



Safety Relief Valve: Operation Maintenance

Course Objective :

- Understanding different aspects of process design that influence process safety
- Appreciate “inherently safer design” for the entire process plant operation
- Evaluate mechanical integrity of process equipment
- Identify hazards associated with process fluids regarding impact on material degradation
- Follow code requirements for sizing relief valves to handle relief streams
- Operate Emergency De-Pressuring Systems (EDP) in case of fire

Course Outline

- Overview of Safety in Process Design
- Definition of Safety in Process Design
- Overview of Historical Incidents and Problem Areas
- Components of Process Safety: People, Plant, Process
- Risk Identification and Safety Analysis
- Process Hazard Analysis: HAZOP, LOPA, FMEA
- Hazards Associated with Specific Plant Systems
- Elimination of Hazards through Process Design
- Prevention of Human Error through Process Control and Monitoring
- Inherently Safer Design
- Inherently Safer Design Methodology
- Pre-Design and Design Phases
- Materials of Construction and Optimized Fabrication
- Hazard Associated with Process Fluids and Chemical Reactions
- Corrosion, Erosion and Material Degradation
- Leakage and Loss of Primary Containment
- Dispersion of Hydrocarbon Release
- Flammability of Chemicals
- Safety of Process Equipment
- Hazard Associated with Process Equipment
- Safety Considerations in Reactor Design
- Design Procedure for Safety of Pressure Vessels, Storage Tanks, Reactors, Heat Exchangers
- Venting of Tanks and Vessels: Codes, Standards and Best Practices
- Piping System Design and Safety
- Design of Piping System Accessories: Valves, Fittings, Supports
- Assessment of Material Degradation during In-Life Cycle: Fitness for Service
- Monitoring, Testing and Inspection (NDT)
- Design of Pressure Relief Systems
- Design of Safety Valves
- Operation of Pressure Relief System
- Calculation and Sizing of Relief Loads of Pressure Relief Systems





- Pressure Relief Valves vs. Rupture Discs
- Codes, Standards and Best Practices
- Specifics of Pressure Relief Systems for Pumps, Compressors, Turbines
- Process Plant Disposal Systems
- Disposal Hazards, Risk Assessment and Environmental Factors
- Process Monitoring and Control
- Safety Instrumented Systems
- Process Plant Monitoring and Control System: SCADA
- Emergency De-Pressurizing Systems (EDP)
- Prevention of Fire and Gas or Dust Explosions
- Safety Consideration in Plant Layout and Equipment Spacing
- Management of Change and Integrity Operation Window
- Plant Equipment Inspection and Maintenance Procedures
- Final Conclusions

