



COURSE OVERVIEW HE1384
Process Safety Management (PSM) Based on API RP 750
Framework & Current Industry Best Practices

Course Title

Process Safety Management (PSM) Based on API RP 750 Framework & Current Industry Best Practices

Course Date/Venue

August 30-September 03, 2026/Sur Meeting Room, Royal Tulip Muscat, Muscat, Oman

Course Reference

HE1384

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.



This intensive course provides participants with a comprehensive understanding of Process Safety Management (PSM) systems based on the historical API RP 750 framework and its evolution into modern risk-based process safety practices. The course integrates OSHA PSM requirements, CCPS RBPS principles, Process Hazard Analysis methodologies, HAZOP studies, Management of Change, Mechanical Integrity, Incident Investigation, and Process Safety Performance Indicators.



Participants will learn how leading organizations prevent catastrophic process incidents and improve operational excellence through systematic risk management. Although the API RP 750 was withdrawn back in 2002, it is still a very important standard from the historical point of view for the PSM professionals who want to understand the evolution of the PSM regulations in industry. API RP 750 was one of the pioneering industry frameworks for managing process hazards and significantly influenced OSHA's PSM regulation and modern process safety systems.



Further, the course will also discuss the difference between process safety and occupational safety; the historical development of process safety and historical API RP 750 requirements; the OSHA PSM standard (29 CFR 1910.119) and process safety culture and leadership; the CCPS risk-based process safety (RBPS), process safety information (PSI), hazard identification and risk assessment fundamentals; the process hazard analysis (PHA) fundamentals, PHA methodologies and operability studies (HAZOP); and the advanced HAZOP applications, operating procedures and safe operations as well as training and competency assurance.

During this interactive course, participants will learn the mechanical integrity (MI) program and inspection, testing and preventive maintenance; the safety instrumented systems (SIS) and contractor and work permit management; the management of change (MOC) fundamentals, effective MOC programs, pre-startup safety review (PSSR) and incident investigation fundamentals; the root cause analysis techniques and process safety performance indicators (API RP 754); the effective process safety metrics and compliance auditing and assurance; the emergency preparedness and response, process safety governance and leadership; and integrating modern process safety excellence.

Course Objectives/Outcomes & Benefits for the Participants

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on process safety management (PSM) based on API RP 750 framework and current industry best practices
- Discuss the difference between process safety and occupational safety including the historical development of process safety and historical API RP 750 requirements
- Review OSHA PSM standard (29 CFR 1910.119) and explain process safety culture and leadership
- Interpret CCPS risk-based process safety (RBPS), process safety information (PSI) and hazard identification and risk assessment fundamentals
- Recognize process hazard analysis (PHA) fundamentals, PHA methodologies and hazard and operability studies (HAZOP)
- Carryout advanced HAZOP applications, operating procedures and safe operations as well as training and competency assurance
- Develop mechanical integrity (MI) program and apply inspection, testing and preventive maintenance
- Discuss safety instrumented systems (SIS) and apply contractor and work permit management
- Apply management of change (MOC) fundamentals, implementing effective MOC programs, pre-startup safety review (PSSR) and incident investigation fundamentals
- Employ root cause analysis techniques, learn from major industry incidents and discuss process safety performance indicators (API RP 754)
- Develop effective process safety metrics and apply compliance auditing and assurance
- Implement emergency preparedness and response, process safety governance and leadership as well as integrating modern process safety excellence

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of process safety management (PSM) based on API RP 750 framework and current industry best practices for process safety engineers, plant managers and supervisors, safety professionals, operations and maintenance personnel, engineers and design professionals, HSE (health, safety, and environment) professionals and regulatory and compliance personnel.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

-  The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.



Course Instructor

This course will be conducted by the following instructor. However, we have the right to change the course instructor prior to the course date and inform participants accordingly:



Mr. Peter Christian is an **International Expert** in **Safety, Health, Environmental and Quality** with over **30 years** of practical and industrial experience in **NEBOSH International General Certificate in Occupational Health & Safety, Process Safety Management (PSM), HAZOP, HAZCOM, HAZMAT, HAZID, Hazard & Risk Assessment, Process Hazard Analysis (PHA), Emergency Response Procedures Behavioural Based Safety (BBS), Confined Space Entry, Fall Protection, Emergency Response, H₂S, Safety Management System (ISO 45001), Accident/Incident Investigation System and Report PSM, Risk Assessment, SCE FMEA Failure Investigations, Site Management Safety Training (SMSTS), Occupational Health & Safety and Industrial Hygiene, Crisis Management & Damage Control in Oil & Gas Industry, Enhancing HSSE Safety Performance & Effectiveness, Overhead & Gantry Crane Safety, Safety, Health, Environmental & Quality Management (SHEQ), Behavioral Safety Management, Industrial Hygiene, Human Factors Engineering, Risk Assessment, Fire Fighting, Rope Rescue Operations, Emergency Response within process industries. He is currently the **President of NKWE** and spearheads the companies major projects and business ventures, where he specializes in the areas of **SHEQ solutions, ISO, Quality Control and OSHA systems**. Previously, he has had much on-hand experience in the initiation and management of projects (technical as well organizational development) including involvement in **design of process plants; the commissioning & decommissioning of process plants; the operational and financial responsibility for large process operations; risk management; operational and maintenance management, crisis and emergency management, accident investigation, risk assessment, hazard identification and emergency preparedness & response (oil spillage and gas explosions).****

