by a pipeline operator managed in a coordinated manner.

- API RP 1175 can be used to create a new LDP from the ground up using established best practices or as an enhancement tool to build upon existing programs.

- This initiative allows operators to tap into expertise across our industry instead of just in their individual companies.

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3. SHARE INDUSTRY BEST PRACTICES

- Share pipeline companies best practices and lessons learned
  - on LDP safeguards (i.e. methods and/or technologies)
  - and LDP responses (i.e. protocols and/or procedures)

- Overall goal of detecting leaks quickly and reliably to minimize spill consequences.

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4. DEMONSTRATE INDUSTRY COMMITMENT

- Widespread adoption of API RP 1175 will show a true commitment from our industry to improve our ability to detect and respond to leaks

- Demonstrate industry's proactive commitment to establish effective LDPs, including further research and best practices for LDP improvement.

- It starts with Leadership support for a Leak Detection culture and Implementation strategy

5. SHARE THE INDUSTRY'S LDP JOURNEY

- External Stakeholders are not necessarily aware of the progress that has been made, and that can be made, as the industry aligns around this common goal.

- Describing the journey of industry's ability to recognize large and small leaks to address the concerns from the public, Congress, National Transportation Safety Board (NTSB), and Pipeline and Hazardous Materials Safety Administration (PHMSA).

API Tools and Resources

(Stuart Saulters-Policy Advisor, American Petroleum Institute

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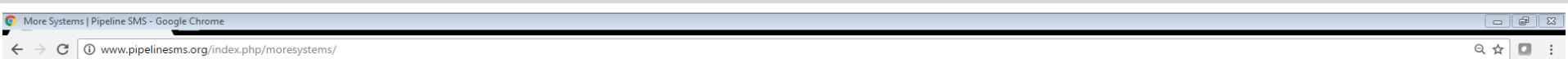
Leak Detection Management System

Mission and Objectives

The desired goal of any pipeline operator is to maintain a robust leak detection program to facilitate appropriate actions to prevent adverse impacts to infrastructure, the environment, and public safety. The guidance in API Recommended Practice (RP) 1175, Pipeline Leak Detection – Program Management, provides the needed framework to develop sound practices within a pipeline company. This RP:

- Provides liquid pipeline operators with guidance on development, implementation, and management of a sustainable Leak Detection Program (LDP) to minimize the size and consequences of leak events; while the focus is on liquid pipeline operation, the philosophy of the RP can be extended to gas pipeline operation.
- Provides pipeline operators with enhanced guidance on selection of leak detection systems (LDSs) using a risk-based approach and establishes performance measures for the capabilities of these systems.
- Provides information on how to address identified gaps.
- Provides guidance in developing, maintaining and managing a pipeline LDP that conforms to current pipeline regulations, as well as encourages pipeline operators to "go beyond" in order to promote the advancement or stronger utilization of LDPs in hazardous liquid pipelines.

Guiding Principles

The overall goal of the LDP is to detect leaks quickly and with certainty, thus facilitating quicker shutdown and therefore minimizing negative consequences. There are several key parts within API RP 1175:

- **Leak Detection Culture & Strategy:** Develop and create a LDP that is supported by all branches and departments of the company ranging from management down to daily operators. Outline how the company will meet minimum regulatory requirements and encourage going beyond the minimum to implement industry best practices.
- **Selection of Leak Detection Systems:** Select the desired principles, methods and techniques that will become the foundation of the company's LDP.
- **Performance Targets, Metrics, & KPIs:** Establish performance targets, metrics, and KPIs for LDSs.
- **Testing:** Perform periodic testing of LDSs within the LDP. This allows for the opportunity to improve the culture, procedures and knowledge levels.
- **Control Center Procedures for Recognition, Response & Alarm Management:** Develop procedures to ensure that appropriate action, tools, analysis and understanding of any potential leak indication is carried out effectively.
- **Roles & Responsibilities:** Pipeline operators should have clear descriptions of their employee's roles and responsibilities, as well as the duties of any other stakeholders.
- **Training:** An effective training program has the potential to greatly reduce the risk consequences of a pipeline leak. Employees should be trained to work together effectively as a team.
- **Reliability Centered Maintenance (RCM) for Leak Detection Equipment:** Ensure that all components of the LDS and their supporting infrastructure components are designed for reliability and maintained appropriately.
- **Overall Performance Evaluation of the LDP:** The LDP should capture noteworthy results of operations, examine company and industry performance and report to management the results of the overall performance on an annual basis.
- **Improvement Planning and Process:** Efforts should be made to identify and define opportunities to improve any part of the LDP. The LDP should be updated and improved on regular basis to ensure an effective program.

