World Academy of Science, Engineering and Technology
International Journal of Nuclear and Quantum Engineering
Vol:12, No:04, 2018

The Concentration Analysis of CO2 Using ALOHA Code for Kuosheng Nuclear Power Plant

Authors : W. S. Hsu, Y. Chiang, H. C. Chen, J. R. Wang, S. W. Chen, J. H. Yang, C. Shih

Abstract : Not only radiation materials, but also the normal chemical material stored in the power plant can cause a risk to the residents. In this research, the ALOHA code was used to perform the concentration analysis under the CO₂ storage burst or leakage conditions for Kuosheng nuclear power plant (NPP). The Final Safety Analysis Report (FSAR) and data were used in this study. Additionally, the analysis results of ALOHA code were compared with the R.G. 1.78 failure criteria in order to confirm the control room habitability. The comparison results show that the ALOHA result for burst case was 0.923 g/m³ which was below the criteria. However, the ALOHA results for leakage case was 11.3 g/m³.

Keywords : BWR, ALOHA, habitability, Kuosheng
Conference Title : ICNQE 2018 : International Conference on Nuclear and Quantum Engineering
Conference Location : New York, United States
Conference Dates : April 19-20, 2018