CALCULATION TITLE PAGE

CALCULATION NUMBER: PSAT 206CT.QA.02.02

CALCULATION TITLE: Columbia Fuel Handling Accident Offsite and Control Room Doses Using Regulatory Guide 1.183 Source Terms

	ORIGINATOR Print/Sign/Date	CHECKER Print/Sign/Date	IND REVIEWER Print/Sign/Date
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2			

REASON FOR REVISION:

		Nonconformance Rpt
0 -	Initial Issue	N/A
1 -	Reorganized main body of calculation Changed offsite X/Qs Used "SCN bypass" X/Qs for CR until 2 hours (no SGTS vent release credit) Increased peaking factor to 2.0 Increased exhaust rate from 10,000 to 40,000 cfm after 20 minutes Removed credit for SGTS filters Updated Reference 6 Revised Appendices A and C Revised Attachment 2	

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Purpose

The purpose of this calculation is to update the Fuel Handling Accident (FHA) dose calculations currently presented in FSAR Section 15.7.4 (Reference 1). This update provides (1) implementation of the Reference 2 (AST) source terms and (2) offsite and control room doses.

Methodology

This dose analysis fully complies with NRC Regulatory Guide 1.183 (Reference 2). The specific methodology is as follows:

1. Make use of the basic modeling from the existing dose analysis (see Attachment 1 for discussion of the benchmark against that existing dose analysis), but substitute the revised gap fractions and decontamination factors from Reference 2 and include a control room dose calculation.

2. The STARDOSE computer code (Reference 3) is used to perform the dose calculation. STARDOSE makes use of Reference 4 dose conversion factors (DCFs) for CEDE and uses Reference 5 DCFs for whole body (i.e., external exposure gamma) dose to obtain TEDE. Where Reference 4 provided updated whole body DCFs, these replaced the DCFs of Reference 5. This approach is consistent or conservative with respect to the requirements of Reference 2.

3. The release is assumed to occur on the refueling floor, and the activity release to the environment is designed to be essentially complete within two hours (see Assumption 2). For an assumed refueling floor volume of approximately 1.2E6 ft3, the 80,000 cfm for the first 20 minutes (Item 3.28 of Reference 6) will reduce the activity in the refueling floor volume by 1-exp(-(8E4)(20)/1.2E6) = 73.6%. The subsequent exhaust rate of 10,000 cfm for the remaining 100 minutes of the two-hour interval, Item 3.28 of Reference 6, would reduce the activity by a further 1-exp(-(1E4)(100)/1.2E6) = 56.5%, which would set the overall activity release to 1-[(exp(-(8E4)(20)/1.2E6)][exp(-(1E4)(100)/1.2E6)] = 89%. In order to remove essentially all the activity from the refueling floor volume over the assumed two-hour period, an artificially exaggerated exhaust rate of 40,000 cfm is needed to increase the overall release to more than 99%. The 40,000 cfm is the value that is used in the analysis.

4. Continue the dose calculation for 744 hours, 30 days after the start of release. This will ensure that the control room dose is fully accumulated. The control room volume is 2.14E5 ft3 (Reference 6, Item 3.5). At the filtered makeup rate of 1800 cfm (neglecting any unfiltered inleakage) with a reduction to 900 cfm after one-half hour into the release phase (Reference 6, Item 3.16), the control room volume will have been purged 181 times over the 718 hours after the end of release.)

5. Compare the TEDE values obtained from the revised analysis with the 6.3 rem FHA TEDE limit for offsite doses and the 5 rem TEDE limit for the control room (Reference 2). The control room doses are calculated for four different unfiltered inleakage values as described below in the Calculation section.

Assumptions

Assumption 1: Assume 24 hours of fuel decay prior to accident release.

Justification: Reference 1

Assumption 2: The release to the environment from the refueling floor must be complete within two hours.

Justification: Reference 2

Assumption 3: A peaking factor of two is used for this analysis.

Justification: The objective of this assumption is to ensure that the FHA dose analysis contained herein will be consistent with any core design. Although the combination of high burnup (tending to increase the fission product gap activity) and high operating power is not generally observed for any particular fuel assembly, the factor of two peaking factor used in this analysis provides considerable margin for gap activity in the fuel assumed to be damaged in the postulated fuel handling accident.

References

1. WNP-2 Final Safety Analysis Report Amendment 53, Section 15.7.4, November 1998

2. "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors", US NRC Regulatory Guide 1.183, Revision 0, July 2000

3. "STARDOSE Model Report", Polestar Applied Technology, Inc., PSATCI09.03, January 1997

4. Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion", EPA-520/1-88-020, September 1988

5. NUREG/CR-5106 (Manual for TACT5 – Version SAIC 9/23/87), File MLWRICRP.30

6. PSAT 206.QA.01.03, "Dose Calculation Data Base for Application of Alternate Source Term to LOCA and Non-LOCA DBAs for Energy Northwest's Columbia Generating Station", Revision 6, 10/19/01

7. "Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Boiling Water Reactors", US NRC Regulatory Guide 1.3, Revision 2, June 1974

8. K.G. Murphy and K.M. Campe, "Nuclear Power Plant Control Room Ventilation System Design for Meeting General Design Criteria 19", 13th AEC Air Cleaning Conference, August 1974

Calculation

The model in STARDOSE consists of three control volumes. The first control volume is the gap (nominally 100 ft^3), the second is the reactor building (RB) refueling floor (also nominally 100 ft^3), and the third is the control room (214,000 ft^3 per Reference 6, Item 3.5). Note that the nominal 100 ft^3 volumes are used to conveniently calculate exchange rates.

The core power is assumed to be 3556 MWt per Reference 6, Item 1.1. The gap activity of noble gas, iodine (set at 99.85% elemental, 0.15% organic per Reference 2), and tellurium (as an iodine precursor) is added from the core to the gap over the first 0.01 hours of the analysis. It is added at 10 core inventories per hour so that the release is 10%. This 10% is to account for a "base" gap fraction of 5% (Reference 2) and a peaking factor of two as explained in Assumption 3. Note, however, that because the gap activities for Kr-85 and I-131 are respectively 10% and 8% per Reference 2, the inventories of these two radionuclides in the STARDOSE LIBFILE1.TXT file, shown in Appendix B, were increased by a factor of 2 and 8/5, respectively, as compared to the activities given in Reference 6.

Once the activity has been established in the gap, it is allowed to decay until 23.9833 hours. It is then released to the RB at 0.528 cfm (0.528% per minute) for 0.0167 hours (one minute) so that the assumed 0.528% of the pin failures are represented (Reference 6, Item 2.4). A filter efficiency of 0.998 is used to account for the water DF of 500 applied to the elemental iodine, while the organic iodine is not scrubbed (Reference 2). By applying the DF of 500 to the elemental iodine (which is assumed to make up 99.85% of the release from the gap) and applying a DF of one to the organic iodine (which is assumed to be the remainder of the iodine release from the gap), the expected iodine speciation of 57% elemental and 43% organic (as suggested in Reference 2) is observed in the reactor building at 24 hours (115 Ci of organic I-131 vs. 160 Ci as may be noted in the ouput files presented in Appendix C). Since tellurium was also released to provide additional iodine during the 24 hours of decay, a filter efficiency of 0.99999 is used to prevent its subsequent release to the RB (although a small amount would be present). No other particulates are assumed to be released in the STARDOSE model because (per Reference 2), the scrubbing DF is assumed to be infinite for that activity.

All of this activity is in the RB by 24 hours. At 24 hours, the release to the environment is assumed to begin at an exhaust rate of 80,000 cfm or 6.667% per minute during the first twenty minutes. Then, an exhaust rate of 40,000 cfm (3.333% per minute) is assumed until the end of the two-hour release phase. In STARDOSE, because the RB volume is set to 100 ft^3, the exhaust rates are respectively 6.667 cfm and 3.333 cfm. Note that no credit for SGTS filtration is taken.

The offsite X/Qs are from Reference 6, Item 5.1, but displaced by 24 hours. In like manner, the offsite breathing rates are from Reference 6, Item 5.2, diplaced by 24 hours, as well. Note that no

credit is taken for the SGTS release point in the selection of X/Qs. In other words, no reliance has been placed on SGTS operation at all in the analysis of FHA; and SGTS is not needed, therefore, to mitigate the consequences of this postulated event.

As for the control room, per Reference 6, Item 3.15, one parametrically considers four different models for assumed unfiltered inleakage into the control room: 300 cfm with a reduction to 150 cfm at one-half hour (Model A), 300 cfm with a reduction to 200 cfm at one-half hour (Model B), 300 cfm for 30 days (Model C), and 350 cfm with a reduction to 200 cfm at one-half hour (Model D). This is in addition to the 1800 cfm of filtered makeup with reduction to 900 cfm at one-half hour (Reference 6, Item 3.16) at 94% iodine removal efficiency (Reference 6, Item 4.2). Note that these four models assume a 5-minute control room response (Reference 6, Item 9.8) during which no credit for control room filtration is taken.

Control room occupancy factors and breathing rates are from Reference 6, Items 5.2 and 5.3, but displaced by 24 hours. Control room X/Qs are from Reference 6, Item 5.1, but displaced by 24 hours. Note that because no credit for the SGTS is taken during the two-hour release phase, the reactor building wall leakage X/Qs are used during the entire two-hour release (i.e., one uses "SCN Bypass" X/Qs rather than "SGTS Release" X/Qs from Reference 6, Item 5.1).

Due to the two different sets of X/Qs for the filtered makeup and unfiltered inleakage, two STARDOSE runs were required for each case. For the first one (the filtered makeup run), the unfiltered inleakage was turned off. For the second one (the unfiltered inleakage run), the filtered makeup was turned off. As for the CR exhaust flow rate, it was set in both cases to the sum of the filtered and unfiltered inleakages. This is the proper way to superimpose make-up from two different sources, and this is obvious if one were to consider a purely hypothetical case wherein the filtered make-up filter is 100% efficient. For such a case, the unfiltered source would be introduced at the unfiltered make-up rate (or inleakage rate), but the combined rates would be used as the exhaust flow. One would not, for example, model one case with the unfiltered make-up and exhaust rates being equal and another case with the filtered make-up and exhaust rates being equal (with no activity being added) and then add the two doses together to obtain the effect of the combined sources.

Because two STARDOSE runs were necessary for each case, and because four different control room models were analyzed, there are a total of 8 INPUT.DAT files provided in Appendix A. Each CR dose is obtained by adding up the 30-day TEDE results (actually the "Wbody dose" and "CEDE" of the 744-h edit time) of two combined runs for which input files and output excerpts are provided. That's why each case will be referred to as the "sum" of two cases, for easy reference to Appendix A (input files) and C (output excerpts). Note that no changes were related to the offsite X/Qs when running two combined STARDOSE runs for a single case. As a result, there is no need to add the doses of two combined cases to obtain the offsite doses (EAB and LPZ TEDE). This addition is only relevant to the calculation of the CR TEDE.

The LIBFILE1.TXT file of Appendix B, common to all AST STARDOSE runs, contains the radionuclide input data. The core inventories listed in Column 5 are from Reference 6 Item 1.2 (with the Kr-85 and I-131 inventories increased by a factor of 2 and 8/5, as described above). The

Dose Conversion Factors (Column 7 for thyroid, Column 8 for whole body, and Column 12 for CEDE) are from References 4, 5, and 4, respectively, (except for certain whole body DCFs covered by Reference 4 which are then taken from Reference 4). Decay constants (per second) come from Reference 5.

Output file excerpts are provided in Appendix C. The 26-hour edits (2 hours after the start of the release) are shown to illustrate the offsite doses, and the 744-hour edits (30 days after the start of the release) are shown to illustrate the fully accumulated CR doses.

Results

Table 1 summarizes offsite and control room dose results for all four cases.

