Rachan Chuancharoen 2008: Risk Study of Lifting System Precast Segment Box Girder Span-by-Span Construction for Safety Case Study Suvarnabhumi Airport Rail Link and City Air Terminal. Master of Engineering (Safety Engineering), Major Field: Safety Engineering, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Flight Lieutenant Piphat Sornwong, M.Eng. 225 pages.

The purpose of this research is to Risk Study of Lifting System Precast Segment Box Girder Span-by-Span Construction for Safety Case Study Suvarnabhumi Airport Rail link and City Air Terminal. The study using the tools to analyze Fault Tree Analysis of Operator staff and system Precast Segment Box Girder Span-by-Span Construction. The study emphasizes on a probability for accident of Lifting System Precast Segment Box Girder Span-by-Span Construction for Safety Case Study Suvarnabhumi Airport Rail Link and City Air Terminal.

The study shows relationship of accident relating to lifting equipment deficiency and working of staff which may cause one or two accidents at the same. Relationship of the accident represented by Logic Gate show connection of the accident which lead to the cause of accident and can use derived mathematical equations to find the reliability and the chance of accident.

The finding from using the Fault Tree Analysis analyzing tool to study the risk of having accident shows that the chance of accident for the system Precast Segment Box Girder Span-by-Span Construction is as high as 0.716 with low confidence only 0.284 and the chance of falling down from height is as high as 0.835 with low confidence only 0.165 Frequency of actual accident per hour ranges between 1.5-2.0 accidents per 1,000 of working hour.

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