

## Radioactive Oxide Removal of Cerium-containing Foam Decontaminant

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A study was conducted to optimize the composition of the chemical decontaminating agent available for the foam decontaminating agent. Four kinds of chemical decontaminants varying in terms of the concentration of Ce (IV) and HNO<sub>3</sub>, which are the main components of an oxidizing chemical decontamination agent, and decontamination specimens were prepared to form FeCr<sub>2</sub>O<sub>4</sub> on SUS 304 metal in an autoclave. A radioactive test of foam decontamination was performed on the SG plug drawn from the nuclear power plant site.

Comparing the decontamination behaviors of foam decontamination and solution decontamination using the same chemical decontaminating agent for 8h decontamination based on the weight loss, the removal rate of the foam decontamination method (Foam-1: 2M HNO<sub>3</sub> / 0.5M Ce (IV) in 1%(v/v) TBS + 1wt.% M-5 silica) is about 75.6% of the solution decontaminating method, showing a relatively effective decontamination performance. The radioactive decontamination demonstration test performed on the SG plug revealed that the Co removal % of KAERI foam decontaminating agent showed 50.3% during the first 2h and then 59.3% and 64.0% after 4h and 6h, respectively.