Table 1 – Doses for the AST Analysis

CR Models	Formula for Easy Reference to Appendices A and C	CR Inleakage before 0.5h (cfm)	CR Inleakage after 0.5h (cfm)	30-d CR TEDE (intake) (rem)	30-d CR TEDE (inleak.) (rem)	30-d CR TEDE Total (rem)	2-h EAB TEDE (rem)	2-h LPZ TEDE (rem)
A	Af + Au	300	150	0.76	0.57	1.33	1.01	0.28
B	Bf + Bu	300	200	0.73	0.57	1.30	1.01	0.28
C	Cf + Cu	300	300	0.68	0.56	1.24	1.01	0.28
D	Df + Du	350	200	0.72	0.65	1.37	1.01	0.28

Reference 2 states that the control room dose limit is 5 rem TEDE and that the offsite dose limit for the FHA is 6.3 rem TEDE. The results from Table 1 can be compared to these limits.

The FHA control room doses represent about 25% of the 5-rem limit. The EAB dose has more than a factor six margin, and the LPZ dose has more than a factor 20 margin.

Looking at the sensitivity to the CR unfiltered inleakage, results show the highest TEDE for Model D which has the highest unfiltered inleakage early in the release phase (prior to 30 min), and a somewhat high unfiltered inleakage thereafter. One may notice that the CR TEDE for Model C is lower than that of Model B, itself lower than that of Model A, despite a decreasing CR unfiltered inleakage after one half-hour into the release phase. The reason for this decreasing dose with increasing unfiltered inleakage after 30 minutes is that activity accumulates in the CR early in accident when the CR inleakage is high, and the activity in the environment is high as well. Then, when the activity in the environment becomes low, the activity in the CR is purged out at a slower rate in Models A and B compared to Model C, with Model C benefiting from a higher unfiltered inleakage that brings relatively clean air from the environment, as the assumed release rate from the RB has gone down by 50% from 80,000 cfm to 40,000 cfm. As for Case D,

it presents both a higher inleakage when the environment activity is high, and a slower purging when the environment activity has gone down. This fact explains why the CR dose for that case is the highest.

Conclusions

The FHA control room and offsite doses are only a small fraction of their Reference 2 limits even for the most limiting CR unfiltered inleakage configuration.

Appendix A – Regulatory Guide 1.183 Analysis

STARDOSE INPUT.DAT Files
8 Runs

(See Table 2 of the Main Calc for Run Naming References)

Run Af

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                        OBJ_CV
name                            GAP
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                        OBJ_CV
name                            RB
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                     OBJ_CR
name                         Control_Room
air_volume                   2.14e+005
water_volume                 0
surface_area                 0
```

```
has_recirc_filter                false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
```

```
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
24.5          4.13e-4
26            4.03e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                            environment
downstream                          Control_Room
has_filter                              true
flow_rate
Time   (hr)   Value  (cfm)
24.5          1800
744           900
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
24.083 0             0             0             0             0             0
744           0             0.94          0.94          0.94          0.94
       0.94
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     1            1             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744      0           0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2100
744                 1050
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
```

```
Time (hr)        Value (s/m*3)
744              0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)        Value (s/m*3)
744              0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)        Value (cms)
26                0.00035
48               0.0
744              0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)        Value (cms)
32                0.00035
48               0.00018
744              0.00023
end_breathing_rate_lpz
end_environment
```

Run Au

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                          OBJ_CV
name                              GAP
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                          OBJ_CV
name                              RB
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                       OBJ_CR
name                           Control_Room
air_volume                     2.14e+005
water_volume                   0
surface_area                   0
has_recirc_filter                 false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
26            6.80e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               environment
downstream                             Control_Room
has_filter                             false
flow_rate
Time (hr)        Value (cfm)
24.5                 300
744                  150
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)        Value (cfm)
24.5                 2100
744                  1050
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)        Value (s/m*3)
744              0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)        Value (s/m*3)
744              0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)        Value (s/m*3)
744              0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)        Value (cms)
26                 0.00035
48               0.0
744              0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)        Value (cms)
32                 0.00035
48               0.00018
744              0.00023
end_breathing_rate_lpz
end_environment
```

Run Bf

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                          OBJ_CV
name                              GAP
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                          OBJ_CV
name                              RB
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                       OBJ_CR
name                           Control_Room
air_volume                     2.14e+005
water_volume                   0
surface_area                   0
has_recirc_filter                 false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
24.5          4.13e-4
26            4.03e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                            environment
downstream                          Control_Room
has_filter                              true
flow_rate
Time   (hr)   Value  (cfm)
24.5          1800
744          900
end_flow_rate
filter_efficiency
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
24.083 0            0             0             0             0            0
744          0             0.94          0.94          0.94          0.94
       0.94
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     1           1             0             0             0            0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744      0          0             0             0             0            0
end_reevolution_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2100
744                 1100
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
```

```
breathing_rate_sb
Time (hr)       Value (cms)
26               0.00035
48              0.0
744             0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)       Value (cms)
32               0.00035
48              0.00018
744             0.00023
end_breathing_rate_lpz
end_environment
```

Run Bu

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                          OBJ_CV
name                              GAP
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                          OBJ_CV
name                              RB
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                       OBJ_CR
name                           Control_Room
air_volume                     2.14e+005
water_volume                   0
surface_area                   0
has_recirc_filter                 false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
26            6.80e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               environment
downstream                             Control_Room
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                300
744                 200
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2100
744                 1100
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)       Value (cms)
26               0.00035
48              0.0
744             0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)       Value (cms)
32               0.00035
48              0.00018
744             0.00023
end_breathing_rate_lpz
end_environment
```

Run Cf

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                        OBJ_CV
name                            GAP
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                        OBJ_CV
name                            RB
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                     OBJ_CR
name                         Control_Room
air_volume                   2.14e+005
water_volume                 0
surface_area                 0
has_recirc_filter               false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
24.5          4.13e-4
26            4.03e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                            environment
downstream                          Control_Room
has_filter                              true
flow_rate
Time   (hr)   Value  (cfm)
24.5          1800
744           900
end_flow_rate
filter_efficiency
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
24.083 0            0             0             0             0            0
744           0             0.94          0.94          0.94          0.94
       0.94
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     1           1             0             0             0            0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas     ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0           0             0             0             0            0
end_reevolution_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2100
744                 1200
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
```

```
breathing_rate_sb
Time (hr)        Value (cms)
26                0.00035
48               0.0
744              0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)        Value (cms)
32                0.00035
48               0.00018
744              0.00023
end_breathing_rate_lpz
end_environment
```

Run Cu

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                          OBJ_CV
name                              GAP
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                          OBJ_CV
name                              RB
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                       OBJ_CR
name                           Control_Room
air_volume                     2.14e+005
water_volume                   0
surface_area                   0
has_recirc_filter                 false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833               0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744      0           0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
26            6.80e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               environment
downstream                             Control_Room
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                300
744                 300
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2100
744                 1200
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)       Value (cms)
26               0.00035
48              0.0
744             0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)       Value (cms)
32               0.00035
48              0.00018
744             0.00023
end_breathing_rate_lpz
end_environment
```

Run Df

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                        OBJ_CV
name                            GAP
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                        OBJ_CV
name                            RB
air_volume                      100
water_volume                    0
surface_area                    0
has_recirc_filter               false
end_control_volume

control_volume
obj_type                     OBJ_CR
name                         Control_Room
air_volume                   2.14e+005
water_volume                 0
surface_area                 0
has_recirc_filter               false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833               0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
24.5          4.13e-4
26            4.03e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                            environment
downstream                          Control_Room
has_filter                              true
flow_rate
Time   (hr)   Value  (cfm)
24.5          1800
744           900
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
24.083 0             0             0             0             0             0
744           0             0.94          0.94          0.94          0.94
       0.94
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     1            1             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744      0           0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2150
744                 1100
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
```

```
breathing_rate_sb
Time (hr)        Value (cms)
26                0.00035
48               0.0
744              0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)        Value (cms)
32                0.00035
48               0.00018
744              0.00023
end_breathing_rate_lpz
end_environment
```

Run Du

```
edit_time
0.0 24.0 24.1 24.2 24.5 25.0
26.0 28.0 32.0 48.0 120.0 744.0
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          0.9985
organic_iodine_frac            0.0015
particulate_iodine_frac           0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   10     10     0      10     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                          OBJ_CV
name                              GAP
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                          OBJ_CV
name                              RB
air_volume                        100
water_volume                      0
surface_area                      0
has_recirc_filter                 false
end_control_volume

control_volume
obj_type                       OBJ_CR
name                           Control_Room
air_volume                     2.14e+005
water_volume                   0
surface_area                   0
has_recirc_filter                 false
breathing_rate
Time (hr)       Value (cms)
744             0.00035
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833              0
24            0.528
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0.998         0             0             0
       0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles
       Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location              AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
24            0
24.333 6.667
26            3.333
744           0
end_flow_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26     0.00018
744    0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
32       5.04e-5
48      3.76e-5
```

```
120     1.99e-5
744     7.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
26            6.80e-4
744           0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               environment
downstream                             Control_Room
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                350
744                 200
end_flow_rate
end_junction

