RAPIDSOLVE™

Fitness for Service

API 579-1/ASME FFS TRAINING

For Inspectors & Engineers

Applicable Sectors: Petro-Chemical & Energy.
Expertise: Beginner/Intermediate.
Training Setup: Class.

What is the RAPIDSOLVE Fitness for Service Course?

The RAPIDSOLVE Fitness for Service course provides direction for performing flaw / defect assessments using API 579-1/ASME FFS recommended practices as it applies to fixed pressure equipment.

The training is delivered through a hands-on approach, with participants completing actual plant or field examples, aided using RAPIDSOLVE™. This FFS software application further reinforces the presentation and understanding of FFS solutions and assessments covered on the course.

Each participant will be granted a 60-day trial access to the RAPIDSOLVE™ cloud-based software application.
www.rapidsolve.ca

Who should attend?

The RAPIDSOLVE Fitness for Service course is designed for plant personnel who are engaged in the design, inspection, maintenance and repair of fixed equipment, such as tanks, pressure vessels and piping. Course Attendees are responsible for the documents required for the training API 579-1/ASME FFS-1, June, 2016 and API 579-2/ASME FFS-2 2009. Plant personnel would typically include experienced:

- Unit inspectors
- Plant engineers
- Asset integrity specialists and engineers
- Operations engineers
- Maintenance engineers
- Welding engineers and allied personnel.

A general working knowledge of pressure equipment and their usual construction materials is a requirement to attend this course.

Upon Completion of this training, participants will:

- Have a baseline understanding of the Methods & Techniques of Fitness for Service as per API 579-1/ASME FFS.
- Better understand damage mechanisms, flaw/defect extent and impacts to pressure equipment.
- Multiple approaches to assess the level of Flaws and interpreting results.
- Complete LEVEL 1 and LEVEL 2 Fitness for Service assessment independently.
- Use a simulation Software to model problems and complete assessments.

Certificate & Credits

Upon completion of this course, a certification of completion will be issued. This earns the attendee at the end of the course 60 professional development hours (PDHs).

Topics Covered

Day 1

- Introduction: The Idea and structure of the training – a practical hands-on approach using real examples.
- The theory of Fitness for Service and how it applies to fixed equipment as a method for structural analysis.
- Structure of the recommended practice API 579-1/ASME FFS.
- The roadmap of all sections and parts and their relationship.
- How the defect morphology and process application drive the appropriate level of assessments.
- Part 3 Assessment for Brittle Fracture Damage.
- Part 4 Assessment for General Metal Loss Damage.
- Part 5 Assessment for Localized Metal Loss Damage.
- Software approach. How to model problems on web-based software and interpret results for screening.

Day 2

- Part 6 Assessment for Pitting Corrosion Damage.
- Part 7 Assessment for Blisters and HIC/SOHIC Damage.
- Part 8 Assessment Weld Misalignment and Shell Distortions Damage.
- LEVEL 1 & LEVEL 2 assessment examples and full stepwise procedure approach.
- Software approach: solve classroom problem using RAPIDSOLVE® FFS application.
- Provincial requirements and how an FFS assessment affects continued use of systems with known defects.

Day 3

- Part 9 Assessments for Crack-like Flaws.
- Part 10 Assessment for High Temperature Operations & Creep.
- Part 11 Assessment for Fire Damage.
- LEVEL 1 & LEVEL 2 assessment examples and full stepwise procedure approach.
- Software approach. Solve classroom problem using RAPIDSOLVE® FFS application.
- Review of applications with multiple defects and dual part assessment requirements.

Day 4

- Part 12 Assessment for Dent, Gouge, and Dent Gouge Combination Parts.
- Part 13 Assessment for Lamination defects.
- Part 14 Assessment for Fatigue defects.
- LEVEL 1 & LEVEL 2 assessment examples and full stepwise procedure approach.
- LEVEL 3 Introduction and steps overview of API 579-1/ASME FFS with example: Pitting / Crack-like flaw.
- Software approach: Solve classroom problem using RAPIDSOLVE® FFS application.