

Inspection Summit 2015



Optional Training Courses - January 26, 2015

Risk-Based Inspection (8 Hours)

Trainer: Lynne Kaley

The details of API's recommended practices (API 580 and API 581) will be presented by recognized industry experts and leaders in the development and use of RBI methodology. API RP 580 introduces the principles and presents minimum general guidelines for developing a RBI program for fixed equipment and piping. API 581 provides quantitative RBI methods to establish an inspection program. Together, these two documents comprise a widely-recognized standard for industry-accepted RBI practices. This API training course helps attendees understand and use RBI technology, develop a program, and learn which RBI procedures and working processes comply with industry standards.

Welding Procedure Prep/Review Based on ASME Section IX (8 Hours)

Trainer: Robert Yagle

This eight hour presentation will provide an overview of the 2013 Edition of ASME Section IX – Welding Qualification. Attendees are encouraged to bring the 2013 Edition of ASME Section IX as it will not be provided.

The discussion will include:

- Part QG – General Requirements
- Part QW – Welding including:
 - Article I – Welding General Requirements
 - Article II – Welding Procedure Qualifications
 - Article III – Welding Performance Qualifications
 - Article IV – Welding Data
 - Article V – Standard Welding Procedure Specifications (SWPSs)

The presentation will include reviewing a Welding Procedure Specification (WPS) and its Procedure Qualification Record (PQR) answering four basic questions:

1. Is the Welding Procedure complete?
2. Is the Welding Procedure supported?
3. Is the Welding Procedure qualified?
4. Is the welding Procedure certified?

The workshop will also determine and document, on a Welders Performance Qualification (WPQ) form, the range of qualifications for the welder who welded the test coupon for the WPS qualification.

API 571 (8 Hours)

Trainer: Marc McConnell

The Basic Corrosion Course focuses on corrosion and the potential problems caused by corrosion. Our goal is to provide the participants with an understanding of why and how corrosion occurs, the metallurgical and environmental factors influencing corrosion, and practical methods of corrosion control and failure prevention. It provides a basic but thorough review of causes of corrosion and the

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methods by which it can be identified, monitored, and controlled. Participants will be able to grasp the basic concepts related to corrosion, metallurgy and failure analysis, and to apply the state of the art technology in their workplace.

Proper selection of materials and design are most effective in curbing the cost of corrosion and achieving low cost reliability as corrosion can be designed out of the system. It is always easier and cheaper to erase lines on a drawing than to repair and replace failed equipment or components in service. The theme throughout the course is how to put the right material in the right place in the right way. Practical rules in selection of materials and design guidelines against many different types of corrosion will be presented. Numerous case histories of real-life problems and practical solutions will be discussed.

We will also address the concept of controlling operations with a set of operating ranges and limits to achieve product specification and safe operation with the overarching objective of maintaining the integrity or of process containment.

Active participation is encouraged.

Inspection, Assessment, and Life Extension of Coke Drums (8 Hours)

Trainer: Mahmud Samman

This course provides refinery engineers and inspectors with an understanding of mechanical failure modes in coke drums and the tools needed to manage their integrity and extend their life. It also provides managers the background needed to decide on keeping or replacing existing drums. The scope includes an overview of related API documents, a discussion of industry experience, and an examination of the latest technologies in this field. Case studies are presented along with lessons learned.

Overview of coke drum failures (1.5 hour)

- Uniqueness of coke drums
- Design considerations
- Common failure modes
- Operations impact on drum failures
- Relevant industry standards and documents

Skirt Failures (2.5 hours)

- Skirt cracking and buckling
- Skirt bolt failures
- Assessment of cracked and distorted skirts
- Skirt repairs and retrofitting

Shell Failures (2 hours)

- Shell failures
- The creation of bulges
- Bulging assessment
- Bulge repairs

Inspection and monitoring (1.5 hour)

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- Laser scanning
- Acoustic emission testing
- Temperature monitoring
- Strain measurements
- Nondestructive testing methods

The big picture (0.5 hour)

- Managing the life cycle
- Design and operation trends

Positive Material Identification (PMI) API-RP 578 (4 Hours)

Trainer: Don Mears

This (4) four hour Training Course offers the reasons, purpose and criteria behind the global need to perform Positive Material Identification (PMI), according to API RP 578 in today's Petrochemical Oil & Gas Industry.

