PrimaTech
Specialists in Safety, Security and Risk

TRAINING

Advanced Process Hazard Analysis (PHA) for Team Leaders

Approaches that go beyond the basics of traditional PHA have been developed. Companies should implement these approaches to ensure compliance with performance-based regulations and the responsible management of risk.

This course goes beyond the fundamentals of facilitating the performance of PHA covered in Primatech's course, *PHA for Team Leaders*, and deals with more advanced issues. It includes the application of PHA to areas such as reactive chemicals, procedures, non-steady state processes, and domino effects.

Also covered are computer HAZOP (CHAZOP) for PHA of control systems, use of bow-tie diagrams to graphically depict process hazards and the barriers that protect against them, and major hazards analysis (MHA) that overcomes the time consuming and onerous nature of many traditional PHA methods.

Other PHA issues are addressed, such as the competence of PHA study teams and addressing them through a competence management program. Guidelines are provided for performing PHA to ensure that the information needed for LOPA is provided, such as when used to help meet the requirements of the IEC 61511 / ISA 84 standard on safety instrumented systems.

Examples are provided of the application of the PHA approaches described and attendees participate in workshop sessions to gain experience using them.

Attendees receive a detailed course manual, resource materials, checklists, job aids and regulatory requirements.

Objective:

To learn advanced methods in PHA and be able to apply them in studies.

Target Audience:

PHA team leaders / facilitators, PHA participants, process safety coordinators.

Course Topics:

- Competence of PHA teams
- Understanding and addressing weaknesses in PHA methods
- Major hazards analysis
- Understanding domino effects
- Domino effects and PHA
- PHA for batch and non-steady state processes
- PHA for procedures
- IEC 61511 / ISA 84 standard and LOPA
- LOPA and PHA
- Overview of reactive chemical hazards
- Identifying reactive chemical hazards
- Addressing reactive chemical hazards in PHA
- Characteristics of control systems and their failures
- HAZOP and PHA for computer control systems
- Bow-tie diagrams

Duration:

Three days, 2.1 CEUs awarded

For more information, contact:
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