

Here is a plot of the neutron spectra in the original triso fuel particles for the inner fuel section that was divided into 4 subsections with varying coolant density as the steam fraction increased radially. This case did not have any burnable poison in the fuel. The coolant densities for the four subsections were 0.607, 0.186, 0.083, and 0.055 g/cc. The spectra are in the UO₂ kernels, not averaged over the coatings or coolant. As you can see, there is significant variation in the thermal flux component and in the high epithermal range between 1 keV and 1 MeV as the coolant density was varied. Therefore significant localized changes in reaction rates and power could be expected for any localized changes in coolant densities, for example from flow variations.

