



API 579 - Fitness for Service (FFS), 2015

Duration: 5 days

INTRODUCTION:

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.

COURSE OBJECTIVES:

- To familiarize participants with the main concepts and technical terms of degradation mechanisms.
- To introduce participants to the concepts of FFS.
- To explain to participants the basic concepts of degradation and FFS.
- To provide participants with the basic technical and scientific knowledge for carrying out in depth inspection and engineering calculations.
- To train participants to choose between '3 R's' i.e. Re-rate, Repair and Replace.
- To introduce participants to different ways of evaluations and decision making as regards the repairs alterations and re-ratings Assessment of future remaining life.

WHO SHOULD ATTEND?

Designers, Inspection Engineers, Maintenance Engineers, Plant Inspectors, Mechanical Engineers, and Process Engineers interested in Fitness-for-Service assessments.

COURSE CONTENTS:

1 - INTRODUCTION

2 - FITNESS-FOR-SERVICE ENGINEERING ASSESSMENT PROCEDURE

- 2.1 General
- 2.2 Applicability and Limitations of the FFS Assessment Procedures
- 2.3 Data Requirements
- 2.4 Assessment Techniques and Acceptance Criteria
- 2.5 Remaining Life Assessment
- 2.6 Remediation
- 2.7 In-Service Monitoring

3 - ASSESSMENT OF EXISTING EQUIPMENT FOR BRITTLE FRACTURE

- 3.1 General
- 3.2 Applicability and Limitations of the Procedure

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- 3.3 Data Requirements
- 3.4 Assessment Techniques and Acceptance Criteria
- 3.5 Remaining Life Assessment – Acceptability for Continued Service
- 3.6 Remediation
- 3.7 In-Service Monitoring

4 - ASSESSMENT OF GENERAL METAL LOSS

- 4.1 General
- 4.2 Applicability and Limitations of the Procedure
- 4.3 Data Requirements
- 4.4 Assessment Techniques and Acceptance Criteria
- 4.5 Remaining Life Assessment
- 4.6 Remediation
- 4.7 In-Service Monitoring

5 – ASSESSMENT OF LOCAL METAL LOSS

- 5.1 General
- 5.2 Applicability and Limitations of the Procedure
- 5.3 Data Requirements
- 5.4 Assessment Techniques and Acceptance Criteria
- 5.5 Remaining Life Assessment
- 5.6 Remediation
- 5.7 In-Service monitoring

6 - ASSESSMENT OF PITTING CORROSION

- 6.1 General
- 6.2 Applicability and Limitations of the Procedure
- 6.3 Data Requirements
- 6.4 Assessment Techniques and Acceptance Criteria
- 6.5 Remaining Life Assessment
- 6.6 Remediation
- 6.7 In Service Monitoring

7 - ASSESSMENT OF HYDROGEN BLISTERS AND HYDROGEN DAMAGE ASSOCIATED WITH HIC AND SOHIC

- 7.1 General
- 7.2 Applicability and Limitations of the Procedure
- 7.3 Data Requirements
- 7.4 Assessment Techniques and Acceptance Criteria
- 7.5 Remaining Life Assessment
- 7.6 Remediation
- 7.7 In-Service Monitoring

8 - ASSESSMENT OF WELD MISALIGNMENT AND SHELL DISTORTIONS

- 8.1 General
- 8.2 Applicability and Limitations of the Procedure

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- 8.3 Data Requirements
- 8.4 Evaluation Techniques and Acceptance Criteria
- 8.5 Remaining Life Assessment
- 8.6 Remediation
- 8.7 In-Service Monitoring

9 - ASSESSMENT OF CRACK-LIKE FLAWS

- 9.1 General
- 9.2 Applicability and Limitations of the Procedure
- 9.3 Data Requirements
- 9.4 Assessment Techniques and Acceptance Criteria
- 9.5 Remaining Life Assessment
- 9.6 Remediation
- 9.7 In-Service Monitoring

10- ASSESSMENT OF COMPONENTS OPERATING IN THE CREEP RANGE

- 10.1 General
- 10.2 Applicability and Limitations of the Procedure
- 10.3 Data Requirements
- 10.4 Assessment Techniques and Acceptance Criteria
- 10.5 Remaining Life Assessment
- 10.6 Remediation
- 10.7 In Service Monitoring

11 - ASSESSMENT OF FIRE DAMAGE

- 11.1 General
- 11.2 Applicability and Limitations of the Procedure
- 11.3 Data Requirements
- 11.4 Assessment Techniques and Acceptance Criteria
- 11.5 Remaining Life Assessment
- 11.6 Remediation
- 11.7 In-Service Monitoring

12 - ASSESSMENT OF DENTS, GOUGES, AND DENT-GOUGE COMBINATIONS

- 12.1 General
- 12.2 Applicability and Limitations of the Procedure
- 12.3 Data Requirements
- 12.4 Assessment Techniques and Acceptance Criteria
- 12.5 Remaining Life Assessment
- 12.6 Remediation
- 12.7 In-Service monitoring

13 - ASSESSMENT OF LAMINATIONS

- 13.1 General
- 13.2 Applicability and Limitations of the Procedure
- 13.3 Data Requirements

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- 13.4 Assessment Techniques and Acceptance Criteria
- 13.5 Remaining Life Assessment
- 13.6 Remediation
- 13.7 In-Service Monitoring

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