NAME: OBIANWUZIA PATRICK EMEKA

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1. Briefly discuss hazard operability technique

Hazard operability technique 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 is based on a theory that assumes risk events are caused by deviations from design or operating intentions. Identification of such deviations is facilitated by using sets of “guide words” as a systematic list of deviation perspectives. This approach is a unique feature of the HAZOP methodology that helps stimulate the imagination of team members when exploring potential deviations.

1. State the significance of HAZOP technique

* It is significant to prevent the release of hazardous materials and energy, followed by mitigation of the consequences should a release occur.
* It is essential for the team to identify all the hazards of the process being studied, not just the most obvious ones.
* The purpose of the HAZOP is to investigate how the system or plant deviate from the design intent and create risk for personnel and equipment and operability problems
* HAZOP is used as part of a Quantitative Risk Assessment (QRA) or as a standalone analysis.
* Another significance is to use a semi-quantitative HAZOP that incorporates Layers of Protection Analysis (LOPA) to assess the reliability and number of safeguards.

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

* Definition
* Preparation
* Examination
* Documentation and follow-up

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