**NEA Data Bank Report to the NRDC**
Obninsk, 15-19 May 2000

**Introduction**

The Data Bank now has a full complement of staff working on Nuclear Data topics and has currently released the first test version of the JEFF-3 library within the JEFF community for preliminary bench-marking and validation.

**Experimental (EXFOR) and Bibliographic (CINDA) data compilation**

A total of 99 EXFOR entries for neutron induced experiments, were compiled and transmitted to the other data centres in 1999. Seventy-four (74) of these entries concerned new experiments.

More than 800 new entries were compiled into the CINDA database in 1999.

The CD-ROM version of the CINDA database has now been produced and is currently being circulated to recipients of the IAEA book version. Extensive testing was carried out by both the NEA and the IAEA and this helped to improve the product, but also delayed its original distribution date.

**Intermediate Energy Nuclear Data (IEND) for EXFOR**

In 1999, the Data Bank received ~150 new data sets from charged particle induced experiments and these are currently undergoing testing before being entered into the EXFOR database.

**The Joint Evaluated Fission and Fusion Project (JEFF)**

Work is continuing to assemble and correct the JEFF-3.0 starter file taking into account the format and physics errors highlighted by the Quality Assurance (QA) checks. Extensive processing has been done using different versions of NJOY-97. This also enables the proposal of different patches to the processing code and to reveal additional errors in some evaluation files. The situation is now quite stable and the latest version of NJOY (NJOY-97/110) is able to formally process all materials.

The production of application libraries has started, with a full set of ACE format files (for use with MCNP) now being held at the Data Bank.

Validation work of JEFF-3.0 started in summer 1999 with a set of 20 configurations, which covers applications such as fast assemblies as GODIVA and JEZEBEL, arrays of water-moderated fuels, and solutions of uranium and plutonium. This activity has been extended after a limited release of an interim version of JEFF-3.0 to JEFF members, who volunteered to participate to this preliminary bench-marking. A second pre-release, taking into account the results of the above mentioned tests, will be done at the JEFF meeting in May 2000.

The plan for the assembly of the Decay Data and Fission Yields files was agreed upon during the last JEFF meeting in November 1999. The first version (April 2000) is being assembled from the

existing new versions of the UK libraries UKPADD-6.1 and UKHEDD-2.2, complemented with a large number of French evaluations, mainly based on ENSDF and converted to ENDF-6 format using a revised version of RADLIST. Further efforts will be needed to define the QA procedures and to develop the checking codes for the Decay Data files. The Fission Yields section will be based on the UKFY3 library.

The detailed documentation for the JEF-2.2 library is about to be published in time for the JEFF meeting in May 2000. This documentation comprises historical information, the sources of data in the file, a complete report on the accuracy of JEF2.2 for a variety of applications (thermal and fast reactors, criticality, shielding...) and the list of feedback. The required improvements as resulting from benchmarking studies are also be highlighted. The full documentation will also be available on a CD-ROM, with links included to all of the supporting JEF and EFF documents which are referenced therein.

In 2000 work will focus on:
• Bench-marking studies.
• The production and testing of the Decay Data and Fission Yield special purpose library.

Extensions are planned to:
• Incorporate intermediate energy ( 150 MeV) cross sections for the most important nuclides.
• Finalise on-going evaluation work and update the file; a new version is foreseen for the end of 2000.

**JEF-PC program**

The JEF-PC program continues to sell moderately well (137 copies in the last year) against the background of competition generated by other programs, many of which are being made available free of charge.

The future development of JEF-PC is now well under way and it is foreseen that a first beta test version will be available in June/July of this year. The work is being carried out by a team of specialised programmers in order that full benefit can be made of the modern architecture available. The new version is being written using Java and so will be platform independent and also closely linked to the WWW allowing for communication with our servers. The user will receive an initial set of data (on CD-ROM or DVD) and yet still have the flexibility to collect newer data from our server. Studies have been made where the actual point-wise data stay on the server and it is only the graphical image which is transmitted, making communication faster. This is interesting for our WWW based plotting facility, which will contain some aspects of the new JEF-PC.

**Services to Nuclear Data Users**

The Data Bank answered ~50 manual data requests in 1999. The number is diminishing year on year as the online service becomes more readily accessible and complete. Most of the manual requests are now for independently produced CD-ROMs which the Data Bank distribute, currently these include JENDL-3.2, JENDL/D-99 and EAF-99. There are also a number of requests for complete libraries as well as for copies of reports containing data.

The Data Bank also continues to provide specific advice to those members using nuclear data in all areas related mainly to nuclear energy.

The number of on-line accesses registered in 1999 was more than twenty one thousand (21,000), as compared to ten thousand (10,000) in the previous year.

All the JEF and EFF documents have been scanned through a Character Recognition system allowing for an automatic search capability to be performed on the entire body text of the documents. Nearly all new documents are received electronically, which allows direct conversion to PDF format and instant WWW availability, hence avoiding the cost of scanning documents and the final files are also significantly smaller in size than those scanned.