

2019

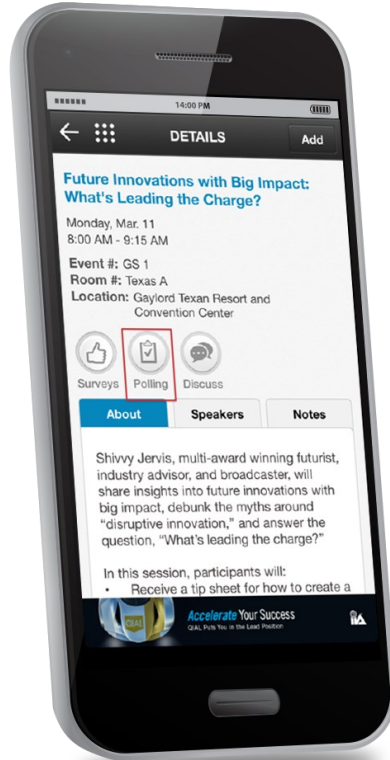
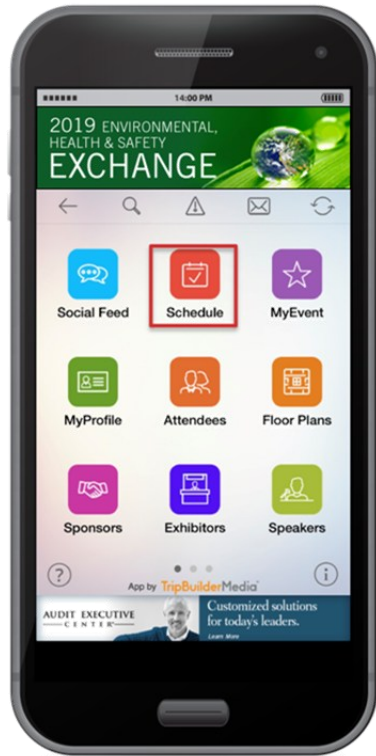
ENVIRONMENTAL
HEALTH & SAFETY
EXCHANGE

Connect. Collaborate. Evolve.



Developing & Implementing Assessment Programs Through Industry Partnerships

PARTICIPATE IN SESSION POLLING



- Download the IIA Conferences App to participate in polling during select sessions
- Select the session through the schedule icon and click on the polling icon
- Ask a member of the Conference Staff if you need assistance
- You can also go to <https://ehs.cnf.io/> from your mobile device web browser

2019

ENVIRONMENTAL
HEALTH & SAFETY
EXCHANGE

Connect. Collaborate. Evolve.



Developing Assessment Programs



PROCESS SAFETY
SITE ASSESSMENT
PROGRAM

Polling Question

How familiar are you with API Process Safety Site Assessment Program (PSSAP) and Pipeline Safety Management System (API RP 1173) (PSMS) programs?

- A. I am familiar with the PSSAP program and standards
- B. I am familiar with the PSMS program and standards
- C. I am familiar with both the PSSAP and PSMS programs and standards
- D. I am not familiar with either program

Background of Programs

PSSAP developed in 2010 to 2011

- Applicable to Refining and Petrochemical sites
- First assessment conducted in April 2012
- Completed 68 General Assessments and 44 HF to date

RP 1173 PSMS developed 2015 to 2018

- RP 1173 published in 2015 to address NTSB and PHMSA recommendations
- Applicable to Product, Crude Oil, Natural Gas (Transmission & Distribution) pipelines
- First pilot assessment conducted in March 2019



Intent of Programs

- Driven by industry to foster improved process safety programs and performance
- Voluntary, Self-Help Program
- Credible 3rd Party independent assessment by experienced, qualified individuals
- Consistent protocols, focus areas, and assessment process
- Mechanism to enable analysis of industry data and identify trends
- Linked to other industry process safety programs and safety initiatives
- Site Benchmarking opportunities

PSSAP

Eight Protocols Focusing On Higher Risk Activities

General Assessment (*7 basic protocols have 616 questions total*)

- Process Safety Leadership (54)
- Operating Practices (96)
- Mechanical Integrity – Fixed Equipment (88)
- Safe Work Practices (106)
- Management of Change (81)
- Process Hazard Analysis (70)
- Facility Siting (121)

Why These Protocols

The protocols were specifically selected as they address areas that can help prevent a process safety event from occurring or reduce the severity of an event.

