

apearly

\* GENERAL DESCRIPTIVE TITLE DESCRIBING THIS NAPS AP1000 "EARLY" INPUT FILE  
\* BASE CASE using EZDLTSHL = 7200 seconds and 95% Evacuation  
\* Last Modified by MGM 04/16/04  
MIEANAM1001 'NAPS APEARLY.INP, For AP1000 Design'  
DCF\_FILE001 'DOSDATA.INP' (DCF file of MACCS 1.5.11.1)

\* ORGNAM ORGFLG  
\*

MIORGDEF001 'A-SKIN' .TRUE.  
MIORGDEF002 'A-RED MARR' .TRUE.  
MIORGDEF003 'A-LUNGS' .TRUE.  
MIORGDEF004 'A-THYROIDH' .TRUE.  
MIORGDEF005 'A-STOMACH' .TRUE.  
MIORGDEF006 'A-LOWER LI' .FALSE. (does not contribute to early fatalities)  
MIORGDEF007 'L-EDEWBODY' .TRUE.  
MIORGDEF008 'L-RED MARR' .TRUE.  
MIORGDEF009 'L-BONE SUR' .TRUE.  
MIORGDEF010 'L-BREAST' .TRUE.  
MIORGDEF011 'L-LUNGS' .TRUE.  
MIORGDEF012 'L-THYROID' .TRUE.  
MIORGDEF013 'L-LOWER LI' .TRUE.  
MIORGDEF014 'L-BLAD WAL' .TRUE.  
MIORGDEF015 'L-LIVER' .FALSE.  
MIORGDEF016 'L-THYROIDH' .TRUE.

\* FLAG TO INDICATE THAT THIS IS THE LAST PROGRAM IN THE SERIES TO BE RUN  
\*

MIENDAT2001 .FALSE. (SET THIS VALUE TO .TRUE. TO SKIP CHRONC)  
\*

\* DISPERSION MODEL OPTION CODE: 1 \* STRAIGHT LINE  
\* 2 \* WIND-SHIFT WITH ROTATION  
\* 3 \* WIND-SHIFT WITHOUT ROTATION  
\*

MIIPLUME001 2  
\*

\* NUMBER OF FINE GRID SUBDIVISIONS USED BY THE MODEL  
\*

MINUMFIN001 7 (3, 5 OR 7 ALLOWED)  
\*

\* LEVEL OF DEBUG OUTPUT REQUIRED, NORMAL RUNS SHOULD SPECIFY ZERO  
\*

MIIPRINT001 0  
\*

\* LOGICAL FLAG SIGNIFYING THAT THE BREAKDOWN OF RISK BY WEATHER  
CATEGORY  
\* BIN ARE TO BE PRESENTED TO SHOW THEIR RELATIVE CONTRIBUTION TO THE  
MEAN  
\*

\* RISBIN  
\*

MIRISCAT001 .FALSE.

\*

\* FLAG INDICATING IF WIND-ROSES FROM ATMOS ARE TO BE OVERRIDDEN

\*

MIOVRRID001 .FALSE. (USE THE WIND ROSE CALCULATED FOR EACH WEATHER BIN)

\*\*\*\*\*

\* POPULATION DISTRIBUTION DATA BLOCK, LOADED BY INPOPU, STORED IN /POPDAT/

\*

PDPOPFLG001 FILE

\*

\*PDPOPFLG001 UNIFORM

\*PDIBEGIN001 1 (SPATIAL INTERVAL AT WHICH POPULATION BEGINS)

\*PDPOPDEN001 50. (POPULATION DENSITY (PEOPLE PER SQUARE KILOMETER))

\*\*\*\*\*

\* SHIELDING AND EXPOSURE FACTORS, LOADED BY INDFAC, STORED IN /EADFAC/

\*

\* THREE VALUES OF EACH PROTECTION FACTOR ARE SUPPLIED,

\* ONE FOR EACH TYPE OF ACTIVITY:

\*

\* ACTIVITY TYPE:

\* 1 - EVACUEES WHILE MOVING

\* 2 - NORMAL ACTIVITY IN SHELTERING AND EVACUATION ZONE

\* 3 - SHELTERED ACTIVITY

\*

\* CLOUD SHIELDING FACTOR

\*

\* SITE GG PB SEQ SUR ZION

\* SHELTERING 0.7 0.5 0.65 0.6 0.5

\*

\* EVACUEES NORMAL SHELTER

\*

SECSFACT001 1. 0.75 0.6 \* SURRY SHELTERING VALUE

\*

\* PROTECTION FACTOR FOR INHALATION

\*

SEPROTIN001 1. 0.41 0.33 \* VALUES FOR NORMAL ACTIVITY AND  
SHELTERING SELECTED BY NRC STAFF

\*

\* BREATHING RATE (CUBIC METERS PER SECOND)

