AcuTech Training Institute

# TRAINING COURSE CATALOG

2027

PROCESS SAFETY

SECURITY

CRISIS & EMERGENCY MANAGEMENT

www.acutech-consulting.com/training

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# Table of Contents

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## ONSITE & CUSTOMIZED TRAINING

AcuTech provides on-site training on process safety, risk management, security and crisis & emergency management topics. The courses listed below can be delivered as an onsite program customized to your organization and facility.

Contact us to discuss your training needs.

## ABOUT ACUTECH TRAINING INSTITUTE

AcuTech Training Institute (ATI) has provided superior quality, practical training courses, seminars, and workshops on process safety, risk management, security, and crisis & emergency management since 1994. Dedicated to providing a high-value solution for all training needs, we provide a strong working knowledge and a clear presentation of safety management principles and regulatory requirements. Partner with AcuTech to develop a strong process safety and security management capacity in your organization.

## KEY BENEFITS

- Receive training from experts who have taught thousands of risk management professionals
- Gain hands-on experience through interactive workshops
- Learn from real-world case studies as shared by our course instructors - their backgrounds in industry and government provide a practical and complete perspective
- Gain insight into expectations of regulators from AcuTech's depth of experience and insights to the industry
- Obtain a Certificate of Attendance with PDHs

Our expert instructors are internationally recognized leaders in process safety, risk management, security, and crisis & emergency management. They have extensive theoretical knowledge and practical experience and are stilled at imparting the knowledge needed to manager process risks and the principles involved.

All AcuTech instructors believe in operational excellence and continuous improvement.

# ABOUT ACUTECH

Since 1994, AcuTech has been a global leader in providing best-in-class consulting, training, and software solutions to manage process risk.

With deep expertise in both the management and technical aspects of risk management, AcuTech is uniquely positioned to support clients ranging from the world's largest companies to specialized private companies to trade organizations and government agencies in improving safety, security, environmental, and operational performance.

This extensive experience across industries and in-depth knowledge of the tools and methods available for managing risk, allows our consultants to be responsive and flexible to meet client needs. In addition, they possess strong project management skills, broad technical expertise, and emphasize high-quality, on-time project work to support safer, more efficient, and, ultimately, more profitable operations.


# ACUTECH IS GLOBAL

With experience running projects in 150+ countries and consultants located around the world, AcuTech can offer training globally.


# A PARTNER

Trusted by the world's largest companies to deliver critical risk services and training.

# Course List & Pricing

Below is a listing of the courses offered by ATI, including the course number, name, duration, cost per person (at AcuTech facilities), and PDH credits.
The first three digits of the course number denote the level of the course (100/200).

### PROCESS SAFETY & RISK MANAGEMENT

| Course Number | Course Title | Duration (days) | Cost ($) | PDHs |
|---|---|---|---|---|
| 100-001 | OSHA Process Safety Management Overview | 1 | 900 | 8 |
| 100-003 | EPA Risk Management Program (RMP) Overview | 1 | 900 | 8 |
| 200-091 | Implementing EPA's Risk Management Program (RMP) | 2 | 1,750 | 16 |
| 200-092 | Implementing California's CalARP & CalOSHA PSM Program | 2 | 1,750 | 16 |
| 200-093 | Implementing New Jersey's Toxic Catastrophe Prevention Act (TCPA) | 2 | 1,750 | 16 |
| 100-011 | Best Practices in Process Safety & Risk Management | 2 | 1,750 | 16 |
| 100-002 | Achieving Process Safety Excellence | 2 | 1,750 | 16 |
| 200-012 | Building a Strong Process Safety Culture | 2 | 1,750 | 16 |
| 100-007 | Risk-Based Decision Making and Cost-Benefit Analysis | 1 | 900 | 8 |
| 100-005 | Overview of Auditing for PSM/RMP Compliance | 1 | 900 | 8 |
| 200-021 | Auditing for Process Safety & Risk Management | 2 | 1,750 | 16 |
| 100-004 | Overview of Process Hazard Analysis | 1 | 900 | 8 |
| 100-031 | Process Hazard Analysis (PHA) & Layer of Protection Analysis (LOPA) for Team Members | 1 | 900 | 8 |
| 200-032 | Process Hazard Analysis (PHA) & Layer of Protection Analysis (LOPA) for Team Leaders | 4 | 3,250 | 32 |
| 200-033 | Process Hazard Analysis (PHA) Revalidation & Advanced Topics in PHA | 2 | 1,750 | 16 |
| 200-034 | Essentials of Layers of Protection Analysis (LOPA) | 2 | 1,750 | 16 |

## COURSE PRICING

All costs listed above are for open-enrollment courses taking place at AcuTech facilities.

Contact us at **ati@acutech-consulting.com**
to discuss training a team at your facility or ours.

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**PROCESS SAFETY & RISK MANAGEMENT**

| | | | | |
|---|---|---|---|---|
| 100-006 | Understanding Quantitative Risk Assessments (QRAs) | 1 | 900 | 8 |
| 200-141 | Quantitative Risk Assessment (QRA) | 3 | 2,500 | 24 |
| 200-143 | Facility Siting | 2 | 1,750 | 16 |
| 200-144 | Reliability, Availability, and Maintainability Analysis | 3 | 2,500 | 24 |
| 100-101 | Overview of SEMS Regulation | 1 | 900 | 8 |
| 200-102 | Implementing a SEMS Program at an Offshore Facility | 2 | 1,750 | 16 |
| 100-131 | Fundamentals of Loss Prevention in the Process Industries | 2 | 1,750 | 16 |
| 100-132 | Fire Protection Engineering in the Chemical Process Industries | 2 | 1,750 | 16 |
| 200-142 | Combustible Dust Mitigation & Management | 1 | 900 | 8 |
| 200-041 | Developing & Managing Management of Change / PSSR Programs | 2 | 1,750 | 16 |
| 200-051 | Developing & Managing Mechanical Integrity Programs | 2 | 1,750 | 16 |
| 200-081 | Inherently Safer Chemical Processes | 2 | 1,750 | 16 |
| 200-121 | Human Factors & Procedure Analysis | 2 | 1,750 | 16 |
| 100-151 | Occupational Safety & Health Basics | 2 | 1,750 | 16 |
| 100-152 | Industrial Hygiene | 2 | 1,750 | 16 |
| 100-153 | OSHA Voluntary Protection Program (VPP) Compliance | 2 | 1,750 | 16 |
| 200-071 | Contractor Safety | 2 | 1,750 | 16 |

## ONSITE & CUSTOMIZED TRAINING

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## SECURITY

| Course Number | Course Title | Duration (days) | Cost ($) | PDHs |
|---|---|---|---|---|
| 200-171 | Security Risk Assessment (SRA) Standard 780 | 2 | 1,750 | 16 |
| 200-173 | Port Facility Security Office (PFSO): USCG Certified Training Course | 3 | 2,500 | 24 |
| 100-176 | Chemical Reactivity Hazards for Security Personnel | 1 | 900 | 8 |
| 100-174 | Insider Threat Management | 2 | 1,750 | 16 |
| 100-175 | Introduction to Security Countermeasures | 1 | 900 | 8 |
| 100-177 | Supply Chain Security | 2 | 1,750 | 16 |

## EMERGENCY MANAGEMENT

| Course Number | Course Title | Duration (days) | Cost ($) | PDHs |
|---|---|---|---|---|
| 100-162 | Business Continuity & Crisis Management | 2 | 1,750 | 16 |
| 100-161 | Emergency Planning & Response for the Process Industries | 2 | 1,750 | 16 |
| 200-061 | Incident Investigation & Root Cause Analysis | 2 | 1,750 | 16 |

## HYDROGEN SAFETY

| Course Number | Course Title | Duration (days) | Cost ($) | PDHs |
|---|---|---|---|---|
| 200-201 | Custom Hydrogen Safety Training | 0.125 - 2 | TBD | 1 - 16 |

# OSHA PROCESS SAFETY MANAGEMENT OVERVIEW

Course Number: **100-001** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Unexpected releases of toxic, reactive, or flammable liquids and gases have caused catastrophic incidents across various industries handling highly hazardous chemicals. These accidents not only threaten worker safety but also lead to significant financial and environmental consequences.

To mitigate these risks, OSHA implemented the Process Safety Management (PSM) standard (29 CFR 1910.119), which provides a comprehensive regulatory framework. It integrates technologies, procedures, and management practices to improve process safety. The U.S. Environmental Protection Agency (EPA) enforces risk management requirements under 40 CFR Part 68 (RMP) to enhance safety at facilities. These regulations help protect both industrial sites and surrounding communities.

This one-day OSHA PSM overview course introduces the 14 elements of OSHA's PSM standard and the key requirements of EPA's Risk Management Program (RMP). Additionally, participants will gain a foundational understanding of process safety regulations, their background and intent, how to apply them in their workplace, and the requirements for each of the elements of PSM. The training is ideal for both new employees seeking an introduction to PSM and experienced personnel in need of a refresher.

## COURSE BENEFITS

- Increase understanding of the regulatory framework to support your organization's risk management processes/procedures and regulatory compliance
- Become knowledgeable of the 14 elements of OSHA's PSM standard and understand their objective
- Recognize the basic requirements of EPA's RMP regulations
- Assess which elements require future focus and attention at your facility, including identifying gaps in existing safety programs and compliance efforts

## RECOMMENDED PREREQUISITES

No prior PSM/RMP experience is necessary and there are no prerequisites. An understanding of process systems is helpful.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# EPA RISK MANAGEMENT PROGRAM (RMP) OVERVIEW

Course Number: **100-003** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

The EPA Risk Management Program (RMP) is a key regulation aimed at preventing chemical accidents that could harm workers, communities, and the environment. Under Section 112(r) of the Clean Air Act, facilities handling hazardous substances must develop and implement risk management plans. The 2024 Safer Communities by Chemical Accident Prevention Final Rule builds on previous regulations by adding requirements for safer technologies, stronger employee participation, better emergency response planning, and improved transparency.

This one-day EPA RMP overview course provides an essential review of EPA RMP requirements (40 CFR Part 68), focusing on core elements like hazard assessments, prevention programs, and emergency response planning. Participants will learn about recent RMP revisions and the 2024 updates, gaining insights into compliance strategies and best practices. This course, designed for both new and experienced personnel involved in RMP implementation, offers valuable guidance on meeting regulatory obligations and enhancing overall safety.

## COURSE BENEFITS

- Gain a clear understanding of EPA RMP requirements and the latest rule updates.
- Learn how to develop and implement a compliant Risk Management Plan.
- Receive practical insights from industry experts on RMP compliance and best practices.
- Improve expertise in hazard assessments, prevention programs, and emergency response planning.
- Foster a stronger safety culture by increasing employee engagement in process safety.