HF Alkylation/RP-751 (393)

Added Incident Learning (71) and Product Storage & Transfer (199) protocols in 2019



API RP 1173 Pipeline SMS

Pipeline SMS Elements

- Leadership & Commitment
- Stakeholder Engagement
- Risk Management
- Operational Controls
- Incident Investigation
- Safety Assurance
- Management Review
- Emergency Response
- Competency Training
- Documents and Records



Audit vs. Assessment Polling Question

What is the difference between an Audit and an Assessment?

- A. There is no difference (A rose by any other name is still a rose)
- B. An audit is about conformance/compliance, an assessment is about improvement
- C. An audit must be independent, an assessment can be more collaborative
- D. An audit must stick to the facts, an assessment can include more opinion
- E. An audit has findings, an assessment has feedback

Audit vs. Assessment

What is the difference between an Audit and an Assessment?

- Is it in the way it is done?
 - Approach by assessors vs. approach by auditors
- Is it in the intent?
- The results?
- The reporting?
- How the team interacts with the client?

Audit vs Assessment – What’s the Difference?

	Assessment	Audit
Terms / Language	<ul style="list-style-type: none"> • Evaluation • How • Health • Same team • Here to help do job better 	<ul style="list-style-type: none"> • Conformity – nonconformity • Compliance • Findings
Style	<ul style="list-style-type: none"> • Horizontal • Ties-interconnections-integration • Evidence of use 	<ul style="list-style-type: none"> • Vertical • “Check-the-box” • Sampling
Interviews	<ul style="list-style-type: none"> • How do you do it? • Seeking to understand • Sharing experiences • P-D-C-A focus 	<ul style="list-style-type: none"> • Did you do it • Yes or no
Reporting	<ul style="list-style-type: none"> • BFQs as effectiveness measure • Qualitative / narrative 	<ul style="list-style-type: none"> • By exception • Binary – quantitative • Stick to 1-page
Meetings	<ul style="list-style-type: none"> • Focus on positives, opportunities for improvement • Share story 	<ul style="list-style-type: none"> • Focus on gaps
Communication	<ul style="list-style-type: none"> • Softer outputs • Help get better – two-way • Less focus on tools, 	<ul style="list-style-type: none"> • One-way (Q&A)

Assessments and API RP 1173

- Not specifically defined in the standard
- PDCA – Continuous assessment and improvement
- SMS Framework – Assessment and continuous improvement
- Operator resource to meet RP requirements for Audit + Evaluation
 - ✓ RP 1173, 3.1.4, Audit = An examination of conformity with this RP [1173] and implement of the PSMS
 - ✓ RP 1173, 3.1.12. Evaluation = An assessment of the effectiveness of a pipeline operator's PSMS and progress made toward improving pipeline safety performance
- Assessment = examination of conformity + assessment of effectiveness

Assessments

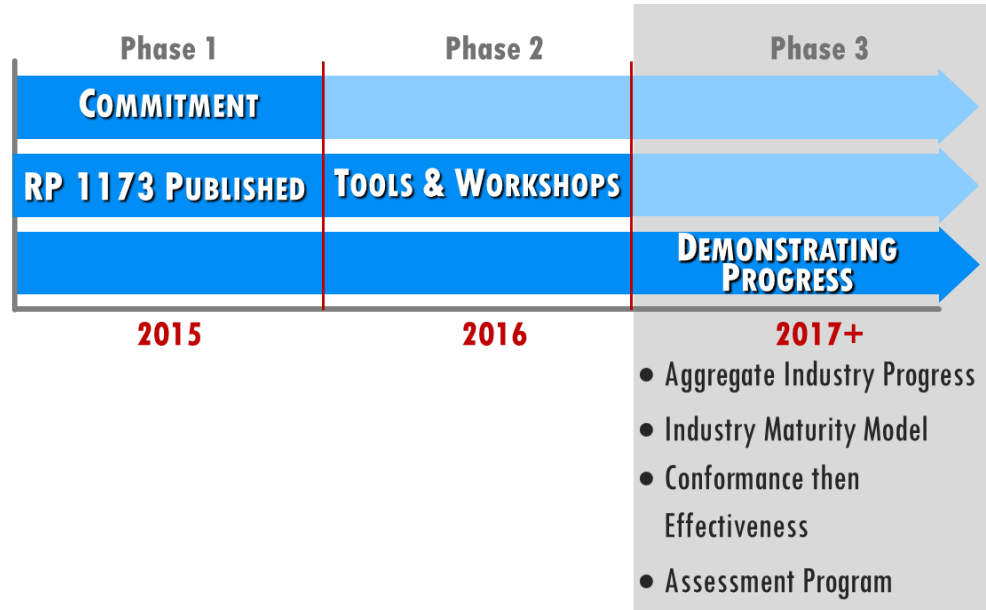
- Looking at what Industry feels “Good Looks Like”
- Assessments are geared toward encouraging learning
- Assessors are hired for their expertise & trained on:
 - Purpose of program – improvement
 - How to use protocols, tools & scoring
 - Intent and application of API RP 1173 (for pipeline SMS)
 - Interaction with site



