

In the Matter of: Entergy Nuclear Operations, Inc.  
(Indian Point Nuclear Generating Units 2 and 3)



ASLBP #: 07-858-03-LR-BD01  
Docket #: 05000247 | 05000286  
Exhibit #: NYS000279-00-BD01  
Admitted: 10/15/2012  
Rejected:  
Other:  
Identified: 10/15/2012  
Withdrawn:  
Stricken:

\*\*\*\*\*

\* FILE NAME CLINCHR.INP

\*  
\* DESCRIPTIVE TITLE DESCRIBING THIS "CHRONC" INPUT FILE

\*  
CHCHNAME001 'CLINTCHR.INP - CLINTON CHRONC, "New" COMIDA2-Based Food Model'

\* G.A.TEAGARDEN (ERIN ENGINEERING) 6/15/04

\*\*\*\*\*

\* EMERGENCY RESPONSE COST DATA BLOCK

\*\*\*\*\*

\* DAILY COST FOR A PERSON WHO IS EVACUATED (DOLLARS/PERSON-DAY)

\* ESCALATED TO 2000 CPI OF 172.2 FROM 1982 VALUE OF \$23.90 AT CPI = 100

\* IE FROM \$27/DAY AT CPI =113 IN 1986 AS IN NUREG/CR-4551

\* REF: BOL STATISTICS DATA DEC 6 2000 SERIES ID CUUR0000SA0 VALUE FOR 2000

\* CPI 2000/1986, FACTOR (172.2/113 = 1.52 )

\* 27.00 \* 1.52 = 41.15

CHEVACST001 41.15 (INCLUDES FOOD AND HOUSING COSTS BUT NOT LOST INCOME)

\*  
\* DAILY COST FOR A PERSON WHO IS RELOCATED (DOLLARS/PERSON-DAY)

\* CPI 2000/1986, FACTOR (172.2/113 = 1.52 )

CHRELCST001 41.15 (INCLUDES FOOD AND HOUSING COSTS BUT NOT LOST INCOME)

\*  
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\* LONG TERM PROTECTIVE ACTION DATA BLOCK

\*\*\*\*\*

\* THE INTERMEDIATE PHASE APPROACH HAS BEEN REVISED BY MACCS2.

\* VARIABLE TMIPND IS NO LONGER USER DEFINED, BUT IS CALCULATED BY MACCS2

\* AS FOLLOWS:

\*  
\* TMIPND = DUR\_INTPHAS + ENDEMP

\* ENDEMP IS DEFINED IN THE EARLY FILE AS 7 DAYS

\* DUR\_INTPHAS IS DEFINED HERE

\*  
\*  
DUR\_INTPHAS 3.15E7 (in seconds) (1 YEAR INTERMEDIATE PHASE)

\*  
\* LONG-TERM PHASE DOSE PROJECTION PERIOD, THE DURATION OF THE EXPOSURE PERIOD OVER WHICH THE LONG-TERM DOSE CRITERION IS EVALUATED (SECONDS)

\*  
CHTMPACT001 1.26E8 (4 YEAR LONG TERM PHASE)

\*  
\* DOSE CRITERION FOR INTERMEDIATE PHASE RELOCATION (Sv) (YEARS 0-1)

\*  
CHDSCRTI001 0.02 (2 REM)

\*  
\* DOSE CRITERION FOR LONG-TERM PHASE RELOCATION (Sv) (YEARS 1-5)

\*  
CHDSCRLT001 0.02 (2 REM)