## RECOMMENDED PREREQUISITES

No prior PSM/RMP experience is necessary and there are no prerequisites. An understanding of process systems is helpful.

# IMPLEMENTING EPA'S RISK MANAGEMENT PROGRAM (RMP)

Course Number: **200-091** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

The EPA Risk Management Program (RMP) aims to prevent and mitigate chemical accidents that could harm workers, the surrounding community, and the environment. Specifically, under the Clean Air Act (Section 112(r)), facilities that handle hazardous chemicals are required to develop and implement comprehensive risk management plans. These plans protect people and property from the risks associated with chemical releases. The program enhances safety by ensuring facilities assess hazards, prevent accidents, and respond effectively to incidents.

This two-day course provides an in-depth understanding of the key elements of the EPA Risk Management Program (RMP). It is designed to help participants develop and implement compliant risk management strategies. Topics include essential RMP components such as Registration, Offsite Consequence Analysis (worst-case and alternative release scenarios), and the 5-year Accident History. In addition, the course also covers RMP Prevention Program elements, including Process Hazard Analysis, Mechanical Integrity, Operating Procedures, Management of Change, and Auditing.

The course provides a thorough review of the recent final RMP Rule revisions, along with practical implementation examples and detailed interpretations. Furthermore, participants will gain the knowledge needed to manage and implement EPA RMP programs at their own facilities. This helps ensure EPA compliance and enhances process safety.

## COURSE BENEFITS

- Acquire the knowledge to plan, develop, and manage effective RMP programs that meet regulatory requirements and enhance safety performance.
- Update and improve existing RMP programs to align with the latest EPA requirements and achieve real safety gains.
- Learn the principles and key components of RMP, including hazard analysis, operating procedures, and auditing.
- Gain practical insights through real-world examples of program and procedure development.
- Understand EPA enforcement activities and priorities to ensure compliance and reduce risk.

## RECOMMENDED PREREQUISITES

Completion of (100-011): Best Practices in Process Safety Management, In-depth understanding of PSM and RMP program requirements.

# IMPLEMENTING CALIFORNIA'S CALARP & CALOSHA PSM PROGRAM

Course Number: **200-092** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Implementing California's CalARP & CalOSHA PSM Program is essential for organizations operating in California's (CA) highly regulated industrial landscape. These two complementary programs are designed to protect workers, contractors, the public, and the environment from hazardous chemical releases.

Understanding and implementing these regulations is critical as California's requirements are among the most comprehensive and stringent in the nation. The state has expanded expectations around inherently safer systems, safeguard evaluation, hierarchy of controls, damage mechanism reviews, and employee participation. Facilities must not only meet compliance requirements but also demonstrate continuous improvement, enhanced transparency, and a proactive safety culture.

This course provides a practical overview of the CalOSHA PSM and CalARP regulations, highlighting their intent, structure, and interrelationship. Participants will review recent updates, learn how to interpret requirements, and understand how to align internal programs with CA's evolving expectations. The training emphasizes proven strategies for managing compliance and integrating CalARP/PSM elements into existing facility processes. Real-world examples, case studies, and regulatory insights equip attendees with the knowledge needed to successfully develop or enhance their organization's CA-compliant safety programs.

## COURSE BENEFITS

- Gain a comprehensive understanding of CalOSHA PSM and CalARP regulatory requirements and their complementary roles.
- Learn how to interpret and apply updated provisions such as inherently safer design, safeguard evaluation, and damage mechanism reviews.
- Understand how to develop, manage, and improve compliant safety programs.
- Enhance your knowledge of key prevention program elements, including PHAs, operating procedures, mechanical integrity, and management of change.
- Strengthen regulatory readiness through insights into enforcement expectations, documentation practices, and effective communication with regulators.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# IMPLEMENTING NEW JERSEY'S TOXIC CATASTROPHE PREVENTION ACT (TCPA)

Course Number: **200-093** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Facilities in New Jersey that handle extraordinarily hazardous substances (EHS) above regulatory levels are required to comply with the Toxic Catastrophe Prevention Act (TCPA), as codified in N.J.A.C. 7:31. This program provides assistance to covered facilities and verifies compliance with TCPA regulations. The EPA has delegated the implementation of federal Accident Release Prevention (ARP) rules under Section 112r of the Clean Air Act (40CFR68) to New Jersey. As part of its duties, the TCPA program reviews risk management plans, assesses inherently safer technology reports, audits risk management programs, inspects regulated facilities, and administers enforcement actions.

The TCPA was the first multi-element, holistic process safety regulation in the country. Over time, it has evolved to include provisions addressing reactive chemicals, inherent safety, and the integration of the EPA's Risk Management Program (RMP) Rule, making the New Jersey Department of Environmental Protection (NJDEP) the implementing agency for the RMP in New Jersey. This course will provide a thorough overview of the TCPA's key elements, focusing on the unique regulatory provisions that remain in effect today.

## COURSE BENEFITS

- Gain a comprehensive understanding of New Jersey's TCPA program, including regulatory provisions and compliance requirements.
- Learn how the EPA's ARP rules are integrated into the TCPA program and enforced by NJDEP.
- Understand the evolution of the TCPA, focusing on provisions for reactive chemicals and inherent safety.

# BEST PRACTICES IN PROCESS SAFETY & RISK MANAGEMENT

Course Number: **100-011** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Developing, implementing, and enhancing process safety programs is crucial for safeguarding personnel, the environment, and assets in industrial settings. By identifying and mitigating potential hazards, these programs prevent incidents such as fires, explosions, and toxic releases. Process Safety Management (PSM) programs ensure compliance with regulations and avoid legal liabilities. Continuous improvement of safety procedures enables organizations to adapt to evolving risks, effectively manage uncertainties, and foster a culture of safety and responsibility in the workplace.

The course provides a deep dive into PSM and explores its history, purpose, and core principles. It covers essential elements like Process Hazard Analysis, Mechanical Integrity, Operating Procedures, Management of Change, and more. Attendees learn about regulatory developments, inherent safety, reactive chemistry, combustible dust hazards, and the (CCPS) Risk-Based Process Safety (RBPS) model.

This popular “best practices” course also serves as an introduction to PSM metrics, process safety culture and safety instrumented systems. The course includes practical examples and up-to-date regulatory information to help you develop and implement robust PSM programs at your facility.

## COURSE BENEFITS

- Gain an understanding of how to develop and manage effective risk management programs (PSM, in particular) that exceed regulatory requirements and enhance safety and security.
- Get up-to-date insights on the latest methods for updating and improving existing programs to achieve significant performance gains.
- Obtain a solid grasp of the key elements of process safety, backed by practical examples and real-world applications.

## RECOMMENDED PREREQUISITES

Familiarization with and experience with OSHA Process Safety Management (PSM) and EPA Risk Management Program (RMP) and their requirements.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# ACHIEVING PROCESS SAFETY EXCELLENCE

Course Number: **100-002** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Achieving excellence in process safety is critical for safeguarding personnel and assets, while driving operational performance. Maintaining high performance in Process Safety Management is a complex challenge, requiring continuous commitment, disciplined execution, and a culture focused on improvement. Organizations that embed process safety into their operational strategy not only reduce incidents but also improve efficiency, resilience, and long-term business outcomes.

This two-day course provides a structured approach to achieving operational excellence through PSM. Participants will explore the justification for investing in process safety, the importance of management commitment, and strategies to plan, organize, execute, and sustain an effective program. The course emphasizes the human and organizational aspects of process safety, including building collaboration, cultivating a culture of learning, and fostering continuous improvement.

Participants will learn AcuTech's Process Safety Operational Model, which reflects years of experience helping organizations enhance their PSM performance. The course includes exercises on creating a risk-focused organization with a culture focused on zero process safety incidents, using benchmarking data to inform decisions, and developing key performance indicators to measure program success & tailor activities.

Attendees will gain insight into overcoming common barriers to PSM excellence, including operational complexity, cultural challenges, and organizational inertia. Emphasis is placed on promoting a disciplined mindset, encouraging shared learning, and sustaining high standards of performance across all levels of the organization.

## COURSE BENEFITS

- Gain insight into achieving Operational Excellence through process safety
- Learn best practices for organizing and structuring process safety programs
- Develop and apply KPIs & tools to monitor and manage process safety performance
- Understand strategies to foster a strong underlying process safety culture
- Receive guidance on driving a corporate focus on becoming a leader in PSM

## RECOMMENDED PREREQUISITES

ATI 100-011: Best Practices in Process Safety Management

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# BUILDING A STRONG PROCESS SAFETY CULTURE

Course Number: **100-011** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Process safety culture is the foundation of every successful Process Safety Management program. Without a strong culture, even the most well-designed systems and procedures cannot be fully effective. This course emphasizes the critical role of leadership in establishing and maintaining a culture that prioritizes process safety, fosters open communication, and promotes operational discipline.

This two-day course guides participants through the core principles of process safety culture and how they influence each element of a PSM or Risk-Based Process Safety (RBPS) program. Topics include leadership behaviors, ethical considerations, workforce engagement, hazard awareness, and aligning culture with organizational goals. Attendees will learn how to assess their current culture, identify warning signs, and implement strategies to strengthen it. Practical exercises demonstrate how to embed these principles into daily operations and sustain cultural improvements over time.

Participants will explore tools and metrics for measuring process safety culture and learn how cultural excellence contributes to High Reliability Organization performance and operational excellence. The course emphasizes translating cultural principles into actionable practices, empowering individuals, deferring to expertise, ensuring open communication, and maintaining a disciplined focus on risk management.

