



Best Technology Solutions (BTS)

API 579 Training - Fitness For Service Training program

Description:

Fitness-For-Service (FFS) assessments are quantitative engineering evaluations that are performed to demonstrate the structural integrity of an in-service component that may contain a flaw or damage. This training course is designed to give a detailed discussion of the subject of Fitness For Service concepts (FFS) with emphasis on the basic degradation mechanism and its consequences aspect.

It presents a thorough understanding of how the disciplines of material science, stress analysis, NDT and inspection practices can be applied for assessing the present structural integrity of the component, and deciding its fitness for continued service as well as the projected remaining life. This course covers the analytical methods and their applications are explained with numerous case studies. In order to suit the course to participants with or without a FFS background, the course will be delivered such a way that most of technical terms and both code statements and examples will clarify concepts..\\

Each attendee must bring a Scientific Calculator

Course Objectives:

This course provides an in-depth examination of the Fitness-For-Service (FFS) assessment methods found in API579-1/ASME FFS-1 Fitness-For-Service using API 579-2/ASME FFS-2 Example Problem Manual and additional examples illustrating the different Assessment Levels.



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Who Should Attend?

- ❖ Engineers or contractors responsible for the Life Cycle Management of pressure vessel, piping, and tanks.
- ❖ Engineers interested in understanding the harmonization of API 579-1/ASME FFS-1

Course Outline

Day 1

Pre-exam and course opening

PART 1 – INTRODUCTION

- ❖ Scope
- ❖ Organization and Use
- ❖ Responsibilities
 - Owner-User
 - Inspector
 - Engineer
- ❖ Qualifications
 - Education and Experience
 - Owner-User
 - Inspector
 - Engineer
- ❖ Definition of Terms

PART 2 - FITNESS-FOR-SERVICE ENGINEERING ASSESSMENT PROCEDURE

- ❖ 2.1 General
- ❖ 2.2 Applicability and Limitations of the FFS Assessment Procedures
- ❖ 2.3 Data Requirements



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- 2.3.1 Original Equipment Design Data
- 2.3.2 Maintenance and Operational History
- 2.3.3 Required Data/Measurements for a FFS Assessment
- 2.3.4 Recommendations for Inspection Technique and Sizing Requirements

- ❖ 2.4 Assessment Techniques and Acceptance Criteria
- ❖ 2.5 Remaining Life Assessment
- ❖ 2.6 Remediation
- ❖ 2.7 In-Service Monitoring
- ❖ 2.8 Documentation

DAY 2

PART 3 - ASSESSMENT OF EXISTING EQUIPMENT FOR BRITTLE FRACTURE

- ❖ 3.1 General
- ❖ 3.2 Applicability and Limitations of the Procedure
- ❖ 3.3 Data Requirements
 - 3.3.1 Original Equipment Design Data
 - 3.3.2 Maintenance and Operational History
 - 3.3.3 Required Data/Measurements for a FFS Assessment
 - 3.3.4 Recommendations for Inspection Technique and Sizing Requirements
- ❖ 3.4 Assessment Techniques and Acceptance Criteria
 - 3.4.1 Overview
 - 3.4.2 Level 1 Assessment
 - 3.4.3 Level 2 Assessment
 - 3.4.4 Level 3 Assessment
- ❖ 3.5 Remaining Life Assessment – Acceptability for Continued Service
- ❖ 3.6 Remediation
- ❖ In-Service Monitoring
- ❖ Documentation



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Day 3

PART 4 - ASSESSMENT OF GENERAL METAL LOSS

- ❖ 4.1 General
- ❖ 4.2 Applicability and Limitations of the Procedure
- ❖ 4.3 Data Requirements
 - 4.3.1 Original Equipment Design Data
 - 4.3.2 Maintenance and Operational History
 - 4.3.3 Required Data/Measurements For A FFS Assessment
 - 4.3.4 Recommendations for Inspection Technique and Sizing Requirements
- ❖ 4.4 Assessment Techniques and Acceptance Criteria
 - 4.4.1 Overview
 - 4.4.2 Level 1 Assessment
 - 4.4.3 Level 2 Assessment
 - 4.4.4 Level 3 Assessment
- ❖ 4.5 Remaining Life Assessment
 - 4.5.1 Thickness Approach
 - 4.5.2 MAWP Approach
- ❖ 4.6 Remediation
- ❖ 4.7 In-Service Monitoring
- ❖ 4.8 Documentation



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Day 4

PART 5 – ASSESSMENT OF LOCAL METAL LOSS

- ❖ 5.1 General
- ❖ 5.2 Applicability and Limitations of the Procedure
- ❖ 5.3 Data Requirements
 - 5.3.1 Original Equipment Design Data
 - 5.3.2 Maintenance and Operational History
 - 5.3.3 Required Data/Measurements for a FFS Assessment
 - 5.3.4 Recommendations for Inspection Technique and Sizing Requirements
- ❖ 5.4 Assessment Techniques and Acceptance Criteria
 - 5.4.1 Overview
 - 5.4.2 Level 1 Assessment
 - 5.4.3 Level 2 Assessment
 - 5.4.4 Level 3 Assessment
- ❖ 5.5 Remaining Life Assessment
 - 5.5.1 Thickness Approach
 - 5.5.2 MAWP Approach
- ❖ 5.6 Remediation
- ❖ 5.7 In-Service monitoring
- ❖ 5.8 Documentation

Day 5

PART 6 - ASSESSMENT OF PITTING CORROSION

- ❖ 6.1 General
- ❖ 6.2 Applicability and Limitations of the Procedure
- ❖ 6.3 Data Requirements



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- 6.3.1 Original Equipment Design Data
- 6.3.2 Maintenance and Operational History
- 6.3.3 Required Data/Measurements for a FFS Assessment
- 6.3.4 Recommendation for Inspection Technique and Sizing Requirements
- ❖ 6.4 Assessment Techniques and Acceptance Criteria
 - 6.4.1 Overview
 - 6.4.2 Level 1 Assessment
 - 6.4.3 Level 2 Assessment
 - 6.4.4 Level 3 Assessment
- ❖ 6.5 Remaining Life Assessment
- ❖ 6.6 Remediation
- ❖ 6.7 In Service Monitoring
- ❖ 6.8 Documentation
- ❖ Introduction for other defects assessment