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Prepared for the U.S. Department of Energy
under Contract DE-AC05-76RL01830

Revision of the APGEMS Dose Conversion Factor File Using Revised Factors from Federal Guidance Report 12 and 13

TR Hay
JP Rishel

September 2013

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Pacific Northwest National Laboratory
Richland, Washington 99352

Summary

The Air Pollutant Graphical Environmental Monitoring System (APGEMS) is used by the Hanford Emergency Operation Center (EOC) to provide refined plume modeling of releases involving radionuclides. The dose conversion factors (DCFs) used by APGEMS to convert air concentration to dose are stored in a file called HUDUFACT.dat; the DCFs are based primarily on ICRP 30 compiled in the late 1980's. This report updates the DCFs using more recent values reported in the Environmental Protection Agency's (EPAs) Federal Guidance Report (FGR) 12 and 13. FGR 12 provides external exposure (air submersion) DCFs for radionuclides in air; FGR 13 provides DCFs for radionuclides from inhalation. DCFs were updated for only those radionuclides listed in the original HUDUFACT.dat file. Since FGR 13 provides inhalation dose conversion factors as a function of age, revised DCF files were created for APGEMS for each age group. The "adult" DCF file is the most relevant to compare to the original DCF file being used in APGEMS; these DCF values are compared in this report.

Acronyms and Abbreviations

APGEMS	Air Pollutant Graphical Environmental Monitoring System
DCF	Dose Conversion Factor
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FGR	Federal Guidance Report
LET	Linear Energy Transfer

Contents

1.0 Introduction

The Air Pollutant Graphical Environmental Monitoring System (APGEMS) is used by the Hanford Emergency Operation Center (EOC) to provide refined plume modeling of releases involving radionuclides. The dose conversion factors (DCFs) used by APGEMS to convert air concentration to dose are stored in a file called HUDUFACT.dat (dated 9/4/1990); the DCFs are based primarily on ICRP 30 compiled in the late 1980's.

This project involved revising the APGEMS HUDUFACT.dat file using more recent DCFs reported in the Environmental Protection Agency's (EPAs) Federal Guidance Report (FGR) 12 (Eckerman et al. 1993) and 13 (Eckerman et al. 1998). FGR 12 provides external exposure (air submersion) DCFs for radionuclides in air; FGR 13 provides DCFs for radionuclides from inhalation.

The update was performed by writing a Visual Basic (VB) script to extract the relevant factors from FGR 12/13 and write the corresponding HUDUFACT.dat file required by APGEMS. DCFs were updated for only those radionuclides listed in the existing HUDUFACT.dat file. Since FGR 13 provides inhalation dose conversion factors as a function of age, the script creates age-based dose conversion files, each in the HUDUFACT.dat file format that can be used in APGEMS. The "adult" (age 7300 days, and for some radionuclides, age 9125 days) dose conversion file are the most relevant DCFs to compare to the original values being used in APGEMS.

2.0 Methodology

The original APGEMS dose conversion factors found in HUDUFACT.dat (dated 9/4/1990) are based on ICRP 30 and GENII outputs compiled in the late 1980's. Since then, the EPA has issued two guidance documents (FGR 12/13) for the purpose of providing federal and state agencies with technical information to assist in implementation of radiation protection programs. These guidance documents were used to update the file HUDUFACT.dat (dated 9/4/1990).

A VB script was written to extract the relevant dose conversion factors from FGR 12/13 and write the corresponding formatted dose conversion file (HUDUFACT.dat) required by APGEMS (the full script found in Appendix C of this report). The script:

- **i.** Reads in the existing HUDUFACT.dat file (dated 9/4/1990)
- **ii.** For each radionuclide in HUDUFACT.dat, reads in the FGR 12/13 dose conversion data files and extract the relevant dose conversion factors
- **iii.** Writes a revised HUDUFACT.dat file using the FGR 12/13 values (Note: since the inhalation dose conversion factors in FGR13 are now a function of age, age-based HUDUFACT.dat files were written for APGEMS; the "adult" file is most comparable to the original DCF file used by APGEMS)
- **iv.** The revised, aged-base dose conversion factor files were validated by hand-checking the values against the factors listed in the FGR 12/13 reports
- **v.** The revised dose conversion factors were compared against the existing values in HUDUFACT.dat file (dated 9/4/1990); these values were written to a separate file and are available for further review

2.1 Units

The units for the DCF factors in the original HUDUFACT.dat file are in the header of the file; the units are as follows:

AIR SUBMERSION Sv/Yr per Bq/m3	LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq

The FGR 12 and 13 DCFs units were converted, if necessary, to be consistent with the units in HUDUFACT.dat.

3.0 Results

The VB script extracts data from FGR 12 for air submersion and FGR 13 for the inhalation dose conversion factors (DCFs). These data were arranged in a format consistent with that in the original DCF file HUDUFACT.dat. The original HUDUFACT.dat (dated 9/4/1990) file contains data for 1- and 50-year committed dose. However, the 1-year DCFs are not available in FGR 12/13, nor are they used in the APGEMS; it was determined that the 1-year DCFs are in the file because, at one time, also used by the now obsolete HUDU program. Thus, to preserve the format in the revised HUDUFACT.dat DCF file, the 1-year DCFs were made equivalent to the 50-year DCFs.

Finally, the original HUDUFACT.dat (dated 9/4/1990) file contains DCF data for adults. The revised inhalation DCFs in FGR 13 are available for different age groups (in days): 100, 365, 1825, 3650, 5475, and 7300/9125. Thus, separate files were created for each age group. The age group 7300/9125 days is the age group that corresponds more closely to the age group in the original file. Complete files, for each age group, are presented in appendix A and are available electronically.

3.1 Conversion requirements

In order to match the original HUDUFACT.dat (dated 9/4/1990) file format, a few conversions were needed. The lung transfer class from the FGR 13 is presented as Slow (S), Medium (M), and Fast (F) whereas, the original HUDUFACT.dat file is presented in Days (D), Weeks (W), and Years (Y). The assumed correspondence between the two systems is as follows:

S = Y
M = W
F = D

DCFs for the radionuclides that include high and low linear energy transfer (LET) are provided separately in FGR 13. Thus, to preserve the format in HUDUFACT.dat (dated 9/4/1990) the high and low LET were combined using the appropriate radiation weighting factors (20 for high LET, 1 for low LET) (ICRP 1990). The following equation is used:

Total DCF = 20 * high LET DCF + Low LET DCF

There are a few radionuclides that are in HUDUFACT.dat (dated 9/4/1990) and do not have corresponding DCFs in FGR 13; these are primarily non-depositing radionuclides (e.g., noble gases) and include:

- Ar-39
- Ar-41
- Kr-83m
- Kr-85m
- Kr-85
- Kr-87
- Kr-88
- Kr-89
- Nb-97m
- Xe-131m
- Xe-133m
- Xe-133
- Xe-135m
- Xe-135
- Xe-137
- Xe-138
- Pr-144m
- Rn-222
- Cm-248
- Cf-252

For these radionuclides, the DCFs from the original HUDUFACT.dat (dated 9/4/1990) were used.

3.2 Comparison of FRG12/13 to HUDUFACT.dat

A VB script was created to compare the ratio of the revised DCFs from FRG12/13 to the original DCFs in HUDUFACT.dat (dated 9/4/1990). Figure 1 is a plot of the DCF ratios (FGR/original values) for effective dose equivalent. A value of one implies total agreement. Most radionuclides are within a factor of two and the largest difference is around a factor of 6. The full results of the comparisons are presented in Appendix B. There are also two radionuclides in the original HUDUFACT.dat (dated 9/4/1990) file that had an air submersion value of zero, however, the revised DCF from FGR 12 is non-zero; these radionuclides are: Sn-121m and Sn-121.

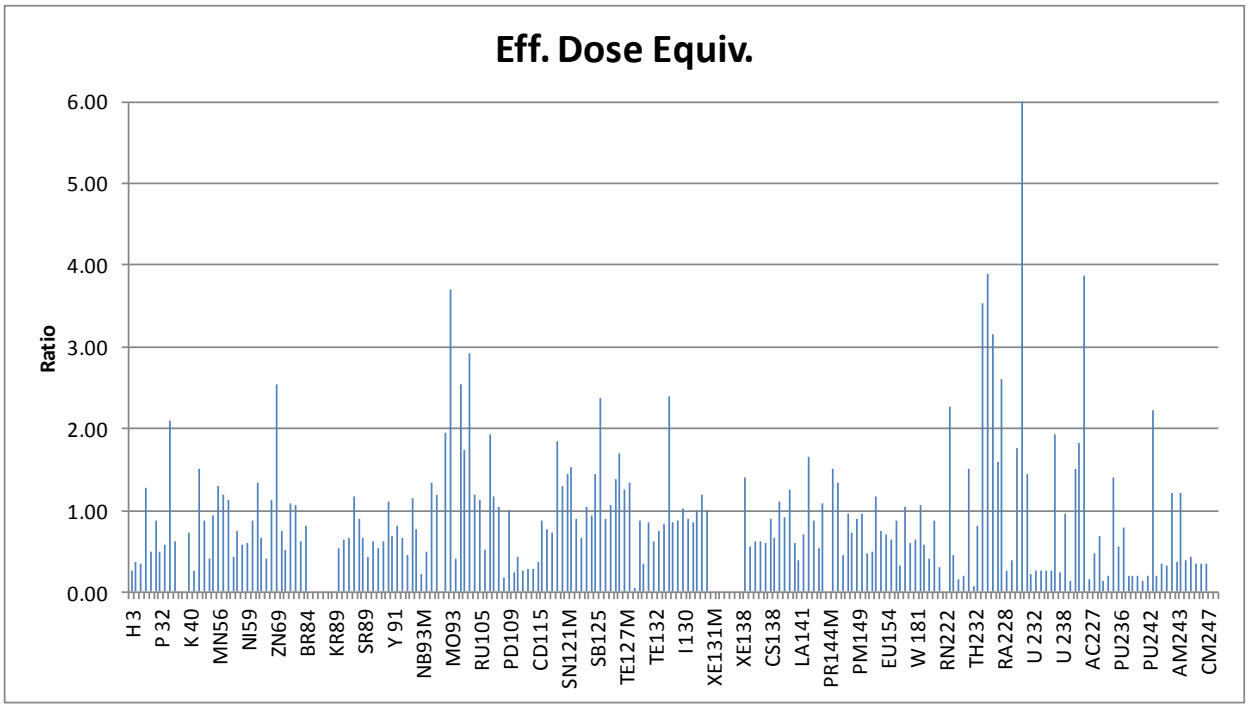

Figure 1. Ratio of the revised FGR13 effective dose equivalent DCFs to the original HUDUFACT.dat effective dose equivalent DCFs for the various radionuclides (Note: not all radionuclide labels are displayed).

3.3 Quality Assurance

The DCFs were hand-checked for several radionuclides to verify the values were correctly extracted by the VB script from the FGR 12/13 files and inserted into the revised (age-based) HUDUFACT.dat files. The VB script also generated a log file, which allowed the DCFs for each radionuclide to be easily compared and verified; Figure 1 and Appendix B provides ratios of the revised DCF's (from FGR12/13) to the original DCF's (from HUDUFACT.dat). Finally, the APGEMS program was tested with the revised HUDUFACT.dat file; it ran successfully with the revised DCFs.

To use a given DCF file, it simply has to be renamed as "HUDUFACT.DAT" and copied into the APGEMS StaticData folder. The 7300/9125 age group file should be used as the default

HUDUFACT.DAT file. Appropriate quality control procedures should be employed by the APGEMS user or custodian to ensure that the default HUDUFACT file is always returned to active status after the termination of the current event or exercise.

4.0 References

Eckerman, KF., Ryman, JC., 1993. External Exposure to Radionuclides in Air, Water, and Soil; Federal Guidance Report No. 12. EPA 402-R-93–081; http://ordose.ornl.gov/documents/fgr12.pdf, U.S. Environmental Protection Agency, Washington, DC.FGR 12.

Eckerman K F, Leggett R W, Nelson C B, Puskin J S and Richardson A C B 1998 Health risks from low-level environmental exposure to radionuclides *Federal Guidance Report* no 13, part I - interim version Environmental Protection Agency, Washington, DC.FGR 13.

