



ERSG/Prod/Serv/FS/014/09

SUBJECT:
INTEGRATED HAZOP &
SIL ANALYSIS

OUR SERVICES COVER THE
FOLLOWING AREAS:

- Process Hazard Analysis
- Enterprise Risk Management
- Project Management
- RUBI-Software
- Business Continuity Systems
- Process Safety Management
- Risk Training Solutions

Savings
of up to
30%

INTEGRATED HAZOP / SIL STUDY

Introduction

*Risk Management Solutions for
Dynamic and Progressive
Industry*

Traditionally, a HAZOP and SIL Assessment (either using the Risk Graph or LOPA methodologies) are two separate facilitated sessions, which produce two unique databases. SIL Validation is yet a third task that uses another set of tools and produces a third database. ERSG has developed an integrated approach using a sophisticated HAZOP / SIL tool, called Lihou™ that combines these three tasks into one tool and one database. In the Integrated Approach, only one facilitated session is required for HAZOP and SIL Assessment. Only one database is created, and it is used to perform SIL Validation.

Services

ERSG provide a secure and auditable database. This single database is also part of a complete "handover package" that operators need to ensure they maintain the SIL integrity assigned to each SIL loop.

The benefits of the Integrated Approach are:

- Minimum 30% savings in time and costs
- A single auditable database is used for both the HAZOP and SIL Assessment/Validation
- Mathematical errors during SIL Validation are eliminated
- A complete electronic handover data package can be provided to Operations
- Operators can easily model proposed changes to their maintenance and testing plans (SIL Optimization) using the same database.

OUR SERVICE USES THE FOLLOWING METHOD AND SOFTWARE

Methodology

The integrated HAZOP / SIL methodology uses the following approach:

The integrated HAZOP / SIL approach looks at the HAZOP and SIL Assessment as one task and involves one meeting where a multi-disciplinary team, led by an experienced facilitator who understands not only Hazard Assessment but SIL Analysis and Risk Mitigation. The LOPA process is selectively applied to those risks identified during the HAZOP as being unacceptable. By using a comprehensive software tool called Lihou™, all details of both the HAZOP and SIL Assessment are captured in one database at one meeting and the SIL Validation phase of the project can proceed seamlessly using an IEC 61511 compliant software tool. There are two keys to realizing time and cost savings:

- Using a skilled facilitator who knows how to lead HAZOP and SIL studies?
- Using a robust tool like Lihou™ to record

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HAZOP /SIL SOFTWARE TOOL



The Lihou™ software is most frequently employed to record and manage Hazop Studies and easily configured for use in other familiar methodologies such as Process Hazards Analysis (PHA), check-list driven Hazard Identification Reviews (HazId), Risk Assessment Studies, SIL Analysis, Failure Mode and Effect Analysis (FMEA and FMECA), etc.

Requirements: 4Mb RAM, 2Mb Hard Disk, Windows®, 98, NT, 2000, XP.