**A CHECKLIST TECHNIQUE FOR THE HAZARD ASSESSMENT OF LARGE GAS STORAGE TANKS**

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**ABSTRACT**

Oil and Gas process facilities often operate large storage tanks which contain significant amounts of hazardous and flammable substances. Hence, the occurrence of major industrial accidents such as the fire and explosion of LPG tanks at Feyzin, France (04/02/1966), is possible and often leads to severe and unanticipated consequences for the process facilities, but can also cause potential health issues in the surrounding population and deterioration of the environment which are diffult to assess apriori.

The purpose of the present effort is to present a checklist technique for the hazard assessment of large gas storage tanks according to the framework of SEVESO Directive series. The proposed hazard assessment method is continuation of the previous works of Argyropoulos et al. (2012) and Nivolianitou et al. (2012) for large liquid hydrocarbon fuel tanks. The current checklist includes a list of causes which could lead to failure of large spherical storage tanks, along with a catalogue of preventive measures to minimise the identified risks for gas storage tanks.

The two proposed lists were derived from previous experience of tank maintentance and operation, which constitute indispensable conditions in order to prevent common accidents. The compliance of a storage depot with the above conditions can decrease significantly the potential risk of accident. This methodology could be a useful tool for safety and process engineers, process companies, safety inspectors and report evaluators and governmental agencies (e.g. Safety and Helth, Labour Inspection, etc.), in order to improve prevention measures and to help evaluate and prepare related safety studies for tank terminals.

**KEYWORDS:** Hazard assessment, checklist, spherical storage tanks, tank fires, BLEVE.

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