



INSTITUTE
of
HAZARD PREVENTION

PHA / HAZOP FACILITATION



PROFESSIONAL DEVELOPMENT:

Three classroom days providing 2.4 CEU (Continuing Education Units) or 24 PDH (Professional Development Hours)



BENEFITS OF THE PHA/HAZOP FACILITATION COURSE:

Provide knowledge and skills to prepare the participants to be able to effectively prepare and facilitate (lead) PHAs within their organization.

In the afternoon of Day 2 and for Day 3, you will form a study team with other participants and take turns leading the team through “practice” HAZOP and What-if sessions. The instructor will coach you and provide feedback on your performance. Participants will have the opportunity to prepare the drawings, populate the software and facilitate the studies using real-life Piping and Instrumentation Diagrams (P&IDs). By the end of the exercises students will be able to facilitate their own HAZOP and What-if sessions.



COURSE OVERVIEW:

This 3-day PHA / HAZOP course is designed to deliver expert instruction on how to successfully plan and execute Process Hazards Analysis (PHA) studies efficiently and effectively. This includes understanding the principles behind each of the major PHA methods (HAZOP, What-if?, Checklist, FMEA), learning how to deal with challenging personalities within the PHA team and how to avoid common pitfalls and traps so your PHA studies run smoothly.



PREREQUISITES OR RELATED COURSES:

It is recommended that the following courses be completed prior to attending this course:

- P&ID (Piping and Instrumentation Diagram) and Engineering Drawings Interpretation



WHO SHOULD ATTEND?

- Supervisors, Managers and Engineers responsible for PHA studies
- PHA / HAZOP Team Leaders & Scribes
- Health & Safety / HSE professionals
- Process Safety Management (PSM) / Loss Management specialists



COURSE OUTLINE:

DAY 1	DAY 2	DAY 3
Quantitative & Qualitative Hazard Analysis	Method Selection Criteria	PHA Workshop (continued) <ul style="list-style-type: none"> • HAZOP “practice” study • What-if? “practice” study
Overview of HSE Hazard Management	PHA Documentation Issues	
Elements of Facility Risk	PHA Leadership: <ul style="list-style-type: none"> • PHA Facilitation Skills • Team Leader Qualifications • PHA Leader Responsibilities • PHA Group Dynamics 	
PHA Teams	PHA Management: <ul style="list-style-type: none"> • Defining Scope & Objective • Estimate Time Requirements • Documenting the Study 	
PHA Methods: <ul style="list-style-type: none"> • HAZOP • Preliminary Hazards Analysis • Checklist Analysis • What-if? Analysis • Checklist / What-if? Analysis • FMEA 	PHA Workshop: <ul style="list-style-type: none"> • HAZOP “practice” study 	



THE ACM EXPERIENCE:

Our courses and workshops are experiential, interactive and provide participants with practical knowledge and tools that can be immediately applied back at work.



COURSE TESTIMONIALS:

Here are a few quotes from over 3,300 participants we’ve trained;

- *“Very helpful instruction and activities in this course helped me get what I was looking for from it!”*
Project Coordinator
- *“Great instructor. Lots of years of experience. Provided us with tips on facilitation and how to look at HAZOPs and What-IF PHAs.”*
Process Engineer
- *“The instructor was very interactive, encouraged discussion and welcomed feedback.”*
Process Engineer
- *“Great course! The instructor made the course very enjoyable. With their wealth of knowledge and experience they could answer all of the questions, as well as provide a real life situation in which it applied.”*
New Grad EIT
- *“Great course content, coverage and length. Superb instructor who presented material as it applies to real world scenarios.”*
I&C Engineer



COURSE INSTRUCTORS:



Marcel Leal-Valias
Expert Advisor & Instructor

Mr. Leal-Valias has more than 50 years of experience in engineering/design and project management in the petrochemical industry in North and South America and Australia and 27 years as a certified PHA specialist and trainer. He holds a diploma in Mechanical Engineering from Centro de Treinamento Industrial, Rio de Janeiro, Brazil and diplomas in Management and Supervision from People Growth Inc., Los Angeles, USA. Mr. Leal-Valias has conducted a multitude of PHA studies that comply with OSHA Process Safety Management guidelines in North and South America, the Middle East, Asia and the Caribbean and also has delivered P&ID and PHA training courses to many companies in Canada and overseas. He is a member of ASET, the Society of Piping Engineers and Designers, Project Management Institute and the Canadian Institute of Energy.