\*  
\* CRITICAL ORGAN NAME FOR LONG-TERM ACTIONS

\*  
CHCRTOCR001 'L-EDEWBODY'  
\*  
\* Long Term Exposure Period Previously permanently set to:  
\* one million years = 3.15 E13 seconds  
\* MACCS2 allowable range is 3.15E7 to 1.E10  
\*  
CHEXPTIM001 9.45E8 (30 YEARS PER EPA STANDARD DEFAULT EXP.  
FACTORS)  
\*  
\*\*\*\* REF/BASIS:  
\*  
\* THE GUIDENCE OF EPA-400 IS USED HERE.  
\*  
\* DUR\_INTPHAS/DSCRTI -  
\*  
\* EPA-400 DEFINES THE INTERMEDIATE PHASE PAG AS 2 REM TEDE IN THE FIRST  
YEAR  
\* (SECTION 4.2 AND TABLE 4-2 OF EPA-400). THE VALUES OF DUR\_INTPHAS AND  
DSCRTI  
\* ARE SET TO THESE VALUES.  
\*  
\* NOTE THAT THE CALCULATIONAL BASIS FOR THE EPA-400 PAG AND THE MACCS  
\* INTERMEDIATE MODEL ARE CONSISTENT; BOTH CONSIDER GROUND SHINE AND  
\* RESUSPENSION ONLY.  
\*  
\* TMPACT/DSCRTL-  
\*  
\* THE LONG-TERM HABITATION DOSE IS INTERGRATED OVER THE LENGTH OF THE  
\* LONG-TERM PHASE (TMPACT). IF THE DOSE TO THE CRITICAL ORGAN (CRTOCR)  
\* EXCEEDS THE LONG-TERM DOSE CRITERION (DSCRTL) THEN MITIGATIVE ACTIONS  
ARE  
\* ASSUMED TO BE TAKEN.  
\*  
\* EPA-400 SECTION 4.2.1 STATES THAT THE OBJECTIVE OF THE EPA PAG'S IS TO  
LIMIT  
\* DOSES IN THE SECOND AND SUBSEQUENT YEARS TO 0.5 REM/YEAR AND THE TOTAL  
OVER  
\* 50 YEARS TO 5 REM (INCLUDING THE 2 REM IN THE FIRST YEAR).  
\*  
\* THE MACCS LONG TERM PHASE MODEL CANNOT IMPLEMENT THIS PAG DIRECTLY  
SINCE  
\* THE DOSE INTEGRATION IS PERFORMED OVER THE SPECIFIED TIME AND THEN  
\* COMPARED TO THE DOSE CRITERION. NO CONSIDERATION IS GIVEN TO LIMITING  
ANY  
\* ONE YEAR'S DOSE TO LESS THAN 0.5 REM. THEREFORE, AN ALTERNATE  
APPROACH IS  
\* REQUIRED.  
\*  
\* THE NUREG-1150 ANALYSES WERE PERFORMED USING THE ASSUMPTION OF 2 REM  
IN THE  
\* FIRST YEAR AND 0.5 REM FOR 4 YEARS, OR 4 REM (0.04 SV) IN FIVE YEARS.  
\* ALTHOUGH NO BASIS FOR THIS ASSUMPTION COULD BE FOUND IN THE NUREG/CR-  
4551  
\* DOCUMENTS IT IS REASONABLY CLEAR THAT THIS LONG TERM PAG WAS AN  
ATTEMPT TO  
\* MODEL THAT SPECIFIED IN EPA-400. THE DIFFICULTY WITH SPECIFYING 3 REM  
IN  
\* 49 YEARS DIRECTLY FOR THE LONG TERM PHASE IS THAT IN EXCESS OF 0.5 REM  
IN

\* A YEAR MIGHT OCCUR WITHOUT PROTECTIVE ACTION BEING TAKEN AS LONG AS THE

\* 49 YEAR INTEGRATED DOSE WAS LESS THAN 3 REM (2 REM HAVING BEEN "USED UP" IN THE FIRST YEAR).

\* SINCE RADIOACTIVE DECAY AND WEATHERING WILL REDUCE GROUND SHINE AND RESUSPENSION DOSES OVER LONG TIMES, IT IS CLEAR, IN THE CONTEXT OF THE MACCS MODEL, THAT A SHORTER INTEGRATION TIME COULD BE USED WITHOUT EXCEEDING THE EPA-400 PAG. THE NUREG/CR-4551 AUTHORS (SANDIA) APPEAR TO HAVE CONCLUDED THAT A 4 YEAR TIME PERIOD WAS APPROPRIATE, ALTHOUGH THEY DO NOT PROVIDE A REFERENCE OR BASIS. ALSO, WHY THEY DID NOT MODEL THE 2 REM PAG FOR THE FIRST YEAR IN AN INTERMEDIATE PHASE IS UNCLEAR.

\* IT IS STATED IN EPA-400 THAT IF THE 2 REM IN THE 1ST YEAR AND 0.5 REM IN THE SECOND YEAR PAG'S ARE MET THAT IT IS UNLIKELY THAT THE 5 REM IN 50 YEARS WILL NOT BE MET.

\* IT CAN BE SEEN THAT SANDIA CONCLUDED THAT 40% OF THE 50 YEAR DOSE (0.40\*5 REM=2 REM) SHOULD NOT BE EXCEEDED IN THE 2ND TO 5TH YEAR, OR EQUIVALENTLY THAT NO MORE THAN 1 REM AVERAGED OVER THE 6TH TO 45TH YEARS (EVEN IF IT ALL OCCURRED IN THE SIXTH YEAR) WAS AN ACCEPTABLE MODEL.

