

WORKSHOP TUTORS

Keith V Middle, B.Sc, C.Eng, FIChemE, - joined Chilworth in 1994 and has since become a Principal Process Safety Specialist in the Process Safety Consultancy. Before this, Keith worked for BP Chemicals in the UK and France for 16 years. He has considerable experience within the fields of polymers, speciality and fine chemicals and petrochemicals. His expertise covers process hazard identification, assessment of chemical reaction hazards and the provision of practical engineering solutions. Particular specialities include HAZOP leadership, SIL determination to IEC 61508/11, the design of emergency relief systems using DIERS techniques, and the specification of vent treatment systems. He is a Chartered Engineer and a Fellow of the Institution of Chemical Engineers.

Brian Tibbs, C.Eng, FIET. - is an Associate Principal Consultant for Chilworth Global and is actively engaged in management of safety and risks through deployment of instrument-based protective systems. He has 30 years experience in the process and petrochemical industries, with general control and instrument engineering expertise. Brian has considerable experience with the practical application and analysis of the reliability and capabilities of complex instrument protection systems, facilitation of safety integrity lwwl assessments, and provision of IEC61508/11 risk assessment techniques.

TO RESERVE YOUR PLACE

Call Tracy Bramall on +44 (0)23 8076 0722

& Fax your completed booking form to:

+44 (0)23 8076 7866

All prices include lunch (please advise of any special dietary requirements)

Alternatively, post or email your registration form with an official Purchase Order or cheque (made payable to 'Chilworth Technology Ltd') to:

Tracy Bramall, Chilworth Global, Beta House, Southampton Science Park, Southampton.SO16 7NS.

t: +44 (0)23 8076 0722

e: tbramall@chilworth.co.uk

f: +44 (0)23 8076 7866

Can't attend this time? Visit www.chilworth.co.uk to view our other courses and download your FREE data sheets on all aspects of Process Safety.

REGISTRATION FORM

Dr/Mr/Mrs/Ms/Miss: _____

Name: _____

Job Title: _____

Company Name: _____

Address: _____

Postcode: _____ Country: _____

Telephone: _____

Email: _____

VAT Number: _____

- Claim our 5% Earlybird Discount** - on bookings received before **12th FEB 2010**
- Claim a further 5%** - when booking for **4 or more colleagues** on this course.

Please tick which day you wish to attend:

- SIL Determination** Tuesday 23rd March
& **SIL Instrumentation Integrity** Wednesday 24th March

or individual days:

- SIL Determination** Tuesday 23rd March
 SIL Instrumentation Integrity Wednesday 24th March

Any single full day € 425 + VAT
Entire Two Days € 625+ VAT

- I cannot attend the courses, but would like a **FREE** consultation with a Chilworth Process Safety Specialist

Signature: _____ Date: _____

Cancellations: All reservations in writing are subject to cancellation conditions. Written cancellations received up to 5 working days before the course date will be subject to an admin charge of €50. No refunds will be made for cancellations received after this date, or for non-attendance, but course notes will be sent. Substitutions may be made at any time. Chilworth Technology reserves the right to modify or cancel the course up to 5 working days prior to the start date.

Chilworth
GLOBAL



at the **Cork International Airport Hotel**
Cork, Ireland

SIL Determination

Tuesday 23rd March 2010, 9am-5pm
(registration at 8.45am)

Safety Instrumentation Integrity

Wednesday 24th March 2010, 9am-5pm
(registration at 8.45am)

THE EXPERTS IN
PROCESS SAFETY



click on www.chilworth.co.uk/news/events.aspx to reserve your place today

DAY 1 – UNDERSTANDING SIL DETERMINATION REQUIREMENTS

An introduction to IEC 61508/11 Safety Integrity Level (SIL) Determination principles for establishing the performance specification and reliability of Safety Instrumented Systems. This seminar is suitable for anyone who would benefit from a basic understanding of this important safety related area.

The introduction will cover the background of IEC61508/11 SIL development requirements. The presentation will go on to feature the approach when using the current techniques for Risk Graph & Layers of Protection Analysis (LOPA), which are common methods within the process industries.