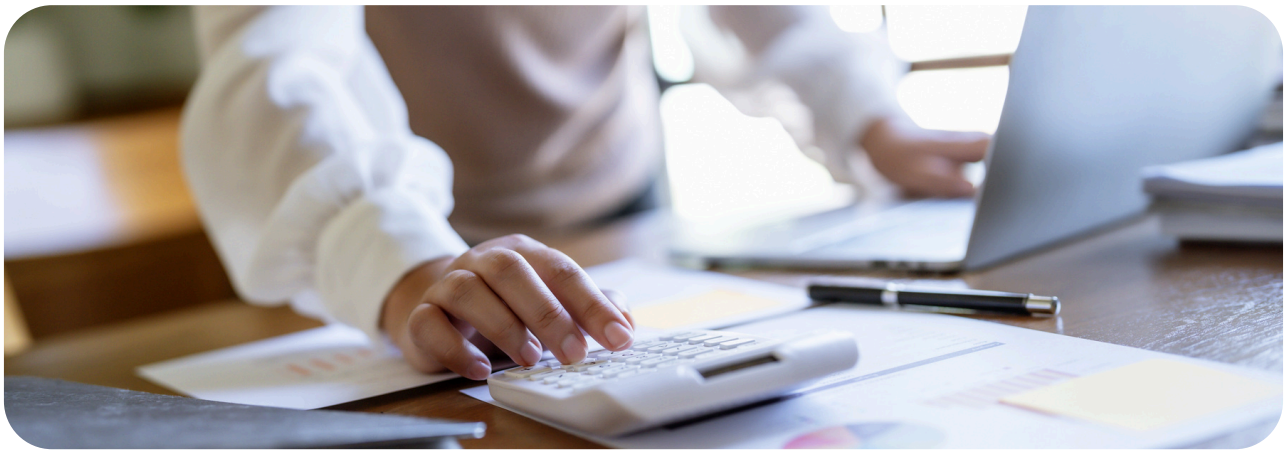
## COURSE BENEFITS

- Master the core principles of process safety culture and their impact on PSM/RBPS program elements
- Understand the influence of leadership on culture, ethics, and business performance
- Learn how to assess and improve process safety culture within your organization
- Gain insight into High Reliability Organization approaches to cultural excellence
- Develop strategies to sustain and nurture a strong culture that supports Operational Excellence
- Understand how culture drives operational discipline, workforce engagement, and safe work practices

## RECOMMENDED PREREQUISITES

Familiarization with and experience with PSM and RMP programs and their requirements. ATI 100-011: Best Practices in Process Safety and Risk Management.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.



# RISK-BASED DECISION MAKING & COST-BENEFIT ANALYSIS

Course Number: **100-007** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

In high-hazard industries, decision-making is rarely simple. Whether selecting between risk reduction measures, investing in safeguards, or prioritizing resources, organizations face the challenge of balancing safety, compliance, operational efficiency, and cost. Risk-based decision making provides a systematic approach to navigate these complexities, helping organizations prioritize actions that mitigate the highest risks.
Risk assessment, when combined with Cost-Benefit Analysis (CBA), provides a powerful framework for making more informed, objective, and defensible decisions. This approach enables organizations to evaluate what could go wrong. Additionally, it can help determine whether proposed actions are worth the investment. Moreover, by applying structured decision analysis techniques, companies can demonstrate regulatory justification and align resources with risk. As a result, they can drive improved performance without overspending or under-protecting.

This one-day course introduces a formal, structured approach to risk-based decision making, with an emphasis on tools and methods for conducting Cost-Benefit Analysis in a process safety context. It is designed for key decision-makers, analysts, and technical professionals who influence or perform risk evaluations and investment decisions.

Throughout the course, participants will explore qualitative and quantitative techniques, learn to apply decision analysis tools, and walk through case studies to see how theory applies in real-world scenarios.

## COURSE BENEFITS

- Understand the principles of risk-based decision making
- Learn how to perform and interpret Cost-Benefit Analysis
- Gain exposure to decision analysis tools such as risk matrices, decision trees, and value-of-information techniques
- Develop the ability to structure, justify, and communicate decisions in a transparent and credible way

# OVERVIEW OF AUDITING FOR PSM/RMP COMPLIANCE

Course Number: **100-005** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Auditing is an essential tool for improving safety performance in facilities handling hazardous chemicals. When done by experienced auditors, safety audits provide a systematic and structured approach to evaluating and enhancing management systems. Effective audits play a key role in meeting Process Safety Management (PSM) and Risk Management Program (RMP) requirements, enhancing overall safety practices. The OSHA PSM standard (29 CFR 1910.119) and the EPA RMP (40 CFR Part 68) outline comprehensive frameworks to manage hazardous chemicals and prevent catastrophic incidents.

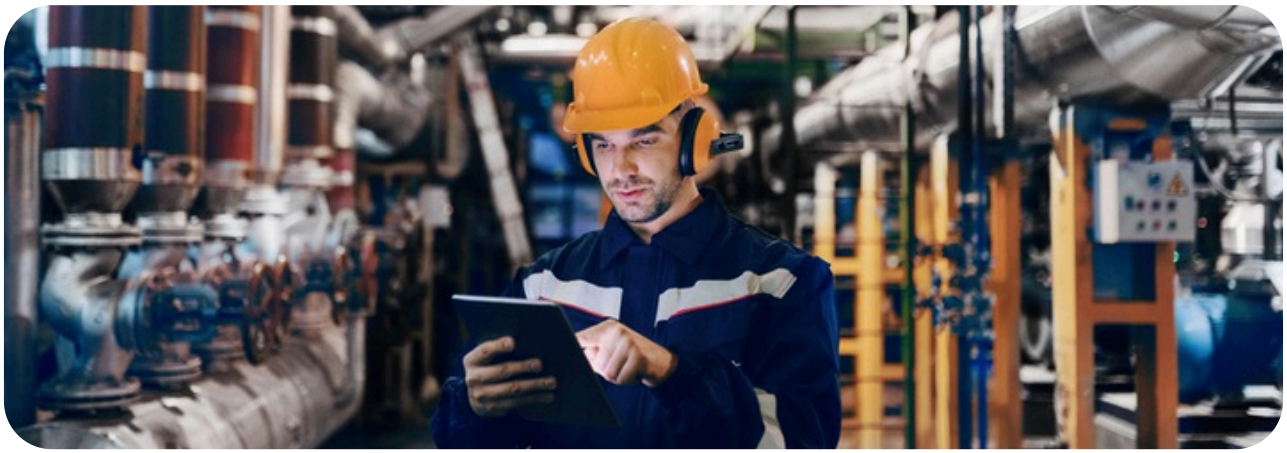
This one-day overview of auditing for PSM/RMP course provides a foundational understanding of the auditing process, focusing specifically on auditing Process Safety Management (PSM) and Risk Management Program (RMP) programs. The course will cover the basics of the auditing practice, offering insights into how audits can help organizations assess and mitigate risks while ensuring compliance with safety regulations.

While this course introduces key auditing concepts, it does not go into the depth of more advanced audit training, such as the Auditing for Process Safety & Risk Management course. Participants will gain a general understanding of how to conduct audits, the skills needed (such as interview techniques and sampling methods), and how to formulate findings and recommendations. The course will also cover how audits contribute to improving safety performance and ensuring compliance with PSM and RMP regulations.

## COURSE BENEFITS

- Gain an overview of the key elements of PSM and RMP and how to assess compliance at a high level.
- Understand the role of audits in ensuring compliance with PSM and RMP regulations and enhancing overall safety performance.
- Learn fundamental audit skills such as interview practices, sampling, and formulating findings and recommendations.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.



# AUDITING FOR PROCESS SAFETY & RISK MANAGEMENT

Course Number: **200-021** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Process safety audits are a useful tool to improve performance when done by experienced and knowledgeable leaders. An experienced auditor, or audit team, will use a systematic and structured approach to evaluating and improving management systems. Through these audits, organizations can identify, assess, and mitigate risks. They ensure compliance with safety standards, and continually improve safety performance while reducing the likelihood of accidents and incidents in their facilities.

This course covers the fundamental skills, techniques, and tools of auditing and how to most effectively perform your facility's Process Safety Management (PSM) and Risk Management Program (RMP) audits, with techniques that can significantly improve your audits and your process safety management performance. Instructors will dive into the characteristics of a good process safety management system to provide auditors with a benchmark for audits.

Learn from the experts – AcuTech was the contractor selected to write the revision of the Center for Chemical Process Safety's (CCPS) *Guidelines for Auditing Process Safety Management Systems* in 2010-2011 and the course is based largely on the revised book, which includes the PSM program elements published in CCPS's *Risk-Based Process Safety* book.

## COURSE BENEFITS

- Understand how to effectively manage an audit program for PSM/RMP including:
  - How to establish audit criteria, protocol, audit scope and frequency.
  - Audit reporting and follow-up of recommendations.
  - How to develop an effective audit capability.
  - The fundamentals of preparing for, conducting, and closing out an audit.
- Learn about OSHA's compliance priorities including citations, interpretations, and cases and EPA's third-party audits.
- Gain insight into key focus areas for PSM improvement.

## RECOMMENDED PREREQUISITES

ATI 100-011: Best Practices in Process Safety Management. In-depth understanding of PSM and RMP programs.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# OVERVIEW OF PROCESS HAZARD ANALYSIS

Course Number: **100-004** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Process Hazard Analysis (PHA) is a foundational element of process safety and a regulatory requirement under OSHA's Process Safety Management (PSM) and EPA's Risk Management Program (RMP). PHAs provide a methodology to identify potential hazards, understand how they could lead to undesirable consequences, and evaluate the safeguards in place to protect workers, the public, property, and the environment.

Understanding PHA is critical because it enables facilities to proactively address hazardous scenarios before they result in incidents. Through systematic examination, PHAs help organizations evaluate the adequacy of their safeguards, improve operability, and ensure that their PSM programs effectively manage identified risks.

This one-day course provides an accessible introduction to PHA concepts, terminology, regulatory expectations, and common industry practices. Participants will learn the objectives of PHAs, the components of hazard scenarios, the principles of hazard elimination and risk reduction, and the strengths and limitations of various PHA methodologies. The course also reviews practical considerations such as selecting methods, forming teams, recording results, and understanding common challenges, ensuring attendees gain a clear understanding of how PHAs are performed and why they are essential. Real-world examples and instructor insights prepare participants to participate in or support PHAs at their own facilities.

## COURSE BENEFITS

- Learn the objectives of PHAs and how they support hazard identification, safeguard evaluation, and risk reduction.
- Understand key definitions including hazard, hazard scenario, initiating events, intermediate events, and severity.
- Become familiar with a wide range of PHA techniques, including Checklist, What-If, HAZOP, FMEA, FTA, HAZID, Event Tree, Job Safety Analysis, LOPA, and Bow-Tie.
- Identify factors for choosing the appropriate PHA method based on process complexity, risk profile, available information, and study objectives.
- Gain awareness of PHA software tools, recording practices, and common limitations of PHAs.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# PROCESS HAZARD ANALYSIS (PHA) & LAYERS OF PROTECTION ANALYSIS (LOPA) FOR TEAM MEMBERS

Course Number: **100-031** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Process Hazard Analysis (PHA) and Layers of Protection Analysis (LOPA) are essential methodologies for identifying hazards, evaluating risks, and determining whether existing safeguards adequately protect workers, the public, and the environment. While facilitators guide the process, team members play a critical role by contributing detailed process knowledge, operational experience, and practical insights.

Strong team member engagement is vital because PHAs and LOPAs rely on collaborative brainstorming, scenario development, and clear understanding of causes, consequences, and safeguards. Well-prepared participants help ensure that hazard scenarios are accurately defined, risk rankings are appropriate, and recommendations are both effective and realistic.