junction
junction_type                          AIR_JUNCTION
downstream_location                    AIR_SPACE
upstream                               Control_Room
downstream                             environment
has_filter                             false
flow_rate
Time (hr)       Value (cfm)
24.5                2150
744                 1100
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)       Value (s/m*3)
744             0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)       Value (cms)
26               0.00035
48              0.0
744             0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)       Value (cms)
32               0.00035
48              0.00018
744             0.00023
end_breathing_rate_lpz
end_environment
```

Appendix B - Regulatory Guide 1.183 Analysis

STARDOSE LIBFILE1.TXT File

n_isotopes	76	n_isotope_groups	11														
Kr83m	N_Gas	NONE	NONE	3.57E+03	1.04E-04	0	4.20E-06	0	0	0	0	0	0	0	0	0	0
Kr85m	N_Gas	NONE	NONE	7.35E+03	4.39E-05	0	0.03069	0	0	0.05	0	0.22	0	0	0	0	0
Kr85	N_Gas	NONE	NONE	8.24E+02	2.04E-09	0	0.00048	0	0	0.05	0	0.22	0	0	0	0	0
Kr87	N_Gas	NONE	NONE	1.34E+04	1.52E-04	0	0.14626	0	0	0.34	0	1.48	0	0	0	0	0
Kr88	N_Gas	NONE	NONE	1.90E+04	6.88E-05	0	0.3708	0	0	0.08	0	0.35	0	0	0	0	0
Kr89	N_Gas	NONE	NONE	2.20E+04	3.63E-03	0	0.303	0	0	0.35	0	1.52	0	0	0	0	0
Xe131m	N_Gas	NONE	NONE	2.79E+02	6.68E-07	0	0.00152	0	0	0.02	0	0.04	0	0	0	0	0
Xe133m	N_Gas	NONE	NONE	1.66E+03	3.49E-06	0	0.00554	0	0	0.03	0	0.13	0	0	0	0	0
Xe133	N_Gas	I133Elem	NONE	5.43E+04	1.52E-06	0	0.00625	0	0	0.01	0	0.04	0	0	0	0	0
Xe135m	N_Gas	NONE	NONE	1.11E+04	7.40E-04	0	0.07756	0	0	0.02	0	0.09	0	0	0	0	0
Xe135	N_Gas	I135Elem	NONE	1.31E+04	2.09E-05	0	0.0482	0	0	0.06	0	0.26	0	0	0	0	0
Xe137	N_Gas	NONE	NONE	4.65E+04	2.96E-03	0	0.0283	0	0	0.46	0	2	0	0	0	0	0
Xe138	N_Gas	NONE	NONE	3.59E+04	6.80E-04	0	0.19776	0	0	0.15	0	0.65	0	0	0	0	0
I131Org	Org_I	NONE	NONE	4.46E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Org	Org_I	NONE	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Org	Org_I	NONE	NONE	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Org	Org_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0
I135Org	Org_I	NONE	NONE	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
I131Elem	Elm_I	Te131m	NONE	4.46E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Elem	Elm_I	Te132	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Elem	Elm_I	NONE	Xe133	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Elem	Elm_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0
I135Elem	Elm_I	NONE	Xe135	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
I131Part	Prt_I	NONE	NONE	4.46E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Part	Prt_I	NONE	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Part	Prt_I	NONE	NONE	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Part	Prt_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0

I135Part	Prt_I	NONE	NONE	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
Rb86	CsGrp	NONE	NONE	4.47E+01	4.29E-07	4921	0	0	0	0	6623	0	0	0	0	0	0
Cs134	CsGrp	NONE	NONE	6.27E+03	9.55E-09	41070	0	0	0	0	46250	0	0	0	0	0	0
Cs136	CsGrp	NONE	NONE	1.39E+03	6.16E-07	6401	0	0	0	0	7326	0	0	0	0	0	0
Cs137	CsGrp	NONE	Ba137m	5.05E+03	7.30E-10	29341	0	0	0	0	31931	0	0	0	0	0	0
Sb127	TeGrp	NONE	Te127	3.31E+03	2.07E-06	227.55	0	0	0	0	6031	0	0	0	0	0	0
Sb129	TeGrp	NONE	Te129	9.48E+03	4.42E-05	35.964	0	0	0	0	643.8	0	0	0	0	0	0
Te127m	TeGrp	NONE	NONE	4.66E+02	7.64E-08	357.42	0	0	0	0	21497	0	0	0	0	0	0
Te127	TeGrp	Sb127	NONE	3.31E+03	2.06E-05	6.808	0	0	0	0	318.2	0	0	0	0	0	0
Te129m	TeGrp	NONE	NONE	1.39E+03	2.36E-07	577.2	0	0	0	0	23939	0	0	0	0	0	0
Te129	TeGrp	Sb129	NONE	8.90E+03	1.57E-04	1.8833	0	0	0	0	77.33	0	0	0	0	0	0
Te131m	TeGrp	NONE	I131Elem	4.20E+03	6.42E-06	133570	0	0	0	0	6401	0	0	0	0	0	0
Te132	TeGrp	NONE	I132Elem	3.99E+04	2.51E-06	232360	0	0	0	0	9435	0	0	0	0	0	0
Ba137m	BaGrp	Cs137	NONE	3.01E+03	4.53E-03	0	0	0	0	0	0	0	0	0	0	0	0
Ba139	BaGrp	NONE	NONE	4.72E+04	1.39E-04	8.88	0	0	0	0	171.68	0	0	0	0	0	0
Ba140	BaGrp	NONE	La140	4.58E+04	6.27E-07	947.2	0	0	0	0	3737	0	0	0	0	0	0
Mo99	NMtls	NONE	Tc99m	4.90E+04	2.87E-06	56.24	0	0	0	0	3959	0	0	0	0	0	0
Tc99m	NMtls	Mo99	NONE	4.34E+04	3.18E-05	185.37	0	0	0	0	32.56	0	0	0	0	0	0
Ru103	NMtls	NONE	NONE	4.70E+04	2.03E-07	950.9	0	0	0	0	8954	0	0	0	0	0	0
Ru105	NMtls	NONE	Rh105	3.46E+04	4.22E-05	15.355	0	0	0	0	455.1	0	0	0	0	0	0
Ru106	NMtls	NONE	NONE	2.04E+04	2.20E-08	6364	0	0	0	0	477300	0	0	0	0	0	0
Rh105	NMtls	Ru105	NONE	3.27E+04	5.40E-06	10.656	0	0	0	0	954.6	0	0	0	0	0	0
Y90	LaGrp	Sr90	NONE	2.04E+03	2.99E-06	1.9129	0	0	0	0	8436	0	0	0	0	0	0
Y91	LaGrp	Sr91	NONE	2.73E+04	1.38E-07	31.45	0	0	0	0	48840	0	0	0	0	0	0
Y92	LaGrp	Sr92	NONE	2.90E+04	5.35E-05	3.885	0	0	0	0	780.7	0	0	0	0	0	0
Y93	LaGrp	NONE	NONE	3.56E+04	1.91E-05	3.4262	0	0	0	0	2153.4	0	0	0	0	0	0
Zr95	LaGrp	NONE	Nb95	4.27E+04	1.27E-07	4292	0	0	0	0	23347	0	0	0	0	0	0
Zr97	LaGrp	NONE	NONE	4.33E+04	1.13E-05	85.47	0	0	0	0	4329	0	0	0	0	0	0
Nb95	LaGrp	Zr95	NONE	4.27E+04	2.29E-07	1324.6	0	0	0	0	5809	0	0	0	0	0	0
La140	LaGrp	Ba140	NONE	4.71E+04	4.77E-06	254.19	0	0	0	0	4847	0	0	0	0	0	0
La141	LaGrp	NONE	Ce141	4.36E+04	4.94E-05	9.065	0	0	0	0	562.4	0	0	0	0	0	0
La142	LaGrp	NONE	NONE	4.17E+04	1.26E-04	18.167	0	0	0	0	203.5	0	0	0	0	0	0
Pr143	LaGrp	Ce143	NONE	3.78E+04	5.85E-07	6.20E-06	0	0	0	0	8103	0	0	0	0	0	0

Nd147	LaGrp	NONE	NONE	1.71E+04	7.10E-07	67.34	0	0	0	0	6845	0	0	0	0	0	0
Am241	LaGrp	NONE	NONE	7.67E+00	4.80E-11	5920	0	0	0	0	4.40E+08	0	0	0	0	0	0
Cm242	LaGrp	NONE	NONE	1.74E+03	4.94E-08	3481.7	0	0	0	0	1.70E+07	0	0	0	0	0	0
Cm244	LaGrp	NONE	NONE	1.41E+02	1.25E-09	3737	0	0	0	0	2.50E+08	0	0	0	0	0	0
Ce141	CeGrp	La141	NONE	4.43E+04	2.51E-07	94.35	0	0	0	0	8954	0	0	0	0	0	0
Ce143	CeGrp	NONE	Pr143	4.01E+04	6.03E-06	23.051	0	0	0	0	3389.2	0	0	0	0	0	0
Ce144	CeGrp	NONE	NONE	3.25E+04	2.77E-08	1080.4	0	0	0	0	373700	0	0	0	0	0	0
Np239	CeGrp	NONE	NONE	7.01E+05	3.44E-06	28.194	0	0	0	0	2508.6	0	0	0	0	0	0
Pu238	CeGrp	NONE	NONE	9.56E+01	2.40E-10	3559.4	0	0	0	0	3.90E+08	0	0	0	0	0	0
Pu239	CeGrp	NONE	NONE	1.89E+01	9.00E-13	3341.1	0	0	0	0	4.30E+08	0	0	0	0	0	0
Pu240	CeGrp	NONE	NONE	3.11E+01	3.30E-12	3348.5	0	0	0	0	4.30E+08	0	0	0	0	0	0
Pu241	CeGrp	NONE	NONE	8.85E+03	1.67E-09	45.88	0	0	0	0	8251000	0	0	0	0	0	0
Sr89	SrGrp	NONE	NONE	2.02E+04	1.59E-07	1539.2	0	0	0	0	6512	0	0	0	0	0	0
Sr90	SrGrp	NONE	Y90	3.34E+03	8.00E-10	9768	0	0	0	0	239390	0	0	0	0	0	0
Sr91	SrGrp	NONE	Y91	2.59E+04	2.01E-05	150.96	0	0	0	0	932.4	0	0	0	0	0	0
Sr92	SrGrp	NONE	Y92	3.01E+04	7.29E-05	81.03	0	0	0	0	629	0	0	0	0	0	0

Appendix C - Regulatory Guide 1.183 Analysis

STARDOSE OUTPUT.OUT Excerpts
8 Runs (See Table 2 of the Main Calc)

Run Af

```
STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:33:36 AM October 16, 2001

edit time 26.000000

environment

            thyroid    wbody      skin       CEDE
EAB dose:   1.94E+001  4.21E-001  5.91E-001  5.93E-001
LPZ dose:   5.42E+000  1.18E-001  1.66E-001  1.66E-001

edit time 744.000000

Control_Room

             thyroid    wbody      skin       CEDE
Total dose:  2.25E+001  6.70E-002  1.79E+000  6.90E-001
Noble gas    0.00E+000  6.66E-002  1.79E+000  0.00E+000
Org iodine   9.44E+000  1.54E-004  1.95E-003  2.89E-001
Elem iodine  1.31E+001  2.18E-004  2.68E-003  4.00E-001
Part iodine  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Cesium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Tellurium    9.94E-003  0.00E+000  0.00E+000  4.06E-004
Barium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Noble metal  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Lanthanides  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Cerium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Strontinum   0.00E+000  0.00E+000  0.00E+000  0.00E+000

STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:33:38 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 02
```

Run Au

```
STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:34:10 AM October 16, 2001

edit time 26.000000

environment

            thyroid    wbody      skin       CEDE
EAB dose:   1.93E+001  4.19E-001  5.90E-001  5.91E-001
LPZ dose:   5.40E+000  1.17E-001  1.65E-001  1.66E-001

edit time 744.000000

Control_Room
```

	thyroid	wbody	skin	CEDE
Total dose:	1.80E+001	1.86E-002	4.95E-001	5.51E-001
Noble gas	0.00E+000	1.83E-002	4.91E-001	0.00E+000
Org iodine	7.55E+000	1.23E-004	1.55E-003	2.31E-001
Elem iodine	1.04E+001	1.72E-004	2.13E-003	3.20E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	7.94E-003	0.00E+000	0.00E+000	3.25E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

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Total elapsed hours: 00, mins: 00, secs: 02

Run Bf

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09:34:33 AM October 16, 2001

edit time 26.000000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.94E+001	4.21E-001	5.91E-001	5.93E-001
LPZ dose:	5.42E+000	1.18E-001	1.66E-001	1.66E-001

edit time 744.000000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	2.16E+001	6.46E-002	1.73E+000	6.63E-001
Noble gas	0.00E+000	6.43E-002	1.72E+000	0.00E+000
Org iodine	9.08E+000	1.49E-004	1.88E-003	2.78E-001
Elem iodine	1.26E+001	2.10E-004	2.58E-003	3.84E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	9.56E-003	0.00E+000	0.00E+000	3.91E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

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09:34:35 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 02

Run Bu

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09:34:59 AM October 16, 2001

edit time 26.000000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.93E+001	4.19E-001	5.90E-001	5.91E-001
LPZ dose:	5.40E+000	1.17E-001	1.65E-001	1.66E-001

edit time 744.000000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	1.79E+001	1.86E-002	4.94E-001	5.48E-001
Noble gas	0.00E+000	1.83E-002	4.90E-001	0.00E+000
Org iodine	7.51E+000	1.22E-004	1.55E-003	2.30E-001
Elem iodine	1.04E+001	1.71E-004	2.12E-003	3.18E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	7.90E-003	0.00E+000	0.00E+000	3.23E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

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09:35:00 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 01

Run Cf

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edit time 26.000000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.94E+001	4.21E-001	5.91E-001	5.93E-001
LPZ dose:	5.42E+000	1.18E-001	1.66E-001	1.66E-001

edit time 744.000000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	2.01E+001	6.04E-002	1.61E+000	6.16E-001
Noble gas	0.00E+000	6.00E-002	1.61E+000	0.00E+000
Org iodine	8.43E+000	1.39E-004	1.75E-003	2.58E-001
Elem iodine	1.17E+001	1.96E-004	2.41E-003	3.57E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	8.89E-003	0.00E+000	0.00E+000	3.63E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

```
STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:35:24 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 02
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Run Cu

