



MC137

Creating and Implementing Effective Inspection Plans for Pressure Equipment and High Energy Piping Systems using ASME PCC-3

Day 1

- Background and Development of ASME PCC-3, Inspection Planning Using Risk-Based Methods
 - Overview of PCC-3
 - Discussion of Risk
 - Probability of Failure
 - Consequence of Failure
 - Key References

- Introduction to Risk-Based Inspection
 - Inspection Optimization
 - Levels of Analysis

- Planning the Risk Analysis
 - Identifying Objectives
 - Initial Screening
 - Selecting the Risk Analysis Level
 - Estimating Time and Resources

- Data and Information Collection
 - Typical Data Needs
 - Data Quality

- Damage Mechanisms and Failure Modes
 - Identifying Damage Mechanisms
 - Determining the Failure Mode

- Determining Probability of Failure
 - Units of Measure
 - Baseline Probability
 - Effects of In-Service Damage
 - Determining Failure Modes
 - Calculating Damage Progression Rate

- Determining Consequence of Failure
 - Units of Measure
 - Types of Consequences
 - Analysis of the Consequence of Failure

- Risk Determination, Analysis, and Management



- Addressing Failure Modes with Multiple Consequence Scenarios
 - Risk Calculation
 - Risk Communication
 - Establishing Acceptable Risk Thresholds
- Risk Management with Inspection Activities
 - Identifying Opportunities for Risk Reduction
 - Establishing an Inspection Strategy
 - Using Inspection to Manage Risk
- Other Risk Mitigation Activities
- Re-Analysis
 - When to Conduct a Re-Analysis
- Documentation and Record Keeping
- Case Study 1 – Equipment Assessment; Multi-Vessel Process
- Case Study 2 – Component Assessment; High Energy Piping System