Original Article

Quantitative Risk Assessment on Onshore Gas Terminal Plan

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ABSTRACT : *Quantitative Risk Assessment (QRA) nowadays is an established risk assessment method used worldwide for the evaluation of risks on onshore plant and offshore facilities which associated with the major hazard installations. However, there are still many issues on QRA used. These include lack of consistency, complexity of the overall model structure, incorporation of new data, methodology and model analysis. Common problem observed for the onshore QRA methodology is conservatism of fire and explosion consequence results using DNV PhastRisk 6.7 software which is mainly contributed from the high release rate due to loss of containment. This paper presents an alternative way to predict the actual release rate for fire and explosion modelling which called limiting flowrate technique. This method has been applied for calculating risk in Onshore Gas Terminal (OGT) Plant. Adopting the limiting flowrate technique has provide more precise model towards real scenarios. Challenges facing during this research such as using the unmodified United Kingdom (UK) HSE hydrocarbon release database without integrate with the actual failure frequencies from the plant, the risk results tend to be much higher than actual experience. It should be noted that the development of improved onshore risk model has been used as an example for this research but many of the issues are equally applicable to offshore studies as well.*

Keywords - *Explosion Modelling, Failure, Process Safety, Rate of Fire, Risk Evaluation*