



Quality-One International

Machinery FMEA Course Outline

- Introduction to Machinery Failure Mode and Effects Analysis (MFMEA)
- History and Purpose of FMEA
- Team Structure and Efficiency
- What is Risk?
 - Criticality (Severity * Occurrence)
 - When to Take Action
- Reliability and Maintainability
- Mean Time Between Failure (MTBF)
- Mean Time to Repair (MTTR)
- Relationship between Machinery FMEA and Process FMEA
- Machinery FMEA Development Methodology (Quality-One Three-Path Model)
 - Pre-work
 - Failure Mode Avoidance (FMA) – Past experiences with failure
 - Path 1
 - Define / Scope the FMEA
 - Assemble the Cross Functional Team (CFT)
 - Create / Review Process Flow Chart or Diagram
 - Identify sub-processes and machinery / tooling design requirements
 - Determine Functions, Failure Modes, Effects and Severity Rankings (MTBF)
 - Take Action on High Severity Items
 - Path 2
 - Conduct Risk Analysis
 - Determine Potential Causes and Prevention Controls and Occurrence Rankings (MTTR)
 - Utilize Decision Matrix / Decision Tree for Single Point Failure, Existing Controls and Detectability



Quality-One International

- Take Action to Reduce High Occurrences
- Path 3
 - Determine Detection Methods for Machinery Failure and Detections Rankings
 - Take Action to Improve Detection Controls
- Review Recommended Actions and Assign Responsibility/Date
 - Confirm Management Agreement / Approval
- Revisit Rankings after Actions Taken