The Influence of Seasonal Characteristics in the Level-3 PSA

Jongtae Jeong and Jaejoo Ha
Korea Atomic Energy Research Institute

Abstract

The variation of health effects and economic consequences resulting from the severe accidents of the YGN 3&4 nuclear power plants was examined for various combinations of source term release parameters and meteorological data. The release parameters and meteorological data considered in making basic scenarios are release height, heat content, release time, warning time, wind speed, rainfall rate, and atmospheric stability class. The seasonal scenarios were also made in order to estimate the seasonal variation of health effects and economic consequences by considering seasonal characteristics of Korea. According to the results, there are large differences in health effects and economic consequences from scenario to scenario although an equal amount of radioactive materials is released to the atmosphere. Also, there are large differences in health effects and economic consequences from season to season due to distinct seasonal characteristics of Korea. Therefore, it is necessary to consider seasonal characteristics in Level-3 PSA.