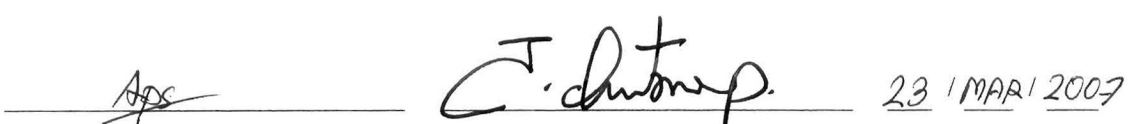
Apiwat Soontornmitrapab 2007: Pipeline Emergency Shutdown Valve (PESDV) Integrity Study: Case Study of Unocal Thailand Limited. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Jarun Chutmanop, D.Eng. 116 pages.

Pipeline Emergency Shutdown Valves (PESDVs) are safety critical elements of all hazardous process plants. They permit the isolation and segregation of hazardous inventories in sections of the plant so that, in the event of an emergency (such as a leak), the operations personnel have the ability to minimize the hazardous inventories involved and mitigate escalation. The valves should be closed to isolate the inventories effectively. Failure to close the value and seal off the hazardous substances could cause catastrophic loss of life and assets during an emergency situation.

Most companies have valve maintenance programs in place, but these programs are often not comprehensive enough. This is caused by the limitations of the production demand and technologies. This study reviews the reliability and effectiveness of a specific program and its PESDV components against the known codes and standards such as SI 1989/1029 and API RP 14C. The study classified the valves by risk and historical data, and then applied possible testing opportunities and modern technology, stroke testing, to investigate the best means of evaluating the reliability and effectiveness of pipeline ESDVs.

The results of this study indicated that the application of the related codes, standards and modern technologies and qualitative risk assessment will benefit the development of a reasonable risk based guideline in order to manage the testing of PESDVs in the Gulf of Thailand Oil and Gas Exploration and Production industry.



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