ICRP 1990 Recommendations of the International Commission on Radiological Protection *ICRP Publication* 60.

Appendix A Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

Appendix A.1

Age 7300/9125

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

			AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D		0.00E00					
	1 Yr:			6.2E-12	6.2E-12	6.2E-12	6.2E-12	6.3E-12
	50 Yr:			6.2E-12	6.2E-12	6.2E-12	6.2E-12	6.3E-12
BE10	Class: Y		4.35E-09					
	1 Yr:			2.8E-07	6.2E-09	2.1E-09	7.1E-11	3.5E-08
	50 Yr:			2.8E-07	6.2E-09	2.1E-09	7.1E-11	3.5E-08
C 14	Class: D		8.20E-11					
	1 Yr:			2.0E-10	1.9E-10	1.9E-10	1.9E-10	2.0E-10
	50 Yr:			2.0E-10	1.9E-10	1.9E-10	1.9E-10	2.0E-10
F 18	Class: D		1.44E-06					
	1 Yr:			2.6E-11	2.5E-11	2.7E-11	3.4E-12	2.8E-11
	50 Yr:			2.6E-11	2.5E-11	2.7E-11	3.4E-12	2.8E-11
NA22	Class: D		3.22E-06					
	1 Yr:			9.2E-10	2.2E-09	1.6E-09	9.6E-10	1.3E-09
	50 Yr:			9.2E-10	2.2E-09	1.6E-09	9.6E-10	1.3E-09
NA24	Class: D		6.56E-06					
	1 Yr:			1.4E-10	2.0E-10	1.5E-10	1.2E-10	2.8E-10
	50 Yr:			1.4E-10	2.0E-10	1.5E-10	1.2E-10	2.8E-10
P 32	Class: D		1.69E-08					
	1 Yr:			3.0E-10	3.3E-09	3.3E-09	2.7E-10	7.8E-10
	50 Yr:			3.0E-10	3.3E-09	3.3E-09	2.7E-10	7.8E-10
P 33	Class: D		4.57E-10					
	1 Yr:			5.3E-11	5.5E-10	2.1E-10	3.8E-11	9.3E-11
	50 Yr:			5.3E-11	5.5E-10	2.1E-10	3.8E-11	9.3E-11
S 35	Class: W		9.81E-11					
	1 Yr:			1.2E-08	7.8E-12	7.8E-12	7.8E-12	1.4E-09
	50 Yr:			1.2E-08	7.8E-12	7.8E-12	7.8E-12	1.4E-09
CL36	Class: D		5.23E-09					
	1 Yr:			3.0E-10	2.7E-10	2.7E-10	2.7E-10	3.3E-10
	50 Yr:			3.0E-10	2.7E-10	2.7E-10	2.7E-10	3.3E-10
AR39	NobleGas		3.63E-09					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas		1.94E-06					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D		2.50E-07					
	1 Yr:			1.7E-09	1.7E-09	1.7E-09	1.7E-09	2.1E-09
	50 Yr:			1.7E-09	1.7E-09	1.7E-09	1.7E-09	2.1E-09
CA41	Class: W		0.00E00					
	1 Yr:			1.6E-10	1.3E-09	4.9E-10	9.5E-13	9.5E-11
	50 Yr:			1.6E-10	1.3E-09	4.9E-10	9.5E-13	9.5E-11
CA45	Class: W		4.83E-10					
	1 Yr:			2.1E-08	1.9E-09	9.3E-10	1.2E-11	2.7E-09
	50 Yr:			2.1E-08	1.9E-09	9.3E-10	1.2E-11	2.7E-09
SC46	Class: Y		2.95E-06					
	1 Yr:			4.5E-08	1.2E-09	1.6E-09	1.2E-09	6.8E-09
	50 Yr:			4.5E-08	1.2E-09	1.6E-09	1.2E-09	6.8E-09
CR51	Class: Y		4.35E-08					
	1 Yr:			1.8E-10	1.2E-11	1.3E-11	9.0E-12	3.7E-11
	50 Yr:			1.8E-10	1.2E-11	1.3E-11	9.0E-12	3.7E-11
MN54	Class: W		1.21E-06					
	1 Yr:			6.5E-09	1.2E-09	1.2E-09	6.7E-10	1.6E-09
	50 Yr:			6.5E-09	1.2E-09	1.2E-09	6.7E-10	1.6E-09
MN56	Class: W		2.58E-06					
	1 Yr:			3.8E-10	7.7E-12	9.9E-12	6.4E-12	1.2E-10

	50 Yr:		3.8E-10	7.7E-12	9.9E-12	6.4E-12	1.2E-10
FE55	Class: W	0.00E00					
	1 Yr:		4.0E-10	6.7E-10	1.3E-09	9.6E-11	3.9E-10
	50 Yr:		4.0E-10	6.7E-10	1.3E-09	9.6E-11	3.9E-10
FE59	Class: W	1.77E-06					
	1 Yr:		2.3E-08	9.8E-10	1.4E-09	6.8E-10	3.7E-09
	50 Yr:		2.3E-08	9.8E-10	1.4E-09	6.8E-10	3.7E-09
CO57	Class: Y	1.57E-07					
	1 Yr:		6.6E-09	4.0E-10	2.4E-10	1.9E-10	1.0E-09
	50 Yr:		6.6E-09	4.0E-10	2.4E-10	1.9E-10	1.0E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		1.3E-08	5.2E-10	7.1E-10	5.2E-10	2.1E-09
	50 Yr:		1.3E-08	5.2E-10	7.1E-10	5.2E-10	2.1E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		1.8E-07	9.3E-09	1.2E-08	9.9E-09	3.1E-08
	50 Yr:		1.8E-07	9.3E-09	1.2E-08	9.9E-09	3.1E-08
NI59	Class: W	0.00E00					
	1 Yr:		4.7E-10	7.8E-11	7.8E-11	7.8E-11	1.3E-10
	50 Yr:		4.7E-10	7.8E-11	7.8E-11	7.8E-11	1.3E-10
NI63	Class: W	0.00E00					
	1 Yr:		2.5E-09	1.8E-10	1.8E-10	1.8E-10	4.7E-10
	50 Yr:		2.5E-09	1.8E-10	1.8E-10	1.8E-10	4.7E-10
NI65	Class: W	8.42E-07					
	1 Yr:		3.2E-10	2.3E-12	3.0E-12	2.2E-12	8.5E-11
	50 Yr:		3.2E-10	2.3E-12	3.0E-12	2.2E-12	8.5E-11
CU64	Class: D	2.69E-07					
	1 Yr:		2.1E-11	9.2E-12	9.2E-12	8.9E-12	3.5E-11
	50 Yr:		2.1E-11	9.2E-12	9.2E-12	8.9E-12	3.5E-11
ZN65	Class: Y	8.61E-07					
	1 Yr:		1.0E-08	7.9E-10	1.0E-09	7.9E-10	2.0E-09
	50 Yr:		1.0E-08	7.9E-10	1.0E-09	7.9E-10	2.0E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		1.3E-09	8.0E-12	1.2E-11	5.7E-12	2.7E-10
	50 Yr:		1.3E-09	8.0E-12	1.2E-11	5.7E-12	2.7E-10
ZN69	Class: Y	6.31E-09					
	1 Yr:		1.2E-10	2.2E-15	2.2E-15	1.7E-15	2.8E-11
	50 Yr:		1.2E-10	2.2E-15	2.2E-15	1.7E-15	2.8E-11
AS76	Class: W	6.50E-07					
	1 Yr:		3.4E-09	3.4E-11	3.8E-11	3.2E-11	7.4E-10
	50 Yr:		3.4E-09	3.4E-11	3.8E-11	3.2E-11	7.4E-10
SE75	Class: W	5.30E-07					
	1 Yr:		5.3E-09	5.2E-10	4.3E-10	3.2E-10	1.1E-09
	50 Yr:		5.3E-09	5.2E-10	4.3E-10	3.2E-10	1.1E-09
SE79	Class: W	1.24E-10					
	1 Yr:		1.9E-08	1.4E-10	1.4E-10	1.4E-10	2.6E-09
	50 Yr:		1.9E-08	1.4E-10	1.4E-10	1.4E-10	2.6E-09
BR82	Class: D	3.85E-06					
	1 Yr:		1.7E-10	1.7E-10	1.6E-10	1.7E-10	3.5E-10
	50 Yr:		1.7E-10	1.7E-10	1.6E-10	1.7E-10	3.5E-10
BR83	Class: D	1.68E-08					
	1 Yr:		2.5E-11	2.9E-12	2.9E-12	2.9E-12	1.6E-11
	50 Yr:		2.5E-11	2.9E-12	2.9E-12	2.9E-12	1.6E-11
BR84	Class: D	2.84E-06					
	1 Yr:		3.0E-11	3.4E-12	3.3E-12	3.5E-12	2.2E-11
	50 Yr:		3.0E-11	3.4E-12	3.3E-12	3.5E-12	2.2E-11
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					

	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					
	1 Yr:		7.7E-10	2.8E-09	1.4E-09	7.4E-10	9.3E-10
	50 Yr:		7.7E-10	2.8E-09	1.4E-09	7.4E-10	9.3E-10
RB87	Class: D	1.04E-09					
	1 Yr:		4.1E-10	1.6E-09	7.8E-10	3.9E-10	5.0E-10
	50 Yr:		4.1E-10	1.6E-09	7.8E-10	3.9E-10	5.0E-10
RB88	Class: D	1.05E-06					
	1 Yr:		3.1E-11	1.9E-12	1.7E-12	1.7E-12	1.6E-11
	50 Yr:		3.1E-11	1.9E-12	1.7E-12	1.7E-12	1.6E-11
RB89	Class: D	3.19E-06					
	1 Yr:		2.2E-11	2.4E-12	1.9E-12	1.8E-12	1.4E-11
	50 Yr:		2.2E-11	2.4E-12	1.9E-12	1.8E-12	1.4E-11
SR85	Class: D	7.06E-07					
	1 Yr:		2.2E-10	7.3E-10	7.4E-10	2.0E-10	3.8E-10
	50 Yr:		2.2E-10	7.3E-10	7.4E-10	2.0E-10	3.8E-10
SR89	Class: D	1.38E-08					
	1 Yr:		2.0E-10	5.4E-09	4.3E-09	1.8E-10	1.0E-09
	50 Yr:		2.0E-10	5.4E-09	4.3E-09	1.8E-10	1.0E-09
SR90	Class: D	3.10E-09					
	1 Yr:		6.2E-10	3.7E-07	1.6E-07	6.0E-10	2.4E-08
	50 Yr:		6.2E-10	3.7E-07	1.6E-07	6.0E-10	2.4E-08
SR91	Class: D	1.03E-06					
	1 Yr:		5.2E-11	1.4E-10	1.3E-10	2.6E-11	1.6E-10
	50 Yr:		5.2E-11	1.4E-10	1.3E-10	2.6E-11	1.6E-10
SR92	Class: D	2.02E-06					
	1 Yr:		3.7E-11	8.9E-11	6.1E-11	1.6E-11	9.8E-11
	50 Yr:		3.7E-11	8.9E-11	6.1E-11	1.6E-11	9.8E-11
Y 90	Class: Y	2.50E-08					
	1 Yr:		7.8E-09	1.2E-12	1.2E-12	4.2E-14	1.5E-09
	50 Yr:		7.8E-09	1.2E-12	1.2E-12	4.2E-14	1.5E-09
Y 91M	Class: Y	7.47E-07					
	1 Yr:		5.0E-11	7.2E-13	9.4E-13	6.8E-13	1.1E-11
	50 Yr:		5.0E-11	7.2E-13	9.4E-13	6.8E-13	1.1E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		7.0E-08	6.4E-11	6.4E-11	2.8E-12	8.9E-09
	50 Yr:		7.0E-08	6.4E-11	6.4E-11	2.8E-12	8.9E-09
Y 92	Class: Y	4.16E-07					
	1 Yr:		7.0E-10	1.3E-12	1.8E-12	1.1E-12	1.8E-10
	50 Yr:		7.0E-10	1.3E-12	1.8E-12	1.1E-12	1.8E-10
Y 93	Class: Y	1.67E-07					
	1 Yr:		1.6E-09	1.3E-12	1.8E-12	9.0E-13	4.2E-10
	50 Yr:		1.6E-09	1.3E-12	1.8E-12	9.0E-13	4.2E-10
ZR93	Class: W	0.00E00					
	1 Yr:		2.8E-09	5.0E-07	4.0E-08	3.5E-12	1.0E-08
	50 Yr:		2.8E-09	5.0E-07	4.0E-08	3.5E-12	1.0E-08
ZR95	Class: W	1.06E-06					
	1 Yr:		3.1E-08	1.3E-08	2.4E-09	6.5E-10	4.8E-09
	50 Yr:		3.1E-08	1.3E-08	2.4E-09	6.5E-10	4.8E-09
ZR97	Class: W	2.81E-07					
	1 Yr:		3.4E-09	6.4E-11	7.8E-11	2.8E-11	9.2E-10
	50 Yr:		3.4E-09	6.4E-11	7.8E-11	2.8E-11	9.2E-10
NB93M	Class: Y	9.62E-11					
	1 Yr:		1.4E-08	5.4E-11	2.0E-11	4.7E-12	1.8E-09
	50 Yr:		1.4E-08	5.4E-11	2.0E-11	4.7E-12	1.8E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		3.2E-07	1.2E-08	1.5E-08	1.2E-08	4.9E-08
	50 Yr:		3.2E-07	1.2E-08	1.5E-08	1.2E-08	4.9E-08
NB95M	Class: Y	8.64E-08					
	1 Yr:		6.2E-09	3.4E-11	3.8E-11	2.6E-11	8.8E-10
	50 Yr:		6.2E-09	3.4E-11	3.8E-11	2.6E-11	8.8E-10
NB95	Class: Y	1.10E-06					
	1 Yr:		1.2E-08	2.5E-10	3.4E-10	2.3E-10	1.8E-09
	50 Yr:		1.2E-08	2.5E-10	3.4E-10	2.3E-10	1.8E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		1.7E-10	1.2E-12	1.6E-12	1.1E-12	4.5E-11
	50 Yr:		1.7E-10	1.2E-12	1.6E-12	1.1E-12	4.5E-11