Program Development - PSMS

- Publication of RP 1173
- Industry Implementation Team
 - All pipeline segments
- Industry Maturity Model
- Implementation and Evaluation Tools
- Assessment Protocol / Tool
 - Standardized approach to measure progress
- Pilot Assessments

Phased Approach to RP 1173 Implementation



Program Development - PSSAP

- Part of the Advancing Process Safety effort:
 - Industry
 - API
 - AFPM
- Protocols developed through numerous meetings:
 - 54 Subject Matter Experts plus API and AFPM reps
 - 20 different refining and petrochemical companies
- Protocols are:
 - Not based on regulation
 - Based on what the industry feels “good looks like”

Major Advantage

Companies/sites like that the program is:

- Developed for industry by industry
- Based on what good looks like
- Not based on regulation
- Enables benchmarking

Keys to the Assessments

- **Setting up assessments well in advance of onsite portion**
- **Expertise of Assessors**
- **Protocol Feedback**
 - Interviews (two-way interviews)
 - Lunchtime Information exchanges
 - Daily Debriefs
 - Closing Conference
- **Benchmarking** (ongoing as we do more assessments)
 - Site can compare its performance vs. Industry
 - Industry can measure performance over time
 - Identify opportunities for improvement
- **Practices Sharing Process**

Benchmarking

- Allows the Site to Compare their performance vs. the Industry
- Allows companies that have assessed multiple sites to compare site performances
- Allows Industry to measure performance over time
- Allows Industry to understand opportunities for improvement and where to focus attention

Benchmarking

PSSAP Data

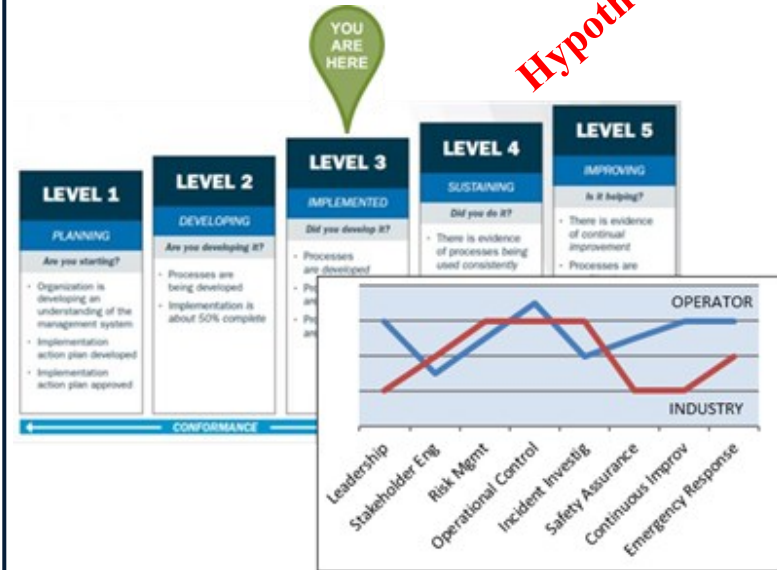
Sub - Protocol Score Ranges for Industry

