

Radioactive contamination estimate of Genkai nuclear power plant

Kotaro Tobiishi and Susumu Ogawa

Student, Nagasaki University: 1-14 Bunkyo-machi, Nagasaki, 852-8521 Japan

Phone: +81-95-819-2611; E-mail: bb35310105@cc.nagasaki-u.ac.jp

Keywords: SPEEDI, ASTER, Stokes equation, diffusion model, hydrogen explosion

Re-operation of Genkai nuclear power plant and Sendai nuclear power plant will start. However, they still depend on SPEEDI for the simulation of radioactive contamination in real time in case of the accident. SPEEDI was not available in the case of Fukushima accident, because Japanese government controlled. Therefore, on the occasion of re-operation of two nuclear power plants, the public presentation of the simulation which offers radioactive contamination on a citizen level should be required. Here, from the investigation of meteorological data and the Fukushima nuclear power plant, a simple forecasting model was proposed and the contamination simulation in case of the same accident was carried out. From the investigation of Fukushima nuclear power plant, the situation of hydrogen explosions was presumed and the subsequent pollutant pathways were calculated. The observation stations at Imari and Sendai were used for meteorological data. The Stokes model and the atmospheric diffusion model were used for radioactive contamination simulations. In the case of Genkai nuclear power plant from the meteorological data, a north-northwest wind is the dominant and Nagasaki is located down in the lee. In Sendai nuclear power plant, a north-northwest wind is dominant and Kagoshima is located in the lee. There is no geographical feature as an obstacle, and serious contamination is expected for both cases.