

하나로 NR 설비 Bi-여과기 냉각 설계 해석 및 실험
Design Analysis and Experimental Results for the Cooling
of HANARO NR Bi-Filter

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요 약

하나로 NR(Neutron Radiography)용 빔포트의 집속관(Collimator)에는 감마선을 차폐하기 위한 Bi(Bismuth) 여과기가 달려있다. 여과기에서는 감마선의 흡수에 의해서 열이 발생하는데 여과기의 건전성을 유지하기 위해서는 적절한 냉각이 이루어져야 한다. 설계시에 해석을 통하여 여과기의 건전성이 유지될 것으로 판단하였고, 실험을 통하여 설계 해석의 보수성을 입증하였다.

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System Transient Analysis Code for Advanced Liquid Metal Reactor

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Abstract

The SSC-K code has been used as the principal tool for analyzing a variety of off-normal conditions or accidents in the preliminary KALIMER design. The SSC-K code features a multiple-channel core representation coupled with a point kinetics model with reactivity feedback. It provides a detailed, one-dimensional thermal-hydraulic simulation of the primary and secondary sodium coolant circuits, as well as a balance-of-plant steam/water circuit. The SSC-K contains detailed models for a passive decay heat removal system and a generalized plant control system. Particularly, a two-dimensional hot pool model is incorporated into SSC-K for analysis of thermal stratification phenomena in the hot pool. A long-term cooling method is developed as a stand-alone model and it will be included in the SSC-K. This paper presents an overview of recent activities concerned with the SSC-K code model development, and focuses on descriptions of the newly adopted thermal hydraulic and neutronic models.