This course provides team members with the foundational skills needed to actively and effectively participate in PHA and LOPA studies. It introduces core PHA activities and covers the basics of LOPA, helping team members understand how independent protection layers are assessed to determine risk adequacy. Participants will learn the techniques commonly used, including HAZOP and What-If methodologies, with instruction designed to ensure they are productive contributors from the outset.

## COURSE BENEFITS

- Understand the purpose and structure of PHA and LOPA, and how team members contribute to successful studies.
- Learn how to participate in brainstorming sessions to identify causes, consequences, safeguards, and potential recommendations.
- Gain familiarity with HAZOP and other PHA methodologies, including key terminology and typical session workflows.
- Explore the basics of LOPA, including initiating events, independent protection layers, and risk ranking concepts.
- Learn how to support preparation activities such as reviewing process information, procedures, and drawings before a study begins.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# PROCESS HAZARD ANALYSIS (PHA) & LAYERS OF PROTECTION ANALYSIS (LOPA) FOR TEAM LEADERS

Course Number: **200-032** Course Length: **4 days** PDHs: **32 hours**

## COURSE DESCRIPTION

Process Hazard Analysis (PHA), a qualitative methodology required by OSHA and the EPA, stands as a cornerstone in the strategic management of risk for organizations and facilities dealing with hazardous materials or processes. Through systematic evaluations, PHAs meticulously unearth potential hazards within industrial processes, offering a critical foundation for risk mitigation. Identifying and comprehending these risks empowers organizations to proactively enhance safety measures, averting consequences that could lead to injuries, fatalities, property damage and more. The thoroughness of PHAs allows for the development of effective strategies to reduce the likelihood of adverse consequences.

Designed for industry professionals, this course focuses on Hazard and Operability (HAZOP), What-If, and LOPA techniques. Participants will learn how to lead, document, and manage PHAs and subsequent study recommendations effectively. Skills developed ensure compliance and effective risk management. It emphasizes leadership, report generation, and revalidation techniques, enabling leaders to optimize team performance and improve PHA quality. This PHA & LOPA for Team Leaders training advances beyond Team Member roles. It focuses on strategic oversight and the successful implementation of study recommendations.

Guided by consultants with decades of trusted expertise in managing highly hazardous materials and ensuring accurate, efficient results from the start, this course ensures that you and your organization gain the knowledge and skills to effectively conduct process hazard analyses.

## COURSE BENEFITS

- Acquire the knowledge necessary to prepare for, lead, generate reports for, and follow-up on PHA methods commonly used for process safety including HAZOP, What-If, and LOPA studies.
- Confirm the key aspects of PHA necessary for compliance.
- Build team leadership skills to guide HAZOP and LOPA teams.
- Learn strategies to optimize team time during PHA sessions.
- Discover methods for PHA revalidation to improve quality

## RECOMMENDED PREREQUISITES

Previous experience in a PHA
ATI 100-031: Process Hazard Analysis and LOPA for Team Members
ATI 200-034: Essentials of Layers of Protection Analysis (LOPA)

# PROCESS HAZARD ANALYSIS (PHA) REVALIDATION & ADVANCED TOPICS IN PHA

Course Number: **200-033** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

PHA and Advanced Topics is a specialized course designed to enhance the effectiveness and efficiency of PHA programs at your facility. PHAs are living documents that must be regularly reviewed to ensure they reflect current process conditions, safeguards, and risks. Revalidation ensures that prior hazard analyses remain accurate, that recommendations have been implemented, and that evolving operational changes are incorporated. Advanced techniques further extend the utility of these analyses by integrating project-based evaluations, LOPA studies, SIL assessments, and inherently safer design principles.

Maintaining accurate and up-to-date PHAs is critical for regulatory compliance, risk reduction, and operational excellence. By mastering revalidation and advanced topics, participants can improve study quality, optimize team time, and ensure that process safety insights are actionable and aligned with current facility conditions.

The course is highly interactive and tailored to your facility's processes. Participants will engage in practical workshops covering PHA revalidations, combination PHA/LOPA or PHA/SIL studies, engineering project PHAs, and integration of inherently safer design into hazard analyses. Attendees will gain hands-on experience applying advanced methodologies, reinforcing lessons with real-world examples, and learning strategies to improve study efficiency, accuracy, and completeness.

## COURSE BENEFITS

- Learn how to conduct effective PHA revalidations to ensure prior studies remain accurate and actionable.
- Explore advanced PHA techniques, including combination PHA/LOPA, PHA/SIL, and engineering project PHAs.
- Improve the efficiency and completeness of hazard identification and risk assessment sessions.
- Develop strategies to optimize team participation, streamline study preparation, and enhance reporting quality.
- Ensure your PHA program continues to meet regulatory requirements while supporting continuous safety improvement.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

PROCESS SAFETY & RISK MANAGEMENT 20

# ESSENTIALS OF LAYERS OF PROTECTION ANALYSIS (LOPA)

Course Number: **200-034** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Layers of Protection Analysis (LOPA) is a semi-quantitative risk assessment technique that bridges the gap between qualitative hazard studies, such as HAZOPs or What-If analyses, and full quantitative risk analyses. LOPA evaluates initiating event frequencies, enabling events, independent protection layers, and potential consequences to provide an order-of-magnitude estimate of risk. It is also widely used to determine the required Safety Integrity Level for safety instrumented systems, as endorsed by industry standards like ISA S84.01 and IEC 61511.

LOPA provides a consistent, objective, and defensible method for assessing the risk of process hazards. By quantifying risk in a structured way, LOPA helps organizations make informed decisions about risk reduction and prioritize safety improvements.

This course teaches participants how to conduct a LOPA, as a standalone analysis or integrated with a process hazard analysis (PHA). Participants will learn how to identify accident scenarios, estimate initiating event frequencies, define consequences, and determine which safeguards qualify as independent protection layers. Through hands-on workshops, the course covers developing scenarios from qualitative hazard studies, assessing risk, and evaluating whether additional risk reduction is needed. Additionally, participants will explore Safety Instrumented Systems, conditional modifiers, and industry best practices for applying LOPA in real-world settings.

## COURSE BENEFITS

- Learn how and when to apply LOPA for process risk assessment.
- Develop accident scenarios from qualitative hazard studies or new/modified processes.
- Estimate initiating event frequencies and unmitigated consequences.
- Identify and evaluate independent protection layers (IPLs).
- Calculate scenario risk and determine if additional risk reduction is required.
- Understand integration of LOPA with PHAs and Safety Instrumented Systems (SIS).
- Gain hands-on experience through practical LOPA workshops.
- Learn industry-recognized best practices for LOPA analysis and SIL determination.

## RECOMMENDED PREREQUISITES

Previous experience in a PHA.

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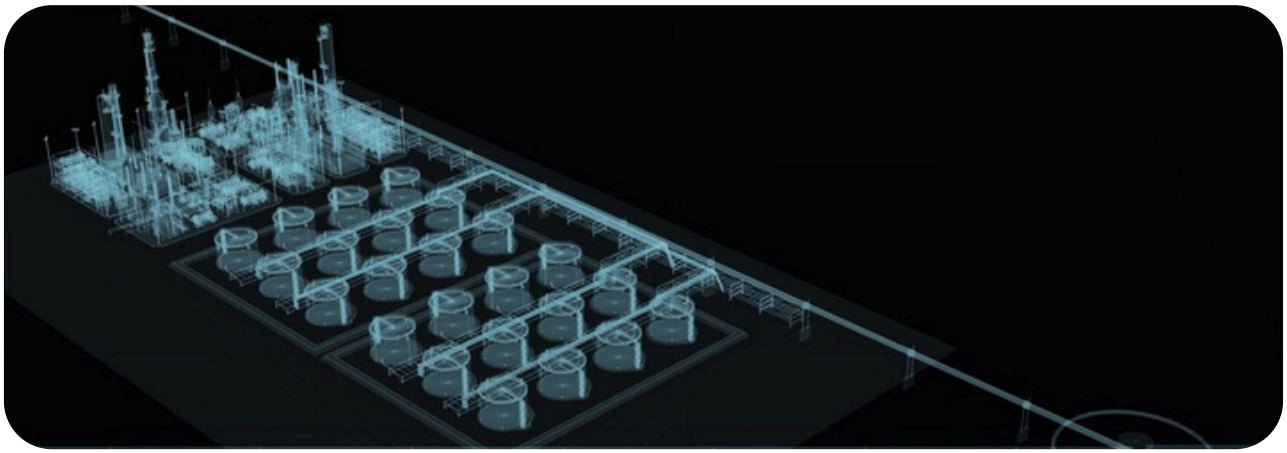

# UNDERSTANDING QUANTITATIVE RISK ASSESSMENTS (QRAS)

Course Number: **100-006** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Quantitative Risk Assessments (QRAs) are structured, data-driven analyses used to evaluate the likelihood and consequences of hazardous events in industrial processes. By combining process, equipment, and operational information with probabilistic modeling, QRAs provide a clear, measurable understanding of potential risks. These assessments help organizations make informed decisions about design, safeguards, emergency planning, and overall process safety management.

Understanding QRAs is critical because the results guide key decisions on risk mitigation, resource allocation, and regulatory compliance. Without a solid grasp of QRA outputs, stakeholders may misinterpret risk levels, fail to prioritize effectively, or struggle to communicate findings to leadership and the public. Correct interpretation ensures that risk-reduction strategies are aligned with actual process hazards, global benchmarks, and organizational safety objectives.

This course introduces participants to the fundamental concepts of QRAs, including risk metrics, modeling approaches, and interpretation techniques. Attendees learn how to assess QRA results, benchmark them against international risk acceptance criteria, and communicate findings to both technical and non-technical audiences. Practical examples and case studies illustrate how QRAs inform decisions across process design, operations, and safety management.

## COURSE BENEFITS

- Gain a clear understanding of the purpose, methodology, and components of QRAs
- Learn how to interpret QRA results, inc. likelihood, consequence, and risk rankings.
- Understand global risk acceptance benchmarks and how to apply them to your facility's risk management strategies.
- Develop the ability to communicate QRA findings effectively to management, regulators, and the public.
- Learn practical strategies to use QRA results for decision-making in process design, safety measures, and emergency planning.
- Enhance confidence in evaluating QRA studies and integrating findings into your organization's overall risk management program.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# QUANTITATIVE RISK ASSESSMENT (QRA)

Course Number: **200-141** Course Length: **3 days** PDHs: **24 hours**

## COURSE DESCRIPTION

Quantitative risk assessment (QRA) is a valuable tool for assessing and managing risks. The technique provides a structured and quantifiable approach to risk analysis, enabling organizations to make accurately informed decisions and prudently manage process risks. QRA can be used to inform every aspect of process risk management, including: site selection and layout, process and safety system design, emergency planning, spacing requirements for installations, process deviation control, fire protection design, gas detection layout, and emergency isolation measures, among others.