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STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:35:46 AM October 16, 2001

edit time 26.000000

environment

            thyroid    wbody      skin       CEDE
EAB dose:   1.93E+001  4.19E-001  5.90E-001  5.91E-001
LPZ dose:   5.40E+000  1.17E-001  1.65E-001  1.66E-001

edit time 744.000000

Control_Room

             thyroid    wbody      skin       CEDE
Total dose:  1.77E+001  1.85E-002  4.91E-001  5.42E-001
Noble gas    0.00E+000  1.82E-002  4.88E-001  0.00E+000
Org iodine   7.43E+000  1.21E-004  1.54E-003  2.28E-001
Elem iodine  1.03E+001  1.70E-004  2.11E-003  3.14E-001
Part iodine  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Cesium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Tellurium    7.82E-003  0.00E+000  0.00E+000  3.20E-004
Barium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Noble metal  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Lanthanides  0.00E+000  0.00E+000  0.00E+000  0.00E+000
Cerium       0.00E+000  0.00E+000  0.00E+000  0.00E+000
Strontinum   0.00E+000  0.00E+000  0.00E+000  0.00E+000

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Total elapsed hours: 00, mins: 00, secs: 02
```

Run Df

```
STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:36:10 AM October 16, 2001

edit time 26.000000

environment

            thyroid    wbody      skin       CEDE
EAB dose:   1.94E+001  4.21E-001  5.92E-001  5.93E-001
LPZ dose:   5.42E+000  1.18E-001  1.66E-001  1.66E-001

edit time 744.000000

Control_Room

             thyroid    wbody      skin       CEDE
Total dose:  2.15E+001  6.44E-002  1.72E+000  6.59E-001
Noble gas    0.00E+000  6.40E-002  1.71E+000  0.00E+000
```

Org iodine	9.03E+000	1.48E-004	1.87E-003	2.77E-001
Elem iodine	1.25E+001	2.09E-004	2.57E-003	3.82E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	9.50E-003	0.00E+000	0.00E+000	3.89E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

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09:36:11 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 01

Run Du

STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
09:36:34 AM October 16, 2001

edit time 26.000000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.93E+001	4.19E-001	5.90E-001	5.91E-001
LPZ dose:	5.40E+000	1.17E-001	1.65E-001	1.66E-001

edit time 744.000000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	2.04E+001	2.12E-002	5.63E-001	6.24E-001
Noble gas	0.00E+000	2.08E-002	5.58E-001	0.00E+000
Org iodine	8.55E+000	1.39E-004	1.76E-003	2.62E-001
Elem iodine	1.18E+001	1.95E-004	2.42E-003	3.62E-001
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	9.00E-003	0.00E+000	0.00E+000	3.68E-004
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

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09:36:36 AM October 16, 2001
Total elapsed hours: 00, mins: 00, secs: 02

Attachment 1 – Benchmark Analysis

Purpose

This attachment summarizes the benchmark FHA calculation that is compared to the results of Reference 1 of the main calculation. It includes a comparison of the thyroid and whole body doses for the Exclusion Area Boundary (EAB) and Low Population Zone (LPZ). Since Dose Conversion Factors may differ (Polestar's dose calculation code STARDOSE, main calculation Reference 3, uses a LIBFILE1.TXT file with DCFs based on References 4 and 5 of the main calculation), a comparison of Curies released is needed, as well.

Assumptions

Assumption 1: For the benchmark, assume 0.5% of fuel pins fail.

Justification: This is approximately the fraction represented by the 250 failed pins from Reference 1 of the main calculation.

Assumption 2: For the benchmark, assume DF of 100 for pool with 100% elemental iodine release.

Justification: Reference 1 of the main calculation states that the release is all elemental, but that the dose analysis conforms to Regulatory Guide 1.25. Table 15.7-2 of that reference shows only a 1% release of the elemental iodine. Therefore, the equivalent DF of 100 must apply.

Assumption 3: For the benchmark, assume the leak rate out of the Reactor Building (RB) refueling floor to be 6.15% per minute.

Justification: This leaves 0.062% of the activity in the RB at two hours (i.e., exp{-(0.0615 per minute)(120 minutes)} = 6.2E-4) which is somewhat more than the apparent 0.01% from the FSAR (equivalent to 7.68% per minute - note that the RB exhaust rate in Reference 1 of the main calculation is never actually stated). The slightly lower rate provides a better comparison for the I-131 Ci release. This correction is needed because of the somewhat greater core inventory being used in the LIBFILE1.TXT file for the AST analysis and also for this benchmark (about 4.5% greater comparing 2.79E4 Ci/MWt from Reference 6 of the main calculation to the implied 2.67E4 Ci/MWt from Tables 15.6-9 and -10 from Reference 1 of the main calculation). The benchmark plan is to match the I-131 release and then to check other nuclides. For a refueling floor volume of approximately 1.2E6 ft3, the 6.15 %/min assumption implies a flow rate out of the refueling floor of 73,800 cfm.

Calculation

Appendix 1-A is the STARDOSE INPUT.DAT file for the benchmark. There are two control volumes (the control room is a "dummy"). The first control volume is the gap (nominally 100 ft^3) and the second is the reactor building refueling floor (also nominally 100 ft^3). The nominal volumes are used to conveniently calculate exchange rates.

The core power is assumed to be 3556 MWt (Reference 1 of the main calculation). The gap activity of noble gas, iodine (set at 100% elemental per Reference 1 of the main calculation), and tellurium (as an iodine precursor) is added from the core to the gap over the first 0.01 hours of the analysis. It is added at 15 core inventories per hour so that the release is 15%. The 15% (as compared to the 10% release from Reference 1 of the main calculation for all but Kr-85) is to account for the 1.5 peaking factor (also from Reference 1 of the main calculation). Since Kr-85 is released at a level a factor of three higher (30% as stated in Reference 1 of the main calculation), the Kr-85 inventory in the LIBFILE1.TXT file (Appendix 1-B) is increased by a factor of three.

Once the activity has been established in the gap, it is allowed to decay until 23.9833 hours. It is then released to the RB at 0.5 cfm (0.5% per minute) for 0.0167 hours (one minute) so that the assumed 0.5% of the pin failures are represented. A filter efficiency of 0.99 is used to account for the water DF of 100 applied to the 100% elemental iodine. Since Te was also released to provide additional iodine during the 24 hours of decay, a filter efficiency of 0.99999 is used to prevent its subsequent release to the RB (although a small amount would be present).

All of this activity is in the RB by 24 hours. At 24 hours, the release to the environment is assumed to begin at 6.15% per minute (6.15 cfm) and this continues for two hours (from 24 to 26 hours). It is unfiltered for 6.5 seconds (0.002 hours). Beyond this point, the iodine is filtered at 99% (Reference 1 of the main calculation).

The offsite X/Qs are from Reference 1 of the main calculation displaced by 24 hours. Offsite breathing rates from Reference 7 of the main calculation are also displaced by 24 hours. For the benchmark, the dose calculation continues beyond the assumed release period of 24 to 26 hours to confirm that dose accumulation has stopped (use 32 hours). In fact, as expected, there is no dose accumulation beyond 26 hours for the benchmark, and edits beyond 26 hours are not really necessary. However, including an additional edit is a good check of the model.

In the LIBFILE1.TXT file for the benchmark (Appendix 1-B), all core inventories listed in Column 5 (except for Kr-85, as described above) are from Reference 6 of the main calculation. The DCFs (Column 7 for thyroid and Column 8 for whole body) are from References 4 and 5, respectively, of the main calculation (except for certain whole body DCFs covered by Reference 4 which are then taken from Reference 4). Decay constants (per second) come from Reference 5 of the main calculation.

Results

The results for the benchmark are shown on Table 1-1. This table depicts the benchmark releases in the second column (new) and the main calculation Reference 1 releases in the third column (old) (see Appendix 1-C, 26-h edit time for the "environment"). The percent change is the comparison. As previously discussed, the I-131 release was adjusted so that the agreement was good (less than one percent difference). This adjustment required a 20 percent decrease in the apparent Reference 1 leak rate (from 7.67 %/min to 6.15 %/min).

Table 1-1

Nuclide	Ci Rel new	Ci Rel old	% change	WB DCF	"Dose" new	% of new	"Dose" old*	% of old*
Kr83m	1.08E+00	3.85E+01	-97.19%	4.20E-06	4.54E-06	0.0%	1.62E-04	0.0%
Kr85m	4.23E+02	4.66E+02	-9.23%	0.03069	1.30E+01	0.4%	1.43E+01	0.5%
Kr85	3.28E+03	1.99E+03	64.82%	0.00048	1.57E+00	0.0%	9.55E-01	0.0%
Kr87	6.16E-02	7.03E-02	-12.38%	0.14626	9.01E-03	0.0%	1.03E-02	0.0%
Kr88	1.24E+02	1.42E+02	-12.68%	0.3708	4.60E+01	1.3%	5.27E+01	1.9%
Xe131m	7.01E+02	7.70E+02	-8.96%	0.00152	1.07E+00	0.0%	1.17E+00	0.0%
Xe133m	3.26E+03	4.29E+03	-24.01%	0.00554	1.81E+01	0.5%	2.38E+01	0.8%
Xe133	2.00E+05	1.47E+05	36.05%	0.00625	1.25E+03	35.9%	9.19E+02	32.6%
Xe135m	5.57E-20	1.17E+03	-100.00%	0.07756	4.32E-21	0.0%	9.07E+01	3.2%
Xe135	4.46E+04	3.55E+04	25.63%	0.0482	2.15E+03	61.7%	1.71E+03	60.6%
I131Elem	1.26E+01	1.27E+01	-0.79%	0.0559	7.04E-01	0.0%	7.10E-01	0.0%
I132Elem	4.55E-01	1.56E+01	-97.08%	0.355	1.62E-01	0.0%	5.54E+00	0.2%
I133Elem	1.12E+01	1.27E+01	-11.81%	0.0911	1.02E+00	0.0%	1.16E+00	0.0%
I134Elem	1.07E-07	6.22E-07	-82.80%	0.411	4.40E-08	0.0%	2.56E-07	0.0%
I135Elem	1.93E+00	2.07E+00	-6.76%	0.249	4.81E-01	0.0%	5.15E-01	0.0%
Total			23.41%		3.48E+03		2.82E+03	
Nuclide				Thy DCF	"Dose" new	% new	"Dose" old*	% old*
I131Elem	1.26E+01	1.27E+01	-0.79%	1080400	1.36E+07	86.8%	1.37E+07	84.9%
I132Elem	4.55E-01	1.56E+01	-97.08%	6438	2.93E+03	0.0%	1.00E+05	0.6%
I133Elem	1.12E+01	1.27E+01	-11.81%	179820	2.01E+06	12.8%	2.28E+06	14.1%
I134Elem	1.07E-07	6.22E-07	-82.80%	1065.6	1.14E-04	0.0%	6.63E-04	0.0%
I135Elem	1.93E+00	2.07E+00	-6.76%	31302	6.04E+04	0.4%	6.48E+04	0.4%
Total			-2.97%		1.57E+07		1.62E+07	

*"old" means that the Ci releases are old, but the DCF weighting uses current DCF values

The large outliers (more than ±25% change) are Kr-83m, Kr-85, Xe-133, Xe-135m, Xe-135, I-132, and I-134). Kr-85 is increased because of the substantial increase in burnup represented by the LIBFILE1.TXT file. To judge the significance of the others, the Curies released were multiplied by the DCFs to determine the measure of dose impact ("Dose" in the table) for both whole body and

thyroid. As can be seen, the only significant nuclides where differences exist for the whole body dose impact are Xe-133 and Xe-135, both of which are increased and result, overall, in a 23.4% increase in dose impact (using the current DCFs). When comparing the actual dose results, however, the reduced whole body DCFs of main calculation References 4 and 5 result in lower doses (0.87 vs. 1.1 rem at the EAB and 0.35 vs. 0.4 rem at the LPZ – see Appendix 1-C).

For the thyroid dose, the result is similar. Only I-131 and I-133 are significant; and because the I-131 was "matched", the valid comparison is I-133. The I-133 release is about 12% lower for the benchmark; but once again, because of the reduced main body Reference 4 DCFs, the decrease in dose is nearly as great even with the I-131 release in nearly perfect agreement (1.37 vs. 1.5 rem at the EAB and 0.56 vs. 0.6 rem at the LPZ – see Appendix 1-C).

Conclusions

Overall, the activity release and the dose agreement is good, although the "new" treatment seems to result in a somewhat greater release of radiologically significant radionuclides and a much smaller release of some of the radiologically insignificant radionuclides. The greater release of radiologically significant radionuclides is then compensated for by the main calculation Reference 4 DCFs so that the dose agreement is quite good.

