Preliminary Safety Analysis on Transient of Heat Removal Increase by Secondary System for SMART

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Abstract

SMART was an integral type reactor of 330 MWt, which enhanced safety by adopting inherent safety design features. Thermal hydraulic characteristics on transient of heat removal increase by the secondary system for the SMART have been carried out by means of TASS/SMR code. The primary, secondary, and residual heat removal systems of the SMART were modeled properly. Then, a set of transients for the whole system was investigated. The results of the analyses using the conservative initial and boundary conditions showed that the safety features of the SMART design well carried out their functions and large moderator temperature coefficient due to the soluble boron free reactor affected on the transient behavior.