MO93	Class: D	5.46E-10					
	1 Yr:		8.2E-11	2.0E-08	6.0E-09	5.7E-11	1.0E-09
	50 Yr:		8.2E-11	2.0E-08	6.0E-09	5.7E-11	1.0E-09
MO99	Class: D	2.20E-07					
	1 Yr:		1.2E-10	3.3E-10	2.0E-10	8.4E-11	2.2E-10
	50 Yr:		1.2E-10	3.3E-10	2.0E-10	8.4E-11	2.2E-10
TC99M	Class: W	1.66E-07					
	1 Yr:		7.6E-11	2.3E-12	1.7E-12	5.5E-12	1.9E-11
	50 Yr:		7.6E-11	2.3E-12	1.7E-12	5.5E-12	1.9E-11
TC99	Class: W	9.05E-10					
	1 Yr:		3.2E-08	9.2E-12	9.2E-12	2.4E-10	4.0E-09
	50 Yr:		3.2E-08	9.2E-12	9.2E-12	2.4E-10	4.0E-09
TC101	Class: W	4.76E-07					
	1 Yr:		3.4E-11	1.8E-13	1.7E-13	1.2E-12	1.2E-11
	50 Yr:		3.4E-11	1.8E-13	1.7E-13	1.2E-12	1.2E-11
RU103	Class: Y	6.59E-07					
	1 Yr:		2.2E-08	1.7E-10	2.4E-10	1.6E-10	3.0E-09
	50 Yr:		2.2E-08	1.7E-10	2.4E-10	1.6E-10	3.0E-09
RU105	Class: Y	1.13E-06					
	1 Yr:		8.0E-10	5.6E-12	7.9E-12	4.5E-12	1.8E-10
	50 Yr:		8.0E-10	5.6E-12	7.9E-12	4.5E-12	1.8E-10
RU106	Class: Y	0.00E00					
	1 Yr:		5.3E-07	5.4E-10	6.7E-10	5.4E-10	6.6E-08
	50 Yr:		5.3E-07	5.4E-10	6.7E-10	5.4E-10	6.6E-08
RH103M	Class: Y	1.90E-10					
	1 Yr:		1.8E-11	3.0E-15	1.3E-15	7.1E-16	2.7E-12
	50 Yr:		1.8E-11	3.0E-15	1.3E-15	7.1E-16	2.7E-12
RH105	Class: Y	1.10E-07					
	1 Yr:		2.3E-09	3.9E-12	4.6E-12	2.6E-12	3.5E-10
	50 Yr:		2.3E-09	3.9E-12	4.6E-12	2.6E-12	3.5E-10
PD103	Class: Y	1.68E-09					
	1 Yr:		3.4E-09	4.1E-12	1.4E-12	1.2E-13	4.5E-10
	50 Yr:		3.4E-09	4.1E-12	1.4E-12	1.2E-13	4.5E-10
PD107	Class: Y	0.00E00					
	1 Yr:		4.8E-09	4.3E-13	1.6E-13	2.9E-14	5.9E-10
	50 Yr:		4.8E-09	4.3E-13	1.6E-13	2.9E-14	5.9E-10
PD109	Class: Y	1.33E-08					
	1 Yr:		2.2E-09	5.4E-13	2.5E-13	8.1E-14	3.7E-10
	50 Yr:		2.2E-09	5.4E-13	2.5E-13	8.1E-14	3.7E-10
AG110M	Class: D	4.01E-06					
	1 Yr:		4.6E-09	3.2E-09	3.6E-09	2.3E-09	5.5E-09
	50 Yr:		4.6E-09	3.2E-09	3.6E-09	2.3E-09	5.5E-09
AG111	Class: D	4.38E-08					
	1 Yr:		1.1E-10	8.9E-11	8.9E-11	8.7E-11	4.0E-10
	50 Yr:		1.1E-10	8.9E-11	8.9E-11	8.7E-11	4.0E-10
CD109	Class: D	7.22E-09					
	1 Yr:		1.6E-09	1.9E-09	1.3E-09	1.4E-09	8.2E-09
	50 Yr:		1.6E-09	1.9E-09	1.3E-09	1.4E-09	8.2E-09
CD113M	Class: D	2.86E-09					
	1 Yr:		1.7E-08	1.7E-08	1.7E-08	1.7E-08	1.1E-07
	50 Yr:		1.7E-08	1.7E-08	1.7E-08	1.7E-08	1.1E-07
CD115M	Class: D	4.67E-08					
	1 Yr:		8.6E-10	8.3E-10	8.4E-10	8.2E-10	5.3E-09
	50 Yr:		8.6E-10	8.3E-10	8.4E-10	8.2E-10	5.3E-09
CD115	Class: D	3.31E-07					
	1 Yr:		8.6E-11	6.4E-11	6.8E-11	5.2E-11	3.6E-10
	50 Yr:		8.6E-11	6.4E-11	6.8E-11	5.2E-11	3.6E-10
IN111	Class: D	5.30E-07					
	1 Yr:		4.6E-11	1.2E-10	1.6E-10	3.0E-11	1.3E-10
	50 Yr:		4.6E-11	1.2E-10	1.6E-10	3.0E-11	1.3E-10
IN114M	Class: D	1.23E-07					
	1 Yr:		1.6E-09	2.3E-08	4.3E-08	1.5E-09	9.3E-09
	50 Yr:		1.6E-09	2.3E-08	4.3E-08	1.5E-09	9.3E-09
IN115M	Class: D	2.17E-07					
	1 Yr:		1.6E-11	1.0E-11	1.6E-11	2.9E-12	2.4E-11
	50 Yr:		1.6E-11	1.0E-11	1.6E-11	2.9E-12	2.4E-11
SN117M	Class: W	1.93E-07					
	1 Yr:		1.9E-08	9.5E-10	1.1E-10	2.4E-11	2.4E-09
	50 Yr:		1.9E-08	9.5E-10	1.1E-10	2.4E-11	2.4E-09
SN119M	Class: W	2.23E-09					
	1 Yr:		1.7E-08	8.0E-10	2.7E-10	3.9E-11	2.2E-09

