Layer of Protection Analysis (LOPA)

A practical one day training course to provide an awareness and basic understanding of LOPA.

20th November 2019 - Teesside, ABB Offices
5th March 2020 - Daresbury, ABB Offices
20th October 2020 - Teesside, ABB Offices
Layer of Protection Analysis (LOPA)

A practical one day training course to provide an awareness and basic understanding of LOPA.

Regulations today ask industry to manage risk by assessing the risk and taking appropriate action.

LOPA is a method of risk assessment which is used to carry out SIL determination to comply with the IEC 61508 / 61511 functional safety standards but is increasingly used in early in design to assess whether further risk reduction is required.

LOPA is a tool that can be calibrated at the time of use to allow assessment of the risk reduction required to give a tolerable level of risk.

Inappropriate use and application of LOPA can adversely affect the integrity of layers of protection specified. Either resulting in insufficient risk reduction or over specification leading to unnecessary spend in capital and operational budgets.

Price
£650 + VAT

Benefits
This course will be of benefit to managers and engineers who need to use LOPA as a method of risk assessment.

The course
On completion of the course, you should be able to:

- Carry out a risk assessment using LOPA and appreciate the potential pitfalls
- Understand its application in SIL determination

Course structure and content
A one-day technical course aimed at responsible managers and engineers.

- Basic risk assessment concepts and criteria, risk aversion, tolerability including an exercise
- Hazard identification, assessing frequency and consequence
- Identifying initiating causes and independent layers of protection (IPLs)
- LOPA use with several practical exercise examples
- The impact of humans in the equation
- Selection and application of data within a LOPA
- Illustration of importance of independent layers or protection
Gaynor Woodford-Phillips is a Senior Consultant for ABB. Gaynor is a Fellow of the Institute of Chemical Engineers with over 25 years’ experience in project design, operations support and line management in the petrochemical and chemical industries.

Gaynor specialises in technical process safety which includes carrying out target SIL assessments, quantified risk assessments (QRA) and consequence modelling.

---

**Course agenda* - 09:00 to 16:30**

<table>
<thead>
<tr>
<th>Introduction and background to functional safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk and criteria</td>
</tr>
<tr>
<td>Hazard identification, initiating causes and IPLs</td>
</tr>
<tr>
<td>Concepts of LOPA, protection layers and conditional modifiers</td>
</tr>
<tr>
<td>Failure data and its use and application</td>
</tr>
<tr>
<td>Human failure</td>
</tr>
<tr>
<td>Dependency</td>
</tr>
<tr>
<td>Close</td>
</tr>
</tbody>
</table>

*ABB reserve the right to amend the course agenda.

---

**How to book**

Web:    www.abb.com/uk/consulting/training
Email:  jackie.kendall@gb.abb.com
Phone:  Call Jackie Kendall on +44 (0)1642 372121