

Retrospective and evergreen HAZOPs



Applying HAZOP studies to existing facilities helps to ensure they are still being operated to the highest possible safety standards.

HAZOP studies are the most widely used hazard identification and risk evaluation technique within the process industries, allowing companies to design processes with appropriate safeguards to prevent and mitigate against major accident hazards.

Developed in the 1960's, the HAZOP technique has traditionally been applied towards the end of the design phase of capital projects and major modifications. However, as companies seek continuous improvement in their process safety performance many are looking for methods of ensuring that safeguards remain effective during all phases of operation. Applying HAZOP studies in a retrospective manner can be an effective way of harnessing the deep process knowledge and experience from the facility operations team.

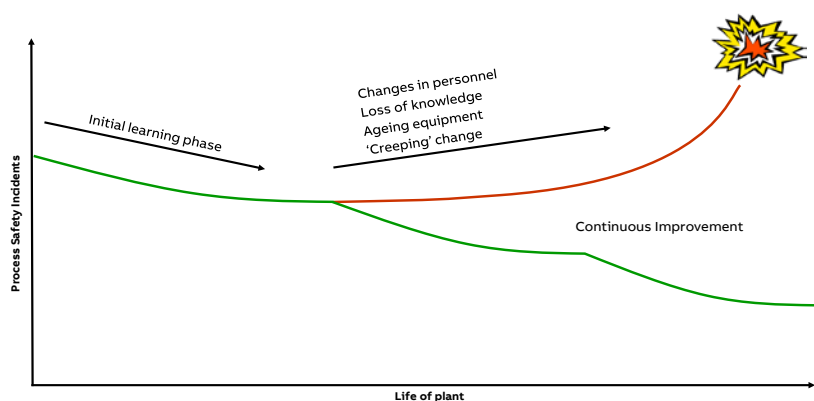
What we offer

ABB HAZOP studies for both new processes and existing facilities utilize a highly structured, in depth approach to identify events with the potential for serious harm to people, the environment, or the business. HAZOP studies are the first step in ABB's 3 step approach to managing risks; 1) Potential risks are identified, 2) options to reduce them are defined and finally 3) cost effective, pragmatic solutions are implemented.

This proven approach provides peace of mind that credible process safety risks have been reduced to as low as reasonably practicable, in order to satisfy company and regulator demands.

Retrospective HAZOP studies are facilitated by an experienced ABB HAZOP leader, and include client representatives such as process, control and mechanical engineers, senior operations personnel and other specialist disciplines. To assist the efficient running of the study ABB can also provide an experienced independent process engineer, along with a technically competent scribe. This ABB / client multi-disciplined team can identify many issues that the original designers may have overlooked, utilizing the extensive operational experience that has been gained during the life of the facility.

Personnel who have operated and maintained facilities can highlight issues and problems they have faced during day to day operations. The structured nature of HAZOP study provides a forum to learn about incidents, process upsets, chronic operational issues and changes to the process that have been made since the original design. This approach allows concerns regarding the sufficiency and effectiveness of the current safeguards to be identified, resulting in targeted recommendations for improvement.



Above: The need for retrospective HAZOPs.

ABB appreciates the difficulty some clients may have when releasing operations personnel to assist with this type of review, hence, studies can be carried out continuously or in scheduled blocks of time, according to resource constraints and business priorities.

ABB HAZOP studies are conducted in line with industry good practice, as defined in the application guide provided in IEC 61882, (the internationally recognized standard for HAZOPs). A flexible approach is offered making use of company standards and procedures where applicable, including calibrated risk matrices and recording software such as PHA-Pro. ABB's HAZOP leaders are respected around the world and the studies they facilitate take advantage of the many decades of experience and thousands of hours of studies undertaken by ABB.

An ABB HAZOP study will provide a prioritised list of recommendations, allowing resources to be focused in the right areas and for the greatest gain. The recommendations are aimed at continually reducing risks, to as low as reasonably practicable levels such that incidents are prevented and companies continue to operate with assurance that major accident hazards are being effectively controlled.

ABB HAZOP leaders are from operational backgrounds and appreciate the need for pragmatic and achievable recommendations. Carrying out the study and establishing the recommendations covers the first step of ABB's risk reduction approach. ABB has helped many clients convert recommendations into effective actions by providing the necessary technical expertise and then providing project management support to implement and close-out these actions in order to gain full benefits.

A retrospective HAZOP study also provides the company with a new 'baseline' study which can be used for subsequent re-validation, typically at 5 year intervals. This ensures that the assessment is kept 'evergreen', as future process improvements are identified and subjected to the HAZOP methodology. The HAZOP report thereby becomes a living document that reflects the current understanding of hazards and risks. The evergreen HAZOP study report provides a detailed, up to date, risk assessment that can help support thorough reviews of onshore safety reports and offshore safety cases.

Benefits

- Reduces risk of major accidents with the potential to harm people, the environment and the business
- Meets best practice safety standards
- The review gives a true picture of the risks rather than a theoretical view by considering actual operating experience, for example if procedures have deviated from written guidelines

Why ABB?

ABB has a long track record of carrying out HAZOP studies in the high hazard process industries, based on the HAZOP methodology developed by former parent company ICI.

ABB has a rigorous accreditation and refresher training scheme for all HAZOP leaders, independent process engineers and scribes. These competent and experienced professionals have an operational background and use their experience to make pragmatic technical judgements, ensuring cost effective solutions that can be practically implemented. ABB HAZOP leaders are also competent to facilitate LOPA studies, allowing a seamless transition between these studies that are often carried out in combination.

ABB is a proven leader in process safety, offering a wide range consultancy and training services, which address the way in which people, plant and systems inter-relate to ensure effective safety management. As a follow-up to HAZOP studies ABB can provide further support including; SIL determination / LOPA, quantified risk assessment, pressure relief design, hazardous area classification, safety critical task analysis, HAZOP action closure management etc.

ABB can provide support through the whole process from identifying the risks, through developing solutions to implementing solutions and over-viewing the whole risk reduction programme.