Based on 59 Assessments Industry = Refineries & Petrochemical Plants



Pipeline SMS Maturity

Hypothetical



Data Handling

— Show PSSAP Database and Benchmarking Spreadsheet



PROCESS SAFETY
SITE ASSESSMENT
PROGRAM

Data Handling

— Show PSSAP Database and Benchmarking Spreadsheet

Benchmarking found in this file:

Benchmarking tables, charts and graphs reside on the **Green** tabs. They are:

Overall	3 Tables and 3 Charts showing Overall Performance Management Systems vs Implementation for Sites and Industry.
MS_vs_1_Site	2 Charts showing site Management Systems vs. Implementation scores. One or more sites can be compared and/or
Spyder	2 Charts showing site (one) vs. Industry Score.
Protocols	1 Box & Whisker chart showing performance by Protocols.
SubProtocols	1 Box & Whisker chart showing performance by SubProtocols.
Key Question Protocols	1 Box & Whisker chart showing performance by Key Question by Protocols.
Key Question SubProtocols	1 Box & Whisker chart showing performance by Key Question by SubProtocols.
Key_Ques	1 Chart showing sites performance for key questions weighted as 4s.
SubSections	7 Tables showing Sites vs Industry by Sub Sections and 1 Table showing Walk-the-Line performance.
MI Sectors	1 Table providing a further breakdown of Mechanical Integrity - Fixed Equipment.
4s Performance	3 Charts showing Sites vs Industry for questions weighted as 4s and Site's performance for questions weighted as 4s.
Size Comparison	2 Charts Comparing sites performance by size of site (small, medium, or large).
CorpSize	3 Charts Comparing company performance by size of the company/corporation (small, medium, mid-large, large).
Quartiles	1 Table format showing which quartile the site is in for each protocol and the quartile ranges.
Overall Score	2 Charts - 1 plotting the sites vs. all other sites assessed for Overall Score and 1 plotting site vs. peer size sites. Also shows quartiles.
Leadership	2 Charts - 1 plotting the sites vs. all other sites assessed for Leadership Score and 1 plotting site vs. peer size sites. Also shows quartiles.
Oper Prac	2 Charts - 1 plotting the sites vs. all other sites assessed for Operating Practices Score and 1 plotting site vs. peer size sites. Also shows quartiles.
FEMI	2 Charts - 1 plotting the sites vs. all other sites assessed for MI - Fixed Equipment Score and 1 plotting site vs. peer size sites. Also shows quartiles.
Safe Work	2 Charts - 1 plotting the sites vs. all other sites assessed for Safe Work Practices Score and 1 plotting site vs. peer size sites. Also shows quartiles.
MOC	2 Charts - 1 plotting the sites vs. all other sites assessed for MOC Score and 1 plotting site vs. peer size sites. Also shows quartiles.
PHA	2 Charts - 1 plotting the sites vs. all other sites assessed for PHA Score and 1 plotting site vs. peer size sites. Also shows quartiles.
Facility Siting	2 Charts - 1 plotting the sites vs. all other sites assessed for Facility Siting Score and 1 plotting site vs. peer size sites. Also shows quartiles.
Speedometer	1 Chart - showing one site's performance in a speedometer format.
Rating Chart	1 Chart - with filter options showing performance by rating of questions (i.e., % rated 1.5 or below, % rated 2.0, etc.)
M_vs_1_Sizes	2 Charts - Allows selection by size of site or corporation to compare Management System vs. Implementation performance.
Site_Corp.	2 Charts - Allows varies selections to compare Size of Site combined with Size of Company.
Exec Sum	8 Charts & 1 table as seen in the Executive Summary of the site's final report. Duplicates some of the above charts, but

Test

Filter All Tabs by Selected Sites

The charts & tables may be filtered by protocol, sub-protocol, and size, as appropriate, on the individual tabs.

Industry = Ref & Petro Data

Industry = Refinery Only

Industry = Petro Only

Go to Attach C Tab

Go to Exec Summary Tab

Going Forward

- Voluntary/self-help so sites want program
- PSSAP is expanding
 - Has added two protocols
 - Incident Learning
 - Product Storage & Transfer
- RP 1173 PSMS is scheduling additional assessments



Final Poll

Which do you feel is more beneficial for the company (or the industry)

- A. Compliance audits
- B. Assessments



Questions

Benchmarking

THANK
YOU

