======================================================================= Merger

 Merger

 PROGRAM MERGER Merger

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 VERSION 80-1 (JANUARY 1980) Merger

 VERSION 80-2 (DECEMBER 1980) Merger

 VERSION 82-1 (JANUARY 1982) Merger

 VERSION 83-1 (JANUARY 1983)\*NEW, MORE COMPATIBLE I/O UNIT NUMBERS. Merger

 VERSION 85-1 (AUGUST 1985) \*FORTRAN-77/H VERSION Merger

 VERSION 86-1 (JANUARY 1986)\*ENDF/B-VI FORMATS Merger

 VERSION 88-1 (JULY 1988) \*OPTION...INTERNALLY DEFINE ALL I/O Merger

 FILE NAMES (SEE, SUBROUTINES FILIO1 Merger

 AND FILIO2 FOR DETAILS). Merger

 \*IMPROVED BASED ON USER COMMENTS. Merger

 VERSION 89-1 (JANUARY 1989)\*PSYCHOANALYZED BY PROGRAM FREUD TO Merger

 INSURE PROGRAM WILL NOT DO ANYTHING Merger

 CRAZY. Merger

 \*UPDATED TO USE NEW PROGRAM CONVERT Merger

 KEYWORDS. Merger

 \*ADDED LIVERMORE CIVIC COMPILER Merger

 CONVENTIONS. Merger

 VERSION 92-1 (JANUARY 1992)\*UPDATED BASED ON USER COMMENTS Merger

 \*ADDED FORTRAN SAVE OPTION Merger

 VERSION 92-2 (JULY 1992) \*ALLOW UP TO 99 ENDF/B DATA FILES. Merger

 (TO ALLOW MANAGEMENT OF THE ENTIRE Merger

 ENDF/B SYSTEM). Merger

 VERSION 94-1 (JANUARY 1994)\*VARIABLE ENDF/B DATA FILENAMES Merger

 TO ALLOW ACCESS TO FILE STRUCTURES Merger

 (WARNING - INPUT PARAMETER FORMAT Merger

 HAS BEEN CHANGED) Merger

 \*ONLY SPECIFY FILENAMES - NO UNIT Merger

 NUMBERS ON INPUT (WARNING - INPUT Merger

 PARAMETERS FORMAT HAS BEEN CHANGED) Merger

 \*CLOSE ALL FILES BEFORE TERMINATING Merger

 (SEE, SUBROUTINE ENDIT) Merger

 \*REQUEST LOG DELETED Merger

 VERSION 96-1 (JANUARY 1996) \*COMPLETE RE-WRITE Merger

 \*IMPROVED COMPUTER INDEPENDENCE Merger

 \*ALL DOUBLE PRECISION Merger

 \*ON SCREEN OUTPUT Merger

 \*UNIFORM TREATMENT OF ENDF/B I/O Merger

 \*IMPROVED OUTPUT PRECISION Merger

 VERSION 99-1 (MARCH 1999) \*GENERAL IMPROVEMENTS BASED ON Merger

 USER FEEDBACK Merger

 VERS. 2000-1 (FEBRUARY 2000)\*GENERAL IMPROVEMENTS BASED ON Merger

 USER FEEDBACK Merger

 VERS. 2002-1 (MAY 2002) \*OPTIONAL INPUT PARAMETERS Merger

 VERS. 2004-1 (MARCH 2004) \*ADDED INCLUDE TO DEFINE COMMON Merger

 \*ADDED TEND LINE IF NO DATA RETRIEVED Merger

 VERS. 2007-1 (JAN. 2007) \*CHECKED AGAINST ALL ENDF/B-VII. Merger

 VERS. 2007-2 (JUNE 2007) \*UP, TO 1,000 ENDF/B FILES. Merger

 \*72 CHARACTER FILE NAMES. Merger

 VERS. 2010-1 (Apr. 2010) \*General update based on user feedback Merger

 VERS. 2012-1 (Aug. 2012) \*Added CODENAME Merger

 \*32 and 64 bit Compatible Merger

 \*Added ERROR stop Merger

 VERS. 2015-1 (Jan. 2015) \*Replaced ALL 3 way IF Statements. Merger

 Merger

 OWNED, MAINTAINED AND DISTRIBUTED BY Merger

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 THE NUCLEAR DATA SECTION Merger

