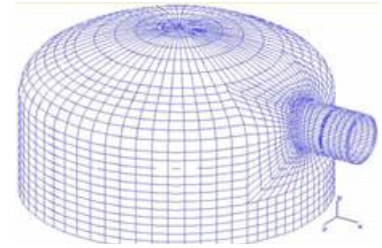


### Day 1 NozzlePRO Basics

- Basic Nozzle Analysis
  - Satisfying the Sec. VIII – Div. 2 Code
  - Volumetric Analysis
  - Steady State and Transient Heat Transfer in Nozzles
- Saddles and Pipe Shoes
  - Satisfying the Codes
  - Steady State and Transient Heat Transfer in Saddles and Pipe Shoes
- Basic Nonlinear Use (Introduction to Sec. VIII - Div. 2 Part 5 Elastic Plastic Analysis)
- Nonintegral Repads
- Introduction to the new Drawing Tools
- Introduction to basic Fitness for Service: Local Thin Areas and Crack-Like Flaws



Nozzle in Head of Vessel

### Day 2 FEPIPE Basics

- FEPIPE Templates and Their Capabilities
- Multiple Nozzles and Supports
- Combining Models to Create Larger Systems
- Skirts and Static/Dynamic Seismic Analysis
- Pressure Capacity and SIFs for B16.9 and EN10253 Welding Tees

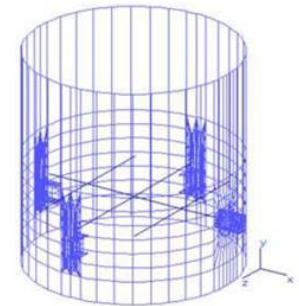


### Day 3 NozzlePRO / FEPIPE Advanced Topics

- Establishing Noncyclic Service for Vessels & Piping Systems
- Simple Volumetric Rules of Thumb
- Nonlinear Analysis Introduction
- Section VIII Div. 2 – Specific examples for pressure vessels and piping
- New Drawing Tools – Intermediate and Advanced Capability

### Day 4 New Functionality

- Nonlinear Analysis VIII-2 Part 5 Elastic-Plastic Compliance for Higher Allowable Loads
- Nonlinear Elastic-Plastic Analysis of Flange Joints
- Local Thin Area and Crack Analysis | Fitness for Service
  - Knowing when to inspect for cracks
  - Crack Prediction – how to use the FFS and Inspection Guidance
  - Crack Growth Model and Inspections
  - FFS & Linear Analysis | FFS & Nonlinear Analysis
  - J Integrals



### Day 5 New Functionality

- Point Cloud Examples
  - Establish a baseline for an installed piping system
  - Understand accuracy calibration by the laser scanner
  - Evaluating operating piping systems – what to expect
  - Verifying vessels and nozzle placement
- BOS B31 – basic fluid mechanics and common variables for:
  - Slug Flow
  - Waterhammer
  - Relief Valve Firing
  - Two Phase Flow
- Cumulative Damage and Code Compliance (PCL-Gold and CAESAR II)
- Piping Fitness for Service
- When is it critical to use B31J?
- When should a piping system be inspected?
- Piping System Gap Analysis for Flanges

Tank with Internal Supports and Piping



Displacement due to Relief Valve Firing



FEA Training Seminar  
Houston, Texas – April 29 – May 3, 2019

## REGISTRATION FORM

<u>Module</u>	<u>Course</u>	<u>Days/Dates</u>
Module 1	NozzlePRO Basics	Monday.....April 29, 2019
Module 2	Module 1 (+) FEPIPE Basics   NozzlePRO/FEPIPE Advanced	Monday - Wednesday .....April 29 – May 1, 2019
Module 3	Module 2 (+) Two Days of New Functionality	Monday - Friday .....April 29 – May 3, 2019

	<u>Price</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>Th</u>	<u>F</u>
<input type="checkbox"/> Module 1: NozzlePRO Basics	\$ 900	•				
<input type="checkbox"/> Module 2: Above (+) FEPIPE Basics   NozzlePRO/FEPIPE Advanced	\$ 2,700	•	•	•		
<input type="checkbox"/> Module 3: Above (+) Two Days of New Functionality	\$ 3,500	•	•	•	•	•

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A rental car is recommended; however, the hotel will provide van service to our offices if pre-arranged with the hotel upon check-in.			