

Problems on the volcanic hazard simulation for safety evaluation of the nuclear power plant site

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Japanese electric power companies (EPCs) have been submitting materials for safety reviews of their nuclear power plants (NPPs) to the National Regulatory Authority (NRA). Among the submitted materials, we are able to find volcanic hazard assessment results for NPP sites based on the applications of volcanic hazard simulation programs and models. Among them, Titan2d is a program for pyroclastic flow simulation and Tephra2 is a simulation program for fallout of volcanic ejecta from a volcanic column. Mogi's model is an assessment formula for ground deformation induced by internal stress change of magma reservoirs. However, applications of the programs and formula by EPCs show inappropriate or wrong use of them when physical process and boundary conditions for them are concerned and resultant volcanic hazard assessments must be almost meaningless for safety review of NPPs.

Keywords: Titan2d, Tephra2, Mogi's Model