

**WORKING PARTY ON INTERNATIONAL  
NUCLEAR DATA EVALUATION CO-OPERATION (WPEC)**

**(Draft version March 31 2006)**

**Chair:** Arjan Koning, the Netherlands  
**Members:** Representatives of the co-operating nuclear data projects  
**Date of expiration:** October 2009  
**Mandate:** Agreed at the 17<sup>th</sup> meeting of the Nuclear Science Committee, 31<sup>st</sup> May – 2<sup>nd</sup> June 2006

#### MISSION

The goal of the Working Party is to improve the quality and completeness of evaluated nuclear data available for use in science and technology and to promote the efficient use of available resources through international collaboration.

#### SCOPE

The nuclear data evaluation co-operation activities described within this document will involve the evaluation projects in the following regions: Japan (JENDL), United States (ENDF), Western Europe (JEFF), and non-OECD countries (BROND, CENDL, and FENDL). The participation of the evaluation projects in non-OECD Member countries will be channelled through the Nuclear Data Section of the International Atomic Energy Agency (IAEA).

#### OBJECTIVES

The Working Party is established under the auspices of the NEA Nuclear Science Committee (NSC) to promote the exchange of information on nuclear data evaluations, measurements, nuclear model calculations, validation, and related topics, and to provide a framework for co-operative activities between the participating projects. The Working Party will assess needs for nuclear data improvements and address those needs by initiating joint evaluation and/or measurement efforts. The Working Party will meet and report to the NSC on an annual basis.

#### PARTICIPATION

The Working Party will consist of four representatives of each participating region, nominated by the respective projects. The representative from the IAEA Nuclear Data Section will nominate participants from non-OECD countries. At least one member of each regional group will be a representative of the nuclear data measurement community. Former Working Party chairmen are permanent members of the Working Party.

The Working Party may identify specific activities to be co-ordinated directly by the Working Party. The individuals assigned to co-ordinate these activities will be ex-officio members of the Working Party.

In order to promote close co-operation with other relevant activities, the Chairman and Secretariat may invite appropriate experts to participate in Working Party meetings, following approval by the designated heads of the participating projects.

A limited number of observers may be invited to specific Working Party meetings, following official nomination by a designated head of a participating project with the concurrence of the Chairman and the Secretariat.

## CHAIRMAN

A Working Party chairman shall be elected for a two-year period, with possible yearly extensions; the guiding principal being an alternating chairmanship between the ENDF, JEFF and JENDL projects. Eligible candidates are representatives of the OECD evaluation projects.

## METHODS OF WORK

At its annual meeting the Working Party will review its mandate, discuss the status of the participating projects, review ongoing subgroup activities, and review proposals for new co-operative activities. In addition, the Working Party may organise workshops and specialists' meetings.

Status reports from each of the projects and each of the ongoing co-operative activities will be submitted to the Secretariat for distribution to the participants.

Only proposals for new co-operative activities submitted on the standard proposal form (template available from the NEA secretariat) and having support from at least two evaluation projects will be considered.

The Working Party will set up a Subgroup to perform the agreed technical co-operative activities. The number of active Subgroups at one time shall be limited, depending on the available resources within the participating projects, and at the discretion of the Working Party chairman in consultation with the project leaders.

All above-mentioned documents and reports must be submitted to the Secretariat at least six weeks before the Working Party meeting.

## SUBGROUPS

Subgroups will be established with an initial mandate of two years. The mandate can be extended by the Working Party. Subgroups will consist of members, who have special expertise in the subject area and are willing and able to participate in the work on a voluntary basis. Subgroups will be responsible for their own working methods. The Subgroup Co-ordinator will be designated by the Working Party.

The Subgroup Co-ordinator will prepare an annual progress report for presentation at the Working Party meeting. The Co-ordinator will also be responsible for producing the final report of the Subgroup and for having it reviewed by Subgroup members before it is submitted to the Working Party for publication approval. Final reports should be submitted at least two months before a Working Party meeting.

A member of the Working Party (Monitor) will be assigned to each Subgroup to actively follow the progress. The Monitor will advise the Working Party on the status of the subgroup and will recommend specific measures to promote progress towards the agreed time-schedules and goals.

Each Subgroup will be dissolved when its task is completed. The Working Party can decide to dissolve a Subgroup due to lack of progress.

## SECRETARIAT

The NEA will assure the Secretariat of the Working Party and will be responsible for maintaining the official records of the Working Party and for organising its meetings in consultation with the Chairman. In particular, the Secretariat will consult with the Subgroup Monitors and Co-ordinators on the Subgroup presentations at Working Party meetings and will send out necessary reminders at least two months before these meetings. The Secretariat will maintain a list of the co-operative activities in progress, the official Working Party Web site and will be responsible for the publication of the final Subgroup reports.

## AVAILABILITY OF INFORMATION

The data files and the results of all co-operative activities will be available without restrictions to all participants. Information developed within the co-operation will be distributed to the Secretariat, the chairmen of the projects, and the IAEA Nuclear Data Section. Distribution of information about the co-operation, to parties outside the co-operation, will be made via the Secretariat.

## **Working Party on International Nuclear Data Evaluation Cooperation (WPEC)**

### **Programme of work and Deliverables for the period October 2006 – October 2009**

#### **Programme of work**

The Working Party will continue to improve the accuracy of the evaluated nuclear data, used in most applied nuclear calculations. The improvements will be reflected in all major evaluated data files and will help to eliminate the outstanding discrepancies in these files. Data needs from the user community will be documented in the Working Party's "High Priority Request List for Nuclear Data" and will be addressed in specific subgroups established by the Working Party.

The Working Party plans to address the following issues during the next three years:

- The "High Priority Request List for Nuclear Data" (HPRL) to provide more detailed justifications for the requests and to indicate better the very high priority items. The HPRL will also coordinate the associated nuclear data measurements.
- The inclusion of uncertainty data in evaluated nuclear data files, and their use. Methods to produce covariance data will be developed, and the associated data formats and processing issues will be considered. All energy regions will be considered: resolved and unresolved resonance range, and beyond.
- Assembling and testing of an evaluated fission product data library, consisting of 211 individual fission product isotopes. At a later stage gamma production data will be considered.
- Decay heat calculations: the problems of summation calculations of fission product decay heat will be addressed, especially for gamma heating. Different existing decay data libraries will be considered.
- Nuclear data relevant for advanced reactor systems, such as GEN-IV. A systematic definition of these needs will be provided in close collaboration with the reactor physics community. The important role of both differential and integral data will be considered.
- Any other emerging important nuclear data needs.

#### **Deliverables**

- A restructured and updated version of the "High Priority Request List for Nuclear Data", accessible through the NEA Internet Web pages.
- Reports describing methods and providing guidelines to produce uncertainty data in evaluated nuclear data files.
- An evaluated fission product data library, accompanied by a report with results from validation calculations against integral experiments.
- A report addressing the quality of contemporary decay heat calculations, in particular with respect to gamma heating.
- A report containing a systematic definition of nuclear data needs for advanced reactor systems.