```
edit_time
0      0.01   0.1    24     24.002 24.5   26     32
end_edit_time

participating_isotopes
Kr83m   Kr85m   Kr85    Kr87    Kr88    Kr89
Xe131m  Xe133m  Xe133   Xe135m  Xe135   Xe137   Xe138
I131Org I131Elem    I131Part
I132Org I132Elem    I132Part
I133Org I133Elem    I133Part
I134Org I134Elem    I134Part
I135Org I135Elem    I135Part
Te131m Te132
end_participating_isotopes

core
thermal_power               3556
elemental_iodine_frac          1.0
organic_iodine_frac            0.0
particulate_iodine_frac            0.0
release_frac
to_control_volume   GAP
Time   N_Gas  I_Grp  CsGrp  TeGrp  BaGrp  NMtls  CeGrp  LaGrp  SrGrp
0.01   15     15     0      15     0      0      0      0      0
744    0      0      0      0      0      0      0      0      0
end_to_control_volume
end_release_frac
end_core

control_volume
obj_type                           OBJ_CV
name                               GAP
air_volume                         100
water_volume                0
surface_area                0
has_recirc_filter                  false
end_control_volume

control_volume
obj_type                           OBJ_CV
name                               RB
air_volume                         100
water_volume                0
surface_area                0
has_recirc_filter                  false
end_control_volume

control_volume
obj_type                              OBJ_CR
name                               Control_Room
air_volume                         1.0e+005
water_volume                       0
surface_area                       0
has_recirc_filter                     false
breathing_rate
Time (hr)       Value (cms)
744             0.000347
end_breathing_rate
occupancy_factor
Time (hr)       Value (frac)
48              1
120             0.6
744             0.4
```

```
end_occupancy_factor
end_control_volume

junction
junction_type              AIR_JUNCTION
downstream_location        AIR_SPACE
upstream                         CORE
downstream                       GAP
has_filter                       false
flow_rate
Time   (hr)   Value  (cfm)
744           1
end_flow_rate
end_junction

junction
junction_type                    AIR_JUNCTION
downstream_location        AIR_SPACE
upstream                         GAP
downstream                       RB
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
23.9833       0
24            0.5
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744    0             0.99          0             0             0             0.99999
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744     0            0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744    0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type              AIR_JUNCTION
downstream_location        AIR_SPACE
upstream                         RB
downstream                       environment
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
24            0
26            6.15
744           0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
24.002 0             0             0             0             0             0
744           0              0.99          0.99          0.99          0.99          0.99
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744           0              0             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
```

```
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744          0             0             0             0             0             0
end_reevolution_rate
X_over_Q_4_site_boundary
Time   (hr)   Value  (s/m*3)
26           0.000262
744          0.0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time   (hr)   Value  (s/m*3)
26           1.06e-4
32           4.47e-5
48           2.91e-5
120          1.14e-5
744          2.97e-6
end_X_over_Q_4_low_population_zone
X_over_Q_4_ctrl_room
Time   (hr)   Value  (s/m*3)
26           0
32           0
48           0
120          0
744          0
end_X_over_Q_4_ctrl_room
end_junction

junction
junction_type              AIR_JUNCTION
downstream_location        AIR_SPACE
upstream                      environment
downstream                    Control_Room
has_filter                       true
flow_rate
Time   (hr)   Value  (cfm)
744             0
end_flow_rate
filter_efficiency
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744          0             0.95          0.95          0.95          0.95          0.95
end_filter_efficiency
frac_4_daughter_resusp
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744          1             1             0             0             0             0
end_frac_4_daughter_resusp
reevolution_rate
Time   NobleGas      ElemIodine    OrgIodine     PartIodine    Solubles      Insolubles
744          0             0             0             0             0             0
end_reevolution_rate
end_junction

junction
junction_type                 AIR_JUNCTION
downstream_location           AIR_SPACE
upstream                      environment
downstream                    Control_Room
has_filter                    false
flow_rate
Time (hr)     Value (cfm)
744         0
end_flow_rate
end_junction

junction
```

```
junction_type                   AIR_JUNCTION
downstream_location             AIR_SPACE
upstream                        Control_Room
downstream                      environment
has_filter                      false
flow_rate
Time (hr)     Value (cfm)
744           0
end_flow_rate
X_over_Q_4_ctrl_room
Time (hr)     Value (s/m*3)
744           0
end_X_over_Q_4_ctrl_room
X_over_Q_4_site_boundary
Time (hr)     Value (s/m*3)
744           0
end_X_over_Q_4_site_boundary
X_over_Q_4_low_population_zone
Time (hr)     Value (s/m*3)
744           0
end_X_over_Q_4_low_population_zone
end_junction

environment
breathing_rate_sb
Time (hr)      Value (cms)
26              0.000347
48            0.0
744           0.0
end_breathing_rate_sb
breathing_rate_lpz
Time (hr)     Value (cms)
32              0.000347
48            0.000175
744           0.000232
end_breathing_rate_lpz
end_environment
```

n_isotopes	76	n_isotope_groups	11														
Kr83m	N_Gas	NONE	NONE	3.57E+03	1.04E-04	0	4.20E-06	0	0	0	0	0	0	0	0	0	0
Kr85m	N_Gas	NONE	NONE	7.35E+03	4.39E-05	0	0.03069	0	0	0.05	0	0.22	0	0	0	0	0
Kr85	N_Gas	NONE	NONE	1.23E+03	2.04E-09	0	0.00048	0	0	0.05	0	0.22	0	0	0	0	0
Kr87	N_Gas	NONE	NONE	1.34E+04	1.52E-04	0	0.14626	0	0	0.34	0	1.48	0	0	0	0	0
Kr88	N_Gas	NONE	NONE	1.90E+04	6.88E-05	0	0.3708	0	0	0.08	0	0.35	0	0	0	0	0
Kr89	N_Gas	NONE	NONE	2.20E+04	3.63E-03	0	0.303	0	0	0.35	0	1.52	0	0	0	0	0
Xe131m	N_Gas	NONE	NONE	2.79E+02	6.68E-07	0	0.00152	0	0	0.02	0	0.04	0	0	0	0	0
Xe133m	N_Gas	NONE	NONE	1.66E+03	3.49E-06	0	0.00554	0	0	0.03	0	0.13	0	0	0	0	0
Xe133	N_Gas	I133Elem	NONE	5.43E+04	1.52E-06	0	0.00625	0	0	0.01	0	0.04	0	0	0	0	0
Xe135m	N_Gas	NONE	NONE	1.11E+04	7.40E-04	0	0.07756	0	0	0.02	0	0.09	0	0	0	0	0
Xe135	N_Gas	I135Elem	NONE	1.31E+04	2.09E-05	0	0.0482	0	0	0.06	0	0.26	0	0	0	0	0
Xe137	N_Gas	NONE	NONE	4.65E+04	2.96E-03	0	0.0283	0	0	0.46	0	2	0	0	0	0	0
Xe138	N_Gas	NONE	NONE	3.59E+04	6.80E-04	0	0.19776	0	0	0.15	0	0.65	0	0	0	0	0
I131Org	Org_I	NONE	NONE	2.79E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Org	Org_I	NONE	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Org	Org_I	NONE	NONE	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Org	Org_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0
I135Org	Org_I	NONE	NONE	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
I131Elem	Elm_I	Te131m	NONE	2.79E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Elem	Elm_I	Te132	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Elem	Elm_I	NONE	Xe133	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Elem	Elm_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0
I135Elem	Elm_I	NONE	Xe135	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
I131Part	Prt_I	NONE	NONE	2.79E+04	9.96E-07	1080400	0.0559	0	0	0.03	32893	0.13	0	0	0	0	0
I132Part	Prt_I	NONE	NONE	3.94E+04	8.27E-05	6438	0.355	0	0	0.11	381.1	0.48	0	0	0	0	0
I133Part	Prt_I	NONE	NONE	5.44E+04	9.22E-06	179820	0.0911	0	0	0.09	5846	0.39	0	0	0	0	0
I134Part	Prt_I	NONE	NONE	6.03E+04	2.23E-04	1065.6	0.411	0	0	0.14	131.35	0.61	0	0	0	0	0
I135Part	Prt_I	NONE	NONE	5.03E+04	2.86E-05	31302	0.249	0	0	0.08	1228.4	0.35	0	0	0	0	0
Rb86	CsGrp	NONE	NONE	4.47E+01	4.29E-07	4921	0	0	0	0	6623	0	0	0	0	0	0
Cs134	CsGrp	NONE	NONE	6.27E+03	9.55E-09	41070	0	0	0	0	46250	0	0	0	0	0	0
Cs136	CsGrp	NONE	NONE	1.39E+03	6.16E-07	6401	0	0	0	0	7326	0	0	0	0	0	0
Cs137	CsGrp	NONE	Ba137m	5.05E+03	7.30E-10	29341	0	0	0	0	31931	0	0	0	0	0	0
Sb127	TeGrp	NONE	Te127	3.31E+03	2.07E-06	227.55	0	0	0	0	6031	0	0	0	0	0	0
Sb129	TeGrp	NONE	Te129	9.48E+03	4.42E-05	35.964	0	0	0	0	643.8	0	0	0	0	0	0

Te127m	TeGrp	NONE	NONE	4.66E+02	7.64E-08	357.42	0	0	0	0	21497	0	0	0	0	0	0
Te127	TeGrp	Sb127	NONE	3.31E+03	2.06E-05	6.808	0	0	0	0	318.2	0	0	0	0	0	0
Te129m	TeGrp	NONE	NONE	1.39E+03	2.36E-07	577.2	0	0	0	0	23939	0	0	0	0	0	0
Te129	TeGrp	Sb129	NONE	8.90E+03	1.57E-04	1.8833	0	0	0	0	77.33	0	0	0	0	0	0
Te131m	TeGrp	NONE	I131Elem	4.20E+03	6.42E-06	133570	0	0	0	0	6401	0	0	0	0	0	0
Te132	TeGrp	NONE	I132Elem	3.99E+04	2.51E-06	232360	0	0	0	0	9435	0	0	0	0	0	0
Ba137m	BaGrp	Cs137	NONE	3.01E+03	4.53E-03	0	0	0	0	0	0	0	0	0	0	0	0
Ba139	BaGrp	NONE	NONE	4.72E+04	1.39E-04	8.88	0	0	0	0	171.68	0	0	0	0	0	0
Ba140	BaGrp	NONE	La140	4.58E+04	6.27E-07	947.2	0	0	0	0	3737	0	0	0	0	0	0
Mo99	NMtls	NONE	Tc99m	4.90E+04	2.87E-06	56.24	0	0	0	0	3959	0	0	0	0	0	0
Tc99m	NMtls	Mo99	NONE	4.34E+04	3.18E-05	185.37	0	0	0	0	32.56	0	0	0	0	0	0
Ru103	NMtls	NONE	NONE	4.70E+04	2.03E-07	950.9	0	0	0	0	8954	0	0	0	0	0	0
Ru105	NMtls	NONE	Rh105	3.46E+04	4.22E-05	15.355	0	0	0	0	455.1	0	0	0	0	0	0
Ru106	NMtls	NONE	NONE	2.04E+04	2.20E-08	6364	0	0	0	0	477300	0	0	0	0	0	0
Rh105	NMtls	Ru105	NONE	3.27E+04	5.40E-06	10.656	0	0	0	0	954.6	0	0	0	0	0	0
Y90	LaGrp	Sr90	NONE	2.04E+03	2.99E-06	1.9129	0	0	0	0	8436	0	0	0	0	0	0
Y91	LaGrp	Sr91	NONE	2.73E+04	1.38E-07	31.45	0	0	0	0	48840	0	0	0	0	0	0
Y92	LaGrp	Sr92	NONE	2.90E+04	5.35E-05	3.885	0	0	0	0	780.7	0	0	0	0	0	0
Y93	LaGrp	NONE	NONE	3.56E+04	1.91E-05	3.4262	0	0	0	0	2153.4	0	0	0	0	0	0
Zr95	LaGrp	NONE	Nb95	4.27E+04	1.27E-07	4292	0	0	0	0	23347	0	0	0	0	0	0
Zr97	LaGrp	NONE	NONE	4.33E+04	1.13E-05	85.47	0	0	0	0	4329	0	0	0	0	0	0
Nb95	LaGrp	Zr95	NONE	4.27E+04	2.29E-07	1324.6	0	0	0	0	5809	0	0	0	0	0	0
La140	LaGrp	Ba140	NONE	4.71E+04	4.77E-06	254.19	0	0	0	0	4847	0	0	0	0	0	0
La141	LaGrp	NONE	Ce141	4.36E+04	4.94E-05	9.065	0	0	0	0	562.4	0	0	0	0	0	0
La142	LaGrp	NONE	NONE	4.17E+04	1.26E-04	18.167	0	0	0	0	203.5	0	0	0	0	0	0
Pr143	LaGrp	Ce143	NONE	3.78E+04	5.85E-07	6.20E-06	0	0	0	0	8103	0	0	0	0	0	0
Nd147	LaGrp	NONE	NONE	1.71E+04	7.10E-07	67.34	0	0	0	0	6845	0	0	0	0	0	0
Am241	LaGrp	NONE	NONE	7.67E+00	4.80E-11	5920	0	0	0	0	4.40E+08	0	0	0	0	0	0
Cm242	LaGrp	NONE	NONE	1.74E+03	4.94E-08	3481.7	0	0	0	0	1.70E+07	0	0	0	0	0	0
Cm244	LaGrp	NONE	NONE	1.41E+02	1.25E-09	3737	0	0	0	0	2.50E+08	0	0	0	0	0	0
Ce141	CeGrp	La141	NONE	4.43E+04	2.51E-07	94.35	0	0	0	0	8954	0	0	0	0	0	0
Ce143	CeGrp	NONE	Pr143	4.01E+04	6.03E-06	23.051	0	0	0	0	3389.2	0	0	0	0	0	0
Ce144	CeGrp	NONE	NONE	3.25E+04	2.77E-08	1080.4	0	0	0	0	373700	0	0	0	0	0	0
Np239	CeGrp	NONE	NONE	7.01E+05	3.44E-06	28.194	0	0	0	0	2508.6	0	0	0	0	0	0
Pu238	CeGrp	NONE	NONE	9.56E+01	2.40E-10	3559.4	0	0	0	0	3.90E+08	0	0	0	0	0	0
Pu239	CeGrp	NONE	NONE	1.89E+01	9.00E-13	3341.1	0	0	0	0	4.30E+08	0	0	0	0	0	0

Pu240	CeGrp	NONE	NONE	3.11E+01	3.30E-12	3348.5	0	0	0	0	4.30E+08	0	0	0	0	0	0
Pu241	CeGrp	NONE	NONE	8.85E+03	1.67E-09	45.88	0	0	0	0	8251000	0	0	0	0	0	0
Sr89	SrGrp	NONE	NONE	2.02E+04	1.59E-07	1539.2	0	0	0	0	6512	0	0	0	0	0	0
Sr90	SrGrp	NONE	Y90	3.34E+03	8.00E-10	9768	0	0	0	0	239390	0	0	0	0	0	0
Sr91	SrGrp	NONE	Y91	2.59E+04	2.01E-05	150.96	0	0	0	0	932.4	0	0	0	0	0	0
Sr92	SrGrp	NONE	Y92	3.01E+04	7.29E-05	81.03	0	0	0	0	629	0	0	0	0	0	0

