

LLNL Report

For USNDP

Nuclear Data Week, November 2016

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LLNL contributions to USNDP

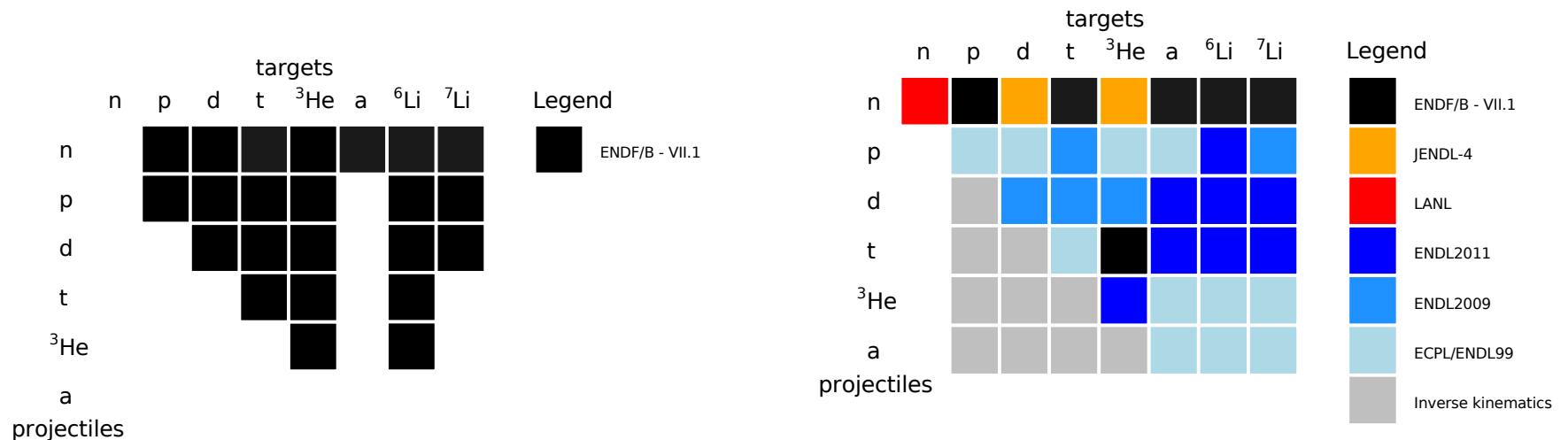
- 0.3 FTE
- Coordinate LLNL nuclear data efforts with USNDP/CSEWG
- Testing new ENDF/B-VIII evaluations
 - Criticality testing: Marie-Anne Descalles, Pavlos Vranos
(presented this week by Eric Jurgenson)
- Revitalize national skills for R-matrix evaluations
 - With IAEA, R-matrix workshops, and GND-interchange codes.
- Leverage LLNL programmatic funding to provide evaluations for inclusion in ENDF
 - Ian Thompson, Eric Jurgenson

Current Funding Scenario

- National Coordination
 - Coordinate Nuclear Data Efforts with USNDP/CSEWG
 - Attend USNDP/CSEWG meetings
 - Use R-matrix GND tools to translate, verify (and improve) proposed evaluations
 - R-matrix methods: deliver keynote tutorials at Santa Fe workshop
- International Coordination
 - Attend IAEA consultants meeting on R-matrix methods
- Provide LLNL evaluations for ENDF
 - USNDP funds the translation over to ENDF (after ASC/PEM funds evaluation work at LLNL)
 - Delivering LLNL charged-particle evaluations for ENDF/B-VIII release

ENDF Evaluations

- Fixes to neutron evaluations for Be7, U239, Ta180,
- Charge Particle Evaluations by LLNL
 - Detailed overview in CSEWG Evaluations Committee
 - ~30 evaluations in use at LLNL that could be considered for next ENDF release
 - Effort now nearly finished (much by Caleb!), to convert ENDL into ENDF evaluations
 - Seeking LCT=4 option in ENDF6 format to use lab frame for breakup products.



Awaiting LCT=4 option, in October 2016 submitted from LLNL
the ENDF files for p+a, t+a, h+a, a+a, p+⁷Li, d+⁷Li, t+⁷Li, h+h

Current Activities

- National & International Coordination
 - Coordinate Nuclear Data Efforts with USNDP/CSEWG
 - Attend data revision workshops at BNL (2015, and 2016 remotely).
 - Attend R-matrix meetings
 - Attend USNDP/CSEWG meetings
- Use GND to make R-matrix interchange code
 - Collaborate on R-matrix evaluations with Sofia Quaglioni
- Provide LLNL evaluations for ENDF
 - ASC/PEM funds evaluation work at LLNL
 - USNDP funds the translation over to ENDF
 - LLNL light-ion evaluations to GND and ENDF format
 - Develop new light-ion evaluations from R-matrix fits
 - Verify recent CIELO R-matrix fits.



FY16 Metrics Table

NSR Compilations	0
EXFOR Compilations	0
XUNDL Compilations	0
ENSDF Evaluations submitted	0
ENDF Evaluations	0 (see below)
Disseminations (in thousands)	5 (approx)
Articles	0
Reports	2
Invited Talks	15

A-chains to be submitted in FY16: N/A

A-chains to be submitted in FY17:

ENDF evaluations in FY17: 8 so far + 8 to come

FY16 FTE Table

PhD Permanent	0.27
PhD Temporary	0
Tech. & Admin.	0.05
Grad. Student	0
Total	0.32

\$133k FY16 funding

\$98k FY15 carry over

\$146k FY16 total costs

\$86k rollover into FY17

USNDP Continued Support of GND

- LLNL programs continuing to support core development at reduced level
- USNDP continue to support GND efforts
 - Coordinate GND efforts with CSEWG formats committee
 - Involved attendance at CSEWG
 - Lead effort for international adoption
 - Involves attendance at WPEC subgroup 38

Lead international effort to develop modern nuclear data format (GND)

- WPEC Subgroup 38 is underway
 - 38 Beyond the ENDF format: A modern nuclear database structure
 - Coordinator: D. McNabb
- Third meeting: Dec 9-11, 2013 (Tokai, Japan)
 - Collected feedback from each sub-task
 - Update the work plan
- WPEC Meeting, OECD Headquarters, 10-11 May 2016