

Summary of changes to the ENDF library

David Brown (BNL)

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BROOKHAVEN
NATIONAL LABORATORY



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Color coding for this talk

- Committed to phase1
- Soon to be committed to phase1
- Planned contribution
- **CONFLICT** 😡 **angry words!**

Once again, TSL sublibrary undergoing major revisions

- New evaluations:

- FLiBe, HF, paraffinic oil (NCSU)
- UH₃, Be₂C, ⁷LiD, ⁷LiH, ZrH₂ (ϵ -phase) (NNL)
- Si, Mg, Toluene, Mesitylene (phase II) (JEFF-3.3/CAB?)

- Revised evaluations:

- YH₂ (NNL), **conflict with RPI/ORNL?**

- New, but conflicting, evaluations:

- **Sapphire (NCSU vs. JEFF-3.3)**
- **Polyethylene (NCSU vs. RPI/ORNL)**
- **Light water ice I_h (NCSU vs. RPI/ORNL vs. JEFF-3.3)**
- **Light H₂O (CAB vs. NCSU)**
- **Lucite (NCSU vs. RPI/ORNL)**
- **ZrH (δ -phase) (NNL vs. JEFF-3.3)**
- **CaH₂ (NCSU vs. JEFF-3.3)**

Mass(ive) sublibrary changes

- **EPICS2017 tweak — atom_relax, electrons, photoat revision from Red Cullen (uploaded by G. Nobre last week)**
- **SFY fixes (A. Mattera, BNL, September 2020)**
- **NFY fixes (A. Mattera, BNL, September 2020)**
- **Decay changes (R. Lorek, April 2020)**
- **2019 IAEA Photonuclear (G. Nobre uploading next week 😊, working through formatting issues)**

Charged particle evaluations

- $p+{}^4\text{He}$ (LANL)
- $d+{}^4\text{He}$ (LANL)
- ${}^4\text{He}+{}^4\text{He}$, ${}^4\text{He}+{}^6\text{Li}$ (LANL)
- ${}^4\text{He}+{}^9\text{Be}$, ${}^4\text{He}+{}^{17}\text{O}$, ${}^4\text{He}+{}^{18}\text{O}$ (NNL+IAEA)

INDEN Evaluations

- ^{56}Fe fixes (IAEA)
- ^{55}Mn thermal capture spectrum (IAEA)
- $^{50,52-54}\text{Cr}$
- ^{235}U , ^{239}Pu
- $^{28-30}\text{Si}$ (ORNL)
- ^{233}U (ORNL)
- $^{16,18}\text{O}$

Non-INDEN neutron sublibrary

- $^{155,158,160-164}\text{Dy}$ (ORNL)
- $^{234,236}\text{U}$ (LANL)
- ^{181}Ta (LANL vs. NNL/RPI)
- ^{35}Cl (LANL)
- Hf (RQW, BNL assist)
- $^{63,65}\text{Cu}$ (ORNL)
- $^{140,143}\text{Ce}$ (ORNL)
- Pb (RPI+LANL)
- Np (LLNL)
- Minor actinide nuclides (RQW, BNL assist)
- (x,CP) (LANL+KAERI)
- $^{106,108,110-112,114,116}\text{Cd}$ (LANL fix)
- ^{86}Kr (BNL)
- ^{170}Tm (BNL fix)
- ^{171}Tm (BNL fix)

There is a lot going on! It's very exciting!

- **We must resolve the conflicts**
 - I prefer consensus solutions. Especially when a single sponsor (NCSP) is paying for both ends of a conflict.
 - Also note, that there are not enough of us. As we stand up the ENDF review process, it is likely that your opponents in any conflict will be your reviewer 😬. Figure it out folks!
- **Spreadsheets summarizing these contributions are included in this meeting contribution**
 - These will be updated for the final meeting minutes
- **We have enough contributions already that the executive committee feels that an ENDF/B-VIII.1 release is warranted by February 2023**