While quantitative risk assessments are highly valuable, understanding and interpreting their results can be challenging for many professionals. This course breaks down key concepts, offers clear guidance on interpreting risk outcomes, provides benchmarking insights on global risk acceptance, and equips participants with the skills needed to effectively communicate risk results to both management and the public.

AcuTech's quantitative risk team are experts in the field. They use the latest industry risk models (DNV Phast and Safeti, Gexcon EFFECTS and RISKCURVES, FLACS), proprietary QRA modeling tools, the latest historical accident data, and practical methods to ensure QRA studies accurately assess complex operations to produce clear and actionable results. This makes them the ideal instructors to guide you in applying these insights to real-world scenarios with confidence and precision. The instructors understand that both technical accuracy and effective communication are key to unlocking the full potential of QRA.

## COURSE BENEFITS

- Master the interpretation of QRA results to make informed decisions and effectively communicate risk to stakeholders.
- Gain insights into global risk acceptance benchmarks and learn how to apply them to your organization's risk management strategies.
- Enhance your ability to utilize industry-leading risk models and tools for accurate and actionable QRA assessments.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# FACILITY SITING

Course Number: **200-143** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Facilities covered by the OSHA Process Safety Management (PSM) Standard are required to evaluate facility siting as part of their Process Hazard Analysis (PHA). This course provides guidance on assessing the potential impacts and risks to onsite occupied buildings using industry-recognized practices, including API 752 for permanent buildings, API 753 for portable buildings, and CCPS guidelines. While these references offer a framework for siting studies, participants will learn how to apply a range of techniques—from checklists and screening analyses to consequence modeling and full Quantitative Risk Analysis (QRA)—to meet PSM requirements.

Facility siting is critical to ensure that occupied buildings are located safely relative to potential process hazards, including fires, explosions, and toxic releases. This course emphasizes evaluating the consequences of accidental releases, understanding the limitations of qualitative and quantitative assessments, and identifying buildings and locations that require protection.

Through a combination of lecture and practical exercises, participants will explore the methods and tools used in facility siting studies, including consequence modeling for flammable vapor dispersion, jet and pool fires, vapor cloud explosions, and toxic hazards. The course also addresses mitigation strategies, evaluating blast and fire impacts on buildings, and developing recommendations for risk reduction that can be tracked and implemented effectively.

## COURSE BENEFITS

- Overview of OSHA PSM facility siting requirements
- Familiarity with API 752, API 753, and CCPS facility siting guidelines
- Techniques for conducting facility siting studies
- Benefits and limitations of qualitative and quantitative siting assessments
- Identification and selection of occupied buildings for assessment
- Consequence and impact assessment methods and modeling tools
- Guidelines for selecting accidental release scenarios & applying mitigation options

## RECOMMENDED PREREQUISITES

Experience with PSM requirements and PHAs

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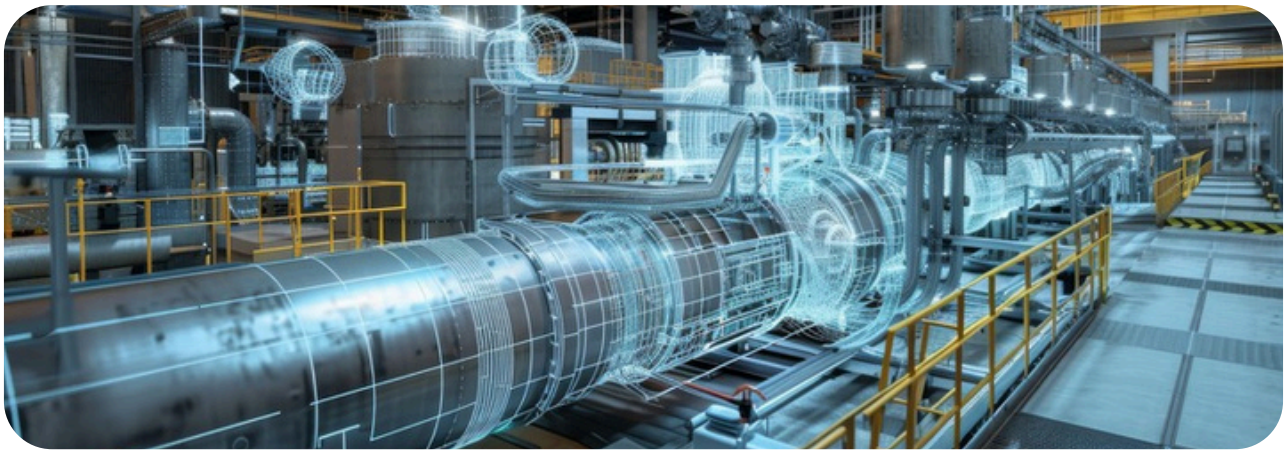

# RELIABILITY, AVAILABILITY, AND MAINTAINABILITY (RAM) ANALYSIS

Course Number: **200-144** Course Length: **3 days** PDHs: **24 hours**

## COURSE DESCRIPTION

This course provides participants with the knowledge and skills to conduct and interpret Reliability, Availability, and Maintainability (RAM) studies for industrial facilities and critical equipment. The course focuses on evaluating system performance, predicting failures, and quantifying downtime. It supports maintenance and operational decisions to ensure facility and equipment performance meets company standards. Participants will learn how RAM studies can identify performance-limiting assets and optimize maintenance strategies.

The RAM study process emphasizes a structured six-step approach: data collection and review, scoping and functional analysis, RAM modeling, reliability and availability assessment, analysis and recommendations, and reporting. Reliability Block Diagram (RBD) methodology represents system dependencies, redundant configurations, and load-sharing arrangements. Monte Carlo simulation techniques evaluate reliability, availability, maintainability, utilization, and lifecycle performance.

The RAM study allows participants to:

- Predict facility and terminal availability and quantify contributions of individual assets to production losses
- Identify systems and equipment that limit operational performance
- Develop recommendations to achieve RAM performance targets

Participants gain practical insights from real-world RAM and asset integrity studies across industries. The course equips participants to apply RAM principles effectively to optimize performance and support operational decisions.

## COURSE BENEFITS

- Understand the fundamentals of RAM analysis and its application to complex industrial systems
- Build high-level RAM models using Reliability Block Diagram methodology
- Incorporate failure, repair, and operational data into RAM simulations
- Quantify reliability, availability, maintainability, utilization, and lifecycle performance
- Apply sensitivity analysis to evaluate potential operational, maintenance, and design optimization measures

# OVERVIEW OF SEMS REGULATION

Course Number: **100-101** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

The Safety and Environmental Management Systems (SEMS) regulations establish mandatory requirements for offshore oil, gas, and sulfur exploration and production operations on the U.S. Outer Continental Shelf (OCS). Based on API RP 75, SEMS programs are designed to promote safety, protect human life, and prevent environmental incidents such as fires, explosions, and uncontrolled releases. The regulations require operators to develop, implement, and maintain comprehensive SEMS programs tailored to their facilities and operations.

Operators must identify critical equipment, establish mechanical integrity programs, conduct audits, implement stop work authority (SWA) and ultimate work authority (UWA), and ensure employee participation. Effective SEMS programs improve operational safety, reduce risk to personnel and the environment, and help operators demonstrate regulatory compliance through documentation, reporting, and audits.

This course provides a comprehensive introduction to the SEMS regulations, including their structure, interpretation, and key elements. Participants will learn the history and evolution of SEMS, BSEE enforcement priorities, regulatory clarifications, and practical approaches for developing and maintaining a compliant program. The course also addresses best practices, audit requirements, and the integration of process safety principles into offshore operations.

## COURSE BENEFITS

- Gain a clear understanding of the SEMS regulations and the 13 required elements based on API RP 75.
- Learn the regulatory interpretation of SEMS, including guidance from Notices to Lessees and Operators (NTLs) and BSEE clarifications.
- Understand BSEE audit requirements and strategies for maintaining compliance through documentation, reporting, and accreditation.
- Explore best practices for SEMS program development, employee participation, and integrating process safety into offshore operations.
- Build confidence in managing SEMS programs to enhance safety, environmental protection, and regulatory readiness.

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# IMPLEMENTING A SEMS PROGRAM AT AN OFFSHORE FACILITY

Course Number: **200-102** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Safety and Environmental Management Systems (SEMS) play a critical role in managing risk at offshore oil and gas facilities. The SEMS regulation establishes a structured framework to identify hazards, manage risk, and prevent accidents that could impact personnel, the environment, and offshore assets.

Effective SEMS implementation goes beyond regulatory compliance and supports consistent, reliable, and safe offshore operations. Well-designed SEMS programs help organizations strengthen operational discipline, improve decision-making, and foster a strong safety culture.

This course introduces participants to the SEMS regulatory framework and provides practical guidance on implementing and maintaining a compliant SEMS program. Topics include interpretation of requirements and development of the policies, practices, and procedures needed for compliance. Emphasis is placed on key SEMS elements such as PHA, mechanical integrity, operating procedures, management of change, auditing, metrics, and safety culture. Examples illustrate how to develop, update, and improve SEMS programs to achieve meaningful safety gains.

## COURSE BENEFITS

- Gain an understanding of the SEMS regulation & its application to offshore facilities.
- Learn how to plan, develop, implement, and manage effective SEMS programs that meet or exceed regulatory expectations.
- Understand the principles and intent behind each element of SEMS and how they work together to manage risk.
- Learn approaches for developing SEMS policies, procedures, and documentation.
- Explore methods for updating and improving existing SEMS programs to drive real performance improvements.
- Gain an intro to SEMS metrics, auditing practices, and performance monitoring.
- Understand the role of leadership, workforce involvement, and safety culture in successful SEMS implementation.

## RECOMMENDED PREREQUISITES

ATI 100-011: Best Practices in Process Safety Management
In-depth understanding of PSM and RMP program requirements

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# FUNDAMENTALS OF LOSS PREVENTION IN THE PROCESS INDUSTRIES

Course Number: **100-131** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Loss prevention in the process industries involves applying engineering principles and safety concepts to prevent fires, explosions, toxic releases, and other catastrophic events. By integrating safeguards, inherently safer designs, and protective features into processes, systems, and equipment, facilities can protect personnel, the environment, and assets while ensuring operational continuity.

Effective loss prevention reduces the likelihood and severity of process incidents, ensures regulatory compliance, and supports a strong process safety culture. Engineers equipped with the fundamentals of loss prevention can make informed design decisions, evaluate safety-critical systems, and implement active and passive safeguards that prevent or mitigate incidents.

