



# ***WPEC/SG46 Meeting***

## ***December 7, 2021***

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Duration	CEST (Paris)	Topic	
00:10	14:00	Introduction and summary of the last meetings	Oscar Cabellos
<b>TAR Exercise</b>			
00:20	14:10	MYRRHA RZ MODEL	Alfonso Ciro
00:20	14:30	Nuclear data for chloride fast reactors	Tom Taylor
00:20	14:50	Assessment of Nuclear Data Needs for Advanced Reactor Demonstrations	Pino Palmiotti
00:15	15:10	Processing covariances for TAR Exercise	Oscar Cabellos
00:20	15:25	TAR Exercise: Preliminary Results	Oscar Cabellos
00:05	15:45	ENEA contribution: Application to ALFRED	Donato Castelluccio
00:10	15:50	<b>Break</b>	
<b>Methodology</b>			
00:20	16:00	PFNS uncertainties – the constrained sensitivity methodology	Ivo Kodeli
00:20	16:20	Compilation of the past methodological presentations	Mathieu Hursin
00:20	16:40	Follow-up: Pulsed Neutron Die Away Experiments at Lawrence Livermore National Laboratory	Daniel Siefman
<b>Invited talk- HPRL</b>			
00:20	17:00	The need for measurement of <sup>135</sup> Xe neutron cross sections	Vladimir Pronyaev
00:40	17:20	Next Steps in SG46	All

## □ Objectives of TAR meeting on April 14, 2021

- To review the status of WPEC/SG26
- “To verify the status of design target accuracies and their potential evolution (reactor operation and fuel cycle parameters)”
  - ... updated target accuracies for “**ND uncertainty reduction (NDUR)**”
  - New reactors concepts are presently explored besides Gen IV, MA burners, and ADS: MSR, SMR, micro reactors, and test reactors
- To explore new methodologies/information for NDUR based on:
  - New covariance data: ENDF/B-VIII.0, JEFF-3.3, JENDL-4u/5, TENDL2019
  - Impact of cross-correlations in energy, reactions and isotopes
  - Energy structure: “7 energy groups (based on physical considerations)”
- “The **HPRL** will certainly benefit from an update, to motivate and focus new experiments and to meet potential new requirements”

## □ Outcome of TAR meeting on April 14, 2021

- [“Benchmark Specifications and Guidelines for the WPEC/SG46 exercise on TAR”](#)

## □ Now...

- [“Volunteers” to perform “Uncertainty Quantification”](#)

- For each candidate reactor system: **collecting sensitivity profiles** in SDF/ 33 groups / **7 groups**
- **Covariances**: ENDF/B-VII.1, ENDF/B-VIII.0, JEFF-3.1.2, JEFF-3.3, JENDL-4.0,... others?
- **Processing covariance matrices**: NJOY/Boxer or COVERX format
- **UQ** with own tools and/or NDaST tool: sensitivity profiles + covariances

- [“Volunteers” to perform “ND uncertainty reduction” based on updated TARs](#)

- Calculations for each reactor system independently
- For N-integral parameters
- Variety of isotopes and reactions
- Different values of “cost parameter”, for each type of reaction, energy or isotopes
- The impact of cross correlations in nuclear data
- Different sources of covariances: ENDF, JEFF, JENDL, TENDL
- Calculations jointly with different reactor systems