\* THIS ANALYSIS USES THE FOLLOWING RATIONALE TO SPECIFY THE LONG TERM PHASE PARAMETERS:

1. THE TOTAL LONG TERM DOSE CANNOT EXCEED 2 REM

\* THE BASIS FOR THIS ASSUMPTION IS THAT, IN THE CONTEXT OF THE MACCS MODEL USE OF THIS DOSE LIMIT WILL ASSURE THAT NO MORE THAN 2 REM CAN BE INCURRED IN ANY ONE YEAR OF THE LONG TERM PHASE. (2 REM COULD BE INCURRED IN THE 2ND YEAR AND 0 REM IN THE REMAINING 48 YEARS). THIS WILL PREVENT THE DOSE IN ANY YEAR FOLLOWING THE FIRST YEAR TO EXCEED THE DOSE ALLOWED IN THE FIRST YEAR.

2. THE INTEGRATION TIME WILL BE 4 YEARS

\* THE BASIS FOR THIS ASSUMPTION IS THAT THE AVERAGE ALLOWABLE EXPOSURE OVER THE LONG TERM PHASE WILL BE EQUAL TO THE EPA-400 YEARLY LIMIT OF 0.5 REM.

\* IT SHOULD BE NOTED THAT THE COMBINED INTERMEDIATE AND LONG TERM DOSE LIMITS SPECIFIED HERE ARE IDENTICAL TO THOSE USED BY SANDIA, EXCEPT THAT THEY ARE EXPLICITLY SPLIT BETWEEN THE TWO PHASES.

\* EPA-400, "MANUAL OF PROTECTIVE ACTION GUIDES AND PROTECTIVE ACTIONS FOR NUCLEAR INCIDENTS", US EPA, 1991.

\* CRTOCR -

\* THE CRITICAL ORGAN IS TAKEN TO BE THE EDE WHOLDEBODY (TEDE).

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*
* EXPTIM - IS A NEW VARIABLE ADDED IN MACCS2, 30 YEARS FROM USERS'
GUIDE
*
*
*****
* DECONTAMINATION PLAN DATA BLOCK
*****
* NUMBER OF LEVELS OF DECONTAMINATION
*
CHLVLDEC001  2
*
* DECONTAMINATION TIMES CORRESPONDING TO THE LVLDEC LEVELS OF
DECONTAMINATION
* (SECONDS)
*
CHTIMDEC001  5.184E6  1.0368E7  (60, 120 DAYS)
*
* DOSE REDUCTION FACTORS CORRESPONDING TO THE LVLDEC LEVELS OF
DECONTAMINATION
*
CHDSRFCT001  3.      15.
*
* COST OF FARM DECONTAMINATION PER FARMLAND UNIT AREA (DOLLARS/HECTARE)
* FOR THE VARIOUS LEVELS OF DECONTAMINATION
*
*CHCDFRM0001  562.5  1250.
*      CPI 2000/1986,  FACTOR (172.2/113 = 1.52 )
CHCDFRM0001  855.00  1900.00
*
* COST OF NONFARM DECONTAMINATION PER RESIDENT PERSON (DOLLARS/PERSON)
* FOR THE VARIOUS LEVELS OF DECONTAMINATION
*
*CHCDNFRM001  3000.  8000.
*      CPI 2000/1986,  FACTOR (172.2/113 = 1.52 )
CHCDNFRM001  4560.  12160.
*
* FRACTION OF FARMLAND DECONTAMINATION COST DUE TO LABOR
* FOR THE VARIOUS DECONTAMINATION LEVELS
*
CHFRFDL0001  .3      .35
*
* FRACTION OF NON-FARM DECONTAMINATION COST DUE TO LABOR
* FOR THE VARIOUS DECONTAMINATION LEVELS
*
CHFRNFDL001  .7      .5
*
* FRACTION OF TIME WORKERS IN FARM AREAS SPEND IN CONTAMINATED AREAS
* FOR THE VARIOUS DECONTAMINATION LEVELS
*
CHTFWKF0001  .10     .33
*
* FRACTION OF TIME WORKERS IN NON-FARM AREAS SPEND IN CONTAMINATED AREAS
* FOR THE VARIOUS DECONTAMINATION LEVELS
*
CHTFWKNF001  .33     .33
*
* AVERAGE COST OF DECONTAMINATION LABOR (DOLLARS/MAN-YEAR)
*

