HAZOP concentrates on identifying both hazards as well as operability problems. While the HAZOP study is designed to identify hazards through a systematic approach, more than 80% of study recommendations are operability and maintainability problems and are not, of themselves, hazards.

Although hazard identification is the main focus, operability problems should be identified to the extent that they have the potential to lead to process hazards, result in an environmental violation or have a negative impact on profitability. It is therefore important that for every HAZOP study undertaken, the presence of an experienced and knowledgeable operator of the facility be included the study is a key member of the HAZOP team.

The HAZOP procedure involves taking the full description of a process and systematically questioning every part of it to establish how deviations from the design intent can arise. Once identified, an assessment is then made as to whether such deviations and their consequences can have a negative effect upon the safe and efficient operation of the plant. If considered necessary, action is then taken to remedy the situation. This critical analysis is applied in a structured way by the HAZOP team, and it relies upon them releasing their imagination in an effort to discover credible causes of deviations. In practice, many of the causes will be fairly obvious, such as pump failure.

The great advantage of the HAZOP technique is that it encourages the team to consider other less obvious ways in which a deviation may occur however unlikely they may seem at first consideration. In this way the study becomes much more than a mechanistic check- list type of review. The result is that there is a good chance that potential failures and problems will be identified that had not previously been experienced in that type of plant.

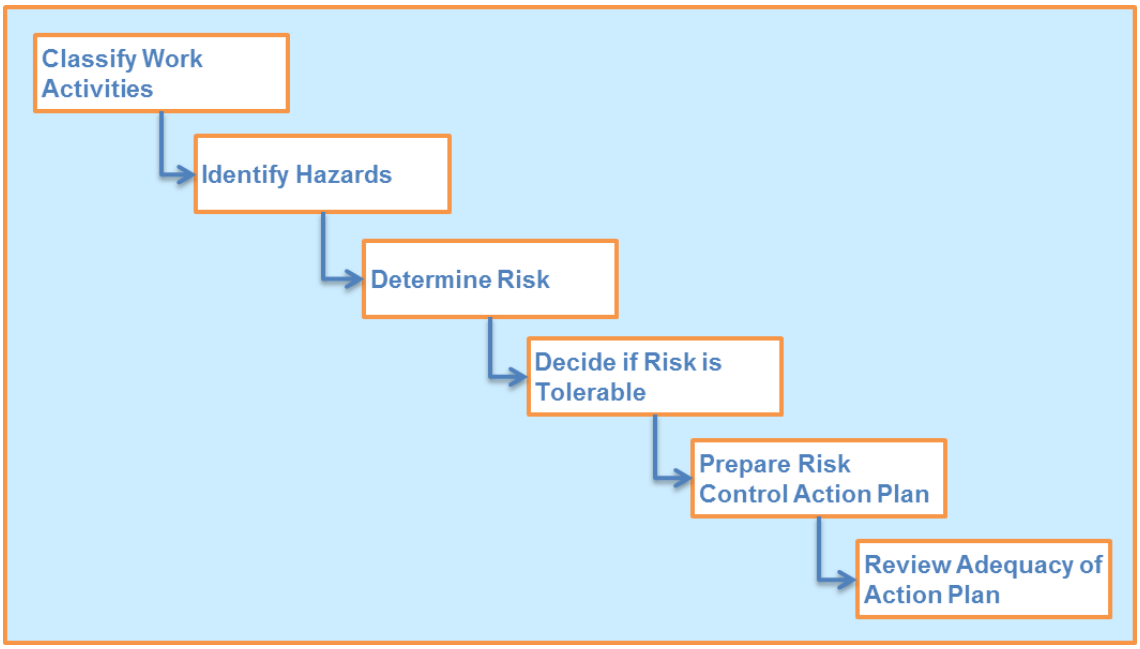

Figure 12-6: A typical Flowchart for a HAZOP Study