 INTERNATIONAL ATOMIC ENERGY AGENCY Merger

 P.O. BOX 100 Merger

 A-1400, VIENNA, AUSTRIA Merger

 EUROPE Merger

 Merger

 ORIGINALLY WRITTEN BY Merger

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 Merger

 AUTHORS MESSAGE Merger

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 THE COMMENTS BELOW SHOULD BE CONSIDERED THE LATEST DOCUMENTATION Merger

 FOR THIS PROGRAM INCLUDING ALL RECENT IMPROVEMENTS. PLEASE READ Merger

 ALL OF THESE COMMENTS BEFORE IMPLEMENTATION, PARTICULARLY THE Merger

 COMMENTS CONCERNING MACHINE DEPENDENT CODING. Merger

 Merger

 AT THE PRESENT TIME WE ARE ATTEMPTING TO DEVELOP A SET OF COMPUTER Merger

 INDEPENDENT PROGRAMS THAT CAN EASILY BE IMPLEMENTED ON ANY ONE Merger

 OF A WIDE VARIETY OF COMPUTERS. IN ORDER TO ASSIST IN THIS PROJECT Merger

 IT WOULD BE APPECIATED IF YOU WOULD NOTIFY THE AUTHOR OF ANY Merger

 COMPILER DIAGNOSTICS, OPERATING PROBLEMS OR SUGGESTIONS ON HOW TO Merger

 IMPROVE THIS PROGRAM. HOPEFULLY, IN THIS WAY FUTURE VERSIONS OF Merger

 THIS PROGRAM WILL BE COMPLETELY COMPATIBLE FOR USE ON YOUR Merger

 COMPUTER. Merger

 Merger

 PURPOSE Merger

 ------- Merger

 THIS PROGRAM IS DESIGNED TO SELECTIVELY RETRIEVE DATA OFF OF FROM Merger

 1 TO 10 ENDF/B DATA TAPES AND TO MERGE THE SELECTED DATA INTO A Merger

 SINGLE MAT/MF/MT ORDERED FINAL OUTPUT FILE. Merger

 Merger

 IN THE DISCUSSION THAT FOLLOWS FOR SIMPLICITY THE ENDF/B Merger

 TERMINOLOGY---ENDF/B TAPE---WILL BE USED. IN FACT THE ACTUAL Merger

 MEDIUM USED MAY BE TAPE, CARD, DISK OR ANY OTHER MEDIUM. Merger

 Merger

 ENDF/B FORMAT Merger

 ------------- Merger

 THIS PROGRAM ONLY USES THE ENDF/B BCD OR CARD IMAGE FORMAT (AS Merger

 OPPOSED TO THE BINARY FORMAT) AND CAN HANDLE DATA IN ANY VERSION Merger

 OF THE ENDF/B FORMAT (I.E., ENDF/B-I, II,III, IV OR V FORMAT). Merger

 Merger

 THE ONLY NUMERICAL DATA THAT THIS PROGRAM READS IS THE ZA FROM THE Merger

 FIRST CARD OF EACH SECTION AND THE MAT/MF/MT FROM EACH CARD. Merger

 SEQUENCE NUMBERS ARE IGNORED ON INPUT AND ALL OTHER FIELDS ARE Merger

 READ AS HOLLERITH. AS SUCH THIS PROGRAM NEED NOT DISTINGUISH Merger

 BETWEEN DIFFERENT VERSIONS OF THE ENDF/B FORMAT. Merger

 Merger

 IT IS ASSUMED THAT THE DATA IS CORRECTLY CODED IN THE ENDF/B Merger

 FORMAT AND NO ERROR CHECKING IS PERFORMED. IN PARTICULAR IT IS Merger

 ASSUMED THAT THE MAT, MF AND MT ON EACH CARD IS CORRECT. SEQUENCE Merger