\*

SEBRRATE001 2.66E-4 2.66E-4 2.66E-4

\*

\* SKIN PROTECTION FACTOR

\*

SESKPFAC001 1.0 0.41 0.33 \* VALUES FOR NORMAL ACTIVITY AND  
SHELTERING SELECTED BY NRC STAFF

\*

\* GROUND SHIELDING FACTOR

\*

\* SITE GG PB SEQ SUR ZION  
 \* SHELTERING 0.25 0.1 0.2 0.2 0.1  
 \*  
 SEGSHFAC001 0.5 0.33 0.2 \* VALUE FOR NORMAL ACTIVITY SELECTED BY  
 \* NRC STAFF  
 \*  
 \* RESUSPENSION INHALATION MODEL CONCENTRATION COEFFICIENT (/METER)  
 \*  
 \* RESCON = 1.E-4 IS APPROPRIATE FOR MECHANICAL RESUSPENSION BY VEHICLES.  
 \* RESHAF = 2.11 DAYS CAUSES 1.E-4 TO DECAY IN ONE WEEK TO 1.E-5, THE VALUE  
 \* OF RESCON USED IN THE FIRST TERM OF THE LONG-TERM RESUSPENSION  
 EQUATION  
 \* USED IN CHRONC.  
 \*  
 SERESCON001 1.E-4 (RESUSPENSION IS TURNED ON)  
 \*  
 \* RESUSPENSION CONCENTRATION COEFFICIENT HALF-LIFE (SEC)  
 \*  
 SERESHAF001 1.82E5 (2.11 DAYS)  
 \*\*\*\*\*  
 \* EVACUATION ZONE DATA BLOCK, LOADED BY EVNETW, STORED IN /NETWORK/  
 /EOPTIO/  
 \*  
 \* SPECIFIC DESCRIPTION OF THE EMERGENCY RESPONSE SCENARIO BEING USED  
 \*  
 EZEANAM2001 'EVACUATION WITHIN 10 MILES, RELOCATION MODELS APPLY  
 ELSEWHERE'  
 \*  
 \* THE TYPE OF WEIGHTING TO BE APPLIED TO THE EMERGENCY RESPONSE  
 SCENARIOS  
 \* YOU MUST SUPPLY A VALUE OF 'TIME' OR 'PEOPLE'  
 \*  
 EZWTNAME001 'PEOPLE'  
 \*  
 \* WEIGHTING FRACTION APPLICABLE TO THIS SCENARIO  
 \*  
 EZWTFRAC001 0.95 (95% of the people within 10 miles evacuate)  
 \*  
 \* LAST RING IN THE MOVEMENT ZONE  
 \*  
 EZLASM0V001 8 (EVACUEES DISAPPEAR AFTER TRAVELING TO 20 MILES)  
 \*  
 \* Flag defining the time at which evacuees "enter" the destination element  
 \*  
 \*TRAVELPOINT 'CENTERPOINT' (new option implemented at MACCS2 v. 1.11f)  
 TRAVELPOINT 'BOUNDARY' (functionality derived from MACCS circa 1984)  
 \*  
 \* RADIAL EVACUATION SPEED (M/S) or (4 mph)  
 \* 3 Phases: (Initial) (Middle) (Late)  
 EZESPEED001 1.8 1.8 1.8 (NAPS)

EZEVATYP001 'RADIAL'  
 EZDURBEG001 86400.0  
 EZDURMID001 0.0  
 EZREFPNT001 'ALARM'  
 EZNUMEVA001 7  
 EZDLTSHL001 7200. 7200. 7200. 7200. 7200. 7200.  
 EZDLTSHL002 7200. 7200. 7200. 7200. 7200. 7200.  
 EZDLTEVA001 0. 0. 0. 0. 0. 0.  
 EZDLTEVA002 0. 0. 0. 0. 0. 0.

