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USNDP LANL Report

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FY13 Metrics Table

NSR Compilations	0
EXFOR Compilations	0
XUNDL Compilations	0
ENSDF Evaluations submitted	0
ENDF Evaluations	?
Disseminations (in thousands)	0
Articles	25
Reports	2
Invited Talks	25

FY13 FTE Table

PhD Permanent	1.2
PhD Temporary	0.35
Tech. & Admin.	
Grad. Student	
Total	1.55

A-chains to be submitted in FY14:

For instance, A=145, A=79, plus 10 individual nuclides

A-chains to be submitted in FY15:

For instance, A=110, plus 5 nuclides

Personnel Changes and National/International Activities

- Staff Members and Post-Docs
 - Brent Perdue finished 3-year postdoc and left LANL for a job in the commercial sector
 - extended visit of Dr. Paul Koehler to LANSCE as Luis Rosen Scholar
- Conference Organized and Plan
 - WINS2012, workshop on elastic and inelastic scattering
 - Boston, Sep. 2012
 - help organizing Int. Conf. Nuclear Data for Science and Technology
 - New York, Mar. 2013
 - NEMEA-7/Cielo, Workshop of the Collaborative International Evaluated Library Organization
 - · Geel, Belgium, Nov. 2013
 - CW2014, Int. Workshop on Nuclear Data Covariances, Santa Fe, Apr. 2014
 - · chair: D. Neudecker
- WPEC/OECD/NEA
 - lead two subgroups
 - SG35 neutron scattering angular distribution
 - SG40 Cielo pilot program



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Nuclear Reaction Theory Development

- New width fluctuation model based on GOE
 - ND2013 paper, T. Kawano, P. Talou
- Monte Carlo Hauser-Feshbach for fission neutrons and gamma-rays
 - CGMF released
 - 2 Phys. Rev. and 1 Nucl. Phys. papers

Neutron scattering angular distributions





Code Development and New Data Evaluations

- Hauser-Feshbach code CoH3 (ver. 3.3 Titania)
 - new dynamical scheme to allocate memory, reduced memory size
 - Madland-Nix model for prompt neutron energy spectra with pre-fission neutrons



New evaluations for ENDF/B-VII.2 (or VIII)

- Ni-58, 59, 60, 61, 62, and 64 above resonances
 - elastic scattering angular distributions calculated from resonance parameters
 - better benchmark performance
- Ar-40 based on GEANIE prompt gamma-ray data (above resonances)
 - S. MacMullin et al. Phys. Rev. C 85, 064614 (2012)
- Ne-20, 22 possible
 - S. MacMullin et al. Phys. Rev. C 85, 067601 (2012)

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LANSCE New Experimental Data Highlight

- DANCE
 - completed neutron capture measurement for Pu-239 below 1 keV
 - began experiment for En > 1 keV
 - high fidelity due to very good separation of capture and fission
 paper submitted





LANCE New Capabilities Highlight

Time-Projection Chamber



Fission cross section measurements

TKE of Fission Fragments



lon chamber and Si detectors

SPIDER



2E-2V measurement of fission fragment masses, charge and yields

Chi-Nu



Prompt fission neutron spectra measurements



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