 NUMBERS (COLUMNS 76-80) ARE IGNORED ON INPUT, BUT WILL BE Merger

 CORRECTLY OUTPUT ON ALL CARDS. Merger

 Merger

 SECTION SIZE Merger

 ------------ Merger

 SINCE THIS PROGRAM ONLY READS THE DATA ONE CARD AT A TIME THERE Merger

 IS NO LIMIT TO THE SIZE OF ANY GIVEN SECTION, E.G. THE TOTAL Merger

 CROSS SECTION MAY BE DESCRIBED BY 200,000 DATA POINTS. Merger

 Merger

 SELECTION OF DATA Merger

 ----------------- Merger

 THE USER MAY CHOOSE TO MERGE ALL DATA OR THE USER MAY SPECIFY Merger

 THAT ONLY CERTAIN DATA SHOULD BE SELECTED. THE DATA TO BE Merger

 SELECTED IS DEFINED BY SPECIFYING UP TO 100 MAT/MF/MT OR Merger

 ZA/MF/MT RANGES. EACH RANGE IS DEFINED BY LOWER AND UPPER LIMITS Merger

 OF MAT/MF/MT OR ZA/MF/MT. Merger

 Merger

 REQUEST LIMITS Merger

 -------------- Merger

 IN ORDER TO SIMPLIFY THE INPUT OF SELECTION REQUESTS THE FOLLOWING Merger

 CONVENTIONS HAVE BEEN INTRODUCED IN ORDER TO DEFINE THE UPPER Merger

 LIMITS OF REQUESTS IF THEY ARE NOT DEFINED BY INPUT (I.E., IF THEY Merger

 ARE ZERO). Merger

 Merger

 (1) MAT OR ZA - IF THE UPPER LIMIT IS ZERO IT IS SET EQUAL TO THE Merger

 LOWER LIMIT. Merger

 (2) MF OR MT - IF THE UPPER LIMIT IS ZERO IT IS SET EQUAL TO THE Merger

 MAXIMUM POSSIBLE VALUE, 99 OR 999 RESPECTIVELY. Merger

 Merger

 WITH THESE CONVENTIONS AN ENTIRE EVALUATION MAY BE SELECTED BY Merger

 MERELY SPECIFYING THE LOWER LIMIT OF MAT OR ZA. THE UPPER MAT OR Merger

 ZA LIMIT WILL BE SET EQUAL TO THE LOWER LIMIT, THE LOWER LIMITS OF Merger

 MF/MT WILL BE 0/0 AND THE UPPER LIMITS OF MF/MT WILL BE SET TO Merger

 99/999. THIS WILL CAUSE ALL SECTIONS OF A SINGLE EVALUATION TO BE Merger

 SELECTED. Merger

 Merger

 SATISFYING SELECTION CRITERIA Merger

 ----------------------------- Merger

 IN ORDER FOR A SECTION TO MEET THE SELECTION CRITERIA SPECIFIED Merger

 BY ONE OF THE RETRIEVAL REQUESTS, EACH OF THE THREE FIELDS ( Merger

 MAT/MF/MT OR ZA/MF/MT) MUST INDIVIDUALLY SATISFY THE CORRESPONDING Merger

 LIMITS OF THE REQUEST. IT IS NOT SUFFICIENT THAT THE MAT OF A Merger

 SECTION LIE BETWEEN THE MINIMUM AND MAXIMUM MATS OF A REQUEST. THE Merger

 MF AND MT WILL ALSO BE INDIVIDUALLY COMPARED TO THE MF AND MT Merger

 LIMITS OF THE REQUEST. FOR EXAMPLE, A SECTION WITH MAT/MF/MT= Merger

 2500/3/2 DOES NOT SATISFY A REQUEST THAT SPECIFIES A REQUEST USING Merger

