IFS ACADEMY

Training For The Future!!

CAESAR-II Piping Stress Analysis Foundation Course

Instructor-Led Online Training

Course Curriculum (40 Hrs.)

Module 1: Intergraph CAESAR II – Static Pipe Stress Analysis

- Piping code theory basics
- Primary and secondary stresses
- Creating input data
- Design for piping loads
- Modeling of piping systems in CAESAR II
- Editing the model
- Supporting of piping systems (support types)
- Sustained and expansion stresses
- Design code requirements (e.g. B31.3, B31.1)
- Assorted modeling, analysis and compliance topics:
- Resolution of overstress due to thermal expansion
- Friction effects
- Adding flexible connections (vessels)
- Assessing equipment allowable loads
- Combining piping systems
- Load case combinations
- Modeling and analysis of a transmission line
- Modeling and analysis of a jacketed riser
- List/edit modeling, jacketed pipe, wind and hydrodynamic loading
- Static seismic loads
- Analysis documentation and static analysis workshop
- Model generation, system evaluation, system re-design

Module 2: Basic Stress Analysis

- Basic stress concept
- Role of Stress Engineer
- Basic Stress Stain Theories
- Basic Engineering concepts required for stress analysis

- Theories of failure
- Concept of stress Range
- Load Cases
- Code Compliance for ASME B31.3
- Different types & functions of Pipe support
- Design system for Sustain, Expansion & Occasional Loading
- Nomograph
- Pipe Rack Loading
- Support span Calculations
- Preparing stress Critical line list
- Stress System formation
- Overview of Caesar II software

Module 3: Piping Stress Analysis

- Storage Tank-pump system modeling
- Column-heat exchanger model
- WRC-297 nozzle flexibility
- Theory of load case generation
- PSV force calculation/ Slug force
- Critical Systems viz.: Turbine; Pump; Column, Air Fine Cooler etc.
- Spring design & Modeling in CAESAR II
- Pump Calculation API 610
- Equipment Modeling
- Pipe Rack CAESAR II Model
- Column Piping System

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