This course introduces participants to the essential concepts of loss prevention, including active and passive safeguards, inherently safer design, and protective features in process design. Topics cover layout considerations, materials of construction and corrosion control, instrumented safety systems, ignition control, fire protection, relief systems, explosion mitigation, and design principles for various types of process equipment. Practical examples and industry best practices provide attendees with the skills to integrate safety effectively into engineering design.

## COURSE BENEFITS

- Gain a fundamental understanding of loss prevention principles and their application in process design.
- Learn to implement active/passive safeguards, inc. instrumented protective systems.
- Explore inherently safer design strategies and methods to reduce process hazards.
- Understand layout, materials of construction, corrosion control, and equipment-specific design considerations.
- Learn fire protection, relief systems, and explosion mitigation techniques.
- Apply engineering concepts to evaluate, design, and improve process safety features across various types of process equipment.

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# FIRE PROTECTION ENGINEERING IN THE CHEMICAL PROCESS INDUSTRIES

Course Number: **100-132** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Fire hazards pose a significant risk in gas plants, refineries, and chemical and petrochemical process facilities, making fire protection a critical aspect of process safety. Effective fire protection involves both preventing fires and mitigating their consequences through hazard identification, fuel load analysis, and the design and implementation of appropriate suppression systems.

Implementing a comprehensive fire protection program is essential for reducing the likelihood and severity of fires, ensuring compliance, and maintaining operational resilience. Programs that follow best industry practice, supported by consequence modeling, hazard assessments, and emergency response planning, provide facilities with robust risk management. Well-designed fire protection systems also support plant uptime, minimize property damage, and reduce environmental impacts.

This course introduces participants to the principles and practices of fire protection engineering in industrial settings. Topics include identifying and evaluating fire hazards, fuel load analysis, fire and explosion consequence modeling, compliance assessment and system design, and emergency response planning. Participants will learn how to develop and implement performance-based and prescriptive fire protection programs, informed by codes, standards, and industry best practices including NFPA and API guidance. Practical examples illustrate the integration of fire protection into process safety management for chemical and petroleum facilities.

## COURSE BENEFITS

- Gain a clear understanding of fire hazards in process facilities and methods to assess and mitigate risk.
- Learn to perform fuel load analyses, consequence modeling, and hazard assessments for fires and explosions.
- Understand fire protection system design, specification, compliance assessment, and performance evaluation.
- Become familiar with relevant codes and standards
- Develop skills to integrate fire protection engineering into process safety programs

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# COMBUSTIBLE DUST MITIGATION & MANAGEMENT

Course Number: **200-142** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Combustible dust poses a significant hazard in many industrial settings. When suspended in air, under certain conditions, fine dust particles can ignite and lead to devastating explosions causing injuries, property damage, and environmental impact. Understanding dust properties, explosion mechanisms, and regulatory guidance is essential for protecting personnel and facilities.

The hazards of combustible dust can often be hidden but can escalate rapidly highlighting the importance of effective combustible dust management. By identifying dust risks, implementing proper housekeeping, controlling ignition sources, and designing mitigation systems, facilities can prevent fires and explosions. Compliance with industry standards such as NFPA 652 and NFPA 654 ensures that facilities adopt best practices and reduce the likelihood of incidents.

This course introduces participants to the principles of combustible dust hazards and mitigation strategies. Topics include the five elements of a dust explosion, primary and secondary explosions, hazard identification, formal dust assessments, fuel handling and storage, and preventive measures including dust collection, isolation, venting, suppression, and housekeeping. The course also covers assessments, firefighting measures for dust fires, and practical guidance on establishing an effective combustible dust management program.

## COURSE BENEFITS

- Understand properties of combustible dust & the conditions that lead to explosions.
- Learn to identify and evaluate dust hazards in your facility.
- Gain knowledge of industry standards and guidance, incl. NFPA 652 and NFPA 654.
- Implement control methods such as dust collection, isolation, venting, and suppression systems.
- Develop and maintain formal housekeeping programs to reduce dust accumulation.
- Learn strategies to control ignition sources and perform inspections of equipment.
- Understand site-specific combustible dust assessments & the steps to mitigate risk.
- Gain practical guidance on firefighting measures for incipient dust fires and emergency response.

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PROCESS SAFETY & RISK MANAGEMENT 30

# DEVELOPING & MANAGING MANAGEMENT OF CHANGE / PSSR PROGRAMS

Course Number: **200-041** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Effective Management of Change is one of the most critical processes in preventing catastrophic process safety incidents. This course provides a comprehensive understanding of the design, implementation, and maintenance of an MOC system that reliably controls risk when introducing modifications to processes, equipment, procedures, and organizational structures.

Participants will learn the full lifecycle of an MOC program, from recognizing what constitutes a change, through hazard evaluation and approvals, to conducting Pre-Startup Safety Reviews (PSSR) and Statements of Readiness (SOR). The course explains the distinctions between permanent, temporary, and emergency changes, details common pitfalls and misperceptions, and offers best-practice examples for documentation, communication, and cross-discipline coordination.

Drawing from landmark incidents such as Flixborough and Williams Olefins, the course illustrates how inadequate change control can lead directly to high-consequence events. Participants will also examine how PSSR and SOR processes ensure safe startup conditions following maintenance, shutdowns, or abnormal operations, including verification of system status, emergency safeguards, instrumentation, procedures, and operator readiness.

## COURSE BENEFITS

- Identifying and classifying changes
- Coordinating multidisciplinary MOC workflows
- Executing effective PSSRs for major and minor changes
- Implementing SOR reviews after uncontrolled shutdowns or off-design conditions
- Managing action items, documentation, and communication throughout the change process

# DEVELOPING & MANAGING MECHANICAL INTEGRITY PROGRAMS

Course Number: **200-051** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

An effective asset integrity management program supports improved performance & uptime, reduced lifetime maintenance costs, and diminished risk of operational equipment. Investing in effective mechanical integrity programs is a proven strategy to improve facility performance, while ensuring compliance with regulatory requirements.

Learn the requirements of, and how to interpret, the Process Safety Management (PSM) Standard's Mechanical Integrity (MI) element. Whether your company is large or small, you are experienced with MI or just developing an MI program, consistent interpretation of the requirements is essential.

This course provides attendees with a comprehensive understanding of Mechanical Integrity (MI) management systems, including the interpretation of MI requirements, RAGAGEPs, inspection and preventive maintenance strategies, risk-based inspection, corrosion management, the implementation of MI programs, Safety Instrumented Systems (SIS), and CMMS tools.

Gain insight from the experts that wrote the book – AcuTech played a key role in authoring both the first and second editions of the Center for Chemical Process Safety's (CCPS) *Guidelines for Mechanical Integrity Systems*. Additionally, AcuTech was chosen as the contractor to revise the CCPS Guidelines for Auditing Process Safety Management Systems, which offers in-depth interpretation of the MI requirements.

## COURSE BENEFITS

- Learn how to interpret the MI requirements in the PSM Standard consistently.
- Master the web of relevant recognized and generally accepted good engineering practices (RAGAGEP).
- Gain knowledge and insight on Risk-based Inspection (RBI).

## RECOMMENDED PREREQUISITES

ATI 100-011) Best Practices in Process Safety Management
In-depth understanding of PSM and RMP program requirements

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# INHERENTLY SAFER CHEMICAL PROCESSES

Course Number: **200-081** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Inherently safer design (ISD) is a fundamental process safety philosophy focused on eliminating or significantly reducing hazards at the source rather than relying solely on add-on protective systems. By minimizing hazardous materials, substituting less hazardous alternatives, moderating process conditions, and simplifying design, organizations can achieve robust risk reduction throughout the process lifecycle.

Applying ISD effectively strengthens PSM, supports regulatory compliance, and improves overall business performance. When ISD is integrated into routine decision-making, from early design through operations and management of change, it helps facilities reduce incident potential, enhance reliability, and build a strong safety culture.

This course introduces participants to the practical application of inherently safer design concepts and prepares them to lead ISD assessments. Topics include the core principles of ISD, methods for identifying and evaluating inherently safer alternatives, integrating ISD into existing management systems, and establishing an "inherently safer lifestyle" as a routine part of process safety and business decision-making.

## COURSE BENEFITS

- Gain a clear understanding of the core principles of inherently safer design and their role in achieving meaningful risk reduction.
- Understand the regulatory background and requirements related to ISD, including EPA RMP STAA expectations.
- Learn how to identify, evaluate, and document inherently safer alternatives for process safety applications.
- Develop skills to lead & participate in ISD assessments across the process lifecycle.
- Learn how to integrate ISD into existing PSM systems & MOC processes.
- Understand how to apply ISD as an ongoing "inherently safer lifestyle" to improve safety, reliability, and business performance.
- Gain practical insight from industry best practices and real-world examples of successful ISD implementation.

## RECOMMENDED PREREQUISITES

Familiarization with and experience with PSM & RMP programs and their requirements. Previous experience in a PHA. ATI 100-031: PHA and LOPA for Team Members.

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# HUMAN FACTORS & PROCEDURE ANALYSIS

Course Number: **200-121** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

This course provides practical knowledge to develop and implement programs that reduce risk related to human factors in process safety, in particular, those related to errors in design or operation. It emphasizes identifying human errors and integrating human reliability considerations into existing Process Safety Management (PSM) systems. Participants will learn systematic methods to analyze human error, including software tools, surveys, and Task Analysis techniques.

Human error is a significant contributor to process safety incidents. Understanding the interaction between people, procedures, equipment, and the work environment allows organizations to design safer systems, reduce operational risk, and improve overall reliability. By considering human factors during PHAs and operational reviews, organizations can prevent errors before they lead to incidents.

The course explores human factors engineering in four key areas: people, procedures, equipment, and the work environment. Topics include task overload, fatigue, alarm management, procedural clarity, control system usability, workspace layout, communication, and supervisory and organizational considerations. Participants will learn to incorporate human factors into PHA sessions, identify potential error causes, and develop mitigations. Guidance on using checklists, HAZOP of procedures, and scenario-based assessments is provided to ensure human factors are fully integrated into safety analysis.

## COURSE BENEFITS

- Recognize and mitigate human error as a source of hazards
- Understand human factors in design, procedures, equipment, and environment
- Apply human factors analysis in PHAs, task analyses, and operational reviews
- Improve reliability and safety by integrating human factors into PSM programs


# OCCUPATIONAL SAFETY & HEALTH BASICS

Course Number: **100-151** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

This course introduces key occupational safety and health (OSH) principles tailored to your operations. It covers essential program elements and regulatory requirements relevant to the process industries, including hot work, lockout/tagout (LOTO), confined space entry, and other critical OSH topics.

Understanding basic OSH requirements helps prevent workplace injuries, ensures regulatory compliance, and fosters a culture of safety. Even fundamental practices, when overlooked, can lead to serious incidents in process facilities.

