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Effect of Recirculation Credit in the Steam Generator on the Dynamics of Reactor Transients Calculated with the MELCOR code

This paper focuses on modeling of the nuclear steam supply system (NSSS) with use of the MELCOR computer code. Two models of NSSS with a steam generator presented as one and three volumes are compared. The volume of the steam generator is divided to evaluate the effect of recirculation of the secondary steam-and-water mixture on the processes that occur in the reactor.

Keywords: numerical modeling, MELCOR, steam generator, recirculation, nuclear power plants, safety, heat and mass transfer.