

Evaluated Data Projects at the NEA

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The OECD Nuclear Energy Agency (NEA) Data Bank is part of an international network of data centres in charge of the compilation and dissemination of basic nuclear data. The NEA offers easy access to the main nuclear databases with bibliographical information, evaluated libraries, e.g. the Joint Evaluated Fission and Fusion (JEFF) library, and experimental data in the EXFOR database, comprising published neutron induced as well as charged particle induced nuclear reaction data.

The NEA Working Party on international nuclear data Evaluation Co-operation (WPEC) is established to promote the exchange of information on nuclear data evaluations, measurements, nuclear model calculations and validation. WPEC provides a framework for co-operative activities between six major evaluation projects (BROND, CENDL, ENDF, FENDL, JEFF and JENDL). It assesses the needs for nuclear data improvements and addresses those needs by initiating joint efforts, such as the high priority request list that is a collection of experimental data requests of special interest for new evaluations.

The NEA Data Bank administrates the collection and validation as well as the distribution of the JEFF library. The latest version, JEFF-3.1, was released in May 2005 and it combines the efforts of the JEFF and EFF/EAF Working Groups who have contributed to this combined fission and fusion file. JEFF-3.1 contains a neutron data library with 381 isotopes or elements, a proton data library with 26 isotopes and thermal scattering law data for 9 materials. The special purpose library on activation data contains 774 target nuclei with over 12600 neutron induced reactions. Included is also radioactive decay data, with 3852 isotopes, and spontaneous and neutron induced fission yield data. The full documentation of the library is being prepared for publication in 2006.

Processed JEFF-3.1 data files in ACE format, mainly for reactor physics applications, have been prepared and were distributed in spring 2006, accompanied by a full documentation of the processing. The processed files have been extensively validated for criticality calculations, using data from the ICSBEP handbook, as well as for radiation physics application, using the SINBAD data base. The detailed analysis of the validation results will be very useful for improving the accuracy of evaluated data libraries.

The display program JANIS has been developed at the NEA, and the latest version (JANIS-2.21) was released in October 2005. JANIS is designed to facilitate the visualisation and manipulation of experimental and evaluated data. The NEA provides also computer program services for nuclear energy and radiation physics applications from a collection of more than 2000 programs.

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