Full QRA analysis will be summarised but will not feature as part of the workshop examples.

Based on the information presented and following completion of the course, delegates should be able to fully participate in and contribute towards future SIL Determination assessments within their own workplace, using either of two widely recognised SIL determination methods.

Opportunities to discuss the various issues raised will be provided.

YOU WILL LEARN

- Basic appreciation of IEC61508/11 expectations.
- To understand the concept of SIL determination.
- Understanding of risk acceptability, targets and calibration.
- A working familiarity with SIL Determination methods in the form of Risk Graphs & LOPA.

COURSE PROGRAMME

- 09:00 – Relevance for developing SIL
- IEC 61508 and IEC 61511 – A summary
 - Risk and risk acceptability
 - SIL determination methods
 - Worked examples, (Risk Graph and LOPA)
 - Group exercise: Risk Graphs and LOPA in practice
 - Making a start in the workplace
- 17:00 – Close

DAY 2 – UNDERSTANDING INTEGRITY OF SAFETY INSTRUMENTED SYSTEMS

An introduction to IEC 61508/11 Safety Instrumented Systems (SIS) Integrity which looks at the lifecycle implementation phase.

The need for a SIS will have been established from an assessment of the process risk during a Safety Integrity Level (SIL) Determination exercise (Day 1). This will have generated the functional safety requirement and the Required SIL of the SIS. The focus for the team then becomes the detailed design of the instrumented system to ensure that the end-to-end configuration can satisfy this functional safety requirement (e.g. the Achieved SIL satisfies the Required SIL).

The main thrust of this day will be to review the various phases of the SIS design process, including such aspects as system architecture, failure modes, fault tolerance, human reliability, etc., in order to achieve both performance and integrity. Additionally, management, planning and conformity assessment aspects will be reviewed. Familiarisation with the requirements of operational proof testing and maintenance of SIS, and their impact to overall functional safety management will also be addressed.

YOU WILL LEARN

- Basic appreciation of SIS architectural expectations.
- The concept of instrument failures and reliability.
- An understanding of SIS design to meet integrity targets
- Overview of quality assurance, validation, competence, functional safety assessments, process safety implications for operations and maintenance of SIS

COURSE PROGRAMME

- 09:00 – SIS implementation issues
- IEC 61508 and IEC 61511 – Context for design
 - Failures and reliability
 - Design architectural requirements
 - Human factors
 - Group exercise: Designing a SIS for a 'Target SIL'
 - Operations and maintenance issues
- 17:00 – Close

WHO SHOULD ATTEND?

Both courses are suitable for Process Engineers, Instrument / Electrical Engineers, Production Managers, Engineering Managers, Process Managers, Safety, Health & Environment Managers... and anyone else responsible for safety related applications in the workplace.

The Day 2 event is designed for delegates who have either attended the Day 1 course or already have a thorough understanding of SIL Determination.

HOW TO REGISTER

Telephone Tracy Bramall on **+44 (0)23 8076 0722** to reserve your place.

AND

Fax or post the attached registration form, together with your joining fee or official company purchase order made payable to **Chilworth Technology Limited**, to

Fax: +44 (0)23 8076 7866

Post: Chilworth Global, Beta House, Southampton Science Park, Southampton. UK. SO16 7NS

VENUE

For full details of the venue with directions, please click on the link below for the **Cork International Airport Hotel:**

www.corkinternationalairporthotel.com

CHILWORTH GLOBAL

Chilworth brings together leading experts in the field of process safety with state-of-the-art GLP compliant safety laboratories to provide a single point of contact for all your process safety needs. Our GLP compliant laboratories cover four areas of process safety, fire and explosion hazards, chemical reaction hazards, electrostatic properties and regulatory testing.

Supporting our laboratories and providing independent and impartial advice is our consultancy team. A group of dedicated engineers and scientists who specialise in the field of industrial explosion hazards, chemical process evaluation, vent sizing (DIERS), HAZOP, electrostatic hazards and production problems, incident investigation, SIL studies, expert witness and process safety training.