

Crack Management Workshop

August 21-22, 2018 | Columbus, OH

The goal of this workshop is to provide the necessary elements of crack management for incorporation into a pipeline operator's integrity management plan (IMP). By integrating all of the relevant information, the operator can determine where the risks of an incident are relevant, identify the greatest threats, and make prudent decisions to reduce these risks.

We will examine the threat mechanisms associated with cracking, including:

- Environmentally Assisted Cracking
- Manufacturing Defects Associated with Longitudinal Seams
- Mechanical Damage Threat Mechanisms Associated with Cracking

We will discuss assessment methods for fitness-for-service of crack-like flaws such as API 579 and the modified Ln-Secant equation. We will also review methods of integrity assessment, and provide guidelines on when to use in-line inspection and hydrostatic testing. We will focus on the guidance of the recently released crack management recommended practice API 1176.

Presenters

The session is given by Dr. Bruce Nestleroth and Mr. Adam Steiner of Kiefner. Dr. Nestleroth has been advancing technologies for internal inspection of pipelines, developing and quantifying methods for detecting corrosion, cracking and mechanical damage for over 25 years. Since 1995, he organizes and instructs in a workshop on "Pipeline Inspection Using Intelligent Pigs". He was a member of API 1176 subgroup that developed the inspection content. Mr. Adam Steiner is a Senior Engineer at Kiefner. Mr. Adam Steiner's 11 year career in the pipeline industry has focused on pipeline integrity management including reassessment interval determination, in-line-inspection and pressure test assessment planning, safety, and execution, and defect evaluation. He is experienced in the development of integrity management plans and executing remediation plans in response to pipeline failures and integrity assessments.

Cost and Schedule

The registration fee of \$1,565.00, which includes continental breakfast and lunch each day, and all workshop materials. This workshop is 2 full days starting at 8:00 am and concluding about 4:00. Time will be allotted for breaks. We plan to hold this workshop August 21-22, 2018 at the Kiefner & Associates Columbus Office located at 4480 Bridgeway Ave, Columbus OH 43219.

More than twelve registrants are needed to hold this workshop, and a decision will be made on August 11, 2018. The full amount of the registration fee will be refunded in the event the minimum registration is not reached.

Contact

For registration visit: <https://kiefnercrackworkshop.eventbrite.com>

For technical questions, please contact:

Bruce Nestleroth bruce.nestleroth@kiefner.com (614) 410-1620

Crack Management Workshop Topics

Crack Management Program

- General Considerations
- Elements of Crack Management

Threat Mechanisms Associated with Cracking

- General
- Environmentally Assisted Cracking
- Manufacturing Defects Associated with Longitudinal Seams
- Mechanical Damage

Fitness-for-Service of Crack-Like Flaws

- Assessment Methods
- Input Parameters

Crack Growth

- Pressure Cycling Analysis
- Fatigue Growth
- Stress Corrosion Cracking and Corrosion Fatigue Growth
- Remaining Life
- Reassessment Interval Determination

Gathering, Reviewing and Integrating Data

- General Considerations
- Threat Interaction

In-Line Inspection for Crack Integrity Assessment

- In-Line Inspection Tool Types
 - UT ILI Technology for Cracks
 - Magnetic ILI Technology for Cracks
- ILI Tool Utilization Considerations
- Capabilities of In-Line Inspection Tools for Specific Types of Axial Cracks and Anomalies

Verification of ILI Results

- In-the-Ditch Methods
- Assessment of SCC and Other Pipe Body Cracks
- Assessment of Longitudinal Seam Cracks

Crack Tool Response Methodology

- Crack ILI Response Criteria
- Immediate, Scheduled, & Monitored
- Example of an ILI Response Protocol

Hydrostatic Testing

- Minimum Test Pressure-to-Operating Pressure Ratio
- Minimum Hold Time
- Spike Testing
- Pressure Reversals

Benefits and Limitations of Hydrostatic Testing

- Test-Pressure-to-Operating-Pressure Ratio Subcritical Crack Growth
- Pressure Reversals
- Dealing with Multiple Test Failures

Preventive and Mitigative

- Mitigating Transit Fatigue
- Re-Evaluation of Pressure Data
- Managing of Pressure Cycles
- Stress Corrosion Cracking