Much earlier in his career, Mr. Christian was a **HAZOP Team Leader** for numerous **HAZOP** studies and he has further managed the **Health, Safety & Environmental and Quality** requirements of a large process company. This included responsibilities as an auditor for compliance against **SHEQ standards, ISO standards** and the **Fatal Risk Control Protocols**. He then facilitated the development and implementation of the above standards as a group and at site level as part of the SHEQ council. Moreover, he established, trained and led a Rope rescue team and a high level emergency care clinic and ambulance service for many years. He still abseils recreationally and leads adventure groups during abseiling activities and serves as a rescue team member for mountain and water emergencies.

During his career life, Mr. Christian has gained his practical and field experience through his various significant positions as the **Plant Manager, Project Metallurgist, Metallurgist, HSE Team Leader, SHEC Superintendent, Mentor, Instructor/Trainer, Acting Technical Manager, Process Plant Superintendent, Acting Project Leader, Acting Plant Superintendent, Appointed Health & Safety & Environmental Superintendent, Production Technician, Acting Senior Shiftsman, Foreman and Learner – Official Extraction Metallurgy** from various companies such as the **NKWE Consulting, SAMANCOR, Middleburg Mine Services (Pty) Ltd., Koomfontein Mines, Emelo Mine Services, Gencor Group and South African Defence Force.**

Mr. Christian has a **Postgraduate Studies in Advanced Executive Programme** and a **National Higher Diploma (NHD) & a National Diploma in Extraction Metallurgy**. He is also a **Certified/Registered Tutor in NEBOSH International General Certificate, Certified Auditor in OHSAS 18001, ISO 14001 & ISO 9001, a Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer by the Institute of Leadership & Management (ILM), a Six Sigma Black Belt Coach** and holds a Certificate in Facilitate Learning Using a Variety of Given Methodologies **NQF Level 5 (EDTP-SETA)** as a **Certified Facilitator**. He has further delivered innumerable courses, trainings, workshops and conferences globally.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 30th of August 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Process Safety Management Difference Between Process Safety and Occupational Safety • Major Accident Hazard (MAH) Concepts • Catastrophic Release Scenarios • Process Safety Lifecycle and Objectives
0930 – 0945	Break
0945 – 1030	Historical Development of Process Safety Flixborough, Bhopal, Piper Alpha and Texas City Lessons • Evolution of Industry Safety Standards • Development of API RP 750 • Emergence of Modern PSM Systems
1030 – 1130	Historical API RP 750 Requirements Purpose and Scope of API RP 750 • Original Management of Process Hazards Framework • Key PSM Elements Introduced by API RP 750 • Influence on Global Process Safety Standards
1130 – 1215	OSHA PSM Standard (29 CFR 1910.119) Regulatory Applicability and Covered Processes • Threshold Quantities and Covered Chemicals • OSHA's 14 PSM Elements • Compliance Expectations and Enforcement Trends
1215 – 1230	Break
1230 – 1330	Process Safety Culture & Leadership Leadership Commitment and Accountability • Safety Culture Characteristics • Human Factors in Process Safety • Workforce Engagement and Participation
1330 – 1420	Introduction to CCPS Risk-Based Process Safety (RBPS) Four RBPS Pillars • Twenty RBPS Elements • Risk-Based Decision Making • Relationship Between API RP 750, OSHA PSM, and RBPS
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2: Monday, 31st of August 2026

0730 – 0830	Process Safety Information (PSI) Chemical Hazard Information • Process Technology Information • Equipment Design Information • Documentation Control and Management
0830 – 0930	Hazard Identification & Risk Assessment Fundamentals Hazard Identification Techniques • Risk Assessment Methodologies • Consequence and Likelihood Evaluation • Risk Matrix Development
0930 – 0945	Break
0945 – 1100	Process Hazard Analysis (PHA) Fundamentals OSHA PHA Requirements • PHA Lifecycle and Revalidation • Team Composition and Competency • Documentation and Recommendation Tracking



1100 – 1215	PHA Methodologies <i>What-If Analysis • Checklist Reviews • FMEA (Failure Modes and Effects Analysis) • Bow-Tie Risk Assessment</i>
1215 – 1230	<i>Break</i>
1230 – 1330	Hazard & Operability Studies (HAZOP) <i>HAZOP Methodology Overview • Guide Words and Deviations • Team Roles and Responsibilities • Recording Findings and Recommendations</i>
1330 – 1420	Advanced HAZOP Applications <i>Node Selection Strategies • Human Factor Considerations • Safeguard Evaluation • Risk Ranking and Action Management</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 01st of September 2026

