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Preliminary Design Study of the KALIMER Containment Dome

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Abstract

KALIMER (Korea Advanced LIquid MEtal Reactor) is a pool type advanced liquid metal reactor which is being developed in KAERI (Korea Atomic Energy Research Institute). Advanced design features are incorporated into the conceptual design for the enhancement of its safety. The reactor core, which produces 392MWt, is loaded with a metallic fuel for the inherent negative reactivity feedback, and the residual heat is removed by the passive safety grade decay heat removal system (PSDRS). Due to the high degree of passive and inherent safety characteristics, the severe accident, such as hypothetical core disruptive accident (HCDA) and associated large release frequency is significantly low. However, in the aspect of defense-in-depth philosophy, the containment design is being studied to mitigate the consequence of radioactive material release by a HCDA. This paper summarizes the on-going study on the conceptual design of KALIMER containment dome.