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TRAINING COURSE

## **Advanced HAZOP for HAZOP leaders**

A three day training course aimed at reflecting upon existing guidance and providing new improved guidance for experienced leaders.

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# Advanced HAZOP for HAZOP leaders

Are you looking to improve your skills as a HAZOP leader?

Do you want to become a more competent HAZOP leader?

Are you looking for some refresher training on the HAZOP methodology?

Are you looking to continuously improve the way you conduct HAZOP studies?

Do you want HAZOP studies to be more effective?

Are you interested in how best to apply the HAZOP technique to an existing process and keep the HAZOP evergreen through the re-validation process?

The HAZOP methodology is a well established technique used throughout industry for hazard identification and risk assessment. The technique was originally developed in the 1960's by ICI and guidance on its use was first published in the 1970's following the Flixborough disaster where an inadequately designed modification led to a large vapour cloud explosion killing 28 people. The technique is formally recognised by many regulators in many parts of the world and details of the HAZOP methodology are outlined in the internationally recognised standard (IEC: 61882 - Hazard and operability studies {HAZOP studies} - application guide).

ABB has provided training in the HAZOP technique for more than 20 years and trained hundreds of personnel.

ABB has also conducted thousands of HAZOP studies for many clients across many industrial sectors. They have a large pool of experienced HAZOP leaders.

## What the course will cover

This course has been developed by ABB's experienced leaders by reflecting upon those years of experience. ABB have identified both good and best practice techniques to further enhance the methodology and develop advanced HAZOP techniques. Employing advanced HAZOP techniques ensures a greater depth of review is achieved, links to LOPA studies are built, good action specification is implemented, links to alarm management and integrity management. Traditionally the HAZOP technique has been applied during the detailed design stage of a project. This course will show how the advanced HAZOP technique can be applied retrospectively to an existing process and how the HAZOP study can be re-validated and kept evergreen.

## Who will benefit and what will they gain?

The course is aimed at reflecting upon existing guidance and providing new improved guidance for experienced leaders. The course is also aimed at providing refresher training for experienced leaders. Note that this course builds upon ABB's existing four day hazard study leader's course. The 4 day course or suitable alternative is a precursor to the advanced HAZOP training course.

**Duration:** 3 days

**Price:** £1575 + VAT

## Benefits

- Detailed guidance on good / best practice techniques
- Opportunity to evaluate good / best practice techniques through workshops
- Refresher training for experienced HAZOP leaders
- Improved consistency of approach to HAZOP studies
- Improved competency of HAZOP leaders
- Improved quality and output from HAZOP studies

## Course tutors

**Graeme Laughland** is a Principal Process Safety Management consultant for ABB and specialises in hazard identification and risk assessment and PSM auditing.

Graeme is a chemical engineer with 30 years' industrial experience gained in design, operations and process safety consultancy. In addition to consultancy assignments he tutors on a range of process safety courses and has presented papers at a number of international conferences.

**Mike Wharton** is a Senior Consultant for ABB. Mike is a Chartered Chemical Engineer with more than 25 years experience in the chemical industry, including roles in process design, plant operations and process safety management. He specialises in leading HAZOP studies, risk assessments and Safety Integrity Level (SIL) determination studies for the oil and gas, power and general chemical sectors.

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## Agenda\*

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### Introduction

The need for HAZOP studies and improvement - initial project, retrospective, re-validation

### Planning and preparation

- Terms of reference workshop
- HAZOP node definition and selection
- HAZOP node workshop

### Conducting the HAZOP

- How to fill out the HAZOP table
- Risk ranking

### Recommendations

- How to write effective recommendations - workshop

### Retrospective and re-validation HAZOPs

### Human factors and the human HAZOP

- Human HAZOP workshop

### HAZOP and link to SIL determination (e.g. FTA, LOPA) studies

### HAZOP nodes for complex systems such as flares, drainage and distribution systems

### Report writing

### HAZOP studies and the link to asset / mechanical integrity

### HAZOP studies and the link to alarm management

### Review of the course

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\*ABB reserve the right to amend the course agenda.

## How to book

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