0730 – 0830	Operating Procedures & Safe Operations <i>Development of Operating Procedures • Startup and Shutdown Procedures • Emergency Operating Procedures • Procedure Management Systems</i>
0830 – 0930	Training & Competency Assurance <i>Operator Qualification Systems • Competency Management Frameworks • Refresher Training Requirements • Knowledge Retention Techniques</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Mechanical Integrity (MI) Program <i>OSHA MI Requirements • Asset Integrity Management Principles • Critical Equipment Identification • Inspection and Testing Strategies</i>
1100 – 1215	Inspection, Testing & Preventive Maintenance <i>Risk-Based Inspection (RBI) • Predictive Maintenance Techniques • Integrity Management Systems • Defect Management and Repair</i>
1215 – 1230	<i>Break</i>
1230 – 1330	Safety Instrumented Systems (SIS) <i>Layers of Protection Analysis (LOPA) • Safety Integrity Levels (SIL) • Instrumented Protection Systems • Testing and Maintenance Requirements</i>
1330 – 1420	Contractor & Work Permit Management <i>Contractor Safety Management • Permit-to-Work Systems • Hot Work Controls • Confined Space Entry Management</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Three</i>

Day 4: Wednesday, 02nd of September 2026

0730 – 0830	Management of Change (MOC) Fundamentals <i>Purpose and Importance of MOC • Regulatory Requirements • Organizational MOC Systems • Common MOC Failures</i>
0830 – 0930	Implementing Effective MOC Programs <i>Technical Changes • Organizational Changes • Temporary Changes • MOC Approval Workflow</i>
0930 – 0945	<i>Break</i>



0945 – 1100	Pre-Startup Safety Review (PSSR) PSSR Objectives • Readiness Verification • Startup Risk Management • Documentation Requirements
1100 – 1215	Incident Investigation Fundamentals OSHA Investigation Requirements • Incident Classification Systems • Root Cause Philosophy • Learning from Near Misses
1215 – 1230	Break
1230 – 1330	Root Cause Analysis Techniques Five Whys Methodology • Cause-and-Effect Analysis • Fault Tree Analysis • Human Factors Investigation
1330 – 1420	Learning from Major Industry Incidents Texas City Refinery Explosion • Buncefield Terminal Explosion • Deepwater Horizon Disaster • Key Process Safety Lessons Learned
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5: Thursday, 03rd of September 2026

0730 – 0830	Process Safety Performance Indicators (API RP 754) Purpose and Scope of API RP 754 • Leading and Lagging Indicators • Tier 1 and Tier 2 Process Safety Events • Tier 3 and Tier 4 Proactive Indicators
0830 – 0930	Developing Effective Process Safety Metrics KPI Selection Methodology • Data Collection and Reporting • Trending and Benchmarking • Management Review Processes
0930 – 0945	Break
0945 – 1100	Compliance Auditing & Assurance OSHA Compliance Audit Requirements • Internal Audit Methodologies • Audit Planning and Execution • Corrective Action Management
1100 – 1230	Emergency Preparedness & Response Emergency Planning Requirements • Incident Command Systems • Crisis Management Principles • Business Continuity Planning
1230 – 1245	Break
1245 – 1300	Process Safety Governance & Leadership Corporate Process Safety Governance • Risk Ownership and Accountability • Board-Level Oversight • Process Safety Culture Maturity
1300 – 1345	Integrating Modern Process Safety Excellence API RP 750 to RBPS Evolution • Digitalization in Process Safety • Barrier Management Systems • Continuous Improvement Roadmap
1345 – 1400	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



Practical Workshops and Case Studies Throughout the Course

Workshop 1: PHA Team Exercise

- Hazard identification
- Risk ranking
- Safeguard assessment
- Recommendation development

Workshop 2: HAZOP Case Study

- Node selection
- Guide word application
- Deviation analysis
- Reporting findings

Workshop 3: MOC Simulation

- Change evaluation
- Risk assessment
- Approval process
- Implementation controls

Workshop 4: Incident Investigation Exercise

- Evidence collection
- Root cause determination
- Corrective actions
- Lessons learned communication

Workshop 5: API RP 754 Metrics Development

- Tier classification
- KPI selection
- Dashboard creation
- Performance review

Workshop 6: PSM System Gap Assessment

- OSHA PSM evaluation
- API RP 750 benchmarking
- RBPS maturity assessment
- Improvement action plan



Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art "Haward PHA/HAZOP" Simulator.

Master List	Participation	1	2	3	4	5	6	7
chlorine railcar								
compressed air system								
chlorine liquid unloading line								
chlorine vaporizer								
chlorine gas supply line to bleach plant								
Step 4								
Step 5								

Haward PHA/HAZOP Simulator

Course Coordinator

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