



Contribution ID: 139

Type: POSTER

Application of the JRODOS system and the probabilistic weather data sampling model in the Probabilistic Safety Assessment Level 3 for nuclear installation.

Probabilistic Safety Assessment (PSA) Level 3 assesses the risk for public that can be caused by the spectrum of possible accident scenarios involving any nuclear installation. Level 3 PSA estimates the frequencies of off-site consequences for public health and environment, including economic consequences attributable to the set of radiological release categories and corresponding source terms determined in the PSA Level 2 analysis. Obtaining the above values is based on using appropriate meteorological data basing on existing knowledge and assessment of the effects of a potential release. These methods that are now widely used should be improved by adopting the latest computational techniques and the lessons learned from the accident in Fukushima Dai-ichi. This publication proposes an advanced probabilistic model for sampling weather conditions basing on the estimated multidimensional probability distribution, which is obtained from long-term measurement data. The JRODOS system was used to calculate the transport of radionuclides in the atmosphere and the dose values. Thanks to using a more robust model of generating meteorological data, PSA L3 results become more transparent and comprehensive, but also easier to identify different negative scenarios and their effects.

Primary authors: KOPKA, Piotr (National Centre for Nuclear Research); Mr POTEMPSKI, Sławomir (National Centre for Nuclear Research)

Presenter: KOPKA, Piotr (National Centre for Nuclear Research)

Track Classification: Track 3 - Managing the interrelationships between safety and sustainability in decision-making