Mechanical Integrity and Quality Assurance (MIQA)

Course Description

Course Overview
The goal of this course is to provide an understanding of the Mechanical Integrity and Quality Assurance (MIQA) elements of Process Safety Management (PSM). It focuses on establishing a site MIQA team, developing a site MIQA manual and implementing MIQA at a site. Participants will collaborate in small groups to analyze scenarios using incident videos and case studies. As the course progresses, participants will continuously build upon the overall PSM MIQA processes related to their fictional plant. They will have to react in real-time as incidents, such as critical equipment failures or inspections, are added to the scenario.

Audience
The Mechanical Integrity and Quality Assurance course is designed for projects and maintenance managers, projects, technical services, and maintenance engineers; MIQA element leaders and team members; and site process safety management (PSM) leaders.

Learning Objectives
In order to accelerate skill development, this course features a problem-based learning approach that provides a collaborative job-focused experience. Participants will see how MIQA fits into the PSM model, identify the essential elements of Mechanical Integrity and Quality Assurance, discuss the importance of QA, explore MIQA roles and responsibilities, and describe repairs and corrective actions. They will also discuss the need for testing and inspection procedures, explore the benefits of predictive methods over reactive ones, hear about reliability centered maintenance (RCM), discuss the purpose of an audit and corrective actions, and describe repairs and corrective actions. They will also discuss the need for testing and inspection procedures, explore the benefits of predictive methods over reactive ones, hear about reliability centered maintenance (RCM), discuss the purpose of an audit and corrective actions, and describe repairs and corrective actions. Participants will also explore MIQA roles and responsibilities, and describe repairs and corrective actions.

Pre-requisites:
- PSM 101: PSM Overview
- PSM 201: Process Technology
- Prior exposure to Maintenance Procedures

Module 1: Why Maintenance Integrity and Quality Assurance?
This module describes how MIQA fits into the PSM model and discusses the LIFECYCLE concept for PSM critical equipment.

Module 2: Establishing a Quality Assurance System for New Equipment
Participants will examine the four PSM Quality Assurance process groups.

Module 3: Maintenance Procedures and Training
In this module, participants get an overview of auditing and training on MIQA.

Module 4: Repairs and Alterations
Participants will explore MIQA roles and responsibilities, and describe repairs and corrective actions.

Module 5: Quality Assurance process groups.
Participants will examine the four PSM Quality Assurance process groups.

Module 6: Maintenance Procedures and Training
In this module, participants get an overview of implementing maintenance procedures and training on MIQA.

Module 7: QC of Maintenance Materials
Participants will see how to develop a thorough process for quality control.

Module 8: Establishing a Quality Assurance process groups.
Participants will examine the four PSM Quality Assurance process groups.

Module 9: Audits
Participants will get an overview of audit procedures and how they should be implemented.

Module 10: Reliability
Participants will explore MIQA roles and responsibilities, and describe repairs and corrective actions.

Module 11: Process Technology
Participants will see how to develop a thorough process for quality control.

Module 12: Quality Assurance process groups.
Participants will examine the four PSM Quality Assurance process groups.

Module 13: Maintenance Procedures and Training
In this module, participants get an overview of implementing maintenance procedures and training on MIQA.

Module 14: Repairs and Alterations
Participants will explore MIQA roles and responsibilities, and describe repairs and corrective actions.

Module 15: Quality Assurance process groups.
Participants will examine the four PSM Quality Assurance process groups.

Module 16: Maintenance Procedures and Training
In this module, participants get an overview of implementing maintenance procedures and training on MIQA.

Module 17: Repairs and Alterations
Participants will explore MIQA roles and responsibilities, and describe repairs and corrective actions.

Module 18: Quality Assurance process groups.
Participants will examine the four PSM Quality Assurance process groups.

Length: 3-day course

Results and Path Forward
After completing this course, participants should compile a list of action items based on their learning to apply back on the job. This starts with writing new or upgrading existing MIQA procedures. To build competency at the individual level, the participant should identify a coach, apply the updated MIQA to a pilot site within their facility, and get assessed on the competency requirements for applying MIQA.

It is recommended that participants go through an e-learning refresher course once a year and instructor-led refresher training once every three years.

General Enquiry:
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