The course provides an overview of regulatory frameworks and OSHA requirements applicable to process operations. Participants learn safe practices for hot work, LOTO, and confined space entry, along with identification and mitigation of common occupational hazards. Practical guidance is provided for implementing and maintaining effective OSH programs that support both compliance and safe operations.

## COURSE BENEFITS

- Gain a solid foundation in occupational safety and health for process facilities
- Learn regulatory expectations and best practices
- Reduce workplace risk through improved awareness and operational compliance

# INDUSTRIAL HYGIENE

Course Number: **100-152** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

This course introduces the fundamental principles of Industrial Hygiene (IH) as applied to the process industries and explains how IH and Process Safety Management (PSM) intersect. Participants learn how to anticipate, recognize, evaluate, and control workplace conditions that may cause illness or injury. Core IH concepts such as containment, sampling strategies, and effective use of personal protective equipment (PPE) are also covered.

Learners gain an understanding of the broad range of workplace hazards and how factors such as work practices, engineering controls, administrative controls, and PPE contribute to managing exposure. The course emphasizes the hierarchy of controls in limiting the potential for illness or injury, the role of industrial hygiene in supporting OSHA compliance, and how to address hazards even when no specific OSHA standard exists through the General Duty Clause, consensus standards, and best practices.

Participants will also explore how IH supports day-to-day operations, understanding applicable regulations, and identifying practical strategies to reduce risk. The course encourages active engagement in identifying workplace hazards, reporting concerns, and promoting safe practices.

## COURSE BENEFITS

- Understand what industrial hygiene is and why it matters
- Recognize workplace hazards and associated risks
- Identify ways IH protects workers across process operations
- Support and promote industrial hygiene practices on the job


# OSHA VOLUNTARY PROTECTION PROGRAM (VPP) COMPLIANCE

Course Number: **100-153** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

This course provides participants with the knowledge and skills needed to understand, apply, and maintain compliance with OSHA's Voluntary Protection Program (VPP) for achieving Star and Merit status. The course focuses on both the administrative and technical aspects of the VPP, including program structure, audit requirements, continuing evaluation, and expectations for safety management in the process industries. Participants will learn how to integrate VPP principles with existing occupational safety and health management systems to enhance workplace safety and regulatory compliance.

The course covers how to evaluate a facility's safety program, identify gaps relative to VPP requirements, and implement strategies to meet OSHA expectations. Participants will gain practical insight into audit processes, documentation, and reporting necessary for achieving and maintaining VPP recognition. Technical topics include understanding the regulatory framework for VPP, interpreting OSHA guidelines, and applying requirements to process industry operations.

## COURSE BENEFITS

- Understand the structure and objectives of OSHA's VPP program and the distinctions between Star and Merit recognition
- Assess facility operations against VPP criteria and identify areas for improvement
- Implement and maintain VPP-related procedures and programs in alignment with OSHA expectations
- Conduct internal audits and reviews to ensure ongoing compliance
- Integrate VPP principles with broader process safety and occupational health programs
- Support the development of safety management systems that foster employee involvement, hazard recognition, and continuous improvement

# CONTRACTOR SAFETY

Course Number: **200-011** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Contractors often perform high-risk activities and may be unfamiliar with the specific hazards, processes, and emergency procedures at a site. Proper management of contractor safety is critical to prevent accidents, maintain regulatory compliance, and protect both contractor and facility personnel.

This course provides participants with the knowledge and tools to manage the interface between contractors and the Process Safety Management (PSM) program at a facility. Participants will learn how to evaluate a contractor's safety program prior to hire, ensure that contractor employees are properly trained in key process safety requirements, and understand the hazards they may encounter while onsite. The course also covers how to establish and maintain ongoing oversight of contractor performance, including periodic evaluations of their adherence to PSM responsibilities. Best practices for benchmarking contractor safety programs and ensuring continuous improvement will also be addressed.

## COURSE BENEFITS

- Evaluate contractor safety programs before engagement to ensure alignment with facility PSM requirements
- Develop and deliver targeted contractor training on process hazards, emergency response, and workplace safety
- Monitor and assess contractor performance onsite to verify compliance with safety and PSM responsibilities
- Implement benchmarking practices to identify and adopt industry best practices for contractor safety
- Strengthen collaboration between facility personnel and contractors to reduce risk and enhance safety culture
- Support continuous improvement in contractor safety programs through structured evaluation and feedback

# SECURITY RISK ASSESSMENTS (SRA) STANDARD 780

Course Number: **200-171** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

In the dynamic landscape of industrial operations, security risk assessments (SRAs) serve as a strategic imperative. They offer a comprehensive understanding of vulnerabilities across physical infrastructure, technology systems, and operational processes. These risk assessments are essential for organizations as they identify, mitigate, and prioritize potential risks, helping in proactive risk management, compliance maintenance, and overall operational resilience. By evaluating security vulnerabilities in protective systems, procedures, and infrastructure, assessments enable organizations to effectively allocate resources, prioritize critical threats, and mitigate or prevent security incidents.

This course covers all aspects of conducting a Standard 780 SRA, from identifying critical assets, assessing consequences, analyzing threats, determining vulnerabilities, and evaluating business-prudent risk treatments. Led by seasoned professionals, attendees learn to conduct SRAs, to identify security hazards, threats, and vulnerabilities facing a facility. Trainees will develop an understanding of how to evaluate the countermeasures to provide for the protection of the public, workers, national interests, the environment, and the company.

Gain hands-on experience from the industry experts who wrote the standard. AcuTech was the contractor selected to develop the ANSI/API Security Risk Assessments Standard 780. The course instructors have practical hands-on knowledge from performing SRAs on hundreds of facilities and delivering this course using traditional classroom settings.

## COURSE BENEFITS

- Master the SRA methodology: Characterization, Threat Assessment, Vulnerability Assessment, Risk Evaluation, and Risk Treatment
- Conduct SRAs using Standard 780 methodology
- Learn about emerging security regulations and industry activities
- Participate in practical group exercises and competency exams

# PORT FACILITY SECURITY OFFICER (PFSO) COURSE

Course Number: **200-173** Course Length: **3 days** PDHs: **24 hours**

## COURSE DESCRIPTION

Port facilities play a critical role in global trade and transportation, making them attractive targets for security threats that can endanger people, infrastructure, and supply chains. The Port Facility Security Officer (PFSO) is a key position responsible for ensuring that security risks are identified, managed, and controlled in accordance with international maritime regulations.

Effective port security is essential to maintaining regulatory compliance, protecting port operations, and ensuring continuity of commerce. A well-trained PFSO provides the leadership needed to implement security plans, respond to changing threat levels, and coordinate with internal teams and external authorities. Strong security management helps ports move beyond compliance toward proactive risk management and operational resilience.

This 24-hour in-person or 20-hour remote, IMO-approved Port Facility Security Officer course provides comprehensive instruction on the roles, responsibilities, and regulatory requirements applicable to PFSOs. Participants learn how to conduct Port Facility Security Assessments (PFSAs), develop and maintain Port Facility Security Plans (PFSPs), perform compliance audits, document findings and recommendations, and meet reporting requirements. The course also addresses current security threats, emerging trends, and practical implementation considerations.

## COURSE BENEFITS

- Understand the provisions and application of the Port Facility Security Assessment (PFSA) and Port Facility Security Plan (PFSP)
- Interpret and apply security levels and corresponding protective measures
- Detect dangerous substances and devices
- Recognize threatening or suspicious behavior and persons
- Understand common techniques used to circumvent security measures
- Conduct effective vehicle searches
- Apply best practices for record-keeping and operational security
- Manage security-related communications and security systems effectively

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# CHEMICAL REACTIVITY HAZARDS FOR SECURITY PERSONNEL

Course Number: **100-176** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Chemical reactivity hazards pose significant risks in industrial facilities, and it is critical for security personnel to understand these hazards to protect both people and property. Uncontrolled chemical reactions can lead to rapid increases in temperature and pressure, explosions, fires, toxic releases, or other hazardous events. Security personnel play a key role in maintaining proper controls, responding to incidents, and supporting emergency procedures to minimize the impact of such events.

This course provides security personnel with a clear understanding of chemical reactivity hazards, the potential consequences of uncontrolled reactions, and the measures required to prevent or mitigate incidents. Participants will learn how to recognize warning signs, understand the properties of reactive chemicals, and support the facility's safety and emergency response systems to ensure effective protection of personnel and assets.

## COURSE BENEFITS

- Develop awareness of chemical reactivity hazards and their potential consequences
- Recognize the role of security personnel in preventing uncontrolled reactions
- Understand how reactive chemicals can lead to fires, explosions, or toxic releases
- Support emergency response efforts to mitigate the impact of reactive chemical incidents
- Apply knowledge of chemical hazards to enhance workplace safety and security
- Strengthen collaboration with facility safety teams to ensure effective hazard control

# INSIDER THREAT MANAGEMENT

Course Number: **100-011** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Insider threat management is critical for protecting people, assets, and information from risks posed by individuals with authorized access who could intentionally or unintentionally cause harm. They are characterized as potential disruption caused by individuals with authorized access who misuse that access to harm an organization's people, property, or information. These threats can include employees, contractors, vendors, partners, or students in academic settings. Malicious insiders often exhibit identifiable patterns of behavior, planning, and preparation before committing acts such as sabotage, theft, process corruption, or IT/industrial control system attacks. In industrial, petrochemical, or academic environments handling sensitive or hazardous materials, these threats can have severe consequences, including safety incidents, environmental impacts, and business disruptions.

This course provides the foundation for establishing a phased insider threat program, covering identification, management, and ongoing monitoring. Participants will learn to assess risks, define team roles and governance, integrate insider threat management with cybersecurity and operational procedures, and apply tools like the Critical Facility Security Insider Threat Management (CF-SIM) system. Case studies of real-world insider incidents will be used to illustrate risks and highlight preventive measures.

## COURSE BENEFITS

- Understand the definition and scope of insider threats in industrial and academic environments
- Identify behaviors and risk factors that may indicate a potential insider threat
- Develop a functional insider threat management program within your organization
- Learn to audit the effectiveness of insider threat and personnel management systems
- Track and assess key roles, risk factors, and potential threats
- Implement safeguards and preventive measures to mitigate insider risks
- Integrate insider threat management with cyber, operational, and governance systems
- Use case studies to understand practical applications and lessons learned

# INTRODUCTION TO SECURITY COUNTERMEASURES

Course Number: **100-175** Course Length: **1 day** PDHs: **8 hours**

## COURSE DESCRIPTION

Protecting company assets and personnel from internal and external threats is a critical component of process safety and operational resilience. Security countermeasures help prevent unauthorized access, mitigate insider threats, and reduce the risk of loss, sabotage, or disruption to operations. Understanding and implementing these measures is essential for maintaining a safe and secure facility.