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             50 Yr:            1.7E-08   8.0E-10   2.7E-10   3.9E-11   2.2E-09
SN121M  Class: W     1.66E-09
              1 Yr:            3.4E-08   3.2E-09   1.1E-09   1.5E-10   4.5E-09
             50 Yr:            3.4E-08   3.2E-09   1.1E-09   1.5E-10   4.5E-09
SN121   Class: W     1.23E-09
              1 Yr:            1.5E-09   4.2E-11   3.6E-12   3.3E-13   2.3E-10
             50 Yr:            1.5E-09   4.2E-11   3.6E-12   3.3E-13   2.3E-10
SN123   Class: W     2.20E-08
              1 Yr:            6.2E-08   2.3E-09   8.5E-10   1.1E-10   8.1E-09
             50 Yr:            6.2E-08   2.3E-09   8.5E-10   1.1E-10   8.1E-09
SN125   Class: W     4.86E-07
              1 Yr:            2.0E-08   5.8E-10   3.5E-10   5.0E-11   3.1E-09
             50 Yr:            2.0E-08   5.8E-10   3.5E-10   5.0E-11   3.1E-09
SN126   Class: W     5.83E-08
              1 Yr:            1.8E-07   2.8E-08   1.5E-08   4.7E-09   2.8E-08
             50 Yr:            1.8E-07   2.8E-08   1.5E-08   4.7E-09   2.8E-08
SB124   Class: W     2.72E-06
              1 Yr:            4.4E-08   1.9E-09   1.2E-09   6.6E-10   6.4E-09
             50 Yr:            4.4E-08   1.9E-09   1.2E-09   6.6E-10   6.4E-09
SB125   Class: W     5.90E-07
              1 Yr:            3.2E-08   8.7E-09   1.7E-09   5.5E-10   4.8E-09
             50 Yr:            3.2E-08   8.7E-09   1.7E-09   5.5E-10   4.8E-09
SB126M  Class: W     2.21E-06
              1 Yr:            4.7E-11   9.6E-13   1.1E-12   9.6E-13   1.9E-11
             50 Yr:            4.7E-11   9.6E-13   1.1E-12   9.6E-13   1.9E-11
SB126   Class: W     4.04E-06
              1 Yr:            1.7E-08   6.5E-10   6.5E-10   3.6E-10   2.9E-09
             50 Yr:            1.7E-08   6.5E-10   6.5E-10   3.6E-10   2.9E-09
SB127   Class: W     9.84E-07
              1 Yr:            1.1E-08   1.2E-10   1.2E-10   4.2E-11   1.7E-09
             50 Yr:            1.1E-08   1.2E-10   1.2E-10   4.2E-11   1.7E-09
TE123M  Class: W     1.84E-07
              1 Yr:            3.0E-08   1.1E-08   1.1E-09   4.1E-10   4.0E-09
             50 Yr:            3.0E-08   1.1E-08   1.1E-09   4.1E-10   4.0E-09
TE125M  Class: W     1.06E-08
              1 Yr:            2.6E-08   4.8E-09   4.2E-10   2.6E-10   3.4E-09
             50 Yr:            2.6E-08   4.8E-09   4.2E-10   2.6E-10   3.4E-09
TE127M  Class: W     3.56E-09
              1 Yr:            5.6E-08   9.0E-09   2.3E-09   8.6E-10   7.4E-09
             50 Yr:            5.6E-08   9.0E-09   2.3E-09   8.6E-10   7.4E-09
TE127   Class: W     1.05E-08
              1 Yr:            7.5E-10   1.7E-12   1.7E-12   2.8E-12   1.3E-10
             50 Yr:            7.5E-10   1.7E-12   1.7E-12   2.8E-12   1.3E-10
TE129M  Class: W     4.92E-08
              1 Yr:            4.8E-08   2.7E-09   1.2E-09   1.0E-09   6.5E-09
             50 Yr:            4.8E-08   2.7E-09   1.2E-09   1.0E-09   6.5E-09
TE129   Class: W     9.05E-08
              1 Yr:            1.5E-10   3.6E-13   3.5E-13   3.5E-13   3.7E-11
             50 Yr:            1.5E-10   3.6E-13   3.5E-13   3.5E-13   3.7E-11
TE131M  Class: W     2.07E-06
              1 Yr:            4.6E-09   1.2E-10   8.8E-11   2.7E-09   1.1E-09
             50 Yr:            4.6E-09   1.2E-10   8.8E-11   2.7E-09   1.1E-09
TE131   Class: W     6.09E-07
              1 Yr:            9.3E-11   5.3E-13   5.2E-13   4.8E-11   2.9E-11
             50 Yr:            9.3E-11   5.3E-13   5.2E-13   4.8E-11   2.9E-11
TE132   Class: W     2.95E-07
              1 Yr:            1.0E-08   2.9E-10   2.2E-10   4.3E-09   2.1E-09
             50 Yr:            1.0E-08   2.9E-10   2.2E-10   4.3E-09   2.1E-09
TE133M  Class: W     3.41E-06
              1 Yr:            2.6E-10   4.4E-12   5.5E-12   1.6E-10   8.9E-11
             50 Yr:            2.6E-10   4.4E-12   5.5E-12   1.6E-10   8.9E-11
TE133   Class: W     1.37E-06
              1 Yr:            5.3E-11   5.1E-13   5.8E-13   3.6E-11   2.0E-11
             50 Yr:            5.3E-11   5.1E-13   5.8E-13   3.6E-11   2.0E-11
TE134   Class: W     1.24E-06
              1 Yr:            2.1E-10   4.1E-12   5.1E-12   2.6E-11   6.7E-11
             50 Yr:            2.1E-10   4.1E-12   5.1E-12   2.6E-11   6.7E-11
I 125   Class: D     1.19E-08
              1 Yr:            1.5E-11   5.8E-11   1.1E-11   1.0E-07   5.2E-09
             50 Yr:            1.5E-11   5.8E-11   1.1E-11   1.0E-07   5.2E-09
I 129   Class: D     8.92E-09
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	1 Yr:		6.2E-11	1.4E-10	4.8E-11	7.2E-07	3.6E-08
	50 Yr:		6.2E-11	1.4E-10	4.8E-11	7.2E-07	3.6E-08
I 130	Class: D	3.05E-06					
	1 Yr:		5.6E-11	3.6E-11	3.3E-11	1.3E-08	6.8E-10
	50 Yr:		5.6E-11	3.6E-11	3.3E-11	1.3E-08	6.8E-10
I 131	Class: D	5.33E-07					
	1 Yr:		6.0E-11	4.9E-11	3.7E-11	1.5E-07	7.4E-09
	50 Yr:		6.0E-11	4.9E-11	3.7E-11	1.5E-07	7.4E-09
I 132	Class: D	3.31E-06					
	1 Yr:		3.6E-11	1.2E-11	1.2E-11	1.4E-09	9.4E-11
	50 Yr:		3.6E-11	1.2E-11	1.2E-11	1.4E-09	9.4E-11
I 133	Class: D	8.70E-07					
	1 Yr:		4.2E-11	2.0E-11	1.9E-11	2.9E-08	1.5E-09
	50 Yr:		4.2E-11	2.0E-11	1.9E-11	2.9E-08	1.5E-09
I 134	Class: D	3.85E-06					
	1 Yr:		3.0E-11	5.8E-12	5.5E-12	2.6E-10	4.5E-11
	50 Yr:		3.0E-11	5.8E-12	5.5E-12	2.6E-10	4.5E-11
I 135	Class: D	2.38E-06					
	1 Yr:		4.0E-11	1.8E-11	1.7E-11	5.8E-09	3.2E-10
	50 Yr:		4.0E-11	1.8E-11	1.7E-11	5.8E-09	3.2E-10
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		2.4E-11	2.8E-12	2.4E-12	2.4E-12	1.4E-11
	50 Yr:		2.4E-11	2.8E-12	2.4E-12	2.4E-12	1.4E-11
CS134	Class: D	2.23E-06					
	1 Yr:		6.0E-09	6.8E-09	6.4E-09	6.3E-09	6.7E-09
	50 Yr:		6.0E-09	6.8E-09	6.4E-09	6.3E-09	6.7E-09
CS135	Class: D	3.00E-10					
	1 Yr:		6.7E-10	6.5E-10	6.5E-10	6.5E-10	6.9E-10
	50 Yr:		6.7E-10	6.5E-10	6.5E-10	6.5E-10	6.9E-10
CS136	Class: D	3.13E-06					
	1 Yr:		9.7E-10	1.1E-09	9.9E-10	1.0E-09	1.2E-09
	50 Yr:		9.7E-10	1.1E-09	9.9E-10	1.0E-09	1.2E-09
CS137	Class: D	2.93E-09					
	1 Yr:		4.3E-09	4.7E-09	4.5E-09	4.4E-09	4.7E-09
	50 Yr:		4.3E-09	4.7E-09	4.5E-09	4.4E-09	4.7E-09
CS138	Class: D	3.63E-06					
	1 Yr:		3.1E-11	4.1E-12	3.9E-12	4.3E-12	2.5E-11
	50 Yr:		3.1E-11	4.1E-12	3.9E-12	4.3E-12	2.5E-11
BA139	Class: D	8.04E-08					
	1 Yr:		2.9E-11	1.2E-11	1.2E-11	1.7E-12	3.4E-11
	50 Yr:		2.9E-11	1.2E-11	1.2E-11	1.7E-12	3.4E-11
BA140	Class: D	2.55E-07					
	1 Yr:		1.5E-10	2.1E-09	1.5E-09	1.2E-10	1.0E-09
	50 Yr:		1.5E-10	2.1E-09	1.5E-09	1.2E-10	1.0E-09
BA141	Class: D	1.24E-06					
	1 Yr:		2.4E-11	6.0E-12	5.6E-12	1.2E-12	2.1E-11
	50 Yr:		2.4E-11	6.0E-12	5.6E-12	1.2E-12	2.1E-11
BA142	Class: D	1.53E-06					
	1 Yr:		1.8E-11	3.1E-12	3.3E-12	1.3E-12	1.5E-11
	50 Yr:		1.8E-11	3.1E-12	3.3E-12	1.3E-12	1.5E-11

LA140	Class: D	3.50E-06					
	1 Yr:		1.8E-10	2.7E-10	3.0E-10	9.0E-11	5.7E-10
	50 Yr:		1.8E-10	2.7E-10	3.0E-10	9.0E-11	5.7E-10
LA141	Class: D	9.08E-08					
	1 Yr:		3.7E-11	7.4E-11	2.3E-11	8.1E-12	6.3E-11
	50 Yr:		3.7E-11	7.4E-11	2.3E-11	8.1E-12	6.3E-11
LA142	Class: D	4.32E-06					
	1 Yr:		3.7E-11	1.2E-11	1.2E-11	9.6E-12	5.2E-11
	50 Yr:		3.7E-11	1.2E-11	1.2E-11	9.6E-12	5.2E-11
CE141	Class: Y	9.81E-08					
	1 Yr:		3.0E-08	1.1E-10	3.7E-11	2.3E-11	3.8E-09
	50 Yr:		3.0E-08	1.1E-10	3.7E-11	2.3E-11	3.8E-09
CE143	Class: Y	3.82E-07					
	1 Yr:		5.0E-09	1.4E-11	1.5E-11	6.7E-12	8.3E-10
	50 Yr:		5.0E-09	1.4E-11	1.5E-11	6.7E-12	8.3E-10
CE144	Class: Y	2.41E-08					
	1 Yr:		4.2E-07	2.1E-09	1.2E-09	1.4E-10	5.3E-08
	50 Yr:		4.2E-07	2.1E-09	1.2E-09	1.4E-10	5.3E-08
PR143	Class: Y	6.12E-09					
	1 Yr:		1.8E-08	2.0E-12	2.0E-12	1.3E-14	2.4E-09
	50 Yr:		1.8E-08	2.0E-12	2.0E-12	1.3E-14	2.4E-09
PR144M	Class: Y	6.97E-09					
	1 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
	50 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
PR144	Class: Y	8.36E-08					
	1 Yr:		5.7E-11	1.4E-14	1.6E-14	1.6E-14	1.8E-11
	50 Yr:		5.7E-11	1.4E-14	1.6E-14	1.6E-14	1.8E-11
ND147	Class: Y	1.81E-07					
	1 Yr:		1.8E-08	9.9E-11	3.4E-11	1.6E-11	2.4E-09
	50 Yr:		1.8E-08	9.9E-11	3.4E-11	1.6E-11	2.4E-09
PM147	Class: Y	2.73E-10					
	1 Yr:		3.9E-08	4.9E-09	4.0E-10	4.0E-14	4.9E-09
	50 Yr:		3.9E-08	4.9E-09	4.0E-10	4.0E-14	4.9E-09
PM148M	Class: Y	2.84E-06					
	1 Yr:		3.9E-08	8.3E-10	1.0E-09	7.0E-10	5.8E-09
	50 Yr:		3.9E-08	8.3E-10	1.0E-09	7.0E-10	5.8E-09
PM148	Class: Y	8.70E-07					
	1 Yr:		1.3E-08	4.5E-11	6.4E-11	3.8E-11	2.2E-09
	50 Yr:		1.3E-08	4.5E-11	6.4E-11	3.8E-11	2.2E-09
PM149	Class: Y	2.24E-08					
	1 Yr:		4.3E-09	1.0E-12	1.1E-12	3.8E-13	7.3E-10
	50 Yr:		4.3E-09	1.0E-12	1.1E-12	3.8E-13	7.3E-10
PM151	Class: Y	4.42E-07					
	1 Yr:		2.7E-09	1.4E-11	1.5E-11	7.0E-12	4.7E-10
	50 Yr:		2.7E-09	1.4E-11	1.5E-11	7.0E-12	4.7E-10
SM147	Class: W	0.00E00					
	1 Yr:		2.4E-07	1.4E-05	1.1E-06	1.6E-11	9.6E-06
	50 Yr:		2.4E-07	1.4E-05	1.1E-06	1.6E-11	9.6E-06
SM151	Class: W	7.79E-13					
	1 Yr:		3.1E-09	1.1E-07	8.7E-09	1.5E-13	4.0E-09
	50 Yr:		3.1E-09	1.1E-07	8.7E-09	1.5E-13	4.0E-09
SM153	Class: W	6.46E-08					
	1 Yr:		4.0E-09	6.3E-11	2.3E-11	2.2E-12	6.3E-10
	50 Yr:		4.0E-09	6.3E-11	2.3E-11	2.2E-12	6.3E-10
EU152	Class: W	1.67E-06					
	1 Yr:		6.3E-08	2.0E-07	7.1E-08	8.3E-09	4.2E-08
	50 Yr:		6.3E-08	2.0E-07	7.1E-08	8.3E-09	4.2E-08
EU154	Class: W	1.82E-06					
	1 Yr:		1.0E-07	4.1E-07	9.2E-08	7.5E-09	5.3E-08
	50 Yr:		1.0E-07	4.1E-07	9.2E-08	7.5E-09	5.3E-08
EU155	Class: W	6.78E-08					
	1 Yr:		1.9E-08	1.2E-07	1.0E-08	2.6E-10	7.0E-09
	50 Yr:		1.9E-08	1.2E-07	1.0E-08	2.6E-10	7.0E-09
EU156	Class: W	2.02E-06					
	1 Yr:		2.2E-08	1.3E-09	6.3E-10	1.9E-10	3.4E-09
	50 Yr:		2.2E-08	1.3E-09	6.3E-10	1.9E-10	3.4E-09
GD153	Class: D	9.84E-08					
	1 Yr:		7.1E-10	4.9E-08	4.8E-09	1.9E-10	2.1E-09
	50 Yr:		7.1E-10	4.9E-08	4.8E-09	1.9E-10	2.1E-09
TB160	Class: W	1.64E-06					
	1 Yr:		4.6E-08	1.4E-08	2.9E-09	5.6E-10	7.0E-09

