

Safety Is Presence of Effective Safeguards Not Absence of Accidents!

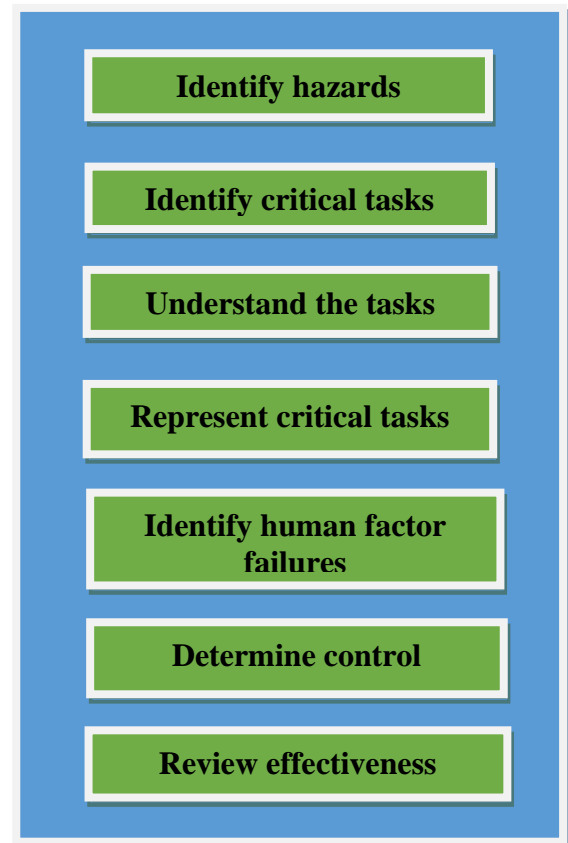
Safety Case – Human Factors Aspect

Safety Critical Task Analysis (SCTA)

Human factors have contributed to many major industrial accidents in Chemical processing and manufacturing industries. Actions by humans, whether deliberate (violations/ shortcuts) or inadvertent (accidental/lapses /less than adequate knowledge etc.) have resulted in or could lead to catastrophic consequences. Hence, identifying the potential for human failure in preventing an accident or exposure to hazardous situations requires a thorough understanding of the tasks and consequences associated with potential errors while carrying out those tasks. A detailed analysis of the tasks can contribute to, clear and accurate procedures, improved competency of personnel carrying out the tasks and possibly better design of the equipment and tasks.

Task analysis is the process of breaking down a task into individual sub tasks and reviewing how the individual steps should be carried out. Safety Critical Task Analysis (SCTA) focuses on those tasks which are safety critical, which, if not done appropriately, could lead to significant consequences. SCTA determines the potential for human failures when conducting critical task and identifies controls required to prevent or mitigate such errors.

The process of SCTA, as shown on the flowchart, typically involves: – determining which tasks are safety critical; – understanding which human action or inaction might make a failure more likely, and – how to identify prevention and mitigation controls and help determine adequate layers of protection, if any, for these Safety Critical Tasks, in order to reduce the likelihood or consequences of human failure.



References:

- Singapore Safety Case Assessment Guide Chapter 8 - Human Factors Aspects of Safety Case Assessment <https://www.mom.gov.sg/-/media/mom/documents/safety-health/mhi/safety-case-assessment-guide.pdf>
- Guidance on human factors safety critical task analysis, Energy Institute, London
- <https://www.hse.gov.uk/humanfactors>
- <https://www.icheme.org › media › xxii-paper-54> “Guidance on human factors safety critical analysis”

An initiative of the SCIC Major Hazard Installation (MHI) Committee

With the implementation of Safety Case regime progresses into its operational phase, this bulletin aims to promote effective sharing of information to support MHIs in a successful implementation that could deliver the expected safety performance improvement of our industry. For enquiries, please contact SCIC via secretariat@scic.sg