\*\*\*\*\*

\* SHELTER AND RELOCATION ZONE DATA BLOCK, LOADED BY INPEMR,  
 \* STORED IN /INPSRZ/, /RELOCA/  
 \*

\* DURATION OF THE EMERGENCY PHASE (SECONDS FROM PLUME ARRIVAL)  
 \*

SRENDEMP001 604800. (ONE WEEK)

\* CRITICAL ORGAN FOR RELOCATION DECISIONS  
 \*

SRCRIORG001 'L-EDEWBODY'

\* HOT SPOT RELOCATION TIME (SECONDS FROM PLUME ARRIVAL)  
 \*

SRTIMHOT001 43200. (ONE-HALF DAY)

\* NORMAL RELOCATION TIME (SECONDS FROM PLUME ARRIVAL)  
 \*

SRTIMNRM001 86400. (ONE DAY)

\* HOT SPOT RELOCATION DOSE CRITERION THRESHOLD (SIEVERTS)  
 \*

SRDOSHOT001 0.5 (50 REM DOSE TO WHOLE BODY IN 1 WEEK TRIGGERS RELOCATION)

\* NORMAL RELOCATION DOSE CRITERION THRESHOLD (SIEVERTS)  
 \*

SRDOSNRM001 0.25 (25 REM DOSE TO WHOLE BODY IN 1 WEEK TRIGGERS RELOCATION)

\*\*\*\*\*

\* EARLY FATALITY MODEL PARAMETERS, LOADED BY INEFAT, STORED IN /EFATAL/  
 \*

\* NUMBER OF EARLY FATALITY EFFECTS  
 \*

EFNUMEFA001 2

\* ORGNAM EFFACA EFFACB EFFTHR  
 \*

EFATAGRP001 'A-RED MARR' 3.8 5.0 1.5

EFATAGRP002 'A-LUNGS' 10.0 7.0 5.0

\*\*\*\*\*

\* EARLY INJURY MODEL PARAMETERS, LOADED BY INEINJ, STORED IN /EINJUR/

\* NUMBER OF EARLY INJURY EFFECTS

EINUMEIN001 7

EINAME ORGNAM EISUSC EITHRE EIFACA EIFACB

EINJUGRP001 'PRODRIMAL VOMIT' 'A-STOMACH' 1. .5 2. 3.  
EINJUGRP002 'DIARRHEA' 'A-STOMACH' 1. 1. 3. 2.5  
EINJUGRP003 'PNEUMONITIS' 'A-LUNGS' 1. 5. 10. 7.  
EINJUGRP004 'SKIN ERYTHEMA' 'A-SKIN' 1. 3. 6. 5.  
EINJUGRP005 'TRANSEPIDERMAL' 'A-SKIN' 1. 10. 20. 5.  
EINJUGRP006 'THYROIDITIS' 'A-THYROIDH' 1. 40. 240. 2.  
EINJUGRP007 'HYPOTHYROIDISM' 'A-THYROIDH' 1. 2. 60. 1.3

\*\*\*\*\*  
\* ACUTE EXPOSURE CANCER PARAMETERS, LOADED BY INACAN STORED IN /ACANCR/.

\* NUMBER OF ACUTE EXPOSURE CANCER EFFECTS

LCNUMACA001 7

\* THRESHOLD DOSE FOR APPLYING THE DOSE DEPENDENT REDUCTION FACTOR

LCDDTHRE001 0.2 (LOWEST DOSE FOR WHICH DDREFA WILL BE APPLIED)

\* DOSE THRESHOLD FOR LINEAR DOSE RESPONSE (Sv)

LCACTHRE001 0.0 (LINEAR-QUADRATIC MODEL IS NOT BEING USED)

ACNAME ORGNAM ACSUSC DOSEFA DOSEFB CFRISK CIRISK DDREFA

LCANCERS001 'LEUKEMIA' 'L-RED MARR' 1.0 1.0 0.0 9.70E-3 0.0 2.0  
LCANCERS002 'BONE' 'L-BONE SUR' 1.0 1.0 0.0 9.00E-4 0.0 2.0  
LCANCERS003 'BREAST' 'L-BREAST' 1.0 1.0 0.0 5.40E-3 1.7E-2 1.0  
LCANCERS004 'LUNG' 'L-LUNGS' 1.0 1.0 0.0 1.55E-2 0.0 2.0  
LCANCERS005 'THYROID' 'L-THYROIDH' 1.0 1.0 0.0 7.20E-4 7.2E-3 1.0  
LCANCERS006 'GI' 'L-LOWER LI' 1.0 1.0 0.0 3.36E-2 0.0 2.0  
LCANCERS007 'OTHER' 'L-EDEWBODY' 1.0 1.0 0.0 2.76E-2 0.0 2.0

\*\*\*\*\*  
\* RESULT 1 OPTIONS BLOCK, LOADED BY INOUT1, STORED IN /INOUT1/  
\* TOTAL NUMBER OF A GIVEN EFFECT (LATENT CANCER, EARLY DEATH, EARLY INJURY)