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             50 Yr:            4.6E-08   1.4E-08   2.9E-09   5.6E-10   7.0E-09
HO166M  Class: W     2.48E-06
              1 Yr:            1.2E-07   7.2E-07   1.5E-07   2.1E-08   1.2E-07
             50 Yr:            1.2E-07   7.2E-07   1.5E-07   2.1E-08   1.2E-07
W 181   Class: D     3.69E-08
              1 Yr:            4.3E-12   5.2E-11   1.6E-11   2.8E-12   2.7E-11
             50 Yr:            4.3E-12   5.2E-11   1.6E-11   2.8E-12   2.7E-11
W 187   Class: D     6.72E-07
              1 Yr:            3.8E-11   5.5E-11   2.5E-11   1.2E-11   1.9E-10
             50 Yr:            3.8E-11   5.5E-11   2.5E-11   1.2E-11   1.9E-10
W 185   Class: D     1.57E-09
              1 Yr:            2.1E-11   1.3E-10   4.6E-11   2.5E-12   1.2E-10
             50 Yr:            2.1E-11   1.3E-10   4.6E-11   2.5E-12   1.2E-10
RE187   Class: W     0.00E00
              1 Yr:            3.8E-11   1.5E-13   1.5E-13   3.8E-12   6.3E-12
             50 Yr:            3.8E-11   1.5E-13   1.5E-13   3.8E-12   6.3E-12
IR192   Class: Y     1.14E-06
              1 Yr:            4.9E-08   5.7E-10   6.6E-10   4.7E-10   6.6E-09
             50 Yr:            4.9E-08   5.7E-10   6.6E-10   4.7E-10   6.6E-09
HG203   Class: D     3.28E-07
              1 Yr:            3.1E-10   3.7E-10   3.1E-10   2.9E-10   4.7E-10
             50 Yr:            3.1E-10   3.7E-10   3.1E-10   2.9E-10   4.7E-10
RN222   NobleGas     5.61E-10
              1 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
             50 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
TH227   Class: Y     1.40E-07
              1 Yr:            8.6E-05   7.4E-08   6.4E-09   2.9E-10   1.0E-05
             50 Yr:            8.6E-05   7.4E-08   6.4E-09   2.9E-10   1.0E-05
TH228   Class: Y     2.56E-09
              1 Yr:            3.3E-04   2.4E-05   1.9E-06   6.9E-08   4.0E-05
             50 Yr:            3.3E-04   2.4E-05   1.9E-06   6.9E-08   4.0E-05
TH229   Class: Y     1.06E-07
              1 Yr:            5.0E-04   5.1E-04   2.5E-05   1.7E-06   7.1E-05
             50 Yr:            5.0E-04   5.1E-04   2.5E-05   1.7E-06   7.1E-05
TH230   Class: Y     4.70E-10
              1 Yr:            7.7E-05   2.8E-04   1.0E-05   3.0E-07   1.4E-05
             50 Yr:            7.7E-05   2.8E-04   1.0E-05   3.0E-07   1.4E-05
TH231   Class: Y     1.45E-08
              1 Yr:            2.2E-09   5.6E-11   2.8E-12   3.6E-13   3.3E-10
             50 Yr:            2.2E-09   5.6E-11   2.8E-12   3.6E-13   3.3E-10
TH232   Class: Y     2.29E-10
              1 Yr:            1.6E-04   2.9E-04   1.2E-05   8.2E-07   2.5E-05
             50 Yr:            1.6E-04   2.9E-04   1.2E-05   8.2E-07   2.5E-05
TH234   Class: Y     9.30E-09
              1 Yr:            5.8E-08   7.4E-11   4.4E-11   6.7E-12   7.7E-09
             50 Yr:            5.8E-08   7.4E-11   4.4E-11   6.7E-12   7.7E-09
RA223   Class: W     1.73E-07
              1 Yr:            6.2E-05   7.8E-07   7.5E-08   3.4E-09   7.4E-06
             50 Yr:            6.2E-05   7.8E-07   7.5E-08   3.4E-09   7.4E-06
RA224   Class: W     1.36E-08
              1 Yr:            2.5E-05   4.1E-07   4.0E-08   2.3E-09   3.0E-06
             50 Yr:            2.5E-05   4.1E-07   4.0E-08   2.3E-09   3.0E-06
RA225   Class: W     7.60E-09
              1 Yr:            5.2E-05   2.2E-06   2.0E-07   6.4E-09   6.3E-06
             50 Yr:            5.2E-05   2.2E-06   2.0E-07   6.4E-09   6.3E-06
RA226   Class: W     8.96E-09
              1 Yr:            2.8E-05   7.4E-06   5.2E-07   2.4E-08   3.5E-06
             50 Yr:            2.8E-05   7.4E-06   5.2E-07   2.4E-08   3.5E-06
RA228   Class: W     0.00E00
              1 Yr:            9.7E-06   5.6E-05   4.7E-06   2.1E-07   2.6E-06
             50 Yr:            9.7E-06   5.6E-05   4.7E-06   2.1E-07   2.6E-06
PB210   Class: D     1.42E-09
              1 Yr:            1.2E-07   2.9E-05   3.2E-06   1.2E-07   9.1E-07
             50 Yr:            1.2E-07   2.9E-05   3.2E-06   1.2E-07   9.1E-07
PB212   Class: D     1.97E-07
              1 Yr:            8.7E-09   8.5E-08   1.1E-08   3.4E-09   1.8E-08
             50 Yr:            8.7E-09   8.5E-08   1.1E-08   3.4E-09   1.8E-08
BI210   Class: W     8.14E-09
              1 Yr:            7.7E-07   4.7E-11   4.7E-11   4.7E-11   9.3E-08
             50 Yr:            7.7E-07   4.7E-11   4.7E-11   4.7E-11   9.3E-08
BI212   Class: W     2.83E-07
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              1 Yr:            2.0E-07   2.1E-11   2.1E-11   2.1E-11   3.1E-08
             50 Yr:            2.0E-07   2.1E-11   2.1E-11   2.1E-11   3.1E-08
PO210   Class: W     1.23E-11
              1 Yr:            2.6E-05   2.8E-07   4.6E-07   4.9E-08   3.3E-06
             50 Yr:            2.6E-05   2.8E-07   4.6E-07   4.9E-08   3.3E-06
U 232   Class: Y     3.72E-10
              1 Yr:            3.0E-04   4.1E-05   3.3E-06   2.0E-07   3.7E-05
             50 Yr:            3.0E-04   4.1E-05   3.3E-06   2.0E-07   3.7E-05
U 233   Class: Y     4.48E-10
              1 Yr:            8.0E-05   8.0E-07   6.8E-08   1.8E-08   9.6E-06
             50 Yr:            8.0E-05   8.0E-07   6.8E-08   1.8E-08   9.6E-06
U 234   Class: Y     1.93E-10
              1 Yr:            7.8E-05   5.0E-07   5.2E-08   1.6E-08   9.4E-06
             50 Yr:            7.8E-05   5.0E-07   5.2E-08   1.6E-08   9.4E-06
U 235   Class: Y     2.04E-07
              1 Yr:            7.0E-05   4.8E-07   5.0E-08   1.6E-08   8.5E-06
             50 Yr:            7.0E-05   4.8E-07   5.0E-08   1.6E-08   8.5E-06
U 236   Class: Y     1.22E-10
              1 Yr:            7.3E-05   4.8E-07   4.9E-08   1.5E-08   8.7E-06
             50 Yr:            7.3E-05   4.8E-07   4.9E-08   1.5E-08   8.7E-06
U 237   Class: Y     1.67E-07
              1 Yr:            1.4E-08   3.4E-11   1.9E-11   1.1E-11   1.9E-09
             50 Yr:            1.4E-08   3.4E-11   1.9E-11   1.1E-11   1.9E-09
U 238   Class: Y     7.92E-11
              1 Yr:            6.7E-05   4.6E-07   4.9E-08   1.5E-08   8.0E-06
             50 Yr:            6.7E-05   4.6E-07   4.9E-08   1.5E-08   8.0E-06
U 240   Class: Y     1.85E-09
              1 Yr:            2.9E-09   5.1E-11   1.1E-11   4.4E-12   5.8E-10
             50 Yr:            2.9E-09   5.1E-11   1.1E-11   4.4E-12   5.8E-10
PA231   Class: Y     4.95E-08
              1 Yr:            1.5E-04   6.0E-04   2.4E-05   1.3E-06   2.9E-05
             50 Yr:            1.5E-04   6.0E-04   2.4E-05   1.3E-06   2.9E-05
PA233   Class: Y     2.70E-07
              1 Yr:            3.0E-08   1.8E-10   8.3E-11   5.0E-11   3.9E-09
             50 Yr:            3.0E-08   1.8E-10   8.3E-11   5.0E-11   3.9E-09
PA234   Class: Y     2.75E-06
              1 Yr:            1.8E-09   1.9E-11   2.6E-11   1.4E-11   4.2E-10
             50 Yr:            1.8E-09   1.9E-11   2.6E-11   1.4E-11   4.2E-10
AC225   Class: Y     2.01E-08
              1 Yr:            7.1E-05   3.8E-08   4.7E-09   2.0E-09   8.5E-06
             50 Yr:            7.1E-05   3.8E-08   4.7E-09   2.0E-09   8.5E-06
AC227   Class: Y     1.62E-10
              1 Yr:            4.1E-04   1.9E-04   1.0E-05   9.5E-07   5.5E-05
             50 Yr:            4.1E-04   1.9E-04   1.0E-05   9.5E-07   5.5E-05
AC228   Class: Y     1.42E-06
              1 Yr:            1.2E-07   8.6E-09   6.8E-10   3.2E-11   1.5E-08
             50 Yr:            1.2E-07   8.6E-09   6.8E-10   3.2E-11   1.5E-08
FR223   Class: D     6.97E-08
              1 Yr:            8.6E-10   8.0E-10   8.0E-10   8.0E-10   9.0E-10
             50 Yr:            8.6E-10   8.0E-10   8.0E-10   8.0E-10   9.0E-10
NP237   Class: W     2.81E-08
              1 Yr:            2.9E-05   1.0E-03   3.9E-05   1.3E-06   2.3E-05
             50 Yr:            2.9E-05   1.0E-03   3.9E-05   1.3E-06   2.3E-05
NP238   Class: W     8.07E-07
              1 Yr:            5.5E-09   6.8E-08   2.8E-09   1.0E-10   2.1E-09
             50 Yr:            5.5E-09   6.8E-08   2.8E-09   1.0E-10   2.1E-09
NP239   Class: W     2.19E-07
              1 Yr:            6.3E-09   5.2E-10   4.5E-11   8.2E-12   9.3E-10
             50 Yr:            6.3E-09   5.2E-10   4.5E-11   8.2E-12   9.3E-10
PU236   Class: Y     1.48E-10
              1 Yr:            7.4E-05   5.1E-05   2.8E-06   8.8E-08   1.1E-05
             50 Yr:            7.4E-05   5.1E-05   2.8E-06   8.8E-08   1.1E-05
PU237   Class: Y     5.58E-08
              1 Yr:            2.9E-09   7.4E-11   2.8E-11   1.8E-11   3.9E-10
             50 Yr:            2.9E-09   7.4E-11   2.8E-11   1.8E-11   3.9E-10
PU238   Class: Y     1.11E-10
              1 Yr:            9.3E-05   1.6E-04   8.3E-06   2.8E-07   1.6E-05
             50 Yr:            9.3E-05   1.6E-04   8.3E-06   2.8E-07   1.6E-05
PU239   Class: Y     1.10E-10
              1 Yr:            8.7E-05   1.8E-04   9.1E-06   3.2E-07   1.6E-05
             50 Yr:            8.7E-05   1.8E-04   9.1E-06   3.2E-07   1.6E-05
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PU240	Class: Y	1.08E-10					
	1 Yr:		8.8E-05	1.8E-04	9.1E-06	3.2E-07	1.6E-05
	50 Yr:		8.8E-05	1.8E-04	9.1E-06	3.2E-07	1.6E-05
PU241	Class: Y	2.00E-12					
	1 Yr:		4.6E-07	4.1E-06	1.8E-07	7.1E-09	1.8E-07
	50 Yr:		4.6E-07	4.1E-06	1.8E-07	7.1E-09	1.8E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		8.1E-05	1.8E-04	8.7E-06	3.0E-07	1.5E-05
	50 Yr:		8.1E-05	1.8E-04	8.7E-06	3.0E-07	1.5E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		4.7E-10	1.5E-11	9.9E-13	1.6E-13	8.7E-11
	50 Yr:		4.7E-10	1.5E-11	9.9E-13	1.6E-13	8.7E-11
PU244	Class: Y	6.56E-11					
	1 Yr:		7.5E-05	1.6E-04	8.2E-06	2.9E-07	1.4E-05
	50 Yr:		7.5E-05	1.6E-04	8.2E-06	2.9E-07	1.4E-05
AM241	Class: W	2.13E-08					
	1 Yr:		3.7E-05	1.7E-03	5.8E-05	2.9E-06	4.2E-05
	50 Yr:		3.7E-05	1.7E-03	5.8E-05	2.9E-06	4.2E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		8.8E-06	1.7E-03	5.5E-05	2.9E-06	3.7E-05
	50 Yr:		8.8E-06	1.7E-03	5.5E-05	2.9E-06	3.7E-05
AM242	Class: W	1.93E-08					
	1 Yr:		1.2E-07	9.2E-08	6.3E-09	1.2E-10	1.7E-08
	50 Yr:		1.2E-07	9.2E-08	6.3E-09	1.2E-10	1.7E-08
AM243	Class: W	5.87E-08					
	1 Yr:		3.5E-05	1.7E-03	5.7E-05	2.9E-06	4.1E-05
	50 Yr:		3.5E-05	1.7E-03	5.7E-05	2.9E-06	4.1E-05
CM242	Class: W	1.27E-10					
	1 Yr:		3.5E-05	2.7E-05	1.9E-06	3.5E-08	5.2E-06
	50 Yr:		3.5E-05	2.7E-05	1.9E-06	3.5E-08	5.2E-06
CM243	Class: W	1.67E-07					
	1 Yr:		4.0E-05	1.2E-03	4.5E-05	1.7E-06	3.2E-05
	50 Yr:		4.0E-05	1.2E-03	4.5E-05	1.7E-06	3.2E-05
CM244	Class: W	1.08E-10					
	1 Yr:		3.9E-05	9.2E-04	3.9E-05	1.3E-06	2.7E-05
	50 Yr:		3.9E-05	9.2E-04	3.9E-05	1.3E-06	2.7E-05
CM245	Class: W	1.10E-07					
	1 Yr:		3.6E-05	1.8E-03	5.9E-05	3.0E-06	4.2E-05
	50 Yr:		3.6E-05	1.8E-03	5.9E-05	3.0E-06	4.2E-05
CM246	Class: W	9.78E-11					
	1 Yr:		3.6E-05	1.7E-03	5.8E-05	2.9E-06	4.2E-05
	50 Yr:		3.6E-05	1.7E-03	5.8E-05	2.9E-06	4.2E-05
CM247	Class: W	4.38E-07					
	1 Yr:		3.2E-05	1.6E-03	5.4E-05	2.7E-06	3.9E-05
	50 Yr:		3.2E-05	1.6E-03	5.4E-05	2.7E-06	3.9E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix A.2
Age 5475

