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ENDF/B-VII.1 library availability with new P_n values

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The decay sub-library for ENDF/BVII.1 was recently released at the NNDC. This incorporates new data, whenever available, updated Q values, and the latest electron conversion calculations. Considerable effort was spent reviewing each decay set, and benchmarking the performance of the library which contains data for 3817 isotopes including isomeric states. For beta-delayed neutron emitters, the experimental neutron spectra are obtained from ENDF/B-VI.8 and are combined with the beta spectra from ENSDF. Experimental measurements of neutron spectra are difficult and sometimes not available. In such cases, a micro-macroscopic (QRPA) theory of the beta-decay strength function is used, and neutron and gamma-ray spectra are calculated using the statistical Cascading Gamma Multiplicity Model (CGM) of continuous gamma, beta, and neutron spectra. The library contains the latest up-to-date P_n values taken from experimental data when available and from the CGM calculations otherwise. Likewise, lifetimes are from experimental data when available; otherwise systematic values are used. In the area of r -process nuclei and reactor fission products where experimental data are often limited, the CGM calculations had some interesting predictions, a few of which will be shown. The entire library is available for public use and how to access it is demonstrated.

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