Malcolm Harrison
B.Sc. Mech. Eng., P.Eng., TÜV (Rheinland) F.S. Expert / Instructor

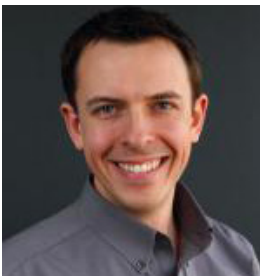
Mr. Harrison is a P.Eng. with over 40 years' experience in Instrumentation and Controls. Malcolm spent over 35 years with Shell and has diversified upstream and downstream experience in the heavy oil, offshore, refining, chemicals and oil & gas processing sectors. He is an experienced SIL Determination and CHAZOP facilitator and has worked on billion dollar projects ensuring horizontal I & C alignment between multiple EPCMs. Malcolm is a TÜV Functional Safety Expert and leads training workshops globally for ACM.



Jamie Merriam
B.Sc. Elec. Eng., P. Eng., TÜV (Rheinland) F.S. Eng. Functional Safety Engineer / TÜV (Rheinland) PH & RA Functional Safety Engineer / Instructor

Mr. Jamie Merriam is an Electrical Engineer (automation) with over 24 years of experience in the energy industry. His experience includes construction, maintenance and project engineering. Mr. Merriam began leading Hazop/LOPA reviews in 2002 as part of his duties with Suncor. Now with ACM, Mr Merriam continues to support Suncor, Cenovus and other clients execute effective hazard analysis. He has applied knowledge in Instrumentation, Process Control and Functional Safety for the energy industry. Mr. Merriam's communication and leadership skills, combined with his understanding of Process Safety make him an effective and competent facilitator and educator. Mr. Merriam is a professional engineer and TÜV Functional Safety Engineer.

Past Projects: Terra Nova FPSO, Edm. Refinery Upgrade, Fort Hills, MR2 (Petro Canada), Firebag 3, Tailings Reduction Operations, Coker Upgrade (Suncor)



Richard Carter
B.Sc. Chem. Eng., P.Eng., TÜV (Rheinland) F.S.Eng. PH & RA, PHA Facilitator / Project Manager / Instructor

Mr. Richard Carter is a Professional Engineer, and is qualified as a Functional Safety Engineer (F.S. Eng.) in Process Hazards and Risk Analysis through the TÜV (Rheinland) Functional Safety Program. Richard is an experienced facilitator of Process Hazards Analysis (PHA) studies, such as Hazard and Operability (HAZOP), Layer of

Protection Analysis (LOPA), Hazard Identification (HAZID) and What-If Analysis. He has facilitated more than 120 PHA studies for some of the largest operating and engineering organizations in Canada and the United States, and has field experience in oilsands and petrochemicals facilities.

Richard is a training instructor, and teaches the 2-day P&ID/Engineering Drawings Interpretation course, the 1-day Introduction to Process Hazards Analysis course, and the 3-day PHA/HAZOP Facilitation course at ACM Facility Safety. He has also managed ACM's education and training program for public and private offerings, and developed customized PHA procedures and education materials to meet the specific needs of clients.

[View instructor profiles online.](#)

CONTACT FOR FURTHER INFORMATION: info@acm.ca

CALL TOLL FREE AT 1-877-264-9637

PRIVATE IN HOUSE TRAINING COURSES:

<http://www.acm.ca/institute-of-hazard-prevention/private-courses>