

Using geographic information systems in and constructions of LPG installation: case 1 assessment effects of fire on humans

ABSTRACT

The application of Geographical Information System (GIS) for controlling of risks from chemical installations handling hazardous substances is getting popular due to the advantage of being automated and allows powerful analytical techniques. The capability of GIS is to combine image map with the corresponding information at each level offering a new dimension to the management of industrial risk to the human health and the environment. Accidentally releases of flammable material like liquefied natural gas (LPG) can lead to hazardous events such as fire and explosion and poses an immediate effect to workers on-site and communities off-site as well as the potential to adversely affect the environment. Mathematical models are very useful tools to simulate consequence due to explosion of liquefied natural gas (LPG) hazards. The results from mathematical models can be incorporated with GIS maps technology to estimate graphically the probability risk to the human (injury or death) and the property (construction damage). This paper presents the effects of radiation to the people due to accident of LPG Installation which lead to BLEVE and fire.

Keyword: LPG tank; Fire; Probit function; GIS; Risk management