This course provides an overview of personnel-based, procedural, and technical security strategies for protecting company assets and personnel. Participants will learn about systems and equipment used for access control, intrusion detection, surveillance, and adversary delay, as well as cost-effective approaches to deter, detect, and delay threats. The course includes working examples and case studies, including sanitized attendee-submitted scenarios, to illustrate practical applications.

Participants will learn to identify critical assets, determine potential threats and vulnerabilities, assess risk, and deploy countermeasures. Effective programs are multidisciplinary, integrating security, legal, operations, IT, HR, and other relevant departments to monitor and mitigate threats. The course also covers the implementation of security zones, response planning, recovery measures, and the use of technical and procedural countermeasures to build resilience.

## COURSE BENEFITS

- Understand fundamental security strategies for protecting facilities and personnel
- Learn to identify and assess critical assets, threats, and vulnerabilities
- Deploy countermeasures based on the principles of deterrence, detection, and delay
- Implement and apply layered security zones and baseline measures
- Align measures with emergency response and recovery procedures
- Apply risk-based approaches to plan, and prioritize security countermeasures
- Gain practical experience through working examples and case studies

Contact us at ati@acutech-consulting.com for details or to schedule this training onsite at your facility.

# SUPPLY CHAIN SECURITY

Course Number: **100-177** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Supply chain security is a critical component of organizational resilience, helping ensure the safe and reliable movement of goods, materials, and services. Vulnerabilities in the supply chain can create significant operational, financial, and reputational risks, as well as potential exposure to theft, sabotage, cyber threats, and other security incidents. Understanding and managing these risks is essential for maintaining continuity, protecting assets, and complying with regulatory and industry expectations.

Effective supply chain security programs allow organizations to identify vulnerabilities, prioritize mitigation measures, and implement practical controls across all tiers of suppliers and logistics operations. By applying structured assessment tools and governance processes, facilities can enhance risk awareness, improve operational decision-making, and strengthen their ability to respond to incidents or disruptions.

This course introduces participants to a comprehensive risk analysis tool for conducting and managing supply chain security assessments. The program leverages a structured Supply Chain Tool (SCT) consisting of four interrelated worksheets that together provide a framework for assessing supply chain risk across a wide variety of assets and operations. Participants will learn to apply this tool through practical exercises addressing threat assessment, security best practices, cyber security, formal risk assessment, governance, and response, emergency/crisis management, and business continuity.

## COURSE BENEFITS

- Gain a clear understanding of supply chain security risks and the methods for assessing them.
- Learn to conduct practical threat assessments.
- Understand the integration of cyber security considerations into supply chain risk management.
- Develop skills to perform formal supply chain security risk assessments using structured tools.
- Apply practical exercises to translate assessment results into actionable management insights.

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# BUSINESS CONTINUITY & CRISIS MANAGEMENT

Course Number: **100-162** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Business continuity and crisis management are essential for organizations to maintain operations and recover effectively in the face of catastrophic events or disruptive crises. Unforeseen incidents can threaten critical resources, impact personnel, disrupt operations, and damage organizational reputation. Understanding and preparing for these events is essential to reduce losses and ensure rapid recovery.

Effective business continuity and crisis management programs help organizations anticipate risks, implement preventive measures, and respond efficiently when crises occur. By integrating structured planning, risk assessment, and operational controls, organizations can improve resilience, maintain confidence, and protect key assets.

This course introduces participants to the principles and practices of business continuity and crisis management across all phases of planning and response. Topics include risk assessment, crisis planning and preparation, mobilization, response, recovery, and plan testing. Participants will also gain an overview of international standards and best practices, including NFPA 1600 and ISO 22301 & 22313, and learn how to apply these frameworks to develop a highly resilient organization capable of managing and recovering from disruptive events.

## COURSE BENEFITS

- Gain a clear understanding of business continuity and crisis management principles and their role in organizational resilience.
- Learn to conduct risk assessments for effective continuity and crisis planning.
- Understand how to plan, organize, and lead response activities during crises to minimize loss and disruption.
- Develop skills for mobilization, response, recovery, and testing of business continuity and crisis management plans.
- Learn to integrate international standards and best practices.
- Explore strategies to build a highly resilient organization capable of responding effectively to a wide range of disruptions.
- Gain practical guidance for continuous improvement of continuity and crisis management processes.

# EMERGENCY PLANNING & RESPONSE FOR THE PROCESS INDUSTRIES

Course Number: **100-161** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

Effective emergency planning and response are essential components of process safety, ensuring that facilities are prepared to prevent, control, and mitigate incidents that could impact workers, the public, and the environment. This course provides a comprehensive understanding of emergency planning principles, regulatory requirements, and best practices for industrial emergency response programs.

Participants will learn the regulatory framework governing emergency planning, including OSHA 1910.38 and 1910.120 (HAZWOPER), as well as the EPA Risk Management Program requirements such as §68.180 and related sections governing emergency response programs, coordination, notifications, and exercises. The course clarifies applicability questions, common regulatory gaps, and the roles and responsibilities of emergency response personnel.

The course also covers practical, scenario-based planning activities, including development of emergency action plans, creation of scenario-specific risk registers, integration with community responders, drills and exercises, communication systems, and preparedness measures. Participants will explore key program elements such as hazard communication, medical surveillance, decontamination procedures, equipment readiness, and the alignment of site plans with local emergency response organizations.

## COURSE BENEFITS

- Understand core emergency planning & response principles for industrial facilities.
- Learn key OSHA (1910.38, 1910.120) and EPA RMP (§68.180) requirements.
- Distinguish between Emergency Action Plans (EAPs) and Emergency Response Programs (ERPs).
- Review development of scenario-based risk registers and identify credible emergency scenarios.
- Learn best practices for alarms, notifications, evacuation, and communication.
- Discuss the importance of effective coordination with local responders and community emergency organizations.
- Identify gaps in emergency programs and strategies to improve preparedness.

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# INCIDENT INVESTIGATION & ROOT CAUSE ANALYSIS

Course Number: **200-061** Course Length: **2 days** PDHs: **16 hours**

## COURSE DESCRIPTION

OSHA's Process Safety Management (PSM) Mandate requires that facilities investigate each incident "which resulted in, or could have reasonably resulted in a catastrophic release of highly hazardous chemical in the workplace." The mandate language provides guidance on the required elements for the investigation. However, it is limited in terms of offering direction on how to conduct the investigation effectively.

Root Cause Analysis (RCA) is one of the leading tools used in incident investigation. It provides structure to ensure that the investigation team identifies the true cause of the incident, enabling effective corrective actions. Investigation teams need to be willing to look beyond the seemingly obvious immediate causes of an incident to ensure they uncover the true root cause of each incident.

This two-day incident investigation course teaches attendees how to conduct a comprehensive investigation to find root causes of incidents and near misses. The program includes establishing an investigation management system, investigation priorities, gathering evidence (physical, interviews and documentation), reaching root causes, reporting, recommendations and response. The course also covers responding to major incidents and cooperation with OSHA, EPA, CSB and other investigative organizations.

## COURSE BENEFITS

- Master proven investigation techniques to uncover the true root causes of incidents and near misses.
- Apply structured methodologies like Root Cause Analysis (RCA) to identify systemic failures.
- Enhance your ability to manage evidence collection, including physical evidence, interviews, and documentation.
- Develop skills to differentiate between immediate causes and underlying root causes.
- Gain confidence in handling interactions with OSHA, EPA, and other regulatory bodies during investigations.
- Create detailed investigation reports that drive impactful corrective actions

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## CUSTOM HYDROGEN SAFETY TRAINING

Hydrogen is transforming industries, and safe handling requires specialized knowledge. As an emerging fuel or feedstock for low-carbon efuels, it is attracting growing attention. It is also globally regulated as a highly hazardous chemical, requiring mandatory compliance with federal or regional public safety requirements. Because hydrogen has unique physical and chemical properties, a one-size-fits-all approach isn't enough.

Whether your organization uses hydrogen as a feedstock in a traditional application or your organization is on the cutting edge of fueling the next hydrogen vehicle applications, you need to be aware of the changes in the landscape of regulatory requirements..

## WHY TAILORED HYDROGEN SAFETY MATTERS

AcuTech's custom hydrogen safety training equips you and your workforce to understand the fundamental requirements and how those requirements can be met with an efficient and effective PSM program. Your team will learn more about how to recognize hazards, prevent incidents, and implement best-practice controls aligned with your specific facility or application—or learn from an existing AcuTech example. Whether your hydrogen operations involve transportation, fueling, midstream or downstream processes, laboratories, industrial manufacturing, or other sectors, we build training applicable to the real-world scenarios encountered by your team.

### Courses include, but are not necessarily limited to:

- Fundamentals of hydrogen behavior and hazards
- Storage, transfer, fueling, and system operation considerations
- Unique hydrogen ignition, dispersion, and material-impact risks
- Facility-specific procedures, safeguards, and mitigation strategies
- Emergency response, detection systems, venting, and isolation practices
- Integration with OSHA PSM, RBPS, and CHS Hydrogen Safety Plan guidance
- Resources, checklists, and next steps tailored to your operation

**Contact us to design your custom hydrogen safety training.**

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# Expert Guidance for Safe & Secure Operations

AcuTech Group is a globally recognized consulting firm specializing in process safety, chemical security, and emergency management for high-hazard industries. Since 1994, the firm has supported leading organizations in identifying, managing, and mitigating risks associated with complex operations and critical infrastructure.

AcuTech combines advanced technical expertise with strategic advisory capabilities to deliver practical, scalable solutions that enhance safety, strengthen security, and improve operational and environmental performance. The firm partners with Fortune 500 companies, private enterprises, trade associations, and government agencies to address regulatory requirements, reduce risk exposure, and build resilient operations.

**Scan for more information.**

AcuTech
PROCESS RISK MANAGEMENT

## WHAT WE DO

## Partner for Success

With project experience in more than 175 countries and a globally distributed team of subject matter experts, AcuTech serves clients across a broad range of sectors, including clean energy (LNG, hydrogen, methanol, ammonia), oil and gas, chemicals and petrochemicals, pharmaceuticals and biotechnology, data centers, and maritime operations.

Our team supports the international market with a presence in the US, India, Asia-Pacific, Europe, and the Middle East. AcuTech plans to expand our global network of consultants to provide support and consistency in delivery across client sites.

AcuTech's integrated approach enables clients to proactively manage catastrophic risk, maintain compliance, and drive continuous improvement—resulting in safer operations, enhanced reliability, and stronger financial performance.

**www.acutech-consulting.com**

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