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# HAZOP ASSIGNMENT

1. BREIFLY DUSCUSS HAZOP OPERABILITY TECHNIQUE

Hazard and Operability Analysis or technique (HAZOP) 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 nonconforming products. HAZOP can also be explained as a study that identifies hazards and operability problems in a process plant. It is a tool for the identification of hazards due to process parameter deviations. The concept involves investigating how the plant might deviate from the design intent. HAZOP is based on the principle that several experts with different backgrounds can interact and identify more problems when working together than when working separately and combining their results. This approach is a unique feature of the HAZOP methodology that helps stimulate the imagination of team members when exploring potential deviations. As a risk assessment tool, HAZOP is often described as:

1. A brainstorming technique
2. An inductive risk assessment tool
3. A qualitative risk assessment tool

The HAZOP team focuses on specific points of the design (called "study nodes"), one at a time. At each of these study nodes, deviations in the process parameters are examined using the guide words. The guide words are used to ensure that the design is explored in every conceivable way. Thus the team must identify a fairly large number of deviations, each of which must then be considered so that their potential causes and consequences can be identified. The success or failure of a HAZOP study depends on several factors, to name a few:

1. The completeness and accuracy of drawings and other data used as a basis for the study
2. The technical skills and insights of the team
3. The ability of the team to use the approach as an aid to their imagination in visualizing deviations, causes, and consequences
4. The ability of the team to concentrate on the more serious hazards which are identified.
5. STATE THE SIGNIFICANCE OF HAZOP TECHNIQUE

HAZOP is extremely important for assessing hazards in facilities, equipment, and processes and is capable of assessing systems from multiple perspectives:

1. Design

HAZOP Assesses system design capability to meet user specifications and safety standards as well as Identifying weaknesses in systems

1. Physical and operational environments

HAZOP Assesses environment to ensure system is appropriately situated, supported, serviced, contained, etc.

1. Operational and procedural control

HAZOP is responsible for Assessing engineered controls (e.g automation), sequences of operations, procedural controls (e.g human interactions) etc. and also Assessing different operational modes – start-up, standby, normal operation, steady & unsteady states, normal shutdown, emergency shutdown, etc.

Other significance of HAZOP Operability Technique Include;

1. Helpful when confronting hazards that are difficult to quantify
2. More simple and intuitive than other commonly used risk management tools. Hence it makes brainstorming much easier.
3. Helps solve Hazards that are difficult to detect, analyze, isolate, count, predict.
4. Helps prevent Hazards rooted in human performance and behaviors.
5. LIST THE COMPONENTS OF HAZOP WITH AID OF BLOCK DIAGRAM

