HAZOP and Risk Management for Industrial Process Safety Training Course

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4100 € (Per Person)

Ref: #OG5482_613649

Course Introduction / Overview:

In the complex and often high-stakes world of industrial operations, a single oversight can have catastrophic consequences. This training course is a vital program for professionals responsible for ensuring the safety and integrity of industrial processes. It provides a comprehensive understanding of HAZOP (Hazard and Operability Study) and other risk management techniques. Participants will learn how to systematically identify, analyze, and mitigate potential hazards. The course, offered by BIG BEN Training Center, is built on the foundational principles of process safety management and is designed for a new generation of safety leaders. It draws on the work of academics such as Trevor Kletz, considered the father of process safety, whose work emphasizes the importance of learning from past incidents to prevent future ones. We will also explore key concepts from books like "Process Plants: A Handbook of Codes and Standards" by N. P. Cheremisinoff and P. N. Cheremisinoff, which details the regulatory and technical frameworks essential for maintaining safety. The curriculum covers the entire life cycle of a process, from design and construction to operation and maintenance, providing a holistic and proactive approach to risk management.

Target Audience / This training course is suitable for:

- Process engineers and chemical engineers.
- Safety, health, and environment (SHE) managers.
- Operations and plant managers.
- Project engineers and design professionals.
- Risk and reliability specialists.

Target Sectors and Industries:

- Oil and gas.
- Chemical manufacturing.
- Pharmaceuticals.
- Power generation.
- Government agencies and regulatory bodies are responsible for industrial safety.

Target Organizations Departments:

- Process Safety.
- Engineering and Design.
- Operations and Maintenance.
- Quality Assurance.
- Environmental, Health, and Safety (EHS).

Course Offerings:

By the end of this course, the participants will have able to:

- Conduct a comprehensive HAZOP study.
- Identify and evaluate process hazards.
- Apply risk management and mitigation strategies.
- Ensure compliance with international process safety standards.
- Develop and implement a robust process safety management system.
- Lead and facilitate a multidisciplinary risk assessment team.
- Analyze and learn from industrial incidents and near-misses.

Course Methodology:

This training course uses a blend of instructional methods to provide a comprehensive learning experience. The methodology includes detailed lectures, interactive workshops, and group exercises to apply theoretical concepts in practical settings. Participants will work through realistic case studies, simulating real-world industrial scenarios to practice hazard identification and risk assessment. We encourage lively discussions to promote knowledge sharing and to learn from the diverse experiences of participants. The course also includes a hands-on HAZOP simulation where participants will act as a review team to identify potential deviations from design intent and propose safeguards. BIG BEN Training Center believes that learning by doing is the most effective way to master complex safety concepts, so our approach is designed to be highly practical and engaging.

Course Agenda (Course Units):

Unit One: Fundamentals of Process Safety

- Introduction to process safety and its principles.
- Understanding hazards, risks, and accidents.
- The importance of a process safety culture.
- Regulatory requirements and international standards.
- The role of human factors in industrial safety.

Unit Two: HAZOP Study Methodology

- Introduction to the HAZOP technique.
- The HAZOP team and its roles.
- Guide words and process parameters.
- Steps for conducting a HAZOP study.
- Documentation and reporting of findings.

Unit Three: Advanced Risk Assessment

- Quantitative and qualitative risk assessment.
- Layers of protection analysis (LOPA).
- Failure modes and effects analysis (FMEA).
- Bow tie analysis.
- Risk matrices and their use.

Unit Four: Implementing Process Safety Management

- Elements of process safety management (PSM).
- Management of change (MOC).
- Pre-startup safety reviews (PSSR).
- Emergency planning and response.
- Incident investigation and root cause analysis.

Unit Five: Auditing and Continuous Improvement

- Conducting a process safety audit.
- Developing an audit protocol.
- Continuous improvement strategies for process safety.
- Performance indicators for safety.
- Maintaining a resilient safety management system.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

In what ways does the successful implementation of a proactive risk management framework, such as HAZOP, contribute not only to operational safety but also to an organization's long-term financial resilience and its social license to operate?

What unique qualities does this course offer compared to other courses?

This training course stands out by providing a deep, practical dive into the application of HAZOP and other risk management tools. While many courses cover the basics, our program is designed to give participants the skills to facilitate and lead real-world safety studies. We focus on hands-on exercises and case studies that mimic actual industrial challenges, giving participants an experience, they can use immediately on the job. The curriculum also integrates the latest industry standards and best practices, going beyond simple theory to cover the human and organizational factors crucial for a strong safety culture. By connecting technical expertise with leadership and communication skills, we prepare professionals to be not just safety experts but true agents of change within their organizations.