NAME: ABAI OMOLOLA MARY

DEPARTMENT: CHEMICAL ENGINEERING

MATRIC NUMBER: 15/ENG01/001

COURSE CODE: CHE 512

COURSE NAME: LOSS PREVENTION AND INDUSTRIAL LAW

1. Hazard operability technique is the study of structured and systematic examination of a planned or existing process or operation in order to identify and evaluate problems that may represent risk to personnel or equipment, or prevent efficient operation. HAZOP techniques uses special adjectives (such as "more," "less," "no," etc.) combined with process conditions (such as speed, flow, pressure, etc.) to systematically consider all credible deviations from normal conditions. The adjectives, called guide words, are a unique feature of HAZOP analysis.

Objectives of HAZOP:

- Identify potential hazards (i.e. potential sources of harm) in a system.
- Identify potential operability problems with a system (deviation of design intent).

The success or failure of HAZOP depends on several factors which include:

- Technical skills and insight of the team
- Completeness and accuracy of drawing and other data used as a basis of the study
- Ability of the team to concentrate on the more serious hazard which are identified
- The ability of the team to use the approach as an aid or instrument to their imagination in actualizing deviations, causes and consequences.

Terms used in HAZOP include:

- Study noes
- Intention
- Deviations
- Causes
- Consequences

- Guide words

HAZOP process consist of four steps which are:

- Definition – define scope, objectives, roles, responsibilities and select team
- Preparation – plan for study, collect data, determine style of recording, and arrange meetings
- Execution – 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
- Documentation – 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

Limitations of HAZOP technique:

- Time consuming
- Focuses on one event causes of deviation
- Requires a well-defined system or activity

2. Significance of HAZOP technique include:
    - A hazard and operability study (HAZOP) is very important for identifying and evaluating problems that may represent risks to personnel or equipment within complex processes and operations
    - More efficient operations
    - Increased productivity
    - Improvements to procedures; allows for procedures to be done in a logical order
    - Increases awareness among all parties concerned
    - Facilitates team building

3. Component of HAZOP