STRUCTURED WHAT IF TECHNIQUE

Introduction

The Structured What-IF Technique (*SWIFT*) combines the use of checklists with a brainstorming 'What if?' approach and was originally developed for Hazard Identification (HAZID) in the chemical process industry. The technique is intended as an efficient alternative to Hazard and Operability studies (*HAZOP*) to provide highly effective hazard identification in situations and systems where a HAZOP is not appropriate. SWIFT can also be used in conjunction with or as complementary to a HAZOP.

The Structured What-If Checklist is a thorough, systematic, and multi-disciplinary team orientated analytical technique. Whereas HAZOP examines the facility item-by-item and procedure-by-procedure through the application of Guidewords, SWIFT is a systems-oriented technique which examines complete systems or subsystems. To ensure comprehensive identification of hazards, the SWIFT relies on a structured brainstorming effort by a team of experienced experts which is supported by supplementary questions from a specifically developed checklist. It requires specialists, who have sufficient domain knowledge of the area under consideration, to evaluate the consequences of hazards that might result from the various potential failures or errors they have identified. When answering all of the questions raised about realistic deviations from the normal intended operation of a system, design or operation, the team assesses the likelihood of an incident, the potential consequences and the adequacy of safeguards to prevent or mitigate it.

The effectiveness of SWIFT in identifying hazards comes from asking questions in a variety of important areas, following a structured plan. The aim is to ensure complete coverage of all the various types of failures or errors which are likely to result in a hazard within the system being examined.

The "What-if?" questions, which can be posed by any team member (including the SWIFT leader and Recorder) are structured according to various question categories. The SWIFT analysis is further strengthened through the use of category specific checklists at the conclusion of each question category resulting in an additional level of thoroughness. Information resulting from the SWIFT meeting is recorded on log sheets in columns labelled "What If", "Consequences", "Existing Safeguards" and "Recommendations".

Additional Information & Guidance

- https://www-pub.iaea.org › MTCD › Publications
- https://www.icheme.org
- https://www.asems.mod.uk/toolkit/swift