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15/SCI14/010

CHEMICAL ENGINEERING

CHE 512 – LOSS PREVENTION IN PROCESS INDUSTRIES

ASSIGNMENT

1. HAZOP, or a Hazard and Operability Study, is a systematic way to identify possible hazards in a work process. In this approach, the process is broken down into steps, and every variation in work parameters is considered for each step, to see what could go wrong. HAZOP's meticulous approach is commonly used with chemical production and piping systems, where miles of pipes and numerous containers can cause logistical headaches.

   A Hazard and Operability Study systematically investigates each element in a process. The goal is to find potential situations that would cause that element to pose a hazard or limit the operability of the process as a whole. There are four basic steps to the process:

   i. Forming a HAZOP team
   ii. Identifying the elements of the system
   iii. Considering possible variations in operating parameters
   iv. Identifying any hazards or failure points

   Once the four steps have been completed, the resulting information can lead to improvements in the system. The best way to apply the results of a HAZOP study will depend on the nature of the system.

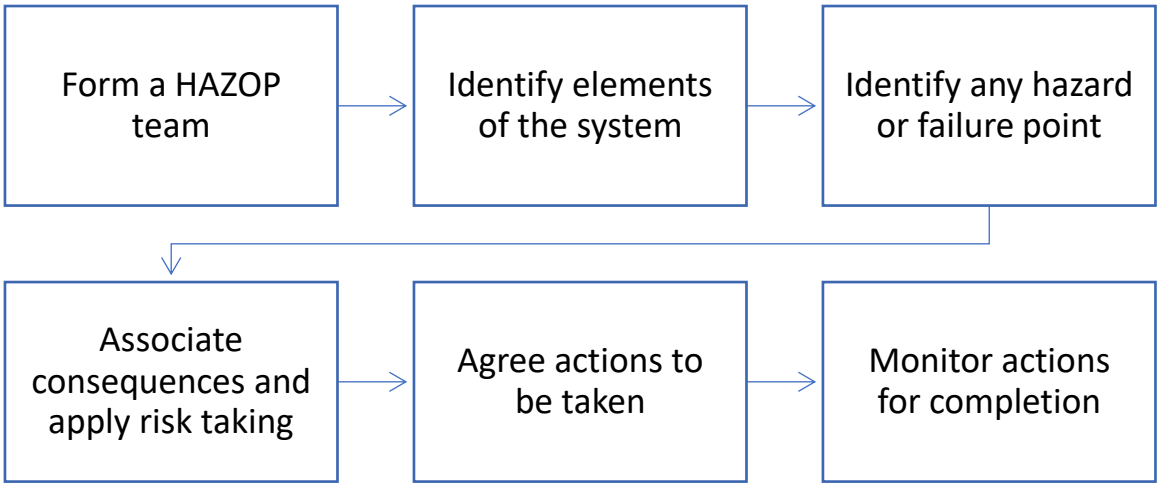
2. In addition to helping the plant run smoothly, Hazard and Operability studies also allow safety professionals to identify and then either control or eliminate hazards.

   HAZOP is ideal for large and complex systems. Breaking these down into their component parts and assessing each in turn gives safety professionals a more fine-grained look at potential hazards that may otherwise be overlooked.

   Other significances are:

- An efficient, knowledgeable HAZOP team can save the company more money than the expense of conducting the study.
- HAZOP studies identify hazards and can thus save lives and decrease employee injuries.
- HAZOP teams provide a multi-disciplinary look at various processes.
- It emphasizes upon the operating integrity of a system,there by leading methodically to most potential and detectable deviations which could conceivably arise in the course of normal operating routine.
- It is important to remember at all times that HAZOP is an identifying technique and not intended as a means of solving problems nor is the method intended to be used solely as an undisciplined means of searching for hazardous scenarios.

3.



i. Form a HAZOP team

ii. Identify elements of the system

iii. Identify any hazard or failure point

iv. Associate consequences and apply risk ranking

v. Agree actions to be taken

vi. Monitor actions for completion