Relevant Documents

Click on the title below to view the relevant documents.

LDP.

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Relevant Documents

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- API RP 1175 Improvement Planning and Process
- API RP 1175 Alarm Management
- API RP 1175 Control Center Procedures
- API RP 1175 Leak Detection Program, Culture & Strategy
- API RP 1175 Management of Change
- API RP 1175 Gap Analysis Tool Template
- API RP 1175 Gap Analysis Tool Example
- API RP 1175 Overall Performance Evaluation
- API RP 1175 Reliability Centered Maintenance
- API RP 1175 Roles, Responsibilities and Training
- API RP 1175 Selection of Leak Detection
- API RP 1175 Metrics, KPIs and Targets
- API RP 1175 Testing
- API RP 1175 Overview

GAP ASSESSMENT TOOL

(MARIELI ROMERO - QUALITY & COMPLIANCE ENGINEER - LEAK DETECTION ENGINEERING, TRANSCANADA)

- The objective of this tool is to measure the gap between your company's Leak Detection Program and the API Recommended Practice 1175.

- This tool is provided for your convenience and to expedite implementation of LDP best practices. API does not require you to use this exact tool, however, it is encouraged.

- Use of this tool is not an adequate replacement for reading and understanding the Recommended Practice document but should serve as a helpful supplement.

- The tool includes all the RP mandatory requirements in the Primary Requirements section and all the RP nice-to-have items in the Informational Items section.

- The API 1175 Implementation Team's expectation is that you will use the GAT to assess your company's current LDP by Q1/2017, re-assess your company's LDP by Q1/2018 and anonymously share both results with API.

NEXT STEPS

(JASON DALTON, MARATHON PIPE LINE)

- Download and complete the Gap Assessment Tool for your organization by the end of 1st Quarter 2017.

- If you feel comfortable sharing your information please email your results table to PipelineLDP@api.org

Component Weight	Component # (RP 1175 Reference)	Components	Weighted Score (the larger number the larger the gap)	
18%	4 & 5	Leak Detection Culture and Strategy	🟢	2
16%	6	Selection of Leak Detection Methods	🟡	7
5%	7	Performance Targets, Metrics and KPI	🟡	21
5%	8	Testing	🟡	14
12%	9	Control Center Procedures, Recognition and Response	🔴	99
7%	10	Alarm Management	🔴	53
9%	11	Roles, Responsibilities and Training	🟡	25
6%	12	Reliability Centered Maintenance for LD Equipment	🟡	17
7%	13	Overall Performance Evaluation of the LDP	🟡	19
5%	14	Management of Change	🟡	14
10%	15	Improvement Process	🟡	41
		Total Gap Score	🟡	**28**

- This information will be kept confidential by API and will be used to:
  - Show the industry's progress as future assessments are completed.
  - Identify the industry wide gaps that deserve discussion at the April 2017 Workshop.
- In approximately one week you will receive a survey via email.
- Make plans to attend the API Leak Detection Workshop held at the San Antonio API meeting on April 26th and 27th, 2017.

Didn't get to your question or for any future ones, contact: PipelineLDP@api.org