



CFD Analysis of 1/7th Scale Steam Generator Inlet Plenum Mixing During a PWR Severe Accident: Nureg-1781 (Paperback)

By -

Bibliogov, United States, 2012. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Computational fluid dynamics (CFD) is used to predict steam generator inlet plenum mixing during a severe accident scenario in a pressurized water reactor. Comparisons are made to 1/7th scale data. Qualitatively, the code predicts the experimental flow patterns and mixing phenomena. Quantitatively, comparisons are made with key temperatures, mass flows, and mixing parameters. The best estimate prediction is generally within 5 of the reported values. Key temperature predictions are within a few degrees K of the test data. Boundary conditions applied to the model include the hot leg inlet mass flow and temperature as well as the tube secondary side temperature and heat transfer. The mass averaged temperature of the flow entering the tubes is predicted to within 1 degree of the experimental data. The mass flow through the tube bundle is predicted to within 0.5 of the data. The number of hot tubes is overpredicted by 7 tubes out of the 216 total. The mixing fraction and the recirculation ratio, both important mixing parameters, are predicted to within 5 of the data. These predictions provide confidence in...



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