Considerations About Future of SG39

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Future Steps For Ending SG39

- **Between March and May 2017 CIELO isotopes covariance should be available (M. Chadwick at last May WPEC meeting).**
- **Therefore, it should be possible to perform a final adjustments using CIELO isotopes evaluations as reference starting points.**
- **INL is planning to perform this adjustment (new C/E calculated with sensitivity coefficients and linear approximation). Any other volunteer (a considerable number of experiments should be used, beyond SG33)?**
- **Results should be provided and analyzed at meeting in December 2017. Final recommendations for CIELO isotopes should be formulated at that time.**
- **Final deliverable of SG39 to be produced by last SG39 meeting in May 2018.**

New SG: Efficient and Effective Use of Integral Experiments for Nuclear Data Validation

Currently, a blind and blanket validation approach is applied usually to several thousand benchmarks (ICSBEP).

- **The result is a list of K_{eff} from which only few firm conclusions can be drawn (see what is done for CIELO).**
- **Compensation effects are not pointed out.**
- **No feedback on data uncertainties and correlations.**
- **A large number of very valuable experiments are not accounted for or they are partly imbedded in the evaluations themselves.**
- **Integral experiment uncertainties, possible systematic errors and correlations are not accounted for.**

A more rigorous, efficient, and effective approach needs to be worked out, agreed and adopted.

New SG: Efficient and Effective Use of Integral Experiments for Nuclear Data Validation

•A new SG is proposed to this purpose that should focus on formalizing and applying a methodology for:

- Selecting appropriate experiments and in particular those that provide separate effects information.
- Analysing C/E by isotope, reaction, and energy range in order to point out compensation effects (based on low uncertainty, sensitivity coefficients, and χ^2).
- Performing adjustments to provide unambiguous feedbacks. Some approaches has been proposed (Yokoyama, Palmiotti) but not yet finalized or widely used.

Moreover the new SG should give guidelines on:

- How to define a general protocol for the use of sensitivity coefficients and covariances.
- How to systematically quantify impact on a list of selected target power reactors (thermal, epithermal, and fast).
- How to provide updated target accuracies by combining inverse approach and integral experiments (some efforts in this direction at ORNL).