

Summary Record of the 9th Meeting of the WPEC Subgroup 33 on Methods and issues for the combined use of integral experiments and covariance data

NEA, Issy-les-Moulineaux, France

22 May 2013

The subgroup co-ordinators, **M. Salvatores** and **G. Palmiotti**, welcomed the participants to this ninth and final meeting of subgroup 33 (see list of participants in Appendix 1). The proposed agenda was adopted (see Appendix 2).

All actions from the previous meeting were relative to the finalisation of subgroup activities, including the final deliverable/report, and the publication of a “Big Paper” in the *Nuclear Data Sheets* journal that will issue the proceedings of the ND2013 conference. All actions were completed and a list of few follow-up actions is available at the end of this document (see section 4).

1. Presentations of updated results/studies

S. Pelloni presented PSI adjustment results using (a) the Generalized Linear Least Squares (GLLS) methodology, and (b) the combined use of GLLS and the ERANOS code for explicit posterior calculations. The JEFF-3.1 nuclear data associated to the COMMARA-2.0 covariance data were used for this benchmark exercise. These new results are consistent with the overall conclusions drawn from other participants’ results.

Participants agreed to add these new PSI results to the final report (Action 1).

T. Ivanova presented IRSN adjustment results applied to the uncertainty quantification of fast reactors. She reported on adjustment results obtained with two different algorithms (“one-through” and “step-wise”). The first one is the usual approach, whereas the second one is conducted as a chain of subsequent steps where the calculation uncertainty due to the extracted nuclear data is added to the benchmark uncertainty. A preliminary comparison between these two approaches for a 3-step case (i.e. ²³⁸U first, ²³⁹Pu second, and all other data in the third and last step) shows that the step-wise method produces reasonable integral C/E and uncertainties, and desirable a posteriori nuclear data covariance. However, corrections to some cross-sections depend on the methods.

S. Hoblit reported on the status of COMMARA-3.0, a 33-group processed version of the ENDF/B-VII.1 covariance library. The processing was performed with NJOY using a reactor-like weighting flux (i.e. fission spectrum + 1/E + thermal Maxwellian). The files were tested using COMMARA procedures for Quality Assurance and a subset is available as COMMARA-3.0β. The final release date will depend on funding.

2. Status of the final deliverable/report

E. Dupont reviewed the status of the 9 chapters and 6 appendices prepared by the section leaders for the final subgroup report. Most of these documents are up-to-date, consistent with the ND2013 publication (already submitted), and ready for publication. **R. McKnight** suggested some changes and additional information in the chapter 4 on integral covariance data. **M. Ishikawa** and **R. McKnight**

agreed to finalise this chapter as soon as possible (Action 2). As discussed earlier, minor updates are needed in various chapters to include PSI results, whereas more significant updates are required in chapter 7 and Appendix F on benchmark results (Action 1). **E. Dupont** noted some inconsistencies in the definition of the phase III of the benchmark exercise in the ND2013 paper and the final report. Participants agreed that the final report should be updated according to the definition given in the paper, and published by the NEA within a few months (Action 3).

3. Adjourn

M. Salvatores thanked all subgroup members for their outstanding participation in subgroup 33 activities and looks forward to a new round of exciting work in the framework of the new proposed subgroup (SG39).

4. Actions

1. S. Pelloni,
Chapter leaders To update relevant chapters of the final report with PSI adjustment results.
2. M. Ishikawa
R. McKnight To finalise Chapter 4 on Integral experiment uncertainties and correlations.
3. E. Dupont To take care of the publication of the final report by the NEA.
4. E. Dupont To update the subgroup web page with materials from this meeting and other participant contributions.

Appendix 1

Participants to the 9th meeting of WPEC subgroup 33

NEA, Issy-les-Moulineaux, France

22 May 2013

M. Dunn	ORNL, USA	
E. Dupont	NEA, OECD	(Secretary)
M. Herman	BNL, USA	
S. Hoblit	BNL, USA	
M. Ishikawa	JAEA, Japan	
E. Ivanov	IRSN, France	
T. Ivanova	IRSN, France	
R. McKnight	ANL, USA	(Monitor)
G. Palmiotti	INL, USA	(Coordinator)
S. Pelloni	PSI, Switzerland	
A. Plompen	JRC-IRMM, EC	
M. Salvatores	INL, USA – CEA, France	(Coordinator)
Haicheng Wu	CIAE, China	

Appendix 2

Agenda of the 9th meeting of WPEC subgroup 33

NEA, Issy-les-Moulineaux, France

22 May 2013

Wednesday, May 22

Subgroup 33 Final meeting

- 13:30-13:40 Short introduction (GP+MS)
- 13:40-14:10 S. Pelloni, “Adjustments at PSI: New benchmark results from the use of (a) the GLLS methodology and (b) the combined use of GLLS and the ERANOS code for explicit posterior calculations”
- 14:10-14:40 T. Ivanova, “Update of IRSN results”
- 14:40-15:20 S. Hoblit, “Status of COMMARA 3.0”
- 15:20-16:00 E. Dupont, “Status of final deliverable”; Review and comments from members are expected on individual chapters

Adjourn