

Chapter 6

Conclusion

6.1 Conclusion

Four steady state conditions and one transient condition were used to verify the proper interface between calculation engine and front end. We found that the interfacing performs very well on both conditions

Graphical programming presents nice displays and seamless connection with the calculation engine. 4 main screens are shown when running the model: Reactor Preview presents the general view of TRR 1/M1, Control Rod Panel mimicked the control panel from actual one and some useful tools are added in this screen, Reactor cooling System shows the schematic diagram of cooling system and equipment, Fuel Pin Profile illustrates the distribution of temperature and neutron flux along the fuel pin.

Steady state and transient conditions were studied. It was found that the calculation results were several magnitudes different from actual measurement. However, the response react properly to any changes made to the reactor core.

The steady state responses were recorded and plotted to view the potential of change where varying control rod position. Neutron flux, fuel temperature and thermal power were shown on the displays.

Further works should be continued to improve the response to compensate the errors from assumptions.

1. multigroup of neutron energy
2. 2 or 3 dimensional space for neutronic and thermal-hydraulic modeling
3. natural convection take over the assumed forced flow.

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