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MODELING OF SPREADING OF THE MELTED CORIUM JET INSIDE THE POOL OF EMERGENCY HEAT REMOVAL DURING SEVERE ACCIDENTS AT NPP

Important nuclear power safety problem in touch with modeling of melted corium jet spreading inside the coolant pool is considered in the paper. It appears by development of the passive protection systems against severe accidents. The non-linear mathematical developed model is presented for the jet under reactor vessel pool for one of the perspective passive protection systems and the results of its analysis and studies are given. The performed analysis and the results of the numerical simulation done on the base of the model have allowed establishing the interesting behaviors of the system, which may be useful for the scientists, as well as the engineers-constructors of the passive protection systems against severe accidents.

Keywords: severe accident, jet, corium, pool, mathematical model, non-linearity.