```
STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
05:41:20 PM December 21, 2000

edit time 0.000000
[...]

edit time 0.100000
GAP
```

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.83E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	3.86E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.56E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	6.77E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	9.89E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	3.18E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.49E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	8.84E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	2.90E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	4.54E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	7.20E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	8.55E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	1.50E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.49E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	2.04E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I133Elem	2.89E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	2.97E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	2.66E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	2.24E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	2.13E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
LPZ dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

edit time 24.000000
GAP

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	2.37E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	8.79E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.53E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	1.41E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Kr88	2.64E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	3.61E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.40E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	6.52E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	4.00E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	1.91E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	9.06E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	2.73E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	3.55E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.45E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	5.50E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	1.30E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	1.37E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	2.26E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.28E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.70E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.19E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Kr85m	4.41E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	3.28E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	7.07E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	1.33E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	1.81E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	7.02E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	3.27E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	2.01E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	9.59E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	4.55E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	1.37E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	1.78E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	7.28E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	2.75E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	6.54E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	6.89E-006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	1.13E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	6.43E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	8.56E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
LPZ dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

edit time 24.002000
GAP

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	2.37E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	8.79E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.53E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	1.41E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	2.64E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	3.51E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.40E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	6.52E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	4.00E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	1.90E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	9.06E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	2.67E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	3.53E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.45E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	5.50E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	1.30E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	1.37E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	2.26E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.28E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.70E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.18E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	4.38E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	3.25E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	7.01E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	1.32E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	1.75E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	6.97E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	3.25E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	1.99E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	9.47E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	4.51E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	1.33E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	1.76E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	7.22E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	2.73E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	6.49E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	6.83E-006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	1.12E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	6.38E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	8.50E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	6.06E-001	7.05E-003	9.88E-003	1.86E-002
LPZ dose:	2.45E-001	2.85E-003	4.00E-003	7.53E-003

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	6.79E-003	9.70E-003	0.00E+000	0.00E+000	2.75E-003	3.92E-003	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	6.05E-001	2.66E-004	1.78E-004	1.86E-002	2.45E-001	1.07E-004	7.21E-005	7.53E-003
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	1.38E-004	0.00E+000	0.00E+000	5.66E-006	5.60E-005	0.00E+000	0.00E+000	2.29E-006
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	8.76E-003	0.00E+000	9.61E-012	0.00E+000	0.00E+000	0.00E+000	3.89E-012	0.00E+000	0.00E+000
Kr85m	3.25E+000	0.00E+000	2.60E-005	4.24E-005	0.00E+000	0.00E+000	1.05E-005	1.72E-005	0.00E+000
Kr85	2.41E+001	0.00E+000	3.02E-006	3.15E-004	0.00E+000	0.00E+000	1.22E-006	1.27E-004	0.00E+000
Kr87	5.20E-004	0.00E+000	1.99E-008	4.62E-008	0.00E+000	0.00E+000	8.03E-009	1.87E-008	0.00E+000
Kr88	9.76E-001	0.00E+000	9.46E-005	2.04E-005	0.00E+000	0.00E+000	3.83E-005	8.25E-006	0.00E+000
Kr89	1.31E-021	0.00E+000	1.03E-025	1.19E-025	0.00E+000	0.00E+000	4.18E-026	4.83E-026	0.00E+000
Xe131m	5.16E+000	0.00E+000	2.05E-006	2.70E-005	0.00E+000	0.00E+000	8.30E-007	1.09E-005	0.00E+000
Xe133m	2.41E+001	0.00E+000	3.49E-005	1.89E-004	0.00E+000	0.00E+000	1.41E-005	7.64E-005	0.00E+000
Xe133	1.48E+003	0.00E+000	2.41E-003	3.86E-003	0.00E+000	0.00E+000	9.76E-004	1.56E-003	0.00E+000
Xe135m	7.03E-022	0.00E+000	1.42E-026	3.67E-027	0.00E+000	0.00E+000	5.76E-027	1.48E-027	0.00E+000
Xe135	3.34E+002	0.00E+000	4.21E-003	5.25E-003	0.00E+000	0.00E+000	1.70E-003	2.12E-003	0.00E+000
Xe137	9.96E-022	0.00E+000	7.32E-027	1.19E-025	0.00E+000	0.00E+000	2.96E-027	4.81E-026	0.00E+000
Xe138	1.31E-022	0.00E+000	6.74E-027	5.11E-027	0.00E+000	0.00E+000	2.73E-027	2.07E-027	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	5.35E+000	5.25E-001	7.82E-005	4.20E-005	1.60E-002	2.12E-001	3.16E-005	1.70E-005	6.46E-003
I132Elem	2.02E-001	1.18E-004	1.88E-005	5.82E-006	7.00E-006	4.78E-005	7.60E-006	2.35E-006	2.83E-006
I133Elem	4.81E+000	7.84E-002	1.14E-004	1.13E-004	2.55E-003	3.17E-002	4.63E-005	4.58E-005	1.03E-003

I134Elem	5.07E-008	4.89E-012	5.44E-012	1.85E-012	6.03E-013	1.98E-012	2.20E-012	7.50E-013	2.44E-013
I135Elem	8.33E-001	2.37E-003	5.42E-005	1.74E-005	9.28E-005	9.57E-004	2.19E-005	7.05E-006	3.76E-005
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	4.73E-004	5.73E-006	0.00E+000	0.00E+000	2.74E-007	2.32E-006	0.00E+000	0.00E+000	1.11E-007
Te132	6.30E-003	1.33E-004	0.00E+000	0.00E+000	5.39E-006	5.37E-005	0.00E+000	0.00E+000	2.18E-006

edit time 24.500000
GAP

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.97E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	8.12E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.53E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	1.07E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	2.33E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	3.48E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.40E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	6.48E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	4.01E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	5.04E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	8.83E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	2.63E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	1.04E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.45E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	5.45E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	1.28E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	9.19E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	2.14E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.27E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.70E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.56E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	6.45E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	5.18E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	8.50E-003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	1.85E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	1.57E-021	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.11E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	5.14E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	3.17E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	4.14E-021	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	6.92E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	6.82E-022	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	8.51E-022	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.15E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	3.75E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	1.02E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	7.29E-007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	1.70E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.00E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.35E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.25E+000	7.35E-001	1.05E+000	3.86E-002
