



ERSG/Prod/Serv/FS/001/09

SUBJECT:

RISK MANAGEMENT (PHA)

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



# PROCESS HAZARD ANALYSIS

*Risk Management Solutions for Dynamic and Progressive Industry*

## Introduction

Process Hazard Analysis (PHA) is a term referencing a variety of techniques in identifying hazards and hazard scenarios. The PHA is a proactive attempt by chemical process operations to understand what can go wrong and what steps are necessary to prevent or mitigate undesired consequences.

Without a proactive approach, without aggressively searching out the process hazards, we are condemned to await each consequence of human error and equipment or system failure. Prevention is our best defense, but we cannot defend against that which we have not identified.

## Services

ERSG can provide a full range of PHA services, using a variety of techniques:

- Hazard and Operability Studies (HAZOP)
- What If Analysis (SWIFT)
- Failure Mode and Effect Analysis (FMEA / FMECA)
- Fault Tree Analysis (FTA)
- Event Tree Analysis (ETA)
- Process Safety Management System Audits (PSMSA)

PHA Revalidation (ensure PHA addresses current operating conditions)

- PHA revalidation
- Quantitative Risk Assessment
- Safety Integrity Level (SIL) or Layer of Prot. Analysis (LOPA)

The following are just a few ways we can assist you in developing and managing PHA in your company.

## OUR SERVICES COVER THE FOLLOWING AREAS

### Methods

#### PHA Facilitation

ERSG's Risk Division offers a proven 'co-facilitation' program whereby we complete a study at your facility with one of your employees, such that they gain 'real' leadership experience to complete studies in the future independently. We will team with your engineering, operations, maintenance and safety personnel to conduct your PHA review. We will work with you for the first half of your study until both sides feel confident in your team's ability to carry out the study. At that point, we will step back from being active in the study, and let your team conduct the study on its own, or with minimal input from our staff. **At the end of the study we can audit and review not only the study and its findings, but also the performance of your team.**

### CONTACT DETAIL

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### PHA 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.