 THE RANGE 2000/3/1 THROUGH 3000/3/1. THIS REQUEST SPECIFIES ALL Merger

 MATERIALS WITH MAT BETWEEN 2000 AND 3000, BUT ONLY THOSE SECTIONS Merger

 WITH MF/MT=3/1. SIMILARLY A REQUEST FOR 2000/3/1 THROUGH 3000/99/ Merger

 999 WILL NOT SELECT ANY SECTIONS WITH MF=1 OR 2, SINCE THE Merger

 REQUEST SPECIFIES ALL MATERIALS WITH MAT BETWEEN 2000 AND 3000, Merger

 BUT ONLY THOSE SECTIONS WITH MF= 3, OR MORE. Merger

 Merger

 DUPLICATE SECTIONS Merger

 ------------------ Merger

 IF TWO OR MORE SECTIONS WITH THE SAME MAT/MF/MT ARE FOUND EITHER Merger

 ON THE SAME OR DIFFERENT TAPES, THE SECTION FROM THE TAPE DEFINED Merger

 EARLIEST IN THE INPUT CARDS WILL BE COPIED TO THE FINAL TAPE AND Merger

 ALL OTHER SECTIONS WITH THE SAME MAT/MF/MT WILL BE SKIPPED. THE Merger

 OUTPUT REPORT WILL INDICATE WHICH SECTIONS WERE COPIED FROM WHICH Merger

 TAPES, AS WELL AS WHICH SECTIONS ARE DUPLICATE AND WERE SKIPPED. Merger

 Merger

 REACTION INDEX Merger

 -------------- Merger

 THIS PROGRAM DOES NOT UPDATE THE REACTION INDEX IN MF=1, MT=451. Merger

 FOR EACH MATERIAL THE PROGRAM WILL FOLLOW THE CONVENTIONS Merger

 DEFINED ABOVE AND ONLY COPY ONE SECTION MF=1, MT=451 AND SKIP Merger

 ALL OTHERS (IF MORE THAN ONE). THIS CONVENTION HAS BEEN ADOPTED Merger

 BECAUSE MOST USERS DO NOT REQUIRE A CORRECT REACTION INDEX FOR Merger

 THERE APPLICATIONS AND IT WAS NOT CONSIDERED WORTHWHILE TO INCLUDE Merger

 THE OVERHEAD OF CONSTRUCTING A CORRECT REACTION INDEX IN THIS Merger

 PROGRAM. HOWEVER, IF YOU REQUIRE A REACTION INDEX FOR YOUR Merger

 APPLICATION AFTER RUNNING THIS PROGRAM YOU MAY USE PROGRAM Merger

 DICTIN TO CREATE ONE. Merger

 Merger

 RETRIEVAL STATISTICS Merger

 -------------------- Merger

 THERE WILL ALWAYS BE AN OUTPUT REPORT LISTING INDICATING WHICH Merger

 SECTIONS WHERE SELECTED, WHICH DUPLICATE SECTIONS WERE SKIPPED, Merger

 WHICH TAPE THE SECTION WAS ON, WHICH REQUEST (MAT/MF/MT OR Merger

 ZA/MF/MT RANGE) CAUSED THE SECTION TO BE SELECTED AND HOW MANY Merger

 CARDS WERE IN THE SECTION. IN ADDITION THE USER MAY OPTIONALLY Merger

 OBTAIN A FILE CONTAINING THE SAME INFORMATION. THIS FILE MAY BE Merger

 COMBINED WITH OTHER SIMILAR FILES OUTPUT BY THIS PROGRAM IN ORDER Merger

 TO ACCUMULATE RETRIEVAL STATISTICS OVER A PERIOD OF TIME. IF Merger

 SPECIFIED THIS FILE WILL CONTAIN THE FOLLOWING INFORMATION IN Merger