LPZ dose:	5.07E-001	2.97E-001	4.25E-001	1.56E-002

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	7.35E-001	1.05E+000	0.00E+000	0.00E+000	2.97E-001	4.25E-001	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	1.25E+000	5.49E-004	3.69E-004	3.85E-002	5.07E-001	2.22E-004	1.49E-004	1.56E-002
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	2.87E-004	0.00E+000	0.00E+000	1.17E-005	1.16E-004	0.00E+000	0.00E+000	4.75E-006
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	9.40E-001	0.00E+000	9.73E-010	0.00E+000	0.00E+000	0.00E+000	3.94E-010	0.00E+000	0.00E+000
Kr85m	3.61E+002	0.00E+000	2.73E-003	4.45E-003	0.00E+000	0.00E+000	1.11E-003	1.80E-003	0.00E+000
Kr85	2.76E+003	0.00E+000	3.27E-004	3.40E-002	0.00E+000	0.00E+000	1.32E-004	1.38E-002	0.00E+000
Kr87	5.42E-002	0.00E+000	1.95E-006	4.54E-006	0.00E+000	0.00E+000	7.90E-007	1.84E-006	0.00E+000
Kr88	1.07E+002	0.00E+000	9.78E-003	2.11E-003	0.00E+000	0.00E+000	3.96E-003	8.54E-004	0.00E+000

Kr89	4.21E-020	0.00E+000	1.41E-024	1.63E-024	0.00E+000	0.00E+000	5.70E-025	6.58E-025	0.00E+000
Xe131m	5.91E+002	0.00E+000	2.21E-004	2.91E-003	0.00E+000	0.00E+000	8.96E-005	1.18E-003	0.00E+000
Xe133m	2.75E+003	0.00E+000	3.76E-003	2.03E-002	0.00E+000	0.00E+000	1.52E-003	8.23E-003	0.00E+000
Xe133	1.69E+005	0.00E+000	2.63E-001	4.21E-001	0.00E+000	0.00E+000	1.07E-001	1.70E-001	0.00E+000
Xe135m	5.33E-020	0.00E+000	5.18E-025	1.34E-025	0.00E+000	0.00E+000	2.10E-025	5.41E-026	0.00E+000
Xe135	3.78E+004	0.00E+000	4.54E-001	5.66E-001	0.00E+000	0.00E+000	1.84E-001	2.29E-001	0.00E+000
Xe137	3.64E-020	0.00E+000	1.09E-025	1.77E-024	0.00E+000	0.00E+000	4.40E-026	7.15E-025	0.00E+000
Xe138	1.02E-020	0.00E+000	2.55E-025	1.94E-025	0.00E+000	0.00E+000	1.03E-025	7.84E-026	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.14E+001	1.09E+000	1.62E-004	8.69E-005	3.31E-002	4.39E-001	6.55E-005	3.51E-005	1.34E-002
I132Elem	4.21E-001	2.38E-004	3.79E-005	1.17E-005	1.41E-005	9.64E-005	1.53E-005	4.75E-006	5.71E-006
I133Elem	1.02E+001	1.63E-001	2.38E-004	2.35E-004	5.29E-003	6.58E-002	9.61E-005	9.50E-005	2.14E-003
I134Elem	1.01E-007	9.46E-012	1.05E-011	3.58E-012	1.17E-012	3.83E-012	4.26E-012	1.45E-012	4.72E-013
I135Elem	1.76E+000	4.88E-003	1.12E-004	3.59E-005	1.91E-004	1.97E-003	4.52E-005	1.45E-005	7.75E-005
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.01E-003	1.18E-005	0.00E+000	0.00E+000	5.67E-007	4.79E-006	0.00E+000	0.00E+000	2.29E-007
Te132	1.34E-002	2.75E-004	0.00E+000	0.00E+000	1.12E-005	1.11E-004	0.00E+000	0.00E+000	4.52E-006

edit time 26.000000
GAP

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.12E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Kr85m	6.41E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.53E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	4.71E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	1.61E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	5.47E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.39E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	6.36E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	4.04E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	9.68E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	8.18E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	1.63E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	2.72E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.44E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	5.33E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	1.22E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	2.76E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	1.84E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.22E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.67E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	3.51E-004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	2.01E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	2.04E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	1.48E-005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	5.04E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	1.17E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	4.36E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	1.99E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	1.24E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	1.76E-025	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	2.44E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	2.75E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	4.41E-026	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	4.51E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	9.48E-003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	3.82E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	8.63E-010	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	5.75E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	3.83E-005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	5.24E-004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.37E+000	8.66E-001	1.24E+000	4.23E-002
LPZ dose:	5.56E-001	3.50E-001	5.01E-001	1.71E-002

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	8.65E-001	1.24E+000	0.00E+000	0.00E+000	3.50E-001	5.01E-001	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Elem iodine	1.37E+000	6.00E-004	4.04E-004	4.22E-002	5.56E-001	2.43E-004	1.63E-004	1.71E-002	
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Tellurium	3.14E-004	0.00E+000	0.00E+000	1.29E-005	1.27E-004	0.00E+000	0.00E+000	5.20E-006	
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	1.08E+000	0.00E+000	1.12E-009	0.00E+000	0.00E+000	0.00E+000	4.52E-010	0.00E+000	0.00E+000
Kr85m	4.23E+002	0.00E+000	3.19E-003	5.20E-003	0.00E+000	0.00E+000	1.29E-003	2.11E-003	0.00E+000
Kr85	3.28E+003	0.00E+000	3.87E-004	4.03E-002	0.00E+000	0.00E+000	1.57E-004	1.63E-002	0.00E+000
Kr87	6.16E-002	0.00E+000	2.22E-006	5.15E-006	0.00E+000	0.00E+000	8.96E-007	2.08E-006	0.00E+000
Kr88	1.24E+002	0.00E+000	1.13E-002	2.45E-003	0.00E+000	0.00E+000	4.59E-003	9.90E-004	0.00E+000
Kr89	2.24E-019	0.00E+000	1.42E-024	1.64E-024	0.00E+000	0.00E+000	5.75E-025	6.64E-025	0.00E+000
Xe131m	7.01E+002	0.00E+000	2.62E-004	3.45E-003	0.00E+000	0.00E+000	1.06E-004	1.40E-003	0.00E+000
Xe133m	3.26E+003	0.00E+000	4.45E-003	2.41E-002	0.00E+000	0.00E+000	1.80E-003	9.74E-003	0.00E+000
Xe133	2.00E+005	0.00E+000	3.11E-001	4.98E-001	0.00E+000	0.00E+000	1.26E-001	2.02E-001	0.00E+000
Xe135m	5.57E-020	0.00E+000	5.40E-025	1.39E-025	0.00E+000	0.00E+000	2.19E-025	5.64E-026	0.00E+000
Xe135	4.46E+004	0.00E+000	5.34E-001	6.65E-001	0.00E+000	0.00E+000	2.16E-001	2.69E-001	0.00E+000
Xe137	4.41E-020	0.00E+000	1.09E-025	1.78E-024	0.00E+000	0.00E+000	4.42E-026	7.18E-025	0.00E+000
Xe138	1.07E-020	0.00E+000	2.68E-025	2.03E-025	0.00E+000	0.00E+000	1.08E-025	8.21E-026	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.26E+001	1.19E+000	1.77E-004	9.52E-005	3.62E-002	4.82E-001	7.18E-005	3.85E-005	1.47E-002
I132Elem	4.55E-001	2.57E-004	4.09E-005	1.27E-005	1.52E-005	1.04E-004	1.65E-005	5.12E-006	6.16E-006
I133Elem	1.12E+001	1.78E-001	2.60E-004	2.57E-004	5.79E-003	7.20E-002	1.05E-004	1.04E-004	2.34E-003
I134Elem	1.07E-007	1.00E-011	1.11E-011	3.79E-012	1.23E-012	4.05E-012	4.50E-012	1.53E-012	4.99E-013
I135Elem	1.93E+000	5.32E-003	1.22E-004	3.92E-005	2.09E-004	2.15E-003	4.93E-005	1.58E-005	8.44E-005
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.11E-003	1.30E-005	0.00E+000	0.00E+000	6.21E-007	5.24E-006	0.00E+000	0.00E+000	2.51E-007
Te132	1.48E-002	3.01E-004	0.00E+000	0.00E+000	1.22E-005	1.22E-004	0.00E+000	0.00E+000	4.95E-006

edit time 32.000000
GAP

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	1.19E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	2.48E+004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	6.53E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	1.77E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	3.64E+003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	1.05E-018	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	1.37E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	5.89E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	4.13E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	5.98E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	5.87E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	1.96E-017	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	4.44E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	1.43E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	4.98E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	9.98E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	2.23E-004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	9.90E+005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.06E+006	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	1.59E+007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

RB

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	3.72E-005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	7.77E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	2.04E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	5.54E-007	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	1.14E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	2.25E-020	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	4.29E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	1.85E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	1.20E+002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	1.09E-024	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	1.56E+001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	3.30E-019	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	7.19E-026	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	4.41E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	1.60E-003	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	3.13E-001	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	6.99E-012	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	3.10E-002	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	3.33E-005	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	4.97E-004	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

Control_Room

	thyroid	wbody	skin	CEDE
Total dose:	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble gas	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	water_pool	surface	recirc	thyroid	wbody	skin	CEDE
Kr83m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr85	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr87	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr88	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Kr89	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe133	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe135	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe137	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Xe138	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Elem	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te132	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