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

			AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D		0.00E00					
	1 Yr:			5.9E-12	5.8E-12	5.8E-12	5.8E-12	6.0E-12
	50 Yr:			5.9E-12	5.8E-12	5.8E-12	5.8E-12	6.0E-12
BE10	Class: Y		4.35E-09					
	1 Yr:			3.0E-07	5.9E-09	2.1E-09	7.0E-11	3.6E-08
	50 Yr:			3.0E-07	5.9E-09	2.1E-09	7.0E-11	3.6E-08
C 14	Class: D		8.20E-11					
	1 Yr:			2.0E-10	1.9E-10	1.9E-10	1.9E-10	1.9E-10
	50 Yr:			2.0E-10	1.9E-10	1.9E-10	1.9E-10	1.9E-10
F 18	Class: D		1.44E-06					
	1 Yr:			3.4E-11	2.6E-11	3.5E-11	3.6E-12	3.4E-11
	50 Yr:			3.4E-11	2.6E-11	3.5E-11	3.6E-12	3.4E-11
NA22	Class: D		3.22E-06					
	1 Yr:			1.1E-09	2.3E-09	1.9E-09	1.1E-09	1.5E-09
	50 Yr:			1.1E-09	2.3E-09	1.9E-09	1.1E-09	1.5E-09
NA24	Class: D		6.56E-06					
	1 Yr:			1.6E-10	2.2E-10	1.8E-10	1.4E-10	3.4E-10
	50 Yr:			1.6E-10	2.2E-10	1.8E-10	1.4E-10	3.4E-10
P 32	Class: D		1.69E-08					
	1 Yr:			3.5E-10	3.3E-09	4.5E-09	3.2E-10	9.9E-10
	50 Yr:			3.5E-10	3.3E-09	4.5E-09	3.2E-10	9.9E-10
P 33	Class: D		4.57E-10					
	1 Yr:			6.4E-11	5.4E-10	2.8E-10	4.5E-11	1.1E-10
	50 Yr:			6.4E-11	5.4E-10	2.8E-10	4.5E-11	1.1E-10
S 35	Class: W		9.81E-11					
	1 Yr:			1.4E-08	9.0E-12	9.0E-12	9.0E-12	1.8E-09
	50 Yr:			1.4E-08	9.0E-12	9.0E-12	9.0E-12	1.8E-09
CL36	Class: D		5.23E-09					
	1 Yr:			3.5E-10	3.2E-10	3.2E-10	3.2E-10	3.9E-10
	50 Yr:			3.5E-10	3.2E-10	3.2E-10	3.2E-10	3.9E-10
AR39	NobleGas		3.63E-09					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas		1.94E-06					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D		2.50E-07					
	1 Yr:			2.0E-09	2.0E-09	2.0E-09	2.0E-09	2.4E-09
	50 Yr:			2.0E-09	2.0E-09	2.0E-09	2.0E-09	2.4E-09
CA41	Class: W		0.00E00					
	1 Yr:			1.8E-10	3.7E-09	8.1E-10	1.1E-12	1.6E-10
	50 Yr:			1.8E-10	3.7E-09	8.1E-10	1.1E-12	1.6E-10
CA45	Class: W		4.83E-10					
	1 Yr:			2.6E-08	4.1E-09	1.5E-09	6.9E-12	3.5E-09
	50 Yr:			2.6E-08	4.1E-09	1.5E-09	6.9E-12	3.5E-09
SC46	Class: Y		2.95E-06					
	1 Yr:			5.6E-08	1.4E-09	1.7E-09	1.4E-09	8.4E-09
	50 Yr:			5.6E-08	1.4E-09	1.7E-09	1.4E-09	8.4E-09
CR51	Class: Y		4.35E-08					
	1 Yr:			2.2E-10	1.4E-11	1.4E-11	1.1E-11	4.5E-11
	50 Yr:			2.2E-10	1.4E-11	1.4E-11	1.1E-11	4.5E-11
MN54	Class: W		1.21E-06					
	1 Yr:			8.0E-09	1.3E-09	1.2E-09	7.6E-10	1.9E-09
	50 Yr:			8.0E-09	1.3E-09	1.2E-09	7.6E-10	1.9E-09
MN56	Class: W		2.58E-06					
	1 Yr:			4.6E-10	8.6E-12	1.1E-11	7.0E-12	1.5E-10
	50 Yr:			4.6E-10	8.6E-12	1.1E-11	7.0E-12	1.5E-10
FE55	Class: W		0.00E00					
	1 Yr:			4.6E-10	9.1E-10	1.5E-09	1.0E-10	4.4E-10

	50 Yr:		4.6E-10	9.1E-10	1.5E-09	1.0E-10	4.4E-10
FE59	Class: W	1.77E-06					
	1 Yr:		2.9E-08	1.3E-09	1.7E-09	8.0E-10	4.6E-09
	50 Yr:		2.9E-08	1.3E-09	1.7E-09	8.0E-10	4.6E-09
CO57	Class: Y	1.57E-07					
	1 Yr:		7.9E-09	4.6E-10	2.6E-10	2.3E-10	1.2E-09
	50 Yr:		7.9E-09	4.6E-10	2.6E-10	2.3E-10	1.2E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		1.6E-08	6.1E-10	7.6E-10	6.0E-10	2.6E-09
	50 Yr:		1.6E-08	6.1E-10	7.6E-10	6.0E-10	2.6E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		2.1E-07	9.9E-09	1.2E-08	1.0E-08	3.4E-08
	50 Yr:		2.1E-07	9.9E-09	1.2E-08	1.0E-08	3.4E-08
NI59	Class: W	0.00E00					
	1 Yr:		5.4E-10	7.9E-11	7.9E-11	7.9E-11	1.4E-10
	50 Yr:		5.4E-10	7.9E-11	7.9E-11	7.9E-11	1.4E-10
NI63	Class: W	0.00E00					
	1 Yr:		2.8E-09	1.9E-10	1.9E-10	1.9E-10	5.3E-10
	50 Yr:		2.8E-09	1.9E-10	1.9E-10	1.9E-10	5.3E-10
NI65	Class: W	8.42E-07					
	1 Yr:		3.9E-10	2.6E-12	3.4E-12	2.4E-12	1.0E-10
	50 Yr:		3.9E-10	2.6E-12	3.4E-12	2.4E-12	1.0E-10
CU64	Class: D	2.69E-07					
	1 Yr:		2.6E-11	1.1E-11	1.1E-11	1.0E-11	4.2E-11
	50 Yr:		2.6E-11	1.1E-11	1.1E-11	1.0E-11	4.2E-11
ZN65	Class: Y	8.61E-07					
	1 Yr:		1.3E-08	8.8E-10	1.1E-09	9.0E-10	2.4E-09
	50 Yr:		1.3E-08	8.8E-10	1.1E-09	9.0E-10	2.4E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		1.7E-09	9.3E-12	1.3E-11	6.2E-12	3.3E-10
	50 Yr:		1.7E-09	9.3E-12	1.3E-11	6.2E-12	3.3E-10
ZN69	Class: Y	6.31E-09					
	1 Yr:		1.6E-10	2.5E-15	2.7E-15	2.0E-15	3.4E-11
	50 Yr:		1.6E-10	2.5E-15	2.7E-15	2.0E-15	3.4E-11
AS76	Class: W	6.50E-07					
	1 Yr:		4.0E-09	3.9E-11	4.3E-11	3.7E-11	8.8E-10
	50 Yr:		4.0E-09	3.9E-11	4.3E-11	3.7E-11	8.8E-10
SE75	Class: W	5.30E-07					
	1 Yr:		6.6E-09	6.0E-10	4.7E-10	3.7E-10	1.3E-09
	50 Yr:		6.6E-09	6.0E-10	4.7E-10	3.7E-10	1.3E-09
SE79	Class: W	1.24E-10					
	1 Yr:		2.4E-08	1.6E-10	1.6E-10	1.6E-10	3.3E-09
	50 Yr:		2.4E-08	1.6E-10	1.6E-10	1.6E-10	3.3E-09
BR82	Class: D	3.85E-06					
	1 Yr:		2.0E-10	1.9E-10	1.8E-10	1.9E-10	4.2E-10
	50 Yr:		2.0E-10	1.9E-10	1.8E-10	1.9E-10	4.2E-10
BR83	Class: D	1.68E-08					
	1 Yr:		3.2E-11	3.4E-12	3.4E-12	3.4E-12	1.9E-11
	50 Yr:		3.2E-11	3.4E-12	3.4E-12	3.4E-12	1.9E-11
BR84	Class: D	2.84E-06					
	1 Yr:		3.7E-11	3.9E-12	3.8E-12	4.0E-12	2.6E-11
	50 Yr:		3.7E-11	3.9E-12	3.8E-12	4.0E-12	2.6E-11
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					

