

Learning Module

Fitness-for-Service Analysis with Abaqus

Pressure vessels and piping equipment are periodically assessed based on guidelines prescribed by documents such as ASME/API-579 Fitness-for-Service (FFS). Finite element based Level – 3 assessments are often utilized to assess equipment with complex geometries and loading conditions. The course discusses methods for modeling common pressure vessels such as distillation towers, storage vessels, etc. using Abaqus/CAE. Methods for the application and verification of loads such as weight of contents, internal pressure, etc. using Abaqus/Standard, as required for Level-3 FFS assessments, are also discussed. Procedures for analyzing metal loss using the finite element method by mapping thickness readings from scans are also discussed.

Objectives

Upon Completion Of This Course You Will Be Able To:

- Use Abaqus/CAE To Create Finite Element Models Of Common Plant Structures.
- Use Abaqus/Cae To Submit And Monitor Analysis Jobs.
- Use Abaqus To Perform Buckling, Elastic-plastic Analyses.

Knowledge Prerequisites

None

Language(s) for selected release

English

Brands

Simulia

Available Releases

SIMULIA 2021, SIMULIA 2020, SIMULIA 2019, SIMULIA 2018, SIMULIA 2017

Duration

16 hours

Discipline

Advanced Abaqus

Contents

Overview - Fitness-for-Service Analysis with Abaqus

- 1 - Overview of Abaqus
- 2 - Introduction to Abaqus - Part I
- 3 - Introduction to Abaqus - Part II
- 4 - Introduction to Abaqus - Part III
- 5 - Overview of Solvers
- 6 - Overview of Fitness-for-Service Analyses
- 7 - Applying Loads in a Simulation
- 8 - Analysis of Metal Loss
- 9 - Analysis of a Flange Connection