

# Risk and Hazard Assessment

## Range of Services:

- Availability Studies
- Consequence Analysis
- High Integrity Systems
- Failure Mode and Effect Analysis (FMEAs)
- HAZOP Studies

## Overall Risk Management



Foster Wheeler has wide experience in the development of an overall strategy for the management and control of potential hazards thus improving safety and reducing impact on the environment. This experience has been applied in the past to both existing plants and new facilities.

Solutions to potential problems may involve minor design changes, or they can involve a complete Safety Management System which involves Management Structures, Operating and Maintenance Procedures as well as modifications to the actual plant.

Foster Wheeler can provide a Total Loss Prevention package which would include site inspection services as well as hazard identification exercises and hazard assessment studies.

## New Facilities

Foster Wheeler's strategy is to ask fundamental safety and environmental questions early in the design programme, when major changes are still possible. As the design develops more detailed reviews are held. Foster Wheeler is able to carry out HAZOP\* Studies on the detailed P & IDs, systematically looking for potential hazards as well as for cases of possible loss of containment.

Safety Integrity Level (SIL) Reviews are held to review Safety Instrument Systems. Constructability Reviews guide the way to improved safety on the construction site.

## Existing Facilities

Up to date drawings and documents are vital for the effective review of existing facilities. Foster Wheeler is able to revise or prepare new drawings of the facilities so that proper HAZOP Studies, SIL Reviews and other engineering reviews can take place.

Foster Wheeler can give advice on the operation and maintenance of plant to reduce the risk of environmental damage.

## Quantitative Risk Analysis

Foster Wheeler uses Fault Tree Analysis to estimate the level of risk. We have access to an equipment failure rate database called HARIS and using software called LOGAN the overall failure rate, or the likelihood of loss of containment can be calculated.

## Consequence Analysis

If loss of containment is possible Foster Wheeler is able to estimate the rate of discharge and the size of the potential gas cloud. The software package PHAST can be used for both gas dispersions and building risk assessments.

## Availability Studies

Where loss of containment can result from the failure of a protection system Foster Wheeler carries out Availability Studies to estimate the reliability of high integrity protective systems.

\* HAZOP - Hazard and Operability

