Best Technology Solutions (BTS)

API 580 and 581 Training - Risk-Based Inspection & Base Resource Document Training program

Introduction:

The course is based on API RP 580 Risk-Based Inspection and API Publication 581, Base Resource Document. The course first explains feasible means and alternatives for achieving a successful RBI program without undue complications. This course deals with RBI framework and methodology in a simple straight forward manner to establish and implement a risk-based inspection program best suited for the company objectives.

Its utility is based on the premise that a few vital equipments in a process plant contribute a majority of the risk. Consequently, if these few equipments can be identified, then testing and inspection can be focused on them rather than several low-risk items. RBI helps to prioritize their equipment for inspection, optimize inspection methods and frequencies, and develop effective inspection plan commensurate with the risk contribution and equipment condition.

The course is focused on methodology of actual implementation of RBI in Oil and Gas industry. It covers advanced knowledge of RBI implementation in addition to the knowledge required for passing the Certification Examination. The candidates should possess at least one certification out of API 510, API 570 or API 653 certifications.

Who Should Attend?

This course will specifically benefit Engineers, Supervisors, and Managers and Individuals who are responsible for implementing risk- based inspection programs within their own company or plant facility such as Mechanical integrity, Equipment Reliability, and Inspection Personnel who are responsible for maintaining the serviceability of process plant equipment based on a cost-effective inspection program.

Course Objectives:

By the end of this course delegates will learn about:

- Introduction to the basic concept of Risk-Based Inspection and the basis for the API 580 RBI program and methodology
- Understand the purpose, scope, and examination of the critical steps in the RBI process
- Overview of deterioration mechanisms and failure modes affecting the plant equipment
- Introduction to the risk-based inspection priority matrix and the means to utilize its results in determining inspection priorities
- Introduction to the iso-risk plot and its use, especially in combination with the risk-based inspections priority matrix
- Discussion of risk-based inspection documentation and record-keeping needs
- Understanding of the basic concepts of risk acceptance, risk assessment, risk perception ,risk mitigation and managing residual risk .

Daily Agenda

Module - 1

- Introduction
- What is RBI?
- Scope of RBI
- Purpose & Utility of RBI
- Common Definition RBI
- Definition of Risk
- Relative Risk V/S Absolute Risk
- Relationship between Inspection & Risk
- Types Of RBI Assessments
- Qualitative, Quantitative and Semi-Quantitative Approaches

Module - 2

- Planning RBI Assessment
- Selecting Type of RBI Assessment
- Identifying Deterioration Mechanisms
- Introduction to Qualitative Analysis
- Likelihood Category
- Consequence Category
- Step-By Step Method for Qualitative Analysis
- Understanding the Damage Factors
- Determine Likelihood Category
- Determine Consequence Category and Risk Category
- Preparation of Risk Matrix, Analysis and Conclusion

Module - 3

- Introduction to Quantitative Analysis
- Flammable Effects
- Toxic Effects
- Business Interruption Effects
- Estimation of Release Rate and Post Leak Response
- Risk Evaluation
- Risk-Weighted Consequences

Module - 4

- Introduction to Semi Quantitative Approach
- Likelihood Analysis
- Consequence Analysis
- Risk Management Post RBI Analysis
- Inspection Strategies Post RBI Analysis
- Using RBI Findings To Evolve Inspection Strategy In Oil And Gas Industry

Module - 5

- Inspection Effectiveness
- Optimizing Inspection Methods And Frequencies
- Risk Mitigation and Follow-Up
- Re-Assessment and Updating RBI
- Implementation of RBI in Oil And Gas Industry
- Final Quiz
- Feedback and Concluding Session