# **LOSS PREVENTION AND INDUSTRIAL LAW CHE 512**

# **AN ASSIGNMENT ON HAZARD OPERABILITY TECHNIQUE**

# **SUBMITTED BY**

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1. **Briefly Discuss Hazard Operability Technique**

Hazard Operability is a tool for the identification of hazards due to process parameter deviation. It involves investigating how the plant might deviate from the design intent. HAZOP is based on a theory that assumes risk events are caused by deviations from design or operating intentions.

When describing the HAZOP methodology, the following definitions are useful:

Hazard - Potential source of harm. Deviations from design or operational intent may constitute or produce a hazard. Hazards are the focus of HAZOP studies, and it should be noted that a single hazard could potentially lead to multiple forms of harm.

Harm - Physical injury or damage to the health of people or damage to property or the environment. Harm is the consequence of a hazard occurring and may take many forms: patient or user safety, employee safety, business risks, regulatory risks, environmental risks, etc.

Risk - Combination of probability of occurrence of harm and the severity of that harm. In a strict sense, “risk” is not always explicitly identified in HAZOP studies since the core methodology does not require identification (also referred to as rating) of the probability or severity of harm.

1. **State the significance of HAZOP technique**

HAZOP Technique identifies hazard and operability problems in a process plant. HAZOP is best suited for assessing hazards in facilities, equipment, and processes and is capable of assessing systems from multiple perspectives: Design, Assessing environment and Operational and procedural controls.

1. **With the aid of a block diagram, list the components of hazard operability.**

The HAZOP analysis process is executed in four components as illustrated below:

PREPARATION

•Plan the study •Collect data •Agree style of recording •Estimate the time •Arrange a schedule

DEFINITION

•Define scope and objectives •Define responsibilities

•Select Team

Preparation

DOCUMENTATION AND FOLLOW-UP

•Record the examination •Sign off the documentation •Produce the report of the study •Follow up that actions are implemented •Re-study any parts of system if necessary •Produce final output report

EXAMINATION

•Divide the system into parts •Select a part and define design intent •Identify deviation by using guide words on each element •Identify consequences and causes •Identify whether a significant problem exists •Identify protection, detection, and indicating mechanisms •Identify possible remedial/mitigating measures (optional) •Agree actions •Repeat for each element and then each part