

Pisak Wichakool 2009: Hazop Analysis Database Programming For Petrochemical Utility Systems. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Penjit Srinophakun, Ph.D. 78 pages.

Hazard and Operability (HAZOP) analysis is a popular method for performing hazard analysis in chemical plant. HAZOP analysis is based on assumption that hazards occurs because of deviations from the normal behavior. However, conventional HAZOP have both favorable and unfavorable characteristic as take a lot of time consuming, demand considerable cognitive load from the analyst, and required multidisciplinary knowledge during the analysis period. Therefore, HAZOP database is developed based on Microsoft Access in order to minimise time and cost for HAZOP analysis.

This HAZOP database system consists of equipment definition, guideword, safeguard, cause and consequence library, and method for finding result. The HAZOP database system uses its relationship between cause and consequence to analyze the study node. Then the HAZOP results will be shown in report. In verifying, the process variable deviations of equipments are compared with the data of conventional HAZOP. These results from HAZOP analysis database programming can detect the potential accident more exhaustively than other hazard analysis system with narrow viewpoint. However, further improvement of the database of the system is required for use in other specific chemical plants

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Thesis Advisor's signature

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