

## عنوان مقاله:

Thermal-hydraulic Analysis of Helical Coil Steam Generator of The Multi-Application Small Light Water Reactor (MASLWR) Test Loop Using Drift Flux Model

## محل انتشار:

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## خلاصه مقاله:

The Multi-Application Small Light Water Reactor (MASLWR) test loop has been built as a proof of concept for SMRs that is scaled down in size and has electric heater rods instead of a nuclear core. In this paper with using Drift-Flux Model (DFM), the thermal-hydraulic analysis of helical steam generator in MASLWR under steady-state conditions is simulated. This simulation is performed using the finite volume method. To ensure the accuracy and stability of solutions, User Defined Function (UDF) is written in C programming language. Distributions of velocities, local void fractions, temperature and pressure in the steam generator are calculated in different heights. To validate this simulation, the calculated primary side and secondary bulk fluid temperature are compared with experimental data. The experimental data have been provided by series of measurements of parameters of heat-transfer agent at Oregon State University. The calculated data are in good agreement with measured data and consequently the accuracy of this simulation is satisfied. Accuracy of the prediction shows that it is possible to use the DFM for thermal-hydraulic analysis in advanced models in nuclear power plant and other industries.

## کلمات کلیدی:

Drift Flux Model, Helical Coil Steam Generator, MASLWR Reactor, Thermal-Hydraulic

## لینک ثابت مقاله در پایگاه سیویلیکا:

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