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*CHDLBCST001  35000.
*          CPI 2000/1986,  FACTOR (172.2/113 = 1.52 )
CHDLBCST001  53200.
*
**** REF/BASIS
*
* ALL DECONTAMINATION VALUES FROM USERS' GUIDE, UPDATED TO YEAR 2000
* AS APPROPRIATE
*
*****
*****
* INTERDICTION COST DATA BLOCK
*****
* DEPRECIATION (DETERIORATION) RATE DURING INTERDICTION PERIOD (PER
YEAR)
*
CHDPRATE001  .20  (VALUE OBTAINED FROM WASH-1400, APPENDIX 6)
*
* INVESTMENT INCOME RETURN (DISCOUNT RATE) DURING INTERDICTION PERIOD
(PER YEAR)
* THIS VALUE SHOULD BE DERIVED AS A REAL RETURN RATE ADJUSTED FOR
INFLATION
*
CHDSRATE001  .12  (VALUE OBTAINED FROM WASH-1400, APPENDIX 6)
*
* POPULATION RELOCATION COST (DOLLARS/PERSON):
* ALTERNATIVE HOUSING, MOVING COSTS, AND LOST INCOME FOR PEOPLE IN
* AREAS WHICH REQUIRE DECONTAMINATION, INTERDICTION, OR CONDEMNATION
*
*CHPOPCST001  5000.
*          CPI 2000/1986,  FACTOR (172.2/113 = 1.52 )
CHPOPCST001  7600.
*
* ABOVE VALUES CONSISTENT WITH USERS' GUIDE
*
*****
*****
* GROUNDSHINE WEATHERING DEFINITION DATA BLOCK
*****
* NUMBER OF TERMS IN THE GROUNDSHINE WEATHERING RELATIONSHIP (EITHER 1
OR 2)
*
CHNGWTRM001  2
*
* GROUNDSHINE WEATHERING COEFFICIENTS
*
CHGWCOEF001  0.5  0.5  (JON HELTON)
*
* HALF LIVES CORRESPONDING TO THE GROUNDSHINE WEATHERING COEFFICIENTS
(S)
*
CHTGWHLF001  1.6E7  2.8E9  (JON HELTON)
*
* ABOVE VALUES CONSISTENT WITH USERS' GUIDE
*
*****
*****
* RESUSPENSION WEATHERING DEFINITION DATA BLOCK
*****
* NUMBER OF TERMS IN THE RESUSPENSION WEATHERING RELATIONSHIP

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*
CHNRWTRM001      3
*
* RESUSPENSION CONCENTRATION COEFFICIENTS      (/ METER)
* RELATIONSHIP BETWEEN GROUND CONCENTRATION AND INSTANTANEOUS AIR CONC.
*
CHRWCOEF001  1.0E-5  1.0E-7  1.0E-9  (VALUES HERE SELECTED BY JON
HELTON)
*
* HALF-LIVES CORRESPONDING TO THE RESUSPENSION CONCENTRATION
COEFFICIENTS (S)
*
CHTRWHLF001  1.6E7    1.6E8    1.6E9    (6 MONTHS, 5 YEARS, 50 YEARS)
*
* ABOVE VALUES CONSISTENT WITH USERS' GUIDE
*
*****
*****
* SITE REGION DESCRIPTION DATA BLOCK
*****
* SOME VALUES SPECIFIED HERE ARE DEFAULT PLACEHOLDERS, REQUIRED BY
MACCS2.
* THEY ARE ONLY UTILIZED IF POPFLG=UNIFORM (I.E. NO SITE FILE IS USED)
* DEFAULT PLACEHOLDER VALUES ARE TAKEN FROM USER GUIDE EXAMPLES P. 7-17
* IF POPFLG=FILE, THESE DEFAULT VALUES ARE OVERRIDEN BY SITE FILE
*
*
* FRACTION OF AREA THAT IS LAND IN THE REGION
*
CHFRACLD001  0.95  (DEFAULT, SITE FILE OVERRIDES THIS VALUE)
*
* FRACTION OF LAND DEVOTED TO FARMING IN THE REGION
*
CHFRCFRM001  0.382  (DEFAULT, SITE FILE OVERRIDES THIS VALUE)
*
* AVERAGE VALUE OF ANNUAL FARM PRODUCTION IN THE REGION
(DOLLARS/HECTARE)
* (CASH RECEIPTS FROM FARMING PLUS VALUE OF HOME CONSUMPTION)/(LAND IN
FARMS)
*
CHFRMPRD001  371.0  (DEFAULT, SITE FILE OVERRIDES THIS VALUE)
*
* FRACTION OF FARM PRODUCTION RESULTING FROM DAIRY PRODUCTION IN THE
REGION
* (VALUE OF MILK PRODUCED)/(CASH RECEIPTS FROM FARMING PLUS HOME
CONSUMPTION)
*
CHDPFRCT001  0.198  (DEFAULT, SITE FILE OVERRIDES THIS VALUE)
*
* VALUE OF FARM WEALTH (DOLLARS/HECTARE)
* (AVERAGE VALUE PER HECTARE OF FARM LAND, BUILDINGS, EQUIPMENT TO 50
MILES)
*
CHVALWF0001  5399.  * AREA WEIGHTED AVERAGE OF SECPop2000 VALUES (97
ECONOMIC
* REGIONS).
* * THIS AVERAGE VALUE IS NOT OVERRIDEN BY SITE FILE
*
* FRACTION OF FARM WEALTH IN IMPROVEMENTS FOR THE REGION
*