	1 Yr:		9.1E-10	2.9E-09	1.8E-09	8.8E-10	1.1E-09
	50 Yr:		9.1E-10	2.9E-09	1.8E-09	8.8E-10	1.1E-09
RB87	Class: D	1.04E-09					
	1 Yr:		4.9E-10	1.6E-09	9.9E-10	4.6E-10	5.9E-10
	50 Yr:		4.9E-10	1.6E-09	9.9E-10	4.6E-10	5.9E-10
RB88	Class: D	1.05E-06					
	1 Yr:		3.7E-11	2.2E-12	2.1E-12	2.0E-12	1.9E-11
	50 Yr:		3.7E-11	2.2E-12	2.1E-12	2.0E-12	1.9E-11
RB89	Class: D	3.19E-06					
	1 Yr:		2.7E-11	2.6E-12	2.2E-12	2.0E-12	1.6E-11
	50 Yr:		2.7E-11	2.6E-12	2.2E-12	2.0E-12	1.6E-11
SR85	Class: D	7.06E-07					
	1 Yr:		5.8E-10	2.6E-09	2.0E-09	5.2E-10	8.3E-10
	50 Yr:		5.8E-10	2.6E-09	2.0E-09	5.2E-10	8.3E-10
SR89	Class: D	1.38E-08					
	1 Yr:		1.8E-10	1.5E-08	9.7E-09	1.5E-10	1.7E-09
	50 Yr:		1.8E-10	1.5E-08	9.7E-09	1.5E-10	1.7E-09
SR90	Class: D	3.10E-09					
	1 Yr:		7.9E-10	1.2E-06	3.3E-07	7.6E-10	5.3E-08
	50 Yr:		7.9E-10	1.2E-06	3.3E-07	7.6E-10	5.3E-08
SR91	Class: D	1.03E-06					
	1 Yr:		5.7E-11	2.9E-10	2.3E-10	2.4E-11	1.7E-10
	50 Yr:		5.7E-11	2.9E-10	2.3E-10	2.4E-11	1.7E-10
SR92	Class: D	2.02E-06					
	1 Yr:		4.2E-11	2.0E-10	9.9E-11	1.3E-11	1.0E-10
	50 Yr:		4.2E-11	2.0E-10	9.9E-11	1.3E-11	1.0E-10
Y 90	Class: Y	2.50E-08					
	1 Yr:		9.2E-09	1.2E-12	1.7E-12	5.0E-14	1.8E-09
	50 Yr:		9.2E-09	1.2E-12	1.7E-12	5.0E-14	1.8E-09
Y 91M	Class: Y	7.47E-07					
	1 Yr:		5.9E-11	8.1E-13	1.0E-12	7.2E-13	1.4E-11
	50 Yr:		5.9E-11	8.1E-13	1.0E-12	7.2E-13	1.4E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		8.0E-08	6.1E-11	8.4E-11	3.3E-12	1.0E-08
	50 Yr:		8.0E-08	6.1E-11	8.4E-11	3.3E-12	1.0E-08
Y 92	Class: Y	4.16E-07					
	1 Yr:		8.1E-10	1.4E-12	2.0E-12	1.2E-12	2.1E-10
	50 Yr:		8.1E-10	1.4E-12	2.0E-12	1.2E-12	2.1E-10
Y 93	Class: Y	1.67E-07					
	1 Yr:		1.9E-09	1.5E-12	2.0E-12	9.8E-13	5.0E-10
	50 Yr:		1.9E-09	1.5E-12	2.0E-12	9.8E-13	5.0E-10
ZR93	Class: W	0.00E00					
	1 Yr:		3.3E-09	3.7E-07	3.0E-08	3.5E-12	7.8E-09
	50 Yr:		3.3E-09	3.7E-07	3.0E-08	3.5E-12	7.8E-09
ZR95	Class: W	1.06E-06					
	1 Yr:		3.9E-08	1.2E-08	2.7E-09	7.2E-10	5.9E-09
	50 Yr:		3.9E-08	1.2E-08	2.7E-09	7.2E-10	5.9E-09
ZR97	Class: W	2.81E-07					
	1 Yr:		4.2E-09	6.9E-11	9.4E-11	3.1E-11	1.1E-09
	50 Yr:		4.2E-09	6.9E-11	9.4E-11	3.1E-11	1.1E-09
NB93M	Class: Y	9.62E-11					
	1 Yr:		1.5E-08	5.2E-11	2.2E-11	4.9E-12	1.9E-09
	50 Yr:		1.5E-08	5.2E-11	2.2E-11	4.9E-12	1.9E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		3.4E-07	1.2E-08	1.5E-08	1.2E-08	5.2E-08
	50 Yr:		3.4E-07	1.2E-08	1.5E-08	1.2E-08	5.2E-08
NB95M	Class: Y	8.64E-08					
	1 Yr:		7.9E-09	3.9E-11	4.2E-11	3.0E-11	1.1E-09
	50 Yr:		7.9E-09	3.9E-11	4.2E-11	3.0E-11	1.1E-09
NB95	Class: Y	1.10E-06					
	1 Yr:		1.5E-08	2.9E-10	3.6E-10	2.7E-10	2.2E-09
	50 Yr:		1.5E-08	2.9E-10	3.6E-10	2.7E-10	2.2E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		2.1E-10	1.4E-12	1.8E-12	1.2E-12	5.5E-11
	50 Yr:		2.1E-10	1.4E-12	1.8E-12	1.2E-12	5.5E-11
MO93	Class: D	5.46E-10					
	1 Yr:		9.3E-11	2.1E-08	6.2E-09	6.5E-11	1.1E-09
	50 Yr:		9.3E-11	2.1E-08	6.2E-09	6.5E-11	1.1E-09

MO99	Class: D	2.20E-07					
	1 Yr:		1.4E-10	3.4E-10	2.6E-10	9.9E-11	2.7E-10
	50 Yr:		1.4E-10	3.4E-10	2.6E-10	9.9E-11	2.7E-10
TC99M	Class: W	1.66E-07					
	1 Yr:		9.8E-11	2.7E-12	1.9E-12	7.9E-12	2.4E-11
	50 Yr:		9.8E-11	2.7E-12	1.9E-12	7.9E-12	2.4E-11
TC99	Class: W	9.05E-10					
	1 Yr:		4.0E-08	1.1E-11	1.1E-11	3.6E-10	5.0E-09
	50 Yr:		4.0E-08	1.1E-11	1.1E-11	3.6E-10	5.0E-09
TC101	Class: W	4.76E-07					
	1 Yr:		4.3E-11	2.1E-13	1.9E-13	1.7E-12	1.4E-11
	50 Yr:		4.3E-11	2.1E-13	1.9E-13	1.7E-12	1.4E-11
RU103	Class: Y	6.59E-07					
	1 Yr:		2.7E-08	2.0E-10	2.5E-10	1.9E-10	3.6E-09
	50 Yr:		2.7E-08	2.0E-10	2.5E-10	1.9E-10	3.6E-09
RU105	Class: Y	1.13E-06					
	1 Yr:		1.0E-09	6.4E-12	8.8E-12	4.9E-12	2.2E-10
	50 Yr:		1.0E-09	6.4E-12	8.8E-12	4.9E-12	2.2E-10
RU106	Class: Y	0.00E00					
	1 Yr:		5.7E-07	6.1E-10	7.0E-10	6.0E-10	7.0E-08
	50 Yr:		5.7E-07	6.1E-10	7.0E-10	6.0E-10	7.0E-08
RH103M	Class: Y	1.90E-10					
	1 Yr:		2.0E-11	3.4E-15	1.6E-15	8.5E-16	3.2E-12
	50 Yr:		2.0E-11	3.4E-15	1.6E-15	8.5E-16	3.2E-12
RH105	Class: Y	1.10E-07					
	1 Yr:		2.9E-09	4.5E-12	5.3E-12	3.0E-12	4.4E-10
	50 Yr:		2.9E-09	4.5E-12	5.3E-12	3.0E-12	4.4E-10
PD103	Class: Y	1.68E-09					
	1 Yr:		3.9E-09	4.8E-12	1.6E-12	1.6E-13	5.3E-10
	50 Yr:		3.9E-09	4.8E-12	1.6E-12	1.6E-13	5.3E-10
PD107	Class: Y	0.00E00					
	1 Yr:		5.0E-09	4.1E-13	1.8E-13	3.1E-14	6.1E-10
	50 Yr:		5.0E-09	4.1E-13	1.8E-13	3.1E-14	6.1E-10
PD109	Class: Y	1.33E-08					
	1 Yr:		2.8E-09	6.2E-13	3.1E-13	9.7E-14	4.6E-10
	50 Yr:		2.8E-09	6.2E-13	3.1E-13	9.7E-14	4.6E-10
AG110M	Class: D	4.01E-06					
	1 Yr:		5.6E-09	3.7E-09	3.9E-09	2.7E-09	6.4E-09
	50 Yr:		5.6E-09	3.7E-09	3.9E-09	2.7E-09	6.4E-09
AG111	Class: D	4.38E-08					
	1 Yr:		1.4E-10	1.1E-10	1.1E-10	1.0E-10	4.8E-10
	50 Yr:		1.4E-10	1.1E-10	1.1E-10	1.0E-10	4.8E-10
CD109	Class: D	7.22E-09					
	1 Yr:		1.9E-09	2.2E-09	1.4E-09	1.5E-09	9.2E-09
	50 Yr:		1.9E-09	2.2E-09	1.4E-09	1.5E-09	9.2E-09
CD113M	Class: D	2.86E-09					
	1 Yr:		1.8E-08	1.8E-08	1.8E-08	1.8E-08	1.1E-07
	50 Yr:		1.8E-08	1.8E-08	1.8E-08	1.8E-08	1.1E-07
CD115M	Class: D	4.67E-08					
	1 Yr:		1.0E-09	9.8E-10	9.8E-10	9.7E-10	6.4E-09
	50 Yr:		1.0E-09	9.8E-10	9.8E-10	9.7E-10	6.4E-09
CD115	Class: D	3.31E-07					
	1 Yr:		1.1E-10	7.5E-11	7.9E-11	6.1E-11	4.3E-10
	50 Yr:		1.1E-10	7.5E-11	7.9E-11	6.1E-11	4.3E-10
IN111	Class: D	5.30E-07					
	1 Yr:		5.5E-11	1.6E-10	1.9E-10	3.4E-11	1.6E-10
	50 Yr:		5.5E-11	1.6E-10	1.9E-10	3.4E-11	1.6E-10
IN114M	Class: D	1.23E-07					
	1 Yr:		1.9E-09	3.9E-08	5.9E-08	1.7E-09	1.1E-08
	50 Yr:		1.9E-09	3.9E-08	5.9E-08	1.7E-09	1.1E-08
IN115M	Class: D	2.17E-07					
	1 Yr:		2.1E-11	1.6E-11	2.2E-11	3.3E-12	2.8E-11
	50 Yr:		2.1E-11	1.6E-11	2.2E-11	3.3E-12	2.8E-11
SN117M	Class: W	1.93E-07					
	1 Yr:		2.4E-08	9.3E-10	1.4E-10	2.9E-11	3.1E-09
	50 Yr:		2.4E-08	9.3E-10	1.4E-10	2.9E-11	3.1E-09
SN119M	Class: W	2.23E-09					
	1 Yr:		2.0E-08	7.9E-10	3.4E-10	4.4E-11	2.6E-09
	50 Yr:		2.0E-08	7.9E-10	3.4E-10	4.4E-11	2.6E-09
SN121M	Class: W	1.66E-09					
	1 Yr:		4.2E-08	3.0E-09	1.4E-09	1.6E-10	5.5E-09

