



Training Programs

API 577 Welding Processes Inspection and
Metallurgy



Fitness for Service Assessment- Training Program

COURSE OVERVIEW

Fitness-for-service assessment is a multi-disciplinary engineering approach that is used to determine if equipment is fit to continue operation for some desired future period. The equipment may contain flaws, have sustained damage, or have aged so that it cannot be evaluated by use of the original construction codes. API 579-1/ASME FFS-1 is a comprehensive consensus industry recommended practice that can be used to analyze, evaluate, and monitor equipment for continued operation. The main types of equipment covered by this standard are pressure vessels, piping, and tanks.

This course helps participants understand and apply the API/ASME fitness-for-service standard in their daily work. The material presented in the course shows how the disciplines of stress analysis, materials engineering, and nondestructive inspection interact and apply to fitness-for-service assessment. The assessment methods apply to pressure vessels, piping, and tanks that are inservice.

The course includes an extensive set of notes to supplement the contents of the recommended practice, and the recommended practice contains numerous example problems that illustrate fitness-for-service assessment.

You Will Learn To

- Analyze, evaluate, and monitor pressure vessels, piping, and tanks for continued operation.
- Explain how to apply background information on fitness-for-service assessment, especially as it applies to the refining and chemical process industries, which are the primary focus of API 579
- I identify the main parts of the API/ASME standard, as well as the annexes
- Explain the practical application of the techniques incorporated in API 579-1/ASME FFS

Who Should Attend

This course is intended for engineers and engineering management engaged in the operation, design, analysis, and maintenance of plant facilities. Participants should have a BS degree or equivalent experience in engineering. A general knowledge of stress analysis, materials behavior, and fracture mechanics are helpful.

Topics Covered

1. Introduction - lecture and discussion
2. Fitness-for-service Engineering Evaluation Procedure (General Roadmap for Parts 3 through 13 of the API/ASME Standard) - lecture and discussion
3. Assessment of Equipment for Brittle Fracture -lecture, discussion, and examples
4. Assessment of General Metal Loss - lecture, discussion, and examples
5. Assessment of Local Metal Loss - lecture, discussion, and examples
6. Assessment of Pitting Corrosion - lecture, discussion, and examples
7. Assessment of Hydrogen Blisters and Hydrogen Damage Associated with HIC and SOHIC – lecture and discussion
8. Assessment of Weld Misalignment and Shell Distortions – lecture and discussion
9. Level 1 Assessment of Crack-Like Flaws - lecture, discussion, and examples
10. In-class problem-solving: general metal loss, local metal loss, and Level 1 crack assessment
11. Introduction to Fracture Mechanics; Level 2 Assessment of Crack-Like Flaws – lecture, discussion, and examples
12. Assessment of Components Operating in the Creep Regime – lecture and discussion
13. Assessment of Fire Damage – lecture and discussion
14. Assessment of Dents, Gouges and Dent-Gouge Combinations – lecture and discussion
15. Assessment of Laminations – lecture and discussion
16. General Discussion and Course Wrap-up

Fitness for Service Assessment, 2021 Calendar

Fitness for Service Assessment (ASME Virtual Classroom)			
Course ID	ST-API-07		ASME Virtual Classroom
Duration	6 Days	Fees (Seminar with ASME Certification)	SAR 11,000.00
Start Date		End Date	
June 21-23 and June 28 – 30, 2021 (6 days)			

Free seats if available (without exam): **1**

For more enquiries, please Contact.

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