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CHFRFIM0001 0.49 \* ZION  
\*  
\* NON-FARM WEALTH, PROPERTY AND IMPROVEMENTS FOR THE REGION  
(DOLLARS/PERSON)  
\* THE VALUE OF ALL RESIDENTIAL, BUSINESS, AND PUBLIC ASSETS WHICH WOULD  
BE  
\* LOST IN THE EVENT OF PERMANENT INTERDICTION (CONDEMNATION) OF THE  
AREA  
\*  
CHVALWNF001 106922. \* AREA WEIGHTED AVERAGE OF SECPop2000 VALUES (97  
ECONOMIC  
\* REGIONS).  
\* \* THIS VALUE IS NOT OVERRIDEN BY SITE FILE  
\*  
\* FRACTION OF NON-FARM WEALTH IN IMPROVEMENTS FOR THE REGION  
\*  
CHFRNFIM001 0.8 (NUREG 1150)  
\*\*\*\*\*  
\*\*\*\*\*  
CHFDPATH001 'NEW'  
\*  
\* name of the COMIDA2 binary output file  
\*  
BIN\_FILE001 'SAMP\_A.BIN' (revised data file of 8/12/95)  
\*  
\* Dose limits triggering first year crop disposal of the separate  
\* milk and non-milk components of the diet, corresponding in purpose,  
\* more or less, to the MACCS 1.5 input variables PSCMLK and PSCOTH  
\*  
\* For NUREG-1150 calculations, the maximum allowable ground  
concentrations for  
\* production of milk and non-milk crops contaminated by an accident  
occurring  
\* in the growing season were derived based on an assumed maximum  
allowable  
\* dose of 5 rem effective or 15 rem thyroid, per the 1982 FDA guidance  
that's  
\* reprinted in the 1992 EPA PAG Manual. For purposes of comparison  
against  
\* the prior results, it is being assumed, for simplicity, that milk and  
\* non-milk crops contribute equally to the first year dose. Thus, the 5  
rem  
\* effective dose limit used in NUREG-1150 is equally split between milk  
and  
\* non-milk crops, with 2.5 rem allowed for each. Similarly, the 15 rem  
\* thyroid limit is split into 7.5 and 7.5 rem for the milk and non-milk  
\* portions of the diet.  
\*  
\*  
\* effective thyroid (doses in sieverts)  
DOSEMILK001 0.025 0.075  
DOSEOTHR001 0.025 0.075  
\*  
\* Annual dose limits for the subsequent year's (i.e., after the first  
year)  
\* interdiction of BOTH the milk and non-milk (combined) components of  
the diet  
\*  
\* Note: the long-term food criteria, GCMAXR, used for NUREG-1150 were  
based on  
\* an ingestion dose integrated from zero to infinity. It is not

possible to  
 \* translate those parameter values into corresponding annual dose limits, as is  
 \* required by the COMIDA2-based food model. The "total" dose limits used in  
 \* NUREG-1150 for "root uptake", 0.5 rem effective and 1.5 rem thyroid, are used  
 \* here as annual dose limits for interdiction of food production in years the  
 \* years subsequent to the accident.

