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=====ENDF2C
Program ENDF2C                                ENDF2C
=====                                ENDF2C
Convert ENDF Data to Standard FORTRAN, C and C++ Format. ENDF2C
Version 2014-1 Feb. 2014 * Initial version.      ENDF2C
  2014-2 Oct. 2014 * Changed from D to E exponential form ENDF2C
                    to improve compatibility between ENDF2C
                    computer languages.            ENDF2C
  2015-1 Jan. 2015 * General updates for release with ENDF2C
                    PREPRO2015.                  ENDF2C
                    * Changed ENDF data filenames from ENDF2CENDF2C
                    to ENDFB, to agree with PREPRO default ENDF2C
                    definitions.                 ENDF2C
                    * Added code name (to be compatible ENDF2C
                    with PREPRO output), but NOT TIME (to ENDF2C
                    keep this code as computer independent ENDF2C
                    as possible).               ENDF2C
  2017-1 May 2017 * Updated based on user feedbsck ENDF2C
  2018-1 Jan. 2018 * Added on-line output for ALL ENDERROR ENDF2C
  2019-1 June 2019 * Added /UNITS/ to allow correct output ENDF2C
                    at end = output either o.k. or error. ENDF2C
  2020-1 Feb. 2020 * Identical to 2019-1.        ENDF2C
  2021-1 Jan. 2021 * Updated for FOTRAN 2018     ENDF2C
  2023-1 Feb. 2023 * Identify ENDF in and out filenames ENDF2C
Purpose                                        ENDF2C
=====ENDF2C
This code is designed for,                      ENDF2C
1) ENDF Data in any ENDF format = ENDF-1 through ENDF-6. ENDF2C
2) On any type of computer = 32 or 64 bit system/compiler ENDF2C
This code tries to keep things as simple as possible ENDF2C
1) There are NO INPUT PARAMETERS.              ENDF2C
2) It reads an ENDF formatted file named ENDFB.IN ENDF2C
3) It writes an ENDF formatted file named ENDFB.OUT ENDF2C
4) It writes a report file named                ENDF2C.LST ENDF2C
Author's Message                                ENDF2C
-----ENDF2C
I consider insuring that ENDF data is in a standard, officially ENDF2C
approved format for FORTRAN, C and C++ is SO IMPORTANT this code ENDF2C
does only one thing - and only one thing - and it does it in the ENDF2C
simplest possible manner - efficiency is NOT a consideration - ENDF2C
ONLY accuracy and general utility of the ENDF data is considered. ENDF2C
Method                                          ENDF2C
-----ENDF2C
Other codes that attempt to do the same thing - including codes ENDF2C
written be me decades ago - are very complicated, and therefore ENDF2C
ERROR PRONE because they try to deal with each and every variant ENDF2C
in which data can be coded in the ENDF format. Needless to say ENDF2C
this means that every time the ENDF formats and procedures change ENDF2C
these codes MUSE also be changed.              ENDF2C
In contrast, ENDF2C uses my almost 50 years of experience dealing ENDF2C
with the ENDF format to realize that except for the comments at ENDF2C
the beginning for each evaluation (MF/MT=1/451), every line of ENDF2C
ENDF data is IDENTICAL - in every version of the ENDF format, from ENDF2C
the original ENDF to today's ENDF-6. So to translate ENDF data ENDF2C
into an official format I do not have to consider differences in ENDF2C
each section (MF/MT) of data.                  ENDF2C
Every line of ENDF is divided into 6 fields, each 11 columns wide. ENDF2C
Each of the 6 fields is either, blank, integer or floating point. ENDF2C
Floating point fields ALL include a decimal point (.). So that ALL ENDF2C
this code does is convert every floating point field to standard ENDF2C
format.                                         ENDF2C
In order to insure that this PRESERVES the accuracy of the data ENDF2C

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this is done by reading and writing each ENDF line as characters. ENDF2C  
Blank and integer fields are copied exactly as read. ALL floating ENDF2C  
point number that are read are converted internally from character ENDF2C  
to floating point - they are then converted back into characters ENDF2C  
in a standard, officially approved format, for output. ENDF2C

As a last step to insure the accuracy of results the characters ENDF2C  
to be output are again converted from characters to floating ENDF2C  
point, and the numerical value that is output is compared to the ENDF2C  
numerical value originally read, and if there is ANY DIFFERENCE ENDF2C  
the characters strings read and written are listed in the output: ENDF2C  
the characters strings read and written as well as the difference ENDF2C  
is listed in the output report (ENDF2C.LST) and on the screen. ENDF2C

#### Running Time

----- ENDF2C  
It takes only seconds to translate an ENDF formatted evaluation, ENDF2C  
so running time need not be a consideration. Concentrate on ENDF2C  
keeping it simple and reliable - that should be your focus. ENDF2C

#### Documentation

----- ENDF2C  
ALL of my codes that process ENDF data and change it in ANY WAY ENDF2C  
document what they have done by adding comment lines at the end ENDF2C  
of the comment section (MF/MT=1/451) of each evaluation. This ENDF2C  
allows data users to determine the pedigree of the data they are ENDF2C  
using, by reading these comments. This code documents what is has ENDF2C  
done by adding the following 2 comment lines. ENDF2C

\*\*\*\*\* Program ENDF2C (Version 2023-1) \*\*\*\*\* ENDF2C  
Convert ENDF Data to Standard FORTRAN, C and C++ Format ENDF2C

WARNING - This documentation is IMPORTANT to data users and it ENDF2C  
should not be deleted. ENDF2C

#### Written by

----- ENDF2C  
Dermott E. Cullen ENDF2C  
University of California (retired) ENDF2C

-----Present Home Address----- ENDF2C  
Dermott E. Cullen ENDF2C  
1466 Hudson Way ENDF2C  
Livermore, CA 94550 ENDF2C  
U.S.A. ENDF2C  
Telephone 925-443-1911 ENDF2C  
E. Mail RedCullen1@Comcast.net ENDF2C  
Website RedCullen1.net/HOME PAGE.NEW ENDF2C

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