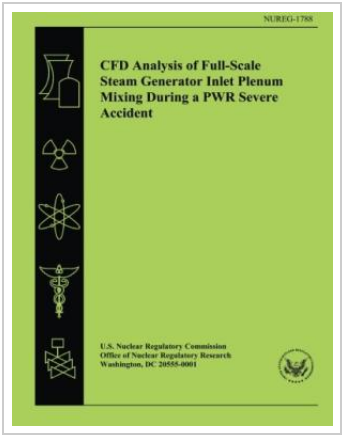

CFD Analysis of Full-Scale Steam Generator Inlet Plenum Mixing During a PWR Severe Accident

By U. S. Nuclear Regulatory Commission

CreateSpace Independent Publishing Platform. Paperback. Condition: New. This item is printed on demand. 84 pages. Dimensions: 11.0in. x 8.5in. x 0.2in.Computational fluid dynamics (CFD) is used to predict steam generator inlet plenum mixing during a particular phase of a severe accident in a pressurized-water reactor. Boundary conditions are obtained from SCDAPRELAP5 predictions of a TMLB station blackout. Full- scale CFD predictions are completed for the scaled-up geometry of a 17th scale test facility to isolate the scaleup effect. These predictions are repeated with a Westinghouse model 44 steam generator design. The effect of tube leakage on the mixing is also considered. Finally, predictions are completed for a steam generator from a Combustion Engineering (CE) nuclear power plant. Scaleup predictions indicate that data at 17th scale are indicative of the full-scale behavior for similar geometries. Predictions for a model 44 steam generator design indicate slightly less mixing and increased plume oscillations and indicate that the geometry is an important parameter. Tube leakage does not show a significant impact on the mixing for leakage rates below 1. 4 kgs at these severe accident conditions. A CE steam generator design results in significantly less inlet plenum mixing. The highest tube entrance temperatures approach...

Reviews

A top quality pdf and also the font applied was fascinating to learn. it was actually writtern extremely properly and valuable. I discovered this publication from my i and dad recommended this publication to find out.

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