

# Summary Record of the WPEC Expert Subgroup-C Meeting on the High Priority Request List (HPRL) for Nuclear Data

NEA, Issy-les-Moulineaux, France

9:00-12:30h, 18 May 2015

NOTE: *Minutes of the SG-C meeting, 18 May 2015. Including comments of the WPEC meeting, 21-2 May 2015.*

## 1. Minutes 2014.

- Minutes of the 2014 meeting were not available.
- It was decided at WPEC 2015 to have regular meetings, once per year, with minutes to guarantee the deliverables specified in the mandate. To be definite this meeting will always be on the first morning of the next WPEC week. The agenda will be determined by the mandate and consists of the discussion on 1) the progress with new general and high priority requests, 2) the progress with establishing new special quantity lists, 3) the progress with the collection of feedback, 4) updates to the website, 5) a.o.b.
- The objective of collection of all feedback by the end of 2014 was not met. According to the present mandate it must be finalized by June 2016.

## 2. Mandate

In 2014 the mandate (**Annex 1**) was changed for the first time since 2004. Even if SG-C is a permanent subgroup (expert group) of WPEC, NSC insisted in 2014 on its review of the mandate every 2 year, following 2 years of renewal without change. The mandate was modified by the SG-C chair and NEA secretary (E. Dupont) to reflect its success, the need to more broadly reflect priorities perceived by WPEC, and the need to reflect the achievements, that is the follow-up, of requests issued since 2004.

The mandate gives two deliverables for the expert group:

- A report on the status of all requests describing completed activities and outlook.
- An up-to-date online version of the "High Priority Request List for Nuclear Data". SPQ

The final draft of the mandate as endorsed by NSC was handed out during the 2015 SG-C meeting. This was accompanied by a document describing the history of the mandate. The duration of validity was clarified to be until June 2016. Its duration may still be renewed indefinitely by NSC reflecting its permanent character.

## 3. Membership

The mandate specifies the Subgroup-C should have ideally have a minimum representation of

1. A minimum representation of one experimenter, one evaluator, and one user per WPEC project,

2. The projects being the member projects JEFF, ENDF, JENDL, BROND and TENDL; and by invitation the projects of CENDL and of KAERI and by agreement of the IAEA.

At the meeting we received the present list of participants of SG-C:

- USA: Y. Danon (Experimenter), D.L. Smith (Experimenter).
- Japan: I. Iwamoto (Evaluator), K. Yokoyama (User), H. Harada (Experimenter).
- Russia: V.N. Koshcheev (Evaluator), V. Pronyaev (Evaluator).
- KAERI: Y.-O. Lee (User)
- JEFF: G. Rimpault (FR, User), A. Plompen (EC, Experimenter).
- TENDL: A. Koning (Evaluator)

At WPEC the projects were asked to review their list of members of SG-C. They agreed to consider their attendance. It was also agreed that members that are not able to travel may be represented by other project members at SG-C meetings. Existing members should be asked if they wish to continue.

The SG-C mailing list was provided to the chairman by the NEA secretariat. It needs to be brought up to date. The members of SG-C and WPEC should be reminded of the use of this mailing list.

The HPRL mailing list was provided as well. It needs to be reviewed by the subgroup.

#### 4. New Requests

- High priority request for new measurements and subsequent re-evaluation of the  $^{237}\text{Np}(n,f)$  cross section in the range from 20 keV to 20 MeV by F. Tovesson. The proposal (**Annex 2**) was modified by A. Plompen, and the modifications were discussed at the SG-C meeting and the WPEC meeting and presented for agreement to the requester (F. Tovesson). F. Tovesson and WPEC agreed to the changes.
- With the approval of the mandate SG-C can proceed with the implementation of new categories of request called "Special Purpose Quantities (SPQ)". Potential categories are "Spectrum Averaged cross sections (SPA)", "Decay Data", "Fission yields", "Thermal Scattering Law", "Activation data". Others may be defined as the need arises. Continuation with this request category depends on modifications to the website and database by the NEA. A document prepared initially by E. Dupont specifying the required changes was discussed, modified and agreed at the SG-C meeting and endorsed by WPEC (**Annex 3**).
- SG-C endorsed the first SPQ proposal for "Spectrum averaged dosimetry cross sections" for the validation of reactor dosimetry reactions by Stanislav Simakov of the IAEA. It is based on advise of the Coordinated Research Project for testing and improvement of the International Reactor Dosimetry and Fusion File. The proposal was discussed and an example request form was prepared (**Annex 4**) to guide implementation of changes on the website for SPQ requests and to guide entry of the requests. For the entry of the requests for SPA cross sections in the  $^{252}\text{Cf}$  and  $^{235}\text{U}(n\text{-th},f)$  neutron fields secretarial support should be asked of S. Simakov and the NEA secretariat.
- An SPQ list for Decay Data was agreed to be appropriate by SG-C and later by WPEC. A request was made by T.V. Golashvili to have entries for 54 nuclides (abbreviated in **Annex 5**). In absence of immediate competence for evaluating these requests it was decided to approach a number of experts in the field to evaluate the relevance and formulation of these requests and to modify/augment it according to their insights. It was noted by M. Herman of the ENDF project that BNL is establishing a high priority list for decay data in the interest of ENSDF development. It was agreed that BNL/ENSDF and SG-C should support one each other's request lists.

