



Process Safety Training

Competence Development & Training in Process Safety 2017

Chilworth Technology, Now Part of DEKRA Insight



30
YEARS OF
EXPERIENCE

MORE THAN
2,000
CLIENTS
EACH YEAR

LEADER
IN INDUSTRIAL
PROCESS
SAFETY

Areas covered include:

- Hazard and risk analysis (HAZOP, etc.),
- Safety instrumented system design and verification,
- Accident and incident investigation,
- Electrostatic risk assessment and chemical reaction hazard assessment,
- Fire and explosion risk assessment (gases, vapours and dusts),
- Safety system design,
- Legislative compliance (DSEAR, COMAH, ATEX, Seveso)

Excellence in Process Safety requires more than having sound programmes in place with a good organisational culture. It should be also about being genuinely proficient and competent in the requisite technical disciplines and having the appropriate level of knowledge in key positions embedded throughout the organisation with a mechanism for longevity.

Chilworth Process Safety Academy brings high-level proficiency to your organisation to maximise the effectiveness of your Process Safety Management.

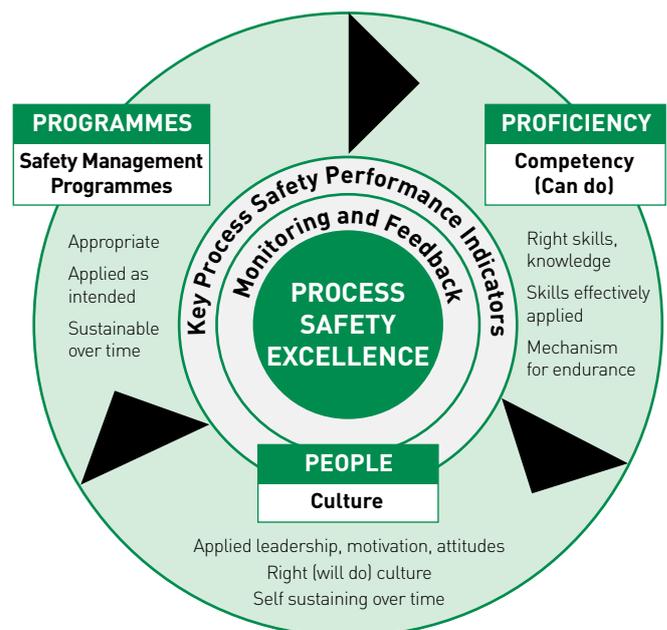
Training is a critical tool for growing proficiency and is the key aim of Chilworth's Process Safety Academy.

Your Global Partner:

- Consistent international curriculum (Europe, North America and Asia) for education, according to established syllabi, in all core elements of Process Safety.
- Available in all major international languages, tailored to specific local requirements – cultural and legal.
- Work to globally recognised standards to ensure high quality, robust learning solutions.

DEKRA Insight is the global leader in safety at work. We guide clients in transforming their organisational culture and their operational environment, enabling them to reduce exposure to injuries, save lives, protect assets and achieve safer performance.

Chilworth Process Safety Academy Embedding Skills, Knowledge and Best Practice



Your Global Partner In Bringing Process Safety Competence to Your Organisation



OUR COMPETENCE DEVELOPMENT PROGRAMMES ARE:



OUR SOLUTIONS ARE:



OUR IN-COMPANY PORTFOLIO INCLUDES:

Effective, with our Process Safety expertise honed to deliver the appropriate knowledge to the appropriate staff; establishing clear targets and skills to be developed with information applicable in day-to-day activities

Impactful, accompanied by testing and managerial follow-up (before and end-of-course grade tests, communication of skills developed)*

Globally Consistent, ensured through adherence to a global syllabus agreed by our facilitators in all locations

Sustainable, refreshed regularly to top-up knowledge and proficiency

- Custom made & focused on your own operational process*
- Flexible (open / in-company / webinar / e-learning platform)
- At your own pace (one-shot, quarterly, annual)
- Complimented by extra services (hotline experts, supplementary back-up training or refresher sessions)*

- Best Practices in PSM Programmes
- Understanding Process Safety Hazards
- Hazard Identification and Risk Analysis
- Safeguards and Layers of Protection

For an informal discussion on our tailored in-company solutions, please call +44 (0)23 8076 0722 or email training-uk@chilworthglobal.com.

