

## Status of the JEF project

A report to the

NEANSC Working Group on  
International Evaluation Cooperation

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### Status

The current version of the JEF library (JEF-2.2) consists of the neutron interaction library, commonly known as the General Purpose file, and four special purpose libraries; Thermal scattering law data, Radioactive decay data, Fission Yields data, and the Photon Interaction data. This complete set of libraries is frozen and freely available.

Massimo Salvatores, chairman of the JEF project for over 10 years, stepped down as chairman at the last meeting of the Scientific Coordination Group, held in December 1994; Ph. Finck of CEN Cadarache was elected as the new chairman. Alan Nichols was elected as chairman of the JEF Radioactive Decay and Fission Yields Working Group.

### JEF-2.2 Benchmarking

An extensive programme of benchmark testing of the JEF-2.2 General Purpose library has been undertaken during the past two years. The data have been validated for both thermal and fast reactor applications, as well as for other special applications, such as radiation shielding including a special emphasis on the major structural materials.

Overall, the library has performed well in both the thermal and fast energy ranges, but there are still areas in need of further benchmarking activities, for example, for thermal absorbers, fission products and minor actinides. In addition, calculational benchmarks have been carried out to investigate the influence of the choice of calculational models on the final validation results.

Detailed results from all of these benchmark testing activities have been extensively documented in the JEF/DOC series of documents which catalogue the papers presented at the bi-annual meeting of the JEF Working Group on Benchmark Testing, Data processing and Evaluations.

## JEF-2.2 Usage

The use of JEF-2.2 by European industry and R & D organisations for detailed calculations appears to be increasing ; some have already adopted the file - others are expected to follow shortly.

More widespread use of the JEF-2.2 libraries has been encouraged through the production of the JEF-PC computer package. This PC package, containing a user-friendly graphical interface for easy access to a wide variety of data taken from the JEF-2.2 libraries, permits users to quickly interrogate and display JEF data; this is intended as a desktop tool for quick reference. Since its release in December 1994, over 200 copies have been distributed.

## Current Activities

A number of reports and documents describing the contents of JEF-2.2 libraries already exist in the JEF Report and JEF/DOC series respectively. Detailed documentation to accompany the JEF-2.2 libraries is currently in production, and is expected to be ready by Autumn 1995.

In addition to the processing already carried out in the member countries as part of the benchmark testing, the General Purpose library has been processed at the NEA Data Bank into pointwise data at both 0K and 300K. Processing into groupwise libraries is planned for the later part of 1995. A new edition of the JEF-PC package, with additional features, will be released in Autumn 1995.

## Future Plans

A close cooperation has always existed between the JEF and EFF projects. A decision was taken at the last meeting of the JEF Scientific Coordination Group to initiate work on a common JEF/EFF neutron library - the Joint Evaluated Fission and Fusion library (JEFF-3). Members of the JEF and EFF communities have been selected to form a working group, charged with the task of creating a starter file, JEFF-3.0, based on selection of evaluations from the current JEF-2.2 and EFF-2.4 libraries and other existing evaluated libraries.

Assembly of the new library will be carried out by the NEA Data Bank using new QA procedures incorporated into the recently implemented ORACLE databases.

The JEF special purpose libraries will remain outside the scope of this collaboration, and preparation of the new JEF-3 radioactive decay data and fission product yields libraries will be initiated as a separate activity.