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE1NUMBER 27

TYPE1OUT001 'ERL FAT/TOTAL' 1 7 NOCCDF (0 TO 10 MILES)

TYPE1OUT002	'ERL INJ/PRODRIMAL VOMIT'	1 7	NOCCDF
TYPE1OUT003	'ERL INJ/DIARRHEA'	1 7	
TYPE1OUT004	'ERL INJ/PNEUMONITIS'	1 7	
TYPE1OUT005	'ERL INJ/THYROIDITIS'	1 7	
TYPE1OUT006	'ERL INJ/HYPOTHYROIDISM'	1 7	
TYPE1OUT007	'ERL INJ/SKIN ERYTHEMA'	1 7	
TYPE1OUT008	'ERL INJ/TRANSEPIDERMAL'	1 7	
TYPE1OUT009	'CAN FAT/TOTAL'	1 7	NOCCDF
TYPE1OUT010	'CAN FAT/LUNG'	1 11	(0 TO 50 MILES)
TYPE1OUT011	'CAN FAT/THYROID'	1 11	
TYPE1OUT012	'CAN FAT/BREAST'	1 11	
TYPE1OUT013	'CAN FAT/GI'	1 11	
TYPE1OUT014	'CAN FAT/LEUKEMIA'	1 11	
TYPE1OUT015	'CAN FAT/BONE'	1 11	
TYPE1OUT016	'CAN FAT/OTHER'	1 11	
TYPE1OUT017	'CAN INJ/THYROID'	1 11	
TYPE1OUT018	'CAN INJ/BREAST'	1 11	
TYPE1OUT019	'CAN FAT/TOTAL'	1 11	(0 TO 50 MILES)
TYPE1OUT020	'ERL FAT/TOTAL'	1 11	
TYPE1OUT021	'ERL INJ/PRODRIMAL VOMIT'	1 11	
TYPE1OUT022	'ERL INJ/DIARRHEA'	1 11	
TYPE1OUT023	'ERL INJ/PNEUMONITIS'	1 11	
TYPE1OUT024	'ERL INJ/THYROIDITIS'	1 11	
TYPE1OUT025	'ERL INJ/HYPOTHYROIDISM'	1 11	
TYPE1OUT026	'ERL INJ/SKIN ERYTHEMA'	1 11	
TYPE1OUT027	'ERL INJ/TRANSEPIDERMAL'	1 11	

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\* RESULT 2 OPTIONS BLOCK, LOADED BY INOUT2, STORED IN /INOUT2/  
 \* FURTHEST DISTANCE AT WHICH A GIVEN RISK OF EARLY DEATH IS EXCEEDED.  
 \*

\* NUMBER OF DESIRED RESULTS OF THIS TYPE  
 \*

TYPE2NUMBER 1

\*  
 \* FATALITY RISK THRESHOLD  
 \*

TYPE2OUT001 0.

\*\*\*\*\*

\* RESULT 3 OPTIONS BLOCK, LOADED BY INOUT3, STORED IN /INOUT3/  
 \* NUMBER OF PEOPLE WHOSE DOSE TO A GIVEN ORGAN EXCEEDS A GIVEN THRESHOLD.  
 \*

\* NUMBER OF DESIRED RESULTS OF THIS TYPE  
 \*

TYPE3NUMBER 4

\*  
 \* ORGAN NAME DOSE THRESHOLD (Sv)  
 \*

TYPE3OUT001	'A-RED MARR'	1.5
TYPE3OUT002	'A-LUNGS'	5.0

TYPE3OUT003 'L-EDEWBODY' 2.0  
TYPE3OUT004 'L-EDEWBODY' 0.25

\*\*\*\*\*

\* RESULT 4 OPTIONS BLOCK, LOADED BY INOUT4, STORED IN /INOUT4/  
\* 360 DEGREE AVERAGE RISK OF A GIVEN EFFECT AT A GIVEN DISTANCE.

\*  
\* POSSIBLE TYPES OF EFFECTS ARE:

- \* 'ERL FAT/TOTAL'
- \* 'ERL INJ/INJURY NAME'
- \* 'CAN FAT/CANCER NAME'
- \* 'CAN FAT/TOTAL'

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE4NUMBER 5

\* RADIAL INDEX TYPE OF EFFECT

TYPE4OUT001	1	'ERL FAT/TOTAL'
TYPE4OUT002	2	'ERL FAT/TOTAL'
TYPE4OUT003	3	'ERL FAT/TOTAL'
TYPE4OUT004	4	'ERL FAT/TOTAL'
TYPE4OUT005	5	'ERL FAT/TOTAL'

\*\*\*\*\*

\* RESULT 5 OPTIONS BLOCK, LOADED BY INOUT5, STORED IN /INOUT5/

\* TOTAL POPULATION DOSE TO A GIVEN ORGAN BETWEEN TWO DISTANCES.

