

Mandate

WPEC Expert Group on the Recommended Definition of a General Nuclear Database Structure

Chair(s):	Dr David BROWN, United States
Members:	Representatives of the participating projects
Full Participant:	European Commission Under the NEA Statute
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Mandate (Document reference):

- Agreed at the 28th meeting of the Working Party on International Nuclear Data Evaluation Cooperation in May 2016 [NEA/SEN/NSC/WPEC(2016)2]
- Approved at the meeting of the NEA Nuclear Science Committee in June 2016 [NEA/SEN/NSC(2016)2]

Mandate (Document extract):

Extract from document [NEA/SEN/NSC(2016)2] (forthcoming)

Context

The ENDF-6 nuclear data format has had a long and fruitful history as the preferred format for storing and exchanging evaluated nuclear data. Together with processing codes, it plays a pivotal role connecting nuclear physicists and reactor physicists, allowing them to exchange data between different computer codes. Today, however, it is showing signs of age. In particular, the ENDF-6 format places unnecessary limitations on the types of reactions and the level of precision at which data can be stored, making it more difficult to ensure quality and consistency of the data. Modern users are applying nuclear data towards solving a broad range of problems (in medical physics, global security and advanced detector designs among others) that stretch the ENDF-6 format beyond its original design.

Purpose, scope and membership

The WPEC Subgroup 38 was formed to solicit feedback from international stakeholders and develop a new General Nuclear Database Structure (GNDS) for storing nuclear data to replace the legacy ENDF-6 format. SG38 has met its stated goal to develop a nuclear data structure definition that can meet the needs of a broad set of nuclear data users and providers.

In order to take the next step, it has become necessary to establish an international expert group to endorse, promote and maintain the new format as the future international standard for disseminating nuclear reaction databases. Therefore, the WPEC/EGGNDS will become the steward of a new international definition for the modern nuclear database structure.

This expert group will consist of a governance body that manages the new recommended definition of GNDS. Up to two official representatives from each WPEC nuclear data evaluation project or institution will form the Governance Board. Currently these entities include ENDF, JENDL, ROSFOND/BROND, JEFF, CENDL and the IAEA. *Only NEA members have voting rights with respect to the adoption of a new recommended definition by the WPEC, but the larger group serves the goal of meeting the needs of the broader community.*

Goals and activities

The main motivations of this subgroup are to make the GNDS:

1. easier for new users, as well as current users, to contribute to the community;
2. general and useful enough that it could also be used to organise nuclear structure data, experimental data and other nuclear data products;
3. adhere to high quality assurance and documentation practices.

Other goals include the development of better open source infrastructure to manipulate, search, plot, process, translate and check nuclear data and the development of new nuclear data products heretofore not possible. The expert group, in close collaboration with the subgroup on infrastructure (WPEC/SG43), will ensure that important and useful tools for using the new recommended definition are developed and maintained.

The expert group will guide the creation of new infrastructure and promote better evaluation practices. It is foreseen that it will release new GNDS versions with appropriate documentation as necessary, without overburdening stakeholders.

Deliverables

The subgroup will ensure the recommended definition of the GNDS meets the needs of major international nuclear data communities. In addition, this subgroup will work on the following deliverables:

- Release the initial GNDS version.
- Collaborative platform and practices to maintain and discuss the recommended definition.
- Workshops to train evaluators and other members, especially users, of the nuclear data community the new structure.