Release notes for ENDF/B Development p-041_Nb_093 evaluation

December 2, 2016

- `checkr` Warnings:

  1. A previous error halted parsing of the current section
     MAT=4125, MF= 1, MT=451 (1): Parsing stopped

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 1, MT=451
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      171 TO     176
     ```

- `checkr` Errors:

  1. A variable is outside the allowed ENDF range
     MAT=4125, MF= 1, MT=451 (0): Variable range

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 1, MT=451
        MOD =     1 OUT OF RANGE     0 -     0           RECORD NUMBER     171
     ```

  2. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=4125, MF= 3, MT= 2 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 3, MT=  2
        SECTION  3/  2 NOT IN DIRECTORY                 RECORD NUMBER     178
     ```

  3. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=4125, MF= 3, MT= 5 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 3, MT=  5
        SECTION  3/  5 NOT IN DIRECTORY                 RECORD NUMBER     207
     ```

  4. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=4125, MF= 6, MT= 2 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 6, MT=  2
        SECTION  6/  2 NOT IN DIRECTORY                 RECORD NUMBER     279
     ```

  5. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=4125, MF= 6, MT= 5 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 6, MT=  5
        SECTION  6/  5 NOT IN DIRECTORY                 RECORD NUMBER    2111
     ```

- `fizcon` Errors:

  1. The mass field (AWI) is incorrectly set.
     MAT=4125, MF= 1, MT=451 (1): Bad mass

     ```
     ERROR(S) FOUND IN MAT=4125, MF= 1, MT=451
         AWI SHOULD BE SET TO  9.98623E-01
     ```

  2. All probability distributions should be normalized to 1, this one isn't.
     MAT=4125, MF= 6, MT= 2 (1): Bad norm (a)

```
ERROR(S) FOUND IN MAT=4125, MF= 6, MT=  2
   CHECK NORMALIZATION=   1.003120 AT E= 3.0000E+07
```

3. All probability distributions should be normalized to 1, this one isn't.
   MAT=4125, MF= 6, MT= 5 (1): Bad norm (a)

```
ERROR(S) FOUND IN MAT=4125, MF= 6, MT=  5
   CHECK NORMALIZATION=   0.000000 AT E= 2.0000E+06
```

- `linear` Errors:

  1. Negative cross section found
     0: Neg. Sig(E)

```
Linearize ENDF/B Cross Sections (LINEAR 2015-1)
-------------------------------------------------------------------------------
Retrieval Criteria-----------        MAT
Monitor Mode-----------------        Off
Minimum Cross Section-------- 1.0000E-10 (Default Option)
... [42 more lines]
```

- `fudge-4.0` Warnings:

  1. Unnormalized outgoing probability distribution
     reaction label 1: sumOfRemainingOutputChannels / Product: H1 / Distribution: / KalbachMann - KalbachMann: (Error # 0): Bad norm

```
WARNING: Unnormalized distribution! At energy_in = 2.e6 eV (index 1), integral = 0.
```