 6I7 FORMAT. Merger

 Merger

 (1) ZA Merger

 (2) MAT Merger

 (3) MF Merger

 (4) MT Merger

 (5) NUMBER OF CARDS IN SECTION Merger

 (6) REQUEST NUMBER THAT CAUSED SECTION TO BE SELECTED Merger

 Merger

 INPUT FILES Merger

 ----------- Merger

 UNIT DESCRIPTION Merger

 ---- ----------- Merger

 2 INPUT CARDS (BCD - 80 CHARACTERS/RECORD) Merger

 VARY FROM 1 TO 99 ENDF/B DATA FILES (BCD - 80 CHARACTERS/RECORD) Merger

 Merger

 OUTPUT FILES Merger

 ------------ Merger

 UNIT DESCRIPTION Merger

 ---- ----------- Merger

 3 OUTPUT REPORT LISTING (BCD - 120 CHARACTERS/RECORD) Merger

 10 MERGED ENDF/B DATA (BCD - 80 CHARACTERS/RECORD) Merger

 Merger

 OPTIONAL STANDARD FILE NAMES (SEE SUBROUTINES FILIO1 AND FILIO2) Merger

 ---------------------------------------------------------------- Merger

 UNIT FILE NAME DESCRIPTION Merger

 ---- ---------- ----------- Merger

 2 MERGER.INP INPUT PARAMETERS Merger

 3 MERGER.LST OUTPUT LISTING Merger

 11 ENDFB.OUT RETRIEVED ENDF/B DATA Merger

 12 ENDFB.IN1 ENDF/B DATA TO READ...FILENAMES WILL BE DEFINED Merger

 13 ENDFB.IN2 IN THE ORDER ENDFB.IN1, ENDFB.IN2,...ENDFB.I99 Merger

 14 ENDFB.IN3 CORRESPONDING TO THE FIRST, SECOND,...99-TH Merger

 15 ENDFB.IN4 ENDF/B DATA FILE TO READ. Merger

 16 ENDFB.IN5 Merger

 17 ENDFB.IN6 Merger

 18 ENDFB.IN7 Merger

 . Merger

 . Merger

 110 ENDFB.I99 Merger

 Merger

 INPUT CARDS Merger

 ----------- Merger

 CARD COLUMNS FORMAT DESCRIPTION Merger

 ---- ------- ------ ----------- Merger

 1 1-72 A72 FILENAME FOR MERGED OUTPUT. Merger

 (LEAVE BLANK FOR STANDARD = ENDFB.OUT) Merger

 2 1-66 16A4,A2 MERGED FILE LABEL Merger

 IF BLANK - LABEL FROM FIRST FILE READ WILL Merger

 BE OUTPUT Merger

 67-70 I4 MERGED FILE ENDF/B NUMBER Merger

 IF ZERO - NUMBER OF FIRST FILE READ WILL Merger

 BE OUTPUT. Merger

 71-72 I2 RETRIEVAL CRITERIA Merger

 = 0 - MAT/MF/MT RANGES Merger

 = 1 - ZA/MF/MT RANGES Merger

 3-N 1-72 A72 FILENAME FOR FILE TO RETRIEVE DATA FROM Merger

 (LEAVE BLANK FOR STANDARD..ENDFB.IN1,ETC.) Merger

 TERMINATE LIST OF FILES WITH A LINE THAT Merger

 SAYS END OR end Merger

 VARY 1- 6 I6 LOWER PRIMARY LIMIT (MAT OR ZA) Merger

 7- 8 I2 LOWER MF LIMIT Merger

 9-11 I3 LOWER MT LIMIT Merger

 12-17 I6 UPPER PRIMARY LIMIT (MAT OR ZA) Merger

 18-19 I2 UPPER MF LIMIT Merger

 20-22 I3 UPPER MT LIMIT Merger

 RANGES OF MAT/MF/MT OR ZA/MF/MT TO BE Merger