OUR TRAINING EXPERTISE:

- In-company, open training, e-learning and webinars
- Multi level audience: engineers, scientists, managers, technicians, operators and board members
- Our trainers: highly experienced Process Safety practitioners in industry
- Senior experts in their fields, providing a high level of advice and able to answer professional questions from experience

* exclusive for in-company programmes

Preventing Reaction Runaway: Integrating Safety Assessment Into Process Life Cycle and Practicalities of Emergency Pressure Relief Design

Date: 21-22 Feb **Location:** Southampton **Price:** 865 GBP / 1255 EUR



Day 1:

Delegates will learn to identify significant sources of hazard in existing plants, understanding the latest techniques for assessing risk and measuring and quantifying chemical process hazards in the workplace. An understanding of established best practice in reducing the hazards of exothermic reaction systems, with particular emphasis on emergency relief design, will be taught (in conjunction with Day 2.)

Day 2:

The provision of emergency relief systems for runaway chemical reactions and decompositions requires a detailed design approach that takes into account the dynamics of the uncontrolled reaction and the potential for multi-phase flow in the vent system. The DIERS (Design Institute for Emergency Relief Systems) methodology provides a practical framework for such studies, which is different to vent sizing for purely physical contingencies. This short course will examine the characterisation of runaway behaviour and the vent design approach. Data requirements, sizing equations and practical aspects will be discussed. Case studies and workshops are included.

Practical Aspects of DSEAR Compliance Success

Date: 14-17 Mar **Location:** Edinburgh
Date: 12-15 Sep **Location:** Manchester
Date: 7-10 Nov **Location:** Southampton
Price: 1225 GBP / 1780 EUR



Day 1:

Hazardous Area Classification uses a systematic approach to identify flammable atmospheres and their persistence. In this way you can classify areas of your site for various levels of risk. This course presents current best practice and procedures for carrying out a HAC for flammable gases/vapours and dusts on your plant. It also provides an understanding of how HAC fits into compliance for DSEAR/ATEX. Why not network with other delegates and presenters at our complimentary welcome dinner?

Day 2:

Dust, Gas and Vapour Explosion Hazards. Although the principles of explosion prevention and protection are well known, dust and gas explosions still continue to occur in process plants. This course provides guidance on the selection of an appropriate basis of safety for a particular situation. We will consider how flammable atmospheres arise, how to identify potential ignition sources and the test data you need to undertake a risk assessment. We will also address explosion protection measures for cases where flammable atmospheres and ignition sources are unavoidable. The course provides practical techniques and relevant case histories.

Day 3:

Industrial Electrostatics Hazards are explicitly cited as potential ignition sources that must be assessed when considering the risk of fire and explosion as part of compliance with DSEAR/ATEX. This course is designed to explain how electrostatic charges occur and how charge builds up in people, liquids, powders, plastics and plant. Understanding electrostatic properties is essential in avoiding electrostatic discharges which can trigger fires and explosions. The course provides practical techniques & relevant case histories.

Day 4:

A short seminar on how to assess the ignition risk from existing non-electrical (mechanical) equipment operating in hazardous areas. In practical terms, how do you ensure compliance for existing non-electrical (mechanical) equipment used in potentially explosive atmospheres, identified from your Hazardous Area Classification Work? This seminar will seek to answer common questions relating to non-electrical (mechanical) equipment risk assessment, from clients undertaking DSEAR compliance work.

Practical Aspects of ATEX Compliance Success

Date: 13-16 June **Location:** Dublin **Price:** 1225 GBP / 1780 EUR



Day 1:

Hazardous Area Classification uses a systematic approach to identify flammable atmospheres and their persistence. In this way you can classify areas of your site for various levels of risk. This course presents current best practice and procedures for carrying out a HAC for flammable gases/vapours and dusts on your plant. It also provides an understanding of how HAC fits into compliance for ATEX. Why not network with other delegates and presenters at our complimentary welcome dinner?

Day 2:

Dust, Gas and Vapour Explosion Hazards. Although the principles of explosion prevention and protection are well known, dust and gas explosions still continue to occur in process plants. This course provides guidance on the selection of an appropriate basis of safety for a particular situation. We will consider how flammable atmospheres arise, how to identify potential ignition sources and the test data you need to undertake a risk assessment. We will also address explosion protection measures for cases where flammable atmospheres and ignition sources are unavoidable. The course provides practical techniques and relevant case histories.

