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Collaborative Emergency Response on Black Swan Type Event: Lessons from a Successful Response to Massive Crude Oil Leak

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ABSTRACT

An accidental massive crude oil leak occurred in Onsan petrochemical complex in South Korea on April 04, 2014. In this study, both the fundamental cause of the leak and the response following the accident were investigated. Black swan type event which is high impact low probability (HILP) has usually the potential to cause an extensive fire spread that could lead to a catastrophic disaster. However, 2014 event was successfully controlled with no harm to human life in a favor of the effective response to the accident. In my presentation, the description of the accident together with the response will be delivered. In addition, lessons learned from the accident and response action will be presented. It was found that cooperative response to the accident played an important role in preventing any external domino effects. Indeed, the heightened and rapid support from adjacent industries in the area helped to prevent a large fire outbreak. From the investigation of the event, a collaborative emergency response plan participated by all plant operators in a big petrochemical complex is necessary in consideration of such a big black swan type event.

Keywords: Black swan type event, Collaborative emergency response