\*  
 \* effective thyroid (doses in sieverts)  
 DOSELONG001 0.005 0.015

\* NUMBER OF NUCLIDES IN THE WATER INGESTION PATHWAY MODEL

CHNUMWPI001 4 (NUREG 1150)

\* TABLE OF NUCLIDE DEFINITIONS IN THE WATER INGESTION PATHWAY MODEL

\* IF A SITE DATA FILE IS DEFINED, THE DATA DEFINING THE WATERSHED INGESTION

\* FACTOR IS SUPERSEDED BY THE CORRESPONDING DATA IN THE SITE DATA FILE

	WATER NUCLIDE	INITIAL WASHOFF FRACTION	ANNUAL WASHOFF RATE	INGESTION FACTOR ((Bq INGESTED)/ (Bq IN WATER))
CHWTRISO001	NAMWPI Sr-89	WSHFRI 0.01	WSHRTA 0.004	WINGF 5.0E-6 (NUREG 1150)
CHWTRISO002	Sr-90	0.01	0.004	5.0E-6 (NUREG 1150)
CHWTRISO003	Cs-134	0.005	0.001	5.0E-6 (NUREG 1150)
CHWTRISO004	Cs-137	0.005	0.001	5.0E-6 (NUREG 1150)

\*\*\*\*\*  
 \* SPECIAL OPTIONS DATA BLOCK

\*\*\*\*\*  
 \* DETAILED PRINT OPTION CONTROL SWITCHES, LOOK AT THE CODE BEFORE TURNING ON!!

\* KSWDSC

CHKSWTCH001 0

\*\*\*\*\*  
 \* DEFINE THE TYPE 9 RESULTS

\* LONG-TERM POPULATION DOSE IN A GIVEN REGION BROKEN DOWN BY THE 12 PATHWAYS

\* NUMBER OF RESULTS OF THIS TYPE THAT ARE BEING REQUESTED  
 \* FOR EACH RESULT YOU REQUEST, THE CODE WILL PRODUCE A SET OF 12

TYPE9NUMBER 1 (UP TO 10 ALLOWED)

\* ORGNAM INNER OUTER



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TYPE9OUT001   'L-EDEWBODY'           1           9   (0-50 MILES)
*****
*****
* ECONOMIC COST RESULTS IN A REGION BROKEN DOWN BY 12 TYPES OF COSTS
*
* NUMBER OF RESULTS OF THIS TYPE THAT ARE BEING REQUESTED
* FOR EACH RESULT YOU REQUEST, THE CODE WILL PRODUCE A SET OF 12
*
TYP10NUMBER   1           (UP TO 10 ALLOWED)
*
*           INNER           OUTER
*
TYP10OUT001   1           9   (0-50 MILES)
*****
*****
* DEFINE A FLAG THAT CONTROLS THE PRODUCTION OF THE ACTION DISTANCE
RESULTS
*
* SPECIFYING A VALUE OF .TRUE. TURNS ON ALL 8 OF THE ACTION DISTANCE
RESULTS,
* A VALUE OF .FALSE. WILL ELIMINATE THE ACTION DISTANCE RESULTS FROM THE
OUTPUT.
*
TYP11FLAG11   .FALSE.
*****
*****
* IMPACTED AREA/POPULATION RESULTS IN A REGION BROKEN DOWN BY 6 TYPES OF
IMPACTS
*
* NUMBER OF RESULTS OF THIS TYPE THAT ARE BEING REQUESTED
* FOR EACH RESULT YOU REQUEST, THE CODE WILL PRODUCE A SET OF 8
*
TYP12NUMBER   2           (UP TO 10 ALLOWED)
*
*           INNER           OUTER
*
TYP12OUT001   1           6   (0-10 MILES)
TYP12OUT002   1           9   (0-50 MILES)
*****
*****
* Maximal annual food ingestion dose to an individual, requested by
IXOT13
*
* This result is calculated after accounting for temporary or
* permanent interdiction. It is only available for the "new" food
model.
*
* NUMBER OF RESULTS OF THIS TYPE THAT ARE BEING REQUESTED
*
TYP13NUMBER   0   (UP TO 10 ALLOWED)
*
* IRAD13 is the radial spatial interval at which results are requested
*
* ORGN13 is the name of the organ for which results are requested
* (allowable values for ORGN13 are 'EFFECTIVE' or 'THYROID')
*
*           IRAD13   ORGN13
*
*TYP13OUT001   2   EFFECTIVE
*TYP13OUT002   4   EFFECTIVE

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*TYP13OUT003	6	EFFECTIVE
*TYP13OUT004	9	EFFECTIVE

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