Quantitative Risk Assessment for On-site Hydrogen Refueling Station in Urban

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Interest in renewable energies like biomass, wind, solar cell and fuel cell because of environmental pollutions such as greenhouse effect is increased. One of the sources, hydrogen, is used to fuel of fuel cell or FCVs (Fuel Cell Vehicles). Hydrogen has zero emission about carbon dioxide, but high risk to occur huge accidents such as explosion, fire. Hydrogen refuelling station which is divided by production method of hydrogen, should be built in urban area by increasing demand of the fuel. On-site hydrogen refuelling station is handled various materials and equipment and generate hydrogen on the station, but risk assessment about on-site station has not guarantee of safety enough.

This paper proposes quantitative risk assessment for On-site hydrogen refuelling station in urban. We generated process model of making hydrogen. Scenarios for risk assessment were made up by hazard identification and process model. The risk assessment was shown how many risky the station. The results of this study can be referred to when designing and building the on-site hydrogen refuelling station in urban.