environment

	thyroid	wbody	skin	CEDE
EAB dose:	1.37E+000	8.66E-001	1.24E+000	4.23E-002
LPZ dose:	5.56E-001	3.50E-001	5.01E-001	1.71E-002

	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Noble gas	0.00E+000	8.65E-001	1.24E+000	0.00E+000	0.00E+000	3.50E-001	5.01E-001	0.00E+000
Org iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Elem iodine	1.37E+000	6.00E-004	4.04E-004	4.22E-002	5.56E-001	2.43E-004	1.63E-004	1.71E-002
Part iodine	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cesium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Tellurium	3.14E-004	0.00E+000	0.00E+000	1.29E-005	1.27E-004	0.00E+000	0.00E+000	5.20E-006
Barium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Noble metal	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Lanthanides	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Cerium	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Strontinum	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

	air_space	thyrd_eab	wbody_eab	skin_eab	CEDE_eab	thyrd_lpz	wbody_lpz	skin_lpz	CEDE_lpz
Kr83m	1.08E+000	0.00E+000	1.12E-009	0.00E+000	0.00E+000	0.00E+000	4.52E-010	0.00E+000	0.00E+000
Kr85m	4.23E+002	0.00E+000	3.19E-003	5.20E-003	0.00E+000	0.00E+000	1.29E-003	2.11E-003	0.00E+000
Kr85	3.28E+003	0.00E+000	3.87E-004	4.03E-002	0.00E+000	0.00E+000	1.57E-004	1.63E-002	0.00E+000
Kr87	6.16E-002	0.00E+000	2.22E-006	5.15E-006	0.00E+000	0.00E+000	8.96E-007	2.08E-006	0.00E+000
Kr88	1.24E+002	0.00E+000	1.13E-002	2.45E-003	0.00E+000	0.00E+000	4.59E-003	9.90E-004	0.00E+000
Kr89	2.24E-019	0.00E+000	1.42E-024	1.64E-024	0.00E+000	0.00E+000	5.75E-025	6.64E-025	0.00E+000
Xe131m	7.01E+002	0.00E+000	2.62E-004	3.45E-003	0.00E+000	0.00E+000	1.06E-004	1.40E-003	0.00E+000
Xe133m	3.26E+003	0.00E+000	4.45E-003	2.41E-002	0.00E+000	0.00E+000	1.80E-003	9.74E-003	0.00E+000
Xe133	2.00E+005	0.00E+000	3.11E-001	4.98E-001	0.00E+000	0.00E+000	1.26E-001	2.02E-001	0.00E+000
Xe135m	5.57E-020	0.00E+000	5.40E-025	1.39E-025	0.00E+000	0.00E+000	2.19E-025	5.64E-026	0.00E+000
Xe135	4.46E+004	0.00E+000	5.34E-001	6.65E-001	0.00E+000	0.00E+000	2.16E-001	2.69E-001	0.00E+000
Xe137	4.41E-020	0.00E+000	1.09E-025	1.78E-024	0.00E+000	0.00E+000	4.42E-026	7.18E-025	0.00E+000
Xe138	1.07E-020	0.00E+000	2.68E-025	2.03E-025	0.00E+000	0.00E+000	1.08E-025	8.21E-026	0.00E+000
I131Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Org	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000

I131Elem	1.26E+001	1.19E+000	1.77E-004	9.52E-005	3.62E-002	4.82E-001	7.18E-005	3.85E-005	1.47E-002
I132Elem	4.55E-001	2.57E-004	4.09E-005	1.27E-005	1.52E-005	1.04E-004	1.65E-005	5.12E-006	6.16E-006
I133Elem	1.12E+001	1.78E-001	2.60E-004	2.57E-004	5.79E-003	7.20E-002	1.05E-004	1.04E-004	2.34E-003
I134Elem	1.07E-007	1.00E-011	1.11E-011	3.79E-012	1.23E-012	4.05E-012	4.50E-012	1.53E-012	4.99E-013
I135Elem	1.93E+000	5.32E-003	1.22E-004	3.92E-005	2.09E-004	2.15E-003	4.93E-005	1.58E-005	8.44E-005
I131Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I132Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I133Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I134Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
I135Part	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000	0.00E+000
Te131m	1.11E-003	1.30E-005	0.00E+000	0.00E+000	6.21E-007	5.24E-006	0.00E+000	0.00E+000	2.51E-007
Te132	1.48E-002	3.01E-004	0.00E+000	0.00E+000	1.22E-005	1.22E-004	0.00E+000	0.00E+000	4.95E-006

STARDOSE 1.0 (c) 1996 Polestar Applied Technology, Inc.
05:41:21 PM December 21, 2000
Total elapsed hours: 00, mins: 00, secs: 01

Planned FSAR Input from Calculation Output

Miscellaneous Parameters

Power Level	3556	
Peaking Factor	2	
Percentage of Damaged Fuel	0.528%	
Release of Activity by Nuclide	Kr-85	10%
	Other Noble Gases	5%
	I-131	8%
	Other Halogens	5%
Iodine Fractions	Organic	0.15%
	Elemental	99.85%
	Particulate	0%
Secondary Containment Leak Rate	80,000 cfm from t = 0 (start of release) to 20 min	
	40,000 cfm from t = 20 min to 24 hr	
SGTS Filtration	N/A	

X/Qs EAB (time after start of release)		
0-2 hr	1.8E-4	
X/Qs LPZ (time after start of release)		
0-2 hr	5.04E-5	
X/Qs CR (time after start of release)		
	Filtered	Unfiltered
0-30 min	4.13E-4	6.80E-4
0.5-2 hr	4.03E-4	6.80E-4

Activity Released to the Reactor Building and Environment as a Function of Time

(See tables which follow)

	Fuel Handling Accident - Activity Airborne in the Refueling Floor Volume of Reactor Building (Ci)										
	0	0.1 hr	0.2 hr	0.5 hr	1 hr	2 hr	4 hr	8 hr	1 day	4 days	30 days
Kr83m	8.39E-01	5.42E-01	3.50E-01	1.31E-01	4.01E-02	3.73E-03	1.77E-03	3.95E-04	9.88E-07	1.95E-18	6.36E-31
Kr85m	3.11E+02	2.05E+02	1.35E+02	5.43E+01	1.84E+01	2.13E+00	1.55E+00	8.26E-01	6.59E-02	7.53E-07	3.48E-20
Kr85	1.55E+03	1.04E+03	6.95E+02	2.92E+02	1.07E+02	1.46E+01	1.45E+01	1.45E+01	1.45E+01	1.45E+01	1.45E+01
Kr87	4.98E-02	3.16E-02	2.00E-02	7.15E-03	2.00E-03	1.57E-04	5.25E-05	5.88E-06	9.27E-10	1.78E-21	4.18E-33
Kr88	9.34E+01	6.11E+01	4.00E+01	1.56E+01	5.07E+00	5.36E-01	3.27E-01	1.21E-01	2.30E-03	4.15E-11	9.22E-23
Kr89	8.21E-20	1.49E-20	2.70E-21	2.63E-23	2.57E-25	2.59E-26	3.95E-22	4.38E-18	9.58E-19	1.94E-20	4.67E-49
Xe131m	4.94E+02	3.31E+02	2.22E+02	9.33E+01	3.43E+01	4.63E+00	4.61E+00	4.56E+00	4.39E+00	3.69E+00	8.23E-01
Xe133m	2.30E+03	1.54E+03	1.03E+03	4.33E+02	1.58E+02	2.11E+01	2.06E+01	1.96E+01	1.60E+01	6.49E+00	2.56E-03
Xe133	1.41E+05	9.47E+04	6.34E+04	2.66E+04	9.77E+03	1.32E+03	1.30E+03	1.27E+03	1.17E+03	7.87E+02	2.59E+01
Xe135m	2.33E-19	1.20E-19	6.14E-20	1.16E-20	1.14E-21	1.28E-23	1.27E-25	3.15E-27	9.42E-20	3.40E-21	5.74E-51
Xe135	3.20E+04	2.13E+04	1.42E+04	5.82E+03	2.06E+03	2.59E+02	2.23E+02	1.65E+02	4.95E+01	2.20E-01	8.98E-22
Xe137	6.59E-21	1.52E-21	3.52E-22	6.40E-24	4.46E-26	1.22E-27	7.71E-25	1.53E-19	5.53E-21	2.00E-20	2.47E-50
Xe138	2.35E-20	1.23E-20	6.47E-21	1.31E-21	1.42E-22	1.94E-24	2.25E-26	3.68E-28	1.41E-21	3.56E-22	2.43E-49
I131Org	1.15E+02	7.72E+01	5.17E+01	2.17E+01	7.98E+00	1.08E+00	1.07E+00	1.05E+00	9.95E-01	7.68E-01	8.20E-02
I132Org	8.74E-02	5.69E-02	3.70E-02	1.42E-02	4.52E-03	4.54E-04	2.50E-04	7.60E-05	6.49E-07	3.18E-16	3.14E-19
I133Org	6.90E+01	4.61E+01	3.08E+01	1.28E+01	4.64E+00	6.08E-01	5.69E-01	4.98E-01	2.93E-01	2.68E-02	2.72E-11
I134Org	7.28E-07	4.50E-07	2.79E-07	9.21E-08	2.27E-08	1.38E-09	2.76E-10	1.11E-11	2.94E-17	1.93E-19	4.21E-40
I135Org	1.20E+01	7.94E+00	5.27E+00	2.15E+00	7.50E-01	9.16E-02	7.46E-02	4.94E-02	9.51E-03	5.74E-06	4.03E-22
I131Elem	1.60E+02	1.07E+02	7.17E+01	3.01E+01	1.11E+01	1.49E+00	1.48E+00	1.46E+00	1.38E+00	1.07E+00	1.14E-01
I132Elem	3.88E+00	2.52E+00	1.64E+00	6.32E-01	2.00E-01	2.02E-02	1.12E-02	3.52E-03	1.72E-04	7.46E-05	2.65E-07
I133Elem	9.19E+01	6.14E+01	4.10E+01	1.71E+01	6.18E+00	8.09E-01	7.57E-01	6.63E-01	3.90E-01	3.57E-02	3.62E-11
I134Elem	9.69E-07	6.00E-07	3.71E-07	1.23E-07	3.02E-08	1.83E-09	3.68E-10	1.48E-11	3.91E-17	2.16E-22	6.89E-35
I135Elem	1.59E+01	1.06E+01	7.01E+00	2.86E+00	9.99E-01	1.22E-01	9.93E-02	6.58E-02	1.27E-02	7.64E-06	9.68E-34
I131Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I132Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I133Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I134Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I135Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Te131m	4.53E-02	3.03E-02	2.02E-02	8.45E-03	3.07E-03	4.07E-04	3.88E-04	3.54E-04	2.45E-04	4.63E-05	2.53E-11
Te132	6.03E-01	4.04E-01	2.70E-01	1.13E-01	4.15E-02	5.57E-03	5.47E-03	5.28E-03	4.57E-03	2.38E-03	8.48E-06

Note regarding the Tellurium isotopes: these are the parents of the radiologically significant decay daughters I-131 and I-132

	Fuel Handling Accident - Activity Released to the Environment (Ci)										
	0	0.1 hr	0.2 hr	0.5 hr	1 hr	2 hr	4 hr	8 hr	1 day	4 days	30 days
Kr83m	0.00E+00	2.72E-01	4.47E-01	6.42E-01	7.19E-01	7.50E-01	7.50E-01	7.50E-01	7.50E-01	7.50E-01	7.50E-01
Kr85m	0.00E+00	1.02E+02	1.69E+02	2.46E+02	2.79E+02	2.94E+02	2.94E+02	2.94E+02	2.94E+02	2.94E+02	2.94E+02
Kr85	0.00E+00	5.10E+02	8.51E+02	1.25E+03	1.44E+03	1.53E+03	1.53E+03	1.53E+03	1.53E+03	1.53E+03	1.53E+03
Kr87	0.00E+00	1.60E-02	2.61E-02	3.71E-02	4.12E-02	4.26E-02	4.26E-02	4.26E-02	4.26E-02	4.26E-02	4.26E-02
Kr88	0.00E+00	3.05E+01	5.04E+01	7.29E+01	8.23E+01	8.63E+01	8.63E+01	8.63E+01	8.63E+01	8.63E+01	8.63E+01
Kr89	0.00E+00	1.58E-20	1.86E-20	1.92E-20	1.92E-20	1.92E-20	1.92E-20	1.96E-20	3.07E-20	8.78E-17	1.18E-13
Xe131m	0.00E+00	1.63E+02	2.72E+02	4.01E+02	4.60E+02	4.89E+02	4.89E+02	4.89E+02	4.89E+02	4.89E+02	4.89E+02
Xe133m	0.00E+00	7.59E+02	1.27E+03	1.86E+03	2.14E+03	2.27E+03	2.27E+03	2.27E+03	2.27E+03	2.27E+03	2.27E+03
Xe133	0.00E+00	4.66E+04	7.78E+04	1.15E+05	1.31E+05	1.40E+05	1.40E+05	1.40E+05	1.40E+05	1.40E+05	1.40E+05
Xe135m	0.00E+00	6.80E-20	1.03E-19	1.30E-19	1.35E-19	1.35E-19	1.35E-19	1.35E-19	1.36E-19	7.43E-17	9.18E-14
Xe135	0.00E+00	1.05E+04	1.75E+04	2.56E+04	2.93E+04	3.10E+04	3.10E+04	3.10E+04	3.10E+04	3.10E+04	3.10E+04
Xe137	0.00E+00	1.38E-21	1.70E-21	1.79E-21	1.79E-21	1.79E-21	1.79E-21	2.04E-21	1.16E-20	3.37E-17	1.14E-13
Xe138	0.00E+00	6.93E-21	1.06E-20	1.35E-20	1.40E-20	1.41E-20	1.41E-20	1.41E-20	1.41E-20	2.04E-18	7.49E-14
I131Org	0.00E+00	3.80E+01	6.34E+01	9.34E+01	1.07E+02	1.14E+02	1.14E+02	1.14E+02	1.14E+02	1.14E+02	1.14E+02
I132Org	0.00E+00	2.84E-02	4.69E-02	6.77E-02	7.62E-02	7.97E-02	7.97E-02	7.97E-02	7.97E-02	7.97E-02	7.97E-02
I133Org	0.00E+00	2.27E+01	3.79E+01	5.57E+01	6.38E+01	6.77E+01	6.77E+01	6.77E+01	6.77E+01	6.77E+01	6.77E+01
I134Org	0.00E+00	2.31E-07	3.74E-07	5.23E-07	5.73E-07	5.88E-07	5.88E-07	5.88E-07	5.88E-07	5.88E-07	5.88E-07
I135Org	0.00E+00	3.93E+00	6.53E+00	9.55E+00	1.09E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01
I131Elem	0.00E+00	5.27E+01	8.79E+01	1.29E+02	1.49E+02	1.58E+02	1.58E+02	1.58E+02	1.58E+02	1.58E+02	1.58E+02
I132Elem	0.00E+00	1.26E+00	2.08E+00	3.00E+00	3.38E+00	3.54E+00	3.54E+00	3.54E+00	3.54E+00	3.54E+00	3.54E+00
I133Elem	0.00E+00	3.03E+01	5.05E+01	7.42E+01	8.49E+01	9.02E+01	9.02E+01	9.02E+01	9.02E+01	9.02E+01	9.02E+01
I134Elem	0.00E+00	3.08E-07	4.98E-07	6.96E-07	7.62E-07	7.83E-07	7.83E-07	7.83E-07	7.83E-07	7.83E-07	7.83E-07
I135Elem	0.00E+00	5.23E+00	8.69E+00	1.27E+01	1.45E+01	1.53E+01	1.53E+01	1.53E+01	1.53E+01	1.53E+01	1.53E+01
I131Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I132Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I133Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I134Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
I135Part	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Te131m	0.00E+00	1.49E-02	2.49E-02	3.66E-02	4.19E-02	4.45E-02	4.45E-02	4.45E-02	4.45E-02	4.45E-02	4.45E-02
Te132	0.00E+00	1.99E-01	3.32E-01	4.88E-01	5.60E-01	5.95E-01	5.95E-01	5.96E-01	5.96E-01	5.96E-01	5.96E-01

Note regarding the Tellurium isotopes: these are the parents of the radiologically significant decay daughters I-131 and I-132

Radiological Effects

Location	TEDE Dose (rem)	
CR	1.33	(with 300 cfm/150 cfm unfiltered inleakage before/after 30 minutes into the event)
EAB	1.01	
LPZ	0.28	