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE5NUMBER 2

\* ORGAN I1DIS5 I2DIS5

TYPE5OUT001	'L-EDEWBODY'	1	7	(0-10 MILES)
TYPE5OUT002	'L-EDEWBODY'	1	11	NOCCDF (0-50 MILES)

\*\*\*\*\*

\* RESULT 6 OPTIONS BLOCK, LOADED BY INOUT6, STORED IN /INOUT6/

\* CENTERLINE DOSE TO AN ORGAN VS DIST BY PATHWAY, PATHWAY NAMES ARE AS FOLLOWS:

- \* PATHWAY NAME:
- \* 'CLD' - CLOUDSHINE
- \* 'GRD' - GROUNDSHINE
- \* 'INH ACU' - "ACUTE DOSE EQUIVALENT" FROM DIRECT INHALATION OF THE CLOUD
- \* 'INH LIF' - "LIFETIME DOSE COMMITMENT" FROM DIRECT INHALATION OF THE CLOUD
- \* 'RES ACU' - "ACUTE DOSE EQUIVALENT" FROM RESUSPENSION INHALATION

\* 'RES LIF' - "LIFETIME DOSE COMMITMENT" FROM RESUSPENSION INHALATION  
\* 'TOT ACU' - "ACUTE DOSE EQUIVALENT" FROM ALL PATHWAYS  
\* 'TOT LIF' - "LIFETIME DOSE COMMITMENT" FROM ALL PATHWAYS

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE6NUMBER 0

\* ORGNAM PATHNM I1DIS6 I2DIS6

\*TYPE6OUT001 'A-RED MARR' 'TOT ACU' 1 11 (0-50 MILES)  
\*TYPE6OUT002 'A-LUNGS' 'TOT ACU' 1 11 (0-50 MILES)  
\*TYPE6OUT003 'L-EDEWBODY' 'TOT LIF' 1 11 (0-50 MILES)

\*\*\*\*\*  
\* RESULT 7 OPTIONS BLOCK, LOADED BY INOUT7, STORED IN /INOUT7/

\* CENTERLINE RISK OF A GIVEN EFFECT VS DISTANCE

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE7NUMBER 0

\* NAME I1DIS7 I2DIS7

\*TYPE7OUT001 'ERL FAT/TOTAL' 1 11 (0-50 MILES)

\*\*\*\*\*  
\* RESULT 8 OPTIONS BLOCK, LOADED BY INOUT8, STORED IN /INOUT8/

\* POPULATION WEIGHTED FATALITY RISK BETWEEN 2 DISTANCES

\* NUMBER OF DESIRED RESULTS OF THIS TYPE

TYPE8NUMBER 2

\* NAME I1DIS8 I2DIS8

TYPE8OUT001 'ERL FAT/TOTAL' 1 2 NOCCDF (0-EXCL ZONE + 1 MI)

TYPE8OUT002 'CAN FAT/TOTAL' 1 7 NOCCDF (0-10 MILES)

\*\*\*\*\*  
\* RESULT A OPTIONS BLOCK, LOADED BY INOUTA, STORED IN /INOUTA/

\* peak dose to a given organ

\* NUMA

TYPEANUMBER 1

\* ORGNAM I1DISA I2DISA

TYPEAOUT001 'L-EDEWBODY' 1 11

\*\*\*\*\*



\*\*\*\*\* BEGINNING OF CHANGE CASE 1 USER INPUT \*\*\*\*\*  
\*\*\*\*\*

\* EMERGENCY RESPONSE SCENARIO NUMBER 2

\*

\* SPECIFIC DESCRIPTION OF THE EMERGENCY RESPONSE SCENARIO BEING USED

\*

EZEANAM2001 'NO EVACUATION, RELOCATION MODELS APPLY EVERYWHERE'

\*

\* THE TYPE OF WEIGHTING TO BE APPLIED TO THE EMERGENCY RESPONSE SCENARIOS

\*

\* WEIGHTING FRACTION APPLICABLE TO THIS SCENARIO FOR EVACUATION

\*

EZWTFRAC001 0.05 (5% of the people DO NOT evacuate)

\*

\* LAST RING IN THE MOVEMENT ZONE

\*

EZLASM0V001 0 (A ZERO TURNS OFF THE EVACUATION MODEL)

\*

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