International Journal for ENGINEERING MODELLING
Vol. 9, No. 1-4, 1996.

Two phase thermalhydraulic code used for fast transient calculations

Matjaž Prah (1), Danilo Feretić (1) and Davor Grgić (2)

(1) Nuclear Power Plant Krško, Vrbina 12, SI-8270 Krško, SLOVENIA
(2) Faculty of Electrical Engineering and Computing, University of Zagreb, Unska 3, HR-10000 Zagreb, CROATIA

SUMMARY

The thermalhydraulic model was developed as a base for a fast running computer code for the purpose of a nuclear power plant primary system simulation. The model is based on the drift flux theory and integrated momentum equation. It is a nonhomogeneous four-equation model of a two-phase flow.

On the basis of the developed theoretical model, the computer code in FORTRAN 77 for PC 386/486 compatible computers was prepared. The results of simulation are quite good and the accuracy of the program for selected test cases is comparable to the accuracy of RELAP5/mod2 computer code with CPU time reduction.