

Abstract Submitted  
for the DNP11 Meeting of  
The American Physical Society

**Decay Heat Calculations for  $^{235}\text{U}$** <sup>1</sup> T.D. JOHNSON, A. SONZOGNI, E. MCCUTCHAN, NNDC — Following a nuclear reactor shutdown, a major issue is the decay heat due to radioactive decay of fission products and actinides. Contributing to this are light particles (*e.g.*,  $\beta$ - electrons), heavy particles (*e.g.*, delayed neutrons), and electromagnetic radiation. Sources of uncertainty include probabilities for the formation of specific fission products, and incomplete knowledge of the levels of daughter nuclei. The latter is partially addressed by using Total Absorption Gamma Spectroscopy (TAGS). Earlier calculations are based on older decay schemes and sometimes less precise, mass measurements. In part to facilitate these calculations, the decay sub-library for the Evaluated Nuclear Data File was updated using the Evaluated Nuclear Structure Data Files with the latest mass measurements. The update includes electron conversion coefficients calculated using the Band-Raman Internal Conversion and “Frozen Orbital” approximation. The updated library was used in conjunction with available TAGS data to obtain preliminary updated decay heat calculations for  $^{235}\text{U}$ .

<sup>1</sup>Work was supported by the Office of Nuclear Physics, Office of Science, US Department of Energy, under contract DE-AC02-98CH10946.

Timothy Johnson  
NNDC

Date submitted: 01 Jul 2011

Electronic form version 1.4