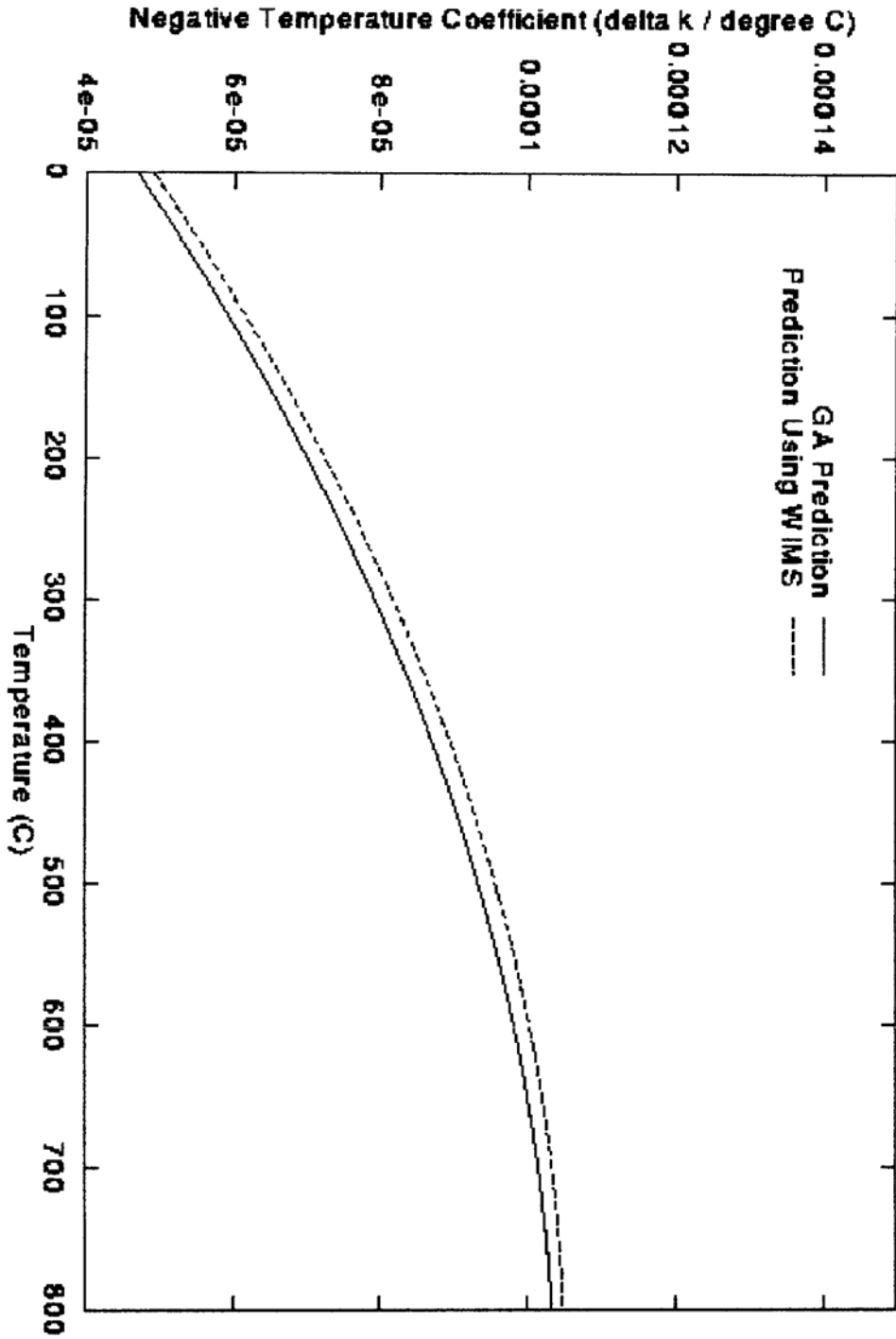


4-21 On page 4-67, Figure 4.33 is referenced as showing the temperature coefficient for 20/20 fuel, however, the Figure 4.33 on page 4-69 shows a fuel map. Provide the correct figure. Open, supplement expected with the correct figure.



4-29 On page 4-77, the text implies that intra-rod power distributions depicted in Figures 4.41, 4.42, and 4.43 were tallied with MCNP. If so, what ranges of relative statistical uncertainty are associated with these tallies? Open, supplement expected to address uncertainty.

The relative uncertainty (1 SD) along the z-axis of the fuel was found to be 0.89% in the region with the highest power output (highest peaking area of the fuel).

The relative uncertainty (1 SD) along the x-y plane of the fuel was found to be 1.18% in the region with the highest power output (highest peaking area of the fuel).

4-30 (1) Is the core configuration considered in Section 4.6.4.4 (page 4-71), Future Cores and the Limiting Core Configuration (LCC), limiting? Could higher peaking factors result from loading additional graphite reflector elements in the C-ring? Open, supplement expected to address higher peaking factors due to additional graphite.

MNRC will commit to a tech spec that prohibits the use of graphite reflector elements in C-ring.

4-31 In Figure 4.35 (page 4-71) and Figure 4.37 (page 4-73), power distributions at 1.1 MW are shown. Why is this power level used, when the safety setting is 1.02 MWt? If these power levels were tallied with MCNP, what level of relative statistical uncertainty is associated with this tally? Open, supplement expected to address uncertainty. (See Question 4-29 related to uncertainty).

The largest relative uncertainty (1 SD) for individual element power is 0.4%

4-35 Provide the RELAP5 input and outputs used in Section 4.7 (page 4-77), Thermal and Hydraulic Design. Open item. Licensee to provide RELAP5 model.

All three RELAP5 models now on Box.

4-41 In Table 4.13 on page 4-89, why do “Heated Diameter” and “Hydraulic Diameter” have different values? The wetted perimeter is the same as the heated perimeter in the subchannel shown in Figure 4.47 on page 4-86. Open item. Staff disagrees with licensee's response provided in audit documents and communicated this feedback to the licensee on 7/20/2021. Will discuss with licensee on 8/3/21.

Input deck of RELAP5 model provided in questions 4-35 to be used to potentially resolve this item. NRC to conduct sensitivity study to determine magnitude of this effect.

O-2 Reactor Mode selector switch – deactivation of the pulse and square-wave mode possibility of inadvertent placement of Mode Switch in pulse mode Open Item. Licensee to provide as supplement path to disable switch for pulse and square-wave mode.

MNRC intends to remove the internal mechanism on the pulse and square-wave selector buttons that provides completion of the electrical circuit that puts the reactor control program in pulse or square wave mode. The compressed nitrogen supply to the transient rod is also physically disconnected from the transient rod in two locations.