

Risk Based Inspection Approach for Buried Piping Systems

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Underground pipeline systems carrying hazardous substances possess a significant threat to surroundings unless a certain level of safety is provided. The pipeline accidents range from small leaks to catastrophic explosions due to which hundreds of people face death and injury. In order to prevent these accidents, all the countries should be responsible for developing their inspection and maintenance programs, and for enforcing the pipeline owners to have safe operation through national regulations. In this study, pipeline safety regulations in Germany, US, and Spain are investigated, and a methodology to evaluate the risk levels of pipelines is proposed based on Risk-Based Inspections and Maintenance Procedures for European Industry (RIMAP). The underground pipelines in Ulsan-Onsan Industrial Complex are evaluated using the proposed model. The recommendations for Korean government to build their pipeline safety regulations are also given considering the practices in Europe and US.