Topics covered include, but are not limited to: PMI using Portable X-Ray Fluorescent (XRF) and Optical Emission Spectroscopy (OES) Technologies for: New Construction QA/MVP Programs, Existing Piping Systems, Control of Incoming Materials & Warehouse, Element of Maintenance Systems, and Reporting with Test Records. This training course will address the Upstream, (Off Shore and Transportation) Sectors, Downstream (Refining and Petrochemical) Sectors, with emphasis on Government regulations and enforcement events by: (OSHA, EPA, BSEE, NTSB, and PHMSA / DOT).

Advanced NDE (4 Hours)

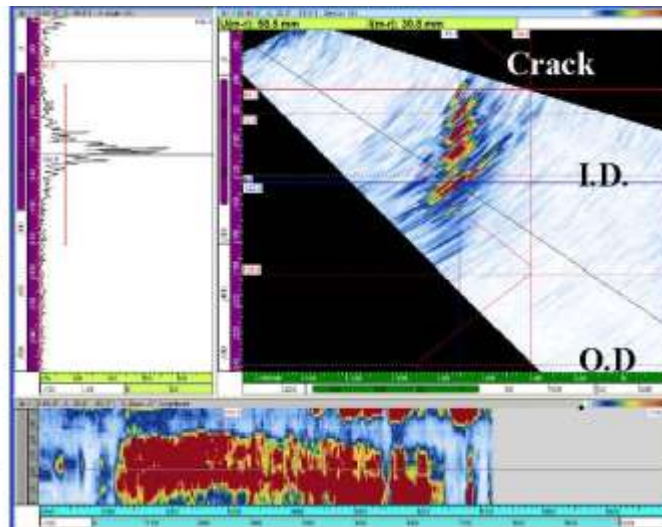
Trainer: David Bajula

This workshop will go over a multiple of Advanced NDT Techniques and how when implemented correctly can nearly eliminate the need for vessel or reactor entry for inspection. We will focus on the latest is high temperature applications, specifically how phased array can be used at temperatures on vessels, reactors, piping or components at temperatures up to 700°F.

As most are unaware this technology recent consistent success, I will present full details on the technology, example data along with video footage of the inspections in action.



Reactor nozzle exam at 600°F



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I will show you how this can be a powerful tool for owner/users and operators whereas now they have the ability to determine the mechanical integrity and/or monitor cracking without taking the equipment out of service; not only saving millions of dollars in potential lost production but also by many times obtaining much better data than you have experienced during out of service or ambient temperature examinations.

Together and as a group we will work through the following:

- Advantages & Disadvantages
- Requirements for the owner/users
 - Component details; material, dia./thickness, operating temp.
 - Access and potential surface preparation needs
 - Permitting, safety considerations
- Requirements for the service provider
 - Personnel qualifications
 - Procedures
 - Techniques
 - Equipment
 - Calibrations
 - Reporting
- Data analysis; we will go through step-by-step which may not make you an expert but will allow you to never be cheated by your service provider.
 - Depending on how many people sign up we may load up analysis on attendee's laptops and provide software dongles (hard lock keys) as needed (note some laptops may be provided)
 - This hasn't been finalized but as a minimum there will be raffle for one of the attendee's to win an Olympus Phased Array software key.
- Time & Cost estimation; how long does it take and what to expect between different service providers.
- Finally, I will solicit an application from one of the attendee's and provide a detailed solution for full on-stream inspection in lieu of an internal inspection including a time/cost estimate that could be expected from various service providers.

B31.3 Intro for Inspectors (4 Hours)

Trainer: Chuck Becht

This course provides a broad overview of the requirements of ASME B31.3 and the philosophy behind the rules. The course is oriented to an inspector audience, so while subjects such as piping flexibility will be discussed in the context of what the Code requires, details as to how those calculations are performed and the development of those rules will not be covered. Fabrication, examination, inspection and testing rules will be covered in detail. Interpretations that have been issued on inspection related subjects will be used for group discussion. The course is taught by Dr. Charles Becht IV, who has been a member of ASME B31.3 since 1987, was Chairman of the committee for six years, and wrote the ASME book, *Process Piping, The Complete Guide to ASME B31.3*.

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Pressure Equipment Incident Investigation (4 Hours)

Trainer: Virginia Edley

The new API 585 recommended practice focuses on pressure equipment integrity incidents. The primary focus is providing guidance on how investigating and determining root causes of small failures and/or near failures or unexpected events of pressure equipment may improve mechanical integrity and avoid catastrophic failures. It also provides some guidance on supporting large investigations that are led by others in the organization. This 4 hours course will provide information on how organizations can utilize the new API RP 585 to reduce the potential for pressure equipment failures and improve their mechanical integrity programs by investigating the small failures. Organizations do not need to wait for a major mechanical integrity failure to occur in order to uncover the systemic issues within the organization that lead to the potential for such a major failure.