Day 3:

Industrial Electrostatics Hazards are explicitly cited as potential ignition sources that must be assessed when considering the risk of fire and explosion as part of compliance with ATEX. This course is designed to explain how electrostatic charges occur and how charge builds up in people, liquids, powders, plastics and plant. Understanding electrostatic properties is essential in avoiding electrostatic discharges which can trigger fires and explosions. The course provides practical techniques & relevant case histories.

Day 4:

A short seminar on how to assess the ignition risk from existing non-electrical (mechanical) equipment operating in hazardous areas. In practical terms, how do you ensure compliance for existing non-electrical (mechanical) equipment used in potentially explosive atmospheres, identified from your Hazardous Area Classification Work? This seminar will seek to answer common questions relating to non-electrical (mechanical) equipment risk assessment, from clients undertaking ATEX compliance work.

Functional Safety Management & SIL Assessment

Date: 9-11 May **Location:** Crewe **Price:** 1095 GBP / 1590 EUR



Day 1:

The introduction will cover the background of IEC61508/11 SIL development and its management requirements and will go on to explain SIL determination techniques such as Risk Graph & Layers of Protection Analysis (LOPA), which are common methods within the process industries. Workshops will reinforce the learning of these techniques.

Day 2:

The course moves onto the initial implementation phase of Safety Instrumented System (SIS) design, including system architecture, failure modes, fault tolerance, human reliability, etc., in order to achieve both performance and integrity. Familiarisation with the requirements of operational proof testing and maintenance of SIS and their impact to overall functional safety will also be addressed. The importance of management, competency, planning and conformity assessment will be highlighted.

Day 3:

Based on the information presented and following completion of the course, delegates should be able to participate in, and contribute towards, future SIL assessments within their own workplace, appreciate the elements of safety system design and the importance of operations and maintenance management to overall safety. Extensive opportunities to discuss the various issues raised with the lecturers will be provided.

Practical HAZOP Leadership in Action

Date: 26-28 Sept **Location:** Birmingham **Price:** 1095 GBP / 1590 EUR



Day 1:

Delegates will learn when and how HAZOP should be employed in a process lifecycle and how HAZOP compares to other hazard identification and assessment techniques. Tuition on how to conduct a HAZOP on continuous and batch process plants will be given.

Day 2:

Building on the main themes mentioned above, delegates will learn how to prepare and develop effective leadership techniques for HAZOP studies. In addition, delegates will learn techniques for developing and auditing HAZOPs and HAZOP procedures.

Day 3:

Examples, case studies and practical examples of HAZOPs in industry.

Basics of Occupied Buildings Risk Assessment (OBRA)

Date: 3 Oct **Location:** Manchester **Price:** 595 GBP / 865 EUR



An introductory module describing the stages of Occupied Buildings Risk Assessment (OBRA), beginning with a background – what can go wrong and consequences to people in buildings. We will move on to the identification of hazardous events and their inclusion in the assessment, modelling the hazardous effects of major process incidents such as fire, explosion, pressure vessel burst and toxic gas releases and how to select which buildings need to be considered alongside assessing hazardous effects on different building types. Finally, we look at the quantification of the risks to occupants of buildings and the use of risk tolerability criteria to help with decision making.

Consideration will be given to options for reducing risk and demonstrating ALARP including when toxic refuges are required, their basic design requirements and the subsequent development of management systems for occupied buildings. Workshops will be employed throughout the training to help understanding and to practice the methods described. Use will be made of the CIA Guidance for occupied building risk assessment.

Process Safety Awareness

Date: 4 Apr **Location:** Dublin **Price:** 595 GBP / 865 EUR



This course looks at the basics of what Process Safety is and how it differs from occupational safety. You will also look at the range of Process Safety hazards present on process plants and storage installations; including fire and explosion hazards, overpressure hazards and hazards from toxic release, as well as the consequences of Process Safety incidents using case studies as examples.

You will then discover common process risk prevention, control and mitigation measures, finishing with an introduction to Process Safety management and the relationship between poor management and incidents



Our range of topical FREE webinars are an ideal opportunity to fit concentrated and focussed training around your busy schedule. With no travel or accommodation to book, it is a quick and effective way to develop your knowledge further, while accessing a broad range of topic areas and expertise developed by Chilworth over the past 30 years. Below, you can find a small selection of the topics we have previously offered, all of which can be tailored as an in-company solution for your organisation using examples from your industry.



