Los Alamos Report to NDAG

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NDAG Meeting

December 3, 2020

Summary of Los Alamos FY20 NCSP Nuclear Data Accomplishments (1)

- ## Evaluations
  - U-234 and U-236 submitted to NNDC (Stetcu)
  - Be-9 completed; undergoing testing; submission to NNDC pending (Paris)
  - U-235/U-238 fission ratio cross-sections by niffteTPC incorporated into standards (Neudecker)
  - Initial work on high-energy Ta-181 (Herman)

- ## Measurements
  - U-233 capture: assessment of previous "thin" target data; finalize specifications and order material for new "thick" target; testing of NEUANCE detector (Couture)
  - Pu-240 PFNS (with LLNL): Pu-240, apparatus for foil preparation and PPAC obtained; measurements on LANSCE 2021 schedule (Devlin / Wu)

Summary of Los Alamos FY20 NCSP Nuclear Data Accomplishments (2)

- **Codes, Theory, and Modeling**
  - Report on Status / Plans for Consistent Evaluation of Fission Observables (Lovell)
  - NJOY21: RECONR modernized and implemented; LEAPR modernized in stand-alone code (Conlin)
  - Updated $S(\alpha,\beta)$ library for MCNP created, documented, and distributed (Parsons)
  - Extensive report on 2-year LANL project exploring Machine Learning for Nuclear Data evaluation and validation (Neudecker)

Summary of Los Alamos FY21 NCSP Nuclear Data Plans (1)

- **Evaluations**
  - U-235 and Pu-239 fission cross-sections incorporated into standards from TPC Pu-239/U-235 ratio data
  - U-235 and Pu-239: Evaluate PFNS and multiplicity consistently, including angular information about prompt neutrons
  - U-235: Develop consistent evaluation of fission yields, neutron multiplicity, and spectra from thermal to 20 MeV
  - U-235: Finalize prompt fission neutron spectra based on LANSCE high-energy emission data from Chi-Nu
  - Complete Ta-181 high-energy evaluation and initiate work on Li-6 and U-233

Summary of Los Alamos FY21 NCSP Nuclear Data Plans (2)

- ## Measurements

  - U-233 capture: Complete fabrication of new U-233 target; acquire initial data using DANCE and NEUANCE (beam time available through Dec 21 and Q3-Q4)

  - Pu-240 PFNS (with LLNL): Electroplate material onto thin Ti foils (12); assemble and test the PPAC; acquire data (beam time scheduled at LANSCE during Q4)

  - Mo-95: finish analysis of ^{95}Mo neutron capture, transmission, and resonance spin/parity data taken at ORELA

- ## Codes, Theory, and Modeling

  - NJOY21: Integrate modernized versions of THERMR and LEAPR; demonstrate modernized version of ACER

  - FAUST: continued focus on enabling capabilities for enhanced data testing and benchmarking