

수소 수송배관의 피해범위 분석

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Hydrogen is considered to be the most important future energy carrier in many applications reducing significantly greenhouse gas emissions, but the safety issues associated with hydrogen applications need to be investigated and fully understood to be applicable as the carrier. Generally, the locations of hydrogen production and consumption are different. Hydrogen must be transported from the point of production to the point of use. Pipeline delivery is cheaper than all other methods for large quantities of hydrogen. The rupture of a hydrogen pipeline can lead to outcomes that can pose a significant threat to people and property in the immediate vicinity of the failure point. In this work, an equation of hazard analysis is proposed for the pipeline transporting hydrogen, which relates the diameter, the operating pressure and the length of the pipeline to the size of the affected area in the event of a failure of the pipeline. The hazard area is directly proportional to the operating pressure raised to the power one-half, and to the pipeline diameter. This simplified equation to estimate the hazard area will be a useful tool for safety management of hydrogen gas transmission pipelines.