

ENDF/B-VII.1 Beta 2 Release Notes

1. Only the Neutron Sublibrary was processed and verified in this release.

2. The following ENDF-6 Utility Codes and their specific versions were used:

- STANEF v8.04
- CHECKR v8.13
- FIZCON v8.08
- PSYCHE v8.05

3. CHECKR issued the following errors:

- **4-Be-7 MAT 419**

ERROR(S) FOUND IN MAT= 419, MF= 1, MT=451
EMAX = 8.10E+06 OUT OF RANGE 2.00E+07 - 5.00E+08

- **8-O-16 MAT 825**

ERROR(S) FOUND IN MAT= 825, MF=33, MT=800
FIRST SUBSECTION MUST BE MAT1=0, MT1=MT
REQUIRED COVARIANCE SECTION 33/107 MISSING

- **74-W-180 MAT 7425**

ERROR(S) FOUND IN MAT=7425, MF=33, MT= 28
MTL=854 IS ASSIGNED OUT OF ORDER 852

- **74-W -182 MAT 7431**

ERROR(S) FOUND IN MAT=7431, MF=33, MT= 28
MTL=854 IS ASSIGNED OUT OF ORDER 852

- **74-W -183 MAT 7434**

ERROR(S) FOUND IN MAT=7434, MF=33, MT= 28
MTL=854 IS ASSIGNED OUT OF ORDER852

- **74-W -184 MAT 7437**

ERROR(S) FOUND IN MAT=7437, MF=33, MT= 28
MTL=854 IS ASSIGNED OUT OF ORDER 852

- **74-W -186 MAT 7443**

ERROR(S) FOUND IN MAT=7443, MF=33, MT= 28
MTL=854 IS ASSIGNED OUT OF ORDER 852

- **90-Th-232 MAT 9040**

ERROR(S) FOUND IN MAT=9040, MF=33, MT= 22
MTL=854 IS ASSIGNED OUT OF ORDER 851

4. A specific NNDC in-house version of NJOY-99.363 was used to process the whole neutron sublibrary, except Cl-35 and F-19 which required NJOY-2009, and generate the corresponding ACE library. To process Ti-46, 47, 48, 49, 50 and V-51, we modified the VIEWR module (beginning of subroutine axis3) in NJOY-99.363 to include the following lines:

```
if(astp .eq. 0.0) then
  if(amin .le. 0.0) return
  if(amax .le. 0.0) return
endif
```

5. NJOY's ACER module flagged possible problems in energy distribution of the alpha production in the following materials:

- Natural C: 1 problem found
- N-014: 5 problems found
- O-16: 1 problem found
- F-19: 2 problems found
- Al-27: 3 problems found
- Si_028: 3 problems found
- Si_029: 1 problem found
- Si_030: 2 problems found

- P_031: 8 problems found
- Ca_040: 95 problems found
- Ca_043: 174 problems found
- Ca_046: 177 problems found
- Ca_048: 97 problems found
- Ti_049: 2 problems found
- Cr_050: 4 problems found
- Cr_052: 4 problems found
- Cr_053: 14 problems found
- Cr_054: 5 problems found
- Fe_054: 3 problems found
- Fe_056: 5 problems found
- Fe_057: 26 problems found
- Ni_058: 2 problems found
- Ni_060: 3 problems found
- Ni_061: 23 problems found
- Ni_062: 1 problem found
- Ni_064: 1 problem found
- Cu_063: 4 problems found
- Cu_065: 3 problems found
- Nb_093: 25 problems found
- Mo_096: 1 problem found
- Mo_097: 1 problem found
- Eu_153: 59 problems found

- Ta_180: 22 problems found
- Hg_198: 11 problems found
- Hg_199: 11 problems found
- Hg_200: 11 problems found
- Hg_201: 24 problems found
- Hg_202: 8 problems found
- Hg_204: 8 problems found
- Pb_204: 181 problems found
- Pb_206: 182 problems found
- Pb_207: 193 problems found
- Pb_208: 1 problem found
- Bi_209: 3 problems found

6. MCNP5 version 1.40 was used to perform simple neutronics calculations using GODIVA.