 RETRIEVED ARE SPECIFIED BY DEFINING Merger

 ONE RANGE (LOWER AND UPPER LIMITS) PER Merger

 CARD. THE USER MAY SPECIFY 0 TO 100 Merger

 RANGES AND THE LIST OF REQUEST RANGES Merger

 IS TERMINATED BY A BLANK CARD. IF Merger

 THE FIRST CARD IS BLANK (0 REQUESTS) Merger

 ALL DATA WILL BE RETRIEVED. IF THE UPPER Merger

 PRIMARY CRITERIA (MAT OR ZA) IS LESS THAN Merger

 THE LOWER PRIMARY CRITERIA, THE UPPER Merger

 PRIMARY CRITERIA WILL BE SET EQUAL TO Merger

 THE LOWER PRIMARY CRITERIA. IF THE UPPER Merger

 MF OR MT LIMIT IS ZERO, OR BLANK, IT Merger

 WILL BE SET TO THE MAXIMUM POSSIBLE Merger

 VALUE, I.E. MF=99 OR MT=999 (SEE Merger

 EXAMPLE INPUT). Merger

 Merger

 EXAMPLE INPUT NO. 1 Merger

 ------------------- Merger

 MERGE ENDF/B DATA ONTO UNIT 10 FROM UNITS 11, 12, 13 AND 14. Merger

 RETRIEVE DATA BY MAT NUMBER. RETRIEVE MATS 1103, 1106, ALL MATS Merger

 BETWEEN 1204 AND 1215, MF=1, 3, 4 AND 5 OF MAT 1219 AND MF=3, Merger

 MT=1 OF MAT 1304. USE STANDARD FILENAMES. Merger

 Merger

 THE FOLLOWING 13 INPUT CARDS ARE REQUIRED. Merger

 Merger

 ENDFB.OUT Merger

 EXAMPLE FILE LABEL FOR MERGER 0 0 Merger

 ENDFB.IN1 Merger

 ENDFB.IN2 Merger

 ENDFB.IN3 Merger

 ENDFB.IN4 Merger

 END Merger

 1103 4317 (UPPER LIMIT SET TO 1103/99/999) Merger

 1106 4317 (UPPER LIMIT SET TO 1106/99/999) Merger

 1204 1215 4317 (UPPER LIMIT SET TO 1215/99/999) Merger

 1219 1 1219 1 4317 (UPPER LIMIT SET TO 1219/ 1/999) Merger

 1219 3 1219 5 4317 (UPPER LIMIT SET TO 1219/ 5/999) Merger

 1304 3 1 1304 3 1 4317 (UPPER LIMIT COMPLETELY DEFINED) Merger

 (BLANK CARD TERMINATES REQUESTS) Merger

 Merger

 EXAMPLE INPUT NO. 2 Merger

 ------------------- Merger

 THE SAME AS EXAMPLE 1, EXCEPT SPECIFY FILENAMES Merger

 Merger

 \ENDFB6\MERGED.LIB Merger

 EXAMPLE FILE LABEL FOR MERGER 0 0 Merger

 ENDFB6.PART1 Merger

 ENDFB6.PART2 Merger

 ENDFB6.PART3 Merger

 ENDFB6.PART4 Merger

 END Merger

 1103 4317 (UPPER LIMIT SET TO 1103/99/999) Merger

 1106 4317 (UPPER LIMIT SET TO 1106/99/999) Merger

 1204 1215 4317 (UPPER LIMIT SET TO 1215/99/999) Merger

 1219 1 1219 1 4317 (UPPER LIMIT SET TO 1219/ 1/999) Merger

 1219 3 1219 5 4317 (UPPER LIMIT SET TO 1219/ 5/999) Merger

 1304 3 1 1304 3 1 4317 (UPPER LIMIT COMPLETELY DEFINED) Merger

 (BLANK CARD TERMINATES REQUESTS) Merger

 Merger

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