



# WPEC subgroup 37 Description

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- Final report
- Time scales
- Working together website/email group

There are new developments in the theory and measurement of fission product yields that are expected to result in new evaluated files in the next 5 years. These files are expected to include considerably more accurate yields including neutron energy dependence combined with new covariance information that will for the first time allow realistic error estimates of many engineering parameters to be determined within the calculation code rather than only being justified by comparison with limited benchmark experiments.

WPEC subgroup 37 will work on improving fission product yield evaluation methods to include both the existing and new measurement types and consider adoption of new models of fission product production replacing the current models such as the five-Gaussian and Wahl  $Z_p$  models.

In addition, the new evaluation methodologies should allow the definition and evaluation of the covariance terms to improve estimations of errors in applied calculations.

The subgroup goal is to develop improved methodologies for future evaluations that are consistent with the new theoretical knowledge and experimental measurements, and include common covariance methods that will allow calculations with both improved accuracy and the generation of uncertainties on calculated engineering parameters.

To gain maximum benefit for modellers the participants need to exchange and discuss their ideas and plans so that common data formats for the improved yields and new covariance data can be developed.

# Task 1

Document and compare the current methodologies used to produce the ENDF, JEFF and JENDL files.

- Propose to write up a summary of the JEFF-3.1.1 evaluation based on existing reports (JEF Report 20) to describe procedure.
- Need volunteers to write up similar summary
- Propose to write review of the methods, highlighting strengths

In proposal, expected to take 6 months (Dec 2013)?

# Task 2

Through insights amongst the subgroup participants, together with new measurements being made, the participants will strive to better understand and reconcile existing fission product yield discrepancies.

Tasks will include:

- Analyze the implications of new measurements techniques which offer a qualitative and potentially a quantitative leap forward, for updating the current evaluated files.

# Task 2

- Examine the existing and planned fission product yield measurements and consider how to improve the current evaluation methodologies to gain maximum benefit from these new sources of data.
- Examine the use of the new theoretical methods to model yield distributions compared to available models and the measurements.
- Need volunteers

Need to include text in final report for May 2015?

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# Task 3

Recommend revised fission product data formats including covariance data.

- Need common (?) concepts of what we need and how these can be generated/stored.
- Need to write up in form suitable for ENDF/SG38
- Volunteers?

Proposed by May 2014?

After approval by the WPEC committee this will be published as part of the OECD WPEC report series

See <http://www.oecd-nea.org/science/wpec/>

WPEC-37 is a two year project, need to complete by May 2015.

- Need to maintain significant effort to achieve this.

# Working together website and email group

## Website:

- <http://www.oecd-nea.org/science/wpec/sg37/>

## Email list:

- [wpec-sg37@oecd-nea.org](mailto:wpec-sg37@oecd-nea.org)

## Next meeting

- May 2014?

Need to maintain effort

6 monthly progress checkups? November 2013??

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