Process Safety Competency

Content:

A topical challenge for industrial companies, especially those involved in hazardous materials processing, is how to demonstrate adequate competence in Process Safety across their organisation.

This granulates further into "what do you need to know, to what level, in what position?" After answering all those questions, you need to be able to demonstrate this competence to your stakeholders and to the regulators. This webinar explores these challenges and provides ideas on demystifying the process.



Measuring Process Safety Performance

Content:

It's an old truism - you can't manage what you don't measure, and in Process Safety it still holds. If you want to improve reliability, profitability and safety, then measuring Process Safety performance is for you. Whether you operate a major hazards site or are sub-COMAH, this webinar appraises the different approaches in developing and selecting performance indicators and gives recommendation on the most effective approach.



Requirements for a Robust Basis of Safety

Content:

Unlike occupational safety, the path to excellent performance in Process Safety is not highly prescribed. As a result, approaches vary significantly between companies and have vastly different outcomes. Being able to demonstrate a rigorous and consistent approach in the assessment and management of Process Safety risks is critical in obtaining reliable outcomes. This webinar outlines the generic procedure to ensure that safety measures are reliably specified and that adequate Process Safety data is available on which the Basis of Safety is founded.



Top Ten Myths on Ignition Sources

Content:

Despite the introduction of European regulations for explosive atmospheres, such as the ATEX Directives, and country legislation such as UK's DSEAR which incorporates ATEX and the Chemical Agents Directives, Chilworth's experts still identify situations in which ignition sources are inadequately controlled. It is impossible to cover everything there is to know about ignition sources in this webinar; however the key focus is to discuss the things the plant personnel really need to know.

These are just a small selection of topics we have offered in previous years. As we run our webinars live, we are able to focus on subjects that are at the forefront of Process Safety right now, ensuring you keep up to date on current challenges and opportunities in the industry. For our latest topics and dates, please keep an eye on our website - www.chilworth.co.uk/process-safety-academy/webinars - or contact us on +44 (0) 23 8076 0722 / training-uk@chilworthglobal.com.

2017 Process Safety Training Schedule



Course Title	Price	Days	Feb	Mar	April	May	Jun	Sep	Oct	Nov
Preventing Reaction Runaway	£865 €1255	2	21-22 Southampton							
Practical Aspects of DSEAR Compliance Success	£1225 €1780	4		14-17 Edinburgh				12-15 Manchester		7-10 Southampton
Practical Aspects of ATEX Compliance Success	£1225 €1780	4					13-16 Dublin			
Basics of OBRA	£595 €865	1							3 Manchester	
Practical HAZOP Leadership in Action	£1095 €1590	3						26-28 Birmingham		
Functional Safety Management & SIL Assessment	£1095 €1590	3				9-11 Crewe				
Process Safety Awareness	£595 €865	1			4 Dublin					

To reserve your place(s) call Hilary Fielder or Amy Maskens on **T +44 (0)23 8076 0722** to check availability and fax or email this form to +44 (0)23 8076 7866 / training-uk@chilworthglobal.com circling your choice of course date(s). Please submit one form per delegate. Full venue details (with a location map and local area information) will be provided prior to the event. Payments can be made by credit card*, cheque or company purchase order made payable to Chilworth Technology Ltd and sent to: Chilworth Technology Ltd, Southampton Science Park Southampton - Hampshire - SO16 7NS - UK.

* excluding American Express

Course Title: _____ Date: _____

Name: _____ Company: _____

Address: _____

Postcode: _____

Country: _____

Tel: _____ Email: _____

Signature: _____ Date: _____

TERMS AND CONDITIONS

Training Registration Terms: Payment in full is due at time of training registration. Registrations are confirmed upon receipt of payment. Substitute attendees are accepted up to the time of the start of the course.

Cancellation & Refund Policy: Confirmed registrations may be cancelled up to 5 working days before the course date and will be subject to an administration charge of £50+VAT. No refunds will be made for cancellations received less than

5 working days before the course commencement date or for non-attendance. Copies of the course documentation will be sent to non-attendees. Chilworth Technology reserves the right to modify or cancel the course up to 5 days prior to its commencement date. In the event Chilworth cancels a course, confirmed registrations shall have the right to transfer to another course within 6 months of such cancellation date.