

HAZOP Introduction Assessment

Hazard and operability (HAZOP) analysis is a structured and systematic technique for system examination and risk management. In particular, HAZOP is often used as a technique for identifying potential hazards in a system and identifying operability problems likely to lead to non-conforming products. It is a tool for the identification of hazards due to deviation from process parameters. HAZOP is based on the principle that several expert with different backgrounds can interact and identify more problems when working together than when working separately and combining their results. Although the HAZOP study was developed to supplement experience-based practices when a new design or technology is involved, its use has expanded to almost all phases of a plant's life. The HAZOP concept is to review the plant in a series of meetings, during which a multidisciplinary team methodically brainstorms the plant's design, following the structure provided by the guide words and the team leader's experience.

HAZOP studies provide a particular method to enhance plant safety by taking consideration of technical and organizational hazards, human error and external influences. In addition to determining which safety measure provide genuine benefits, HAZOP studies also can help identify the qualitative solution for functional safety assets of process control. The results can be used to reduce the likelihood of costly and time-consuming malfunctions while increasing operational safety and availability.

The aim of hazard operability technique are to:

- i) make a successful HAZOP study that clearly identifies the scope and time frames,
- ii) select and motivate the HAZOP team to finish the study on time and with results,
- iii) make productive HAZOP study meetings succeed in positive outcomes,
- iv) identify and solve problems that occurs during HAZOP studies,
- v) create effective and user-friendly HAZOP study reports, and
- vi) analyze HAZOP study results and form the organization's improvement and recommendations.

2) state the significance of hazard technique

The significance of hazard technique are:

- i) The hazard technique is used to identify hazards due to process parameters deviations.
- ii) It is used to investigate how the plant might deviate from the design intent.
- iii) It probes a particular method to enhance plant safety.
- iv) It considers technical and organizational hazards, human error and external influences.
- v) It reduces the likelihood of cost and time-consuming malfunctions.
- vi) It increases operational safety and availability.
- vii) It identifies qualitative solutions for functional safety, aspects of process control.
- viii) It is used for system examination and risk management.

3) With the aid of a block diagram, list the components of hazard operability.

- i) Hazard elimination
- ii) Administrative control
- iii) Engineering control
- iv) Hazard substitution
- v) Personal protective equipment