- It was agreed at the SG-C meeting and further endorsed by WPEC to solicit requests for SPQ lists of Fission Yields and of Thermal Scattering Law requests.
- SG-C reviewed the available requests for prompt fission gamma spectra. It was concluded that there was significant follow-up to the existing requests and that this should be included in the feedback. The existing requests could be modified to reflect interests in global security applications. This will surface in the feedback exercise (see below).
- SG-C discussed the existing nu-bar requests. A stronger and more recent motivation can be supplied to the existing U-233 request. We urgently need requests for Pu-239 and U-235 to reflect the interest in the energy dependence (resonance fluctuations) and multiplicity distributions and the overwhelming importance for criticality estimates. At WPEC it was agreed that requests are urgently needed.
- SG-C discussed the requests for actinide capture cross sections. All important nuclides are on the HPRL. Significant follow-up is underway that should be reflected in the feedback document.
- SG-C discussed the lack of prompt fission neutron spectra requests for the main nuclides U-235 and Pu-239 despite considerable interest in all file projects and the CIELO SG. At WPEC it was agreed requests are urgently needed.
- SG-C and WPEC discussed the lack of requests for the fission cross sections of U-235 and Pu-239. It was agreed that these are too important to warrant the absence of such requests.
- SG-C and WPEC discussed the need for scattering data of Pu-239 and U-235. Requests are due to motivate the study of these very important but very difficult to measure quantities.

## 5. Feedback

- Feedback was received only from Y. Danon. Excellent examples (8 cases  $^1\text{H}$ ,  $^{23}\text{Na}$ ,  $^{56}\text{Fe}$ ,  $^{235}\text{U}$ ,  $^{238}\text{U}$ ,  $^{240}\text{Pu}$ ,  $^{242}\text{Pu}$  (BNL, LANL, NIST)) were provided by LANL, BNL and NIST on the basis of the template. Feedback Form for the High Priority Request List for  $^{23}\text{Na}$  and  $^{56}\text{Fe}$  are given in **Annex\_6a** and **Annex\_6b**.
- The timing to finalize this by the end of 2014 was completely missed due to lack of time SG-C coordinator.
- The deliverable under the present mandate leaves SG-C with one year to finalize the feedback report.
- The report will consist of an introduction, the collected feedback forms and a conclusion.
- These forms will be the starting point for modifications to the online entries.
- The appeal for support of this feedback will be issued again.

## 6. List of actions

1. **Action NEA:** The mandate should be a reference document on the HPRL website.
2. **Action NEA:** Remind the projects of the need to appoint new/additional members of SG-C and ask existing members if they wish to continue.
3. **Action NEA:** modify the SG-C mailing list to reflect its current members and remind the members and WPEC of the way to use it (distribute the name).
4. **Action SG-C members:** review the HPRL mailing list (distribution of present list by NEA).
5. **Action NEA:** Implement the changes to the request given according to **Annex 2** and move the status of the request from “to be checked” to “high priority”. An email should be sent to the HPRL list to announce this new request once this is done.
6. **Action NEA:** Modify the website and database of the HPRL to accommodate requests for special purpose quantity using the guidance provided in **Annex 3**. The example in **Annex 4** provides partial further guidance. A timely implementation is of the utmost importance for a credible follow-up of the SG decisions and its mandate.

7. **Action NEA:** Ask for secretarial support from S. Simakov and the NEA secretariat to enter the SPA requests of the proposal by Simakov according to the guidelines given in **Annex 4** together with his request.
8. **Action AP (done):** Send an email to Robert Mills (NNL), Mark Kellett (LNHB), V. Chechev (Khlopin RI), Dr. F. Minato (JAEA), I. Gauld (ORNL), A. Sonzogni (BNL) to review the list by T. Golashvili (**Annex 5**) and modify and add to it in accordance with their view of importance to applications interests. Consult with the SG-C chair in case this email requires assistance.
9. **Action AP (done):** Contact Robert Mills (NNL), Mark Chadwick, Morgan White (LANL), Ian Gauld (ORNL), (JENDL, T. Fukahori), O. Serot (CEA), A. Ignatyuk (IPPE) to provide their suggestions for an SPQ list of Fission Yield requests.
10. **Action AP (done):** Contact G. Noguere (CEA), D. Roubtsov (AECL), Y. Danon (RPI), M. Dunn (ORNL), A. Kahler (LANL), I. Hawari (NCSU), T. Fukahori (JAEA) to provide their suggestions for an SPQ list of Thermal Scattering Law requests.
11. **Action MW:** Prepare requests for nu-bar of U-235 and Pu-239 in consultation with M. Chadwick.
12. **Action MW:** Prepare requests for the PFNS of U-235 and Pu-239 in consultation with M. Chadwick.
13. **Action M. Chadwick:** Propose requests for the fission cross sections of U-235 and Pu-239.
14. **Action MW and AP:** Prepare requests for Pu-239 and U-235 inelastic scattering.
15. **Action AP:** Renew the appeal for feedback to the project responsables, SG-C and WPEC and ensure timely completion of the report and the mandate deliverables.



## Agenda

### Meeting: WPEC SG-C “High Priority Request List (HPRL)”

<p style="text-align: center;"><b>Agenda</b> <b>NEA</b> NEA Headquarters, Issy-les-Moulineaux May 18, 2015</p>
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	<b>Monday, May 18, 2015</b> <b>NEA Room B</b>	
<b>9:00 – 12:30</b>	<b>Morning schedule will be for discussion of:</b>  1) Proposal Simakov for Reactor Dosimetry requests 2) Proposal Tovesson for Np-237 3) Discussion on FY and DD requests 4) Discussion on nu-bar and PFNS requests 5) Feedback on existing requests (Danon, Jurado, ...). 6) How to implement modifications at NEA.	

**High**

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OECD Nuclear Energy Agency

Tuesday, 2 June 2015

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