



**Gaerttner LINAC Center, Rensselaer Polytechnic Institute
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SUBJECT: Report on Foreign Travel 2023 WPEC meeting
DATE: 7/21/2023
TO: Dr. Angela Chambers, Nuclear Criticality Safety Program Manager, National Nuclear Security Administration / NA-511
FROM: Yaron Danon

MEETING TITLE: 2023 WPEC meeting

MEETING LOCATION: OECD/NEA Headquarters, 46, quai Alphonse Le Gallo, 92100 Boulogne-Billancourt, France

MEETING DATES: May 15-17, 2023

ATTENDEES ON BEHALF OF NCSP: [Only 1 report from the institution for ALL attendees]

Yaron Danon

MEETING PURPOSE:

The purpose of WPEC and adjacent subgroup meetings is to promote the exchange of information on nuclear data evaluations, measurements, nuclear model calculations, validation, and related topics, and to provide a framework for co-operative activities between the participating projects. That includes the ENDF, JEFF, JENDL, and CENDL projects and other invited delegates.

MEETING BENEFITS TO THE NCSP:

WPEC and subgroup meetings include topics which are supported by NCSP research and relate to nuclear data work performed at RPI and other US labs. NCSP supported work was presented and highlighted, and information exchange enables us to access other data such as details of nTOF experiments on Fe-54

PURPOSE OF TRAVEL

The purpose of the travel is to participate in the WPEC meeting as an official member of the ENDF US delegation, to present a report on US experimental ND work during FY22-23, and to participate in subgroups SG-C (High Priority list), SG-48 (Advances in Thermal Scattering Law Analysis), SG-51 (new group proposal on URR processing).

Persons Contacted at meeting

Participation list is not available, a list of in-person participants that I recall is provided.

Country	Name		Country	Name
CHN	RUAN Xichao		USA	V. SOBES
ESP	CABELLOS DE FRANCISCO		USA	A. HAWARI
FRA	BERNARD David		USA	K. RAMIC
FRA	G. NOGUÈRE		USA	C. CHAPMAN
GBR	MILLS Robert W.		USA	NOBRE Gustavo
JPN	A. KIMURA		JPN	KATABUCHI Tatsuya
JPN	IWAMOTO Osamu		EC	PLOMPEN Arjan
USA	ZERKLE Michael		IAEA	J. C. SUBLET
USA	RAMIC Kemal		OECD/NEA	FLEMING Michael
USA	BROWN David		OECD/NEA	Andrw HOLCOMB
USA	Jesse BROWN		OECD/NEA	HILL Ian
USA	C. MATTOON			
USA	HAECK Wim			

Presentations, Chair Responsibilities, Etc.:

Danon is the chair of the CSEWG measurement committee and in this capacity reported to WPEC on behalf of CSEWG in the May 17, 2023, session on recent US experimental results. This presentation included summaries from:

1. LANL results on O-16(n,alpha), Hye Young Lee (LANL)
2. NZ results on Fe and Ni, including Ni-56, Sean Kuvin (LANL)
3. PFNS for U-235 and U-238, and neutron scattering measurements at LANL, Keegan Kelly (LANL)
4. Recent measurements on C-13, Li-7, and F-19 at Kentucky with a digital data acquisition system, Jeff Vanhoy (US Naval Academy)
5. Overview of Nuclear Data Measurements at RPI, Yaron Danon (RPI)
6. Sub-Thermal Transmission Experiments of Organic Materials at the RPI Gaertner LINAC Center, Adam Daskalakis (NNL)
7. Current status of Zr-90 experiments, Jesse Brown (ORNL)
8. Recent Work related to Neutron Standards, Dr Allan Carlson, (NIST)
9. Measurements Program Update from Berkeley, Lee Bernstein (Berkley)
10. The current status of the EXFOR project, Dr Boris Pritychenko (NNDC/BNL)



Danon is also a US representative to Subgroup C - High Priority list (HPRL) and participated in the meeting of this subgroup. The discussion in SG-C was about updates to different entries on the list since no new entries were added in the last year.

Highlights from the different subgroup meetings

SG-C HPRL 5/15/2023

- Discussion on criteria to close requests suggested that it should probably be done based on information exchange with the originator of the request.
- Data needs for the EURADOS a dosimeter project requires more accurate data on proton induced reactions on (C,N,O) up to 200 MeV. It was indicated that HPRL is mostly for neutron induced reactions. The request was deferred until a decision will be made later.
- A need for better Am-241 neutron capture branching ratios important for MOX fuel burnup calculations was mentioned.
- N-15 scattering in support of UN fuels in UK. A measurement is possible, but the availability of N-15 needs to be explored.
- There is a new HPRL web interface which was discussed last year but is not on-line yet.

SG-48 5/16/2023

Danon presented results of different total cross section measurements performed at RPI. These data are used for validation of new evaluations of Polyethylene, Polystyrene, Lucite, YHx.

RPI measured data were used in evaluation reports from ORNL and NNL.

An overview of evaluation work was given by different participants.

WPEC 5/13/2023

Danon presented a report on US experimental activity.

Other reports on experiments and evaluation for other evaluation projects (JEFF, JENDL, CENDL) were also given.

Some observations:

Japan:

- Pb scattering in Japan might be relevant to our work.
- Gd-157 experimental results, measured thermal cross section is agreeing with JENDEL 5 within uncertainty. About 8% higher than Leinweber (RPI, 2006).
- Nb- capture in the resonance region. 119 eV neutron width is 6% higher than Drindak (RPI, 2006).

Europe

- nElbe Zr-nat transmission was not finalized yet, nTOF Zr-94 capture via activation not finalized yet.
- Scattering measurements on Fe-54 and 56, data is not available yet.
- Rh-103 transmission and capture measurements are being finalized.
- Cr-53 capture yield was measured at nTOF (we removed it from the NDAG list)
- Mo-94,95,96 capture yields were measured at nTOF

Distribution:

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