Nuclear Data Evaluation for Actinoid Nuclides

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Nuclear data of actinoid nuclides are under evaluation for JENDL Actinoid File (JENDL/AC) which will contain the data for 79 nuclides from ^{225}Ac to ^{255}Fm in the incident neutron energy range from 10^{-5} eV to 20 MeV. The data for 62 nuclides had been already given in JENDL-3.3. Their data have been revised for the JENDL/AC. Other 17 nuclides are new isotopes which were selected by a criterion of half-lives longer than 1 day.

Characteristics of the present evaluation are as follows:

* Resonance parameters were revised by comparing with experimental data.
* The fission and capture cross sections at 0.0253 eV were evaluated from experimental data, and resonance parameters were adjusted so as to reproduce them.
* New SAMMY analyses for ^{232}Th, ^{233}U, ^{238}U and ^{241}Pu were adopted from ENDF/B-VII.0.
* The upper boundary of the resolved resonance region of ^{235}U was lowered down to 500 eV.
* Unresolved resonance parameters were revised. They are used only for self-shielding calculations. Upper boundary energies of the unresolved resonance region were selected sufficiently high to calculate self-shielded cross sections.
* Theoretical calculation with CCONE code was performed for all the nuclides. Results of the calculation were widely adopted for various cross sections, angular and energy distributions of secondary neutrons and fission spectra.
* Fission cross section was evaluated with GMA code for many nuclides with experimental data.

Simultaneous evaluation of fission cross sections for ^{233}U, ^{235}U, ^{238}U, ^{239}Pu, ^{240}Pu and ^{241}Pu is just in progress. Those cross sections will be replaced with the new results. Model parameters for main important actinides used in the CCONE calculation will be modified slightly by adjusting to integral data available such as k-eff.