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             50 Yr:            4.2E-08   3.0E-09   1.4E-09   1.6E-10   5.5E-09
SN121   Class: W     1.23E-09
              1 Yr:            1.9E-09   4.0E-11   5.0E-12   3.9E-13   2.9E-10
             50 Yr:            1.9E-09   4.0E-11   5.0E-12   3.9E-13   2.9E-10
SN123   Class: W     2.20E-08
              1 Yr:            7.2E-08   2.2E-09   1.1E-09   1.3E-10   9.5E-09
             50 Yr:            7.2E-08   2.2E-09   1.1E-09   1.3E-10   9.5E-09
SN125   Class: W     4.86E-07
              1 Yr:            2.3E-08   5.7E-10   4.5E-10   5.8E-11   3.6E-09
             50 Yr:            2.3E-08   5.7E-10   4.5E-10   5.8E-11   3.6E-09
SN126   Class: W     5.83E-08
              1 Yr:            2.1E-07   2.8E-08   1.6E-08   5.0E-09   3.3E-08
             50 Yr:            2.1E-07   2.8E-08   1.6E-08   5.0E-09   3.3E-08
SB124   Class: W     2.72E-06
              1 Yr:            5.3E-08   2.0E-09   1.4E-09   7.4E-10   7.7E-09
             50 Yr:            5.3E-08   2.0E-09   1.4E-09   7.4E-10   7.7E-09
SB125   Class: W     5.90E-07
              1 Yr:            4.0E-08   8.4E-09   1.9E-09   6.1E-10   5.8E-09
             50 Yr:            4.0E-08   8.4E-09   1.9E-09   6.1E-10   5.8E-09
SB126M  Class: W     2.21E-06
              1 Yr:            5.9E-11   1.1E-12   1.2E-12   1.0E-12   2.3E-11
             50 Yr:            5.9E-11   1.1E-12   1.2E-12   1.0E-12   2.3E-11
SB126   Class: W     4.04E-06
              1 Yr:            2.1E-08   7.2E-10   7.3E-10   4.1E-10   3.5E-09
             50 Yr:            2.1E-08   7.2E-10   7.3E-10   4.1E-10   3.5E-09
SB127   Class: W     9.84E-07
              1 Yr:            1.4E-08   1.3E-10   1.5E-10   4.7E-11   2.1E-09
             50 Yr:            1.4E-08   1.3E-10   1.5E-10   4.7E-11   2.1E-09
TE123M  Class: W     1.84E-07
              1 Yr:            3.7E-08   1.0E-08   1.4E-09   5.8E-10   5.0E-09
             50 Yr:            3.7E-08   1.0E-08   1.4E-09   5.8E-10   5.0E-09
TE125M  Class: W     1.06E-08
              1 Yr:            3.3E-08   4.7E-09   5.6E-10   3.9E-10   4.3E-09
             50 Yr:            3.3E-08   4.7E-09   5.6E-10   3.9E-10   4.3E-09
TE127M  Class: W     3.56E-09
              1 Yr:            7.0E-08   8.6E-09   3.0E-09   1.3E-09   9.2E-09
             50 Yr:            7.0E-08   8.6E-09   3.0E-09   1.3E-09   9.2E-09
TE127   Class: W     1.05E-08
              1 Yr:            9.5E-10   1.9E-12   2.2E-12   4.1E-12   1.6E-10
             50 Yr:            9.5E-10   1.9E-12   2.2E-12   4.1E-12   1.6E-10
TE129M  Class: W     4.92E-08
              1 Yr:            5.8E-08   2.6E-09   1.6E-09   1.5E-09   8.0E-09
             50 Yr:            5.8E-08   2.6E-09   1.6E-09   1.5E-09   8.0E-09
TE129   Class: W     9.05E-08
              1 Yr:            1.9E-10   4.1E-13   4.1E-13   4.4E-13   4.4E-11
             50 Yr:            1.9E-10   4.1E-13   4.1E-13   4.4E-13   4.4E-11
TE131M  Class: W     2.07E-06
              1 Yr:            5.8E-09   1.2E-10   1.0E-10   4.1E-09   1.2E-09
             50 Yr:            5.8E-09   1.2E-10   1.0E-10   4.1E-09   1.2E-09
TE131   Class: W     6.09E-07
              1 Yr:            1.2E-10   6.1E-13   5.8E-13   7.3E-11   3.5E-11
             50 Yr:            1.2E-10   6.1E-13   5.8E-13   7.3E-11   3.5E-11
TE132   Class: W     2.95E-07
              1 Yr:            1.3E-08   3.1E-10   2.5E-10   6.6E-09   2.6E-09
             50 Yr:            1.3E-08   3.1E-10   2.5E-10   6.6E-09   2.6E-09
TE133M  Class: W     3.41E-06
              1 Yr:            3.2E-10   5.0E-12   6.1E-12   2.5E-10   1.1E-10
             50 Yr:            3.2E-10   5.0E-12   6.1E-12   2.5E-10   1.1E-10
TE133   Class: W     1.37E-06
              1 Yr:            6.6E-11   5.7E-13   6.5E-13   5.6E-11   2.4E-11
             50 Yr:            6.6E-11   5.7E-13   6.5E-13   5.6E-11   2.4E-11
TE134   Class: W     1.24E-06
              1 Yr:            2.6E-10   4.6E-12   5.7E-12   3.8E-11   8.2E-11
             50 Yr:            2.6E-10   4.6E-12   5.7E-12   3.8E-11   8.2E-11
I 125   Class: D     1.19E-08
              1 Yr:            1.5E-11   5.5E-11   1.1E-11   1.5E-07   7.3E-09
             50 Yr:            1.5E-11   5.5E-11   1.1E-11   1.5E-07   7.3E-09
I 129   Class: D     8.92E-09
              1 Yr:            5.4E-11   1.1E-10   3.7E-11   9.1E-07   4.6E-08
             50 Yr:            5.4E-11   1.1E-10   3.7E-11   9.1E-07   4.6E-08
I 130   Class: D     3.05E-06
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	1 Yr:		6.9E-11	3.9E-11	3.6E-11	1.9E-08	1.0E-09
	50 Yr:		6.9E-11	3.9E-11	3.6E-11	1.9E-08	1.0E-09
I 131	Class: D	5.33E-07					
	1 Yr:		7.3E-11	5.2E-11	4.1E-11	2.2E-07	1.1E-08
	50 Yr:		7.3E-11	5.2E-11	4.1E-11	2.2E-07	1.1E-08
I 132	Class: D	3.31E-06					
	1 Yr:		4.6E-11	1.4E-11	1.3E-11	2.1E-09	1.4E-10
	50 Yr:		4.6E-11	1.4E-11	1.3E-11	2.1E-09	1.4E-10
I 133	Class: D	8.70E-07					
	1 Yr:		5.3E-11	2.2E-11	2.1E-11	4.4E-08	2.3E-09
	50 Yr:		5.3E-11	2.2E-11	2.1E-11	4.4E-08	2.3E-09
I 134	Class: D	3.85E-06					
	1 Yr:		3.8E-11	6.5E-12	6.2E-12	4.0E-10	5.9E-11
	50 Yr:		3.8E-11	6.5E-12	6.2E-12	4.0E-10	5.9E-11
I 135	Class: D	2.38E-06					
	1 Yr:		5.0E-11	2.0E-11	1.9E-11	8.8E-09	4.8E-10
	50 Yr:		5.0E-11	2.0E-11	1.9E-11	8.8E-09	4.8E-10
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		3.2E-11	3.0E-12	2.5E-12	2.6E-12	1.6E-11
	50 Yr:		3.2E-11	3.0E-12	2.5E-12	2.6E-12	1.6E-11
CS134	Class: D	2.23E-06					
	1 Yr:		5.9E-09	6.4E-09	6.0E-09	6.1E-09	6.4E-09
	50 Yr:		5.9E-09	6.4E-09	6.0E-09	6.1E-09	6.4E-09
CS135	Class: D	3.00E-10					
	1 Yr:		6.5E-10	6.3E-10	6.3E-10	6.3E-10	6.8E-10
	50 Yr:		6.5E-10	6.3E-10	6.3E-10	6.3E-10	6.8E-10
CS136	Class: D	3.13E-06					
	1 Yr:		1.1E-09	1.2E-09	1.1E-09	1.1E-09	1.4E-09
	50 Yr:		1.1E-09	1.2E-09	1.1E-09	1.1E-09	1.4E-09
CS137	Class: D	2.93E-09					
	1 Yr:		4.2E-09	4.4E-09	4.2E-09	4.3E-09	4.5E-09
	50 Yr:		4.2E-09	4.4E-09	4.2E-09	4.3E-09	4.5E-09
CS138	Class: D	3.63E-06					
	1 Yr:		3.8E-11	4.6E-12	4.5E-12	4.8E-12	3.0E-11
	50 Yr:		3.8E-11	4.6E-12	4.5E-12	4.8E-12	3.0E-11
BA139	Class: D	8.04E-08					
	1 Yr:		3.5E-11	2.5E-11	2.0E-11	1.2E-12	3.1E-11
	50 Yr:		3.5E-11	2.5E-11	2.0E-11	1.2E-12	3.1E-11
BA140	Class: D	2.55E-07					
	1 Yr:		4.7E-10	8.3E-09	4.7E-09	4.1E-10	1.6E-09
	50 Yr:		4.7E-10	8.3E-09	4.7E-09	4.1E-10	1.6E-09
BA141	Class: D	1.24E-06					
	1 Yr:		2.9E-11	1.4E-11	9.6E-12	1.1E-12	2.1E-11
	50 Yr:		2.9E-11	1.4E-11	9.6E-12	1.1E-12	2.1E-11
BA142	Class: D	1.53E-06					
	1 Yr:		2.2E-11	5.7E-12	5.0E-12	1.3E-12	1.6E-11
	50 Yr:		2.2E-11	5.7E-12	5.0E-12	1.3E-12	1.6E-11
LA140	Class: D	3.50E-06					
	1 Yr:		2.2E-10	2.9E-10	3.6E-10	1.0E-10	6.9E-10
	50 Yr:		2.2E-10	2.9E-10	3.6E-10	1.0E-10	6.9E-10

LA141	Class: D	9.08E-08					
	1 Yr:		4.5E-11	7.3E-11	2.9E-11	9.7E-12	7.5E-11
	50 Yr:		4.5E-11	7.3E-11	2.9E-11	9.7E-12	7.5E-11
LA142	Class: D	4.32E-06					
	1 Yr:		4.6E-11	1.3E-11	1.4E-11	1.1E-11	6.4E-11
	50 Yr:		4.6E-11	1.3E-11	1.4E-11	1.1E-11	6.4E-11
CE141	Class: Y	9.81E-08					
	1 Yr:		3.8E-08	1.3E-10	4.4E-11	2.8E-11	4.7E-09
	50 Yr:		3.8E-08	1.3E-10	4.4E-11	2.8E-11	4.7E-09
CE143	Class: Y	3.82E-07					
	1 Yr:		6.2E-09	1.6E-11	1.7E-11	7.6E-12	1.0E-09
	50 Yr:		6.2E-09	1.6E-11	1.7E-11	7.6E-12	1.0E-09
CE144	Class: Y	2.41E-08					
	1 Yr:		4.6E-07	2.5E-09	1.8E-09	1.6E-10	5.7E-08
	50 Yr:		4.6E-07	2.5E-09	1.8E-09	1.6E-10	5.7E-08
PR143	Class: Y	6.12E-09					
	1 Yr:		2.3E-08	1.9E-12	2.7E-12	1.5E-14	3.0E-09
	50 Yr:		2.3E-08	1.9E-12	2.7E-12	1.5E-14	3.0E-09
PR144M	Class: Y	6.97E-09					
	1 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
	50 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
PR144	Class: Y	8.36E-08					
	1 Yr:		6.8E-11	1.6E-14	1.7E-14	1.7E-14	2.1E-11
	50 Yr:		6.8E-11	1.6E-14	1.7E-14	1.7E-14	2.1E-11
ND147	Class: Y	1.81E-07					
	1 Yr:		2.2E-08	1.0E-10	3.8E-11	1.9E-11	3.0E-09
	50 Yr:		2.2E-08	1.0E-10	3.8E-11	1.9E-11	3.0E-09
PM147	Class: Y	2.73E-10					
	1 Yr:		4.5E-08	4.6E-09	4.2E-10	4.4E-14	5.7E-09
	50 Yr:		4.5E-08	4.6E-09	4.2E-10	4.4E-14	5.7E-09
PM148M	Class: Y	2.84E-06					
	1 Yr:		4.9E-08	9.6E-10	1.1E-09	8.1E-10	7.1E-09
	50 Yr:		4.9E-08	9.6E-10	1.1E-09	8.1E-10	7.1E-09
PM148	Class: Y	8.70E-07					
	1 Yr:		1.6E-08	5.1E-11	7.2E-11	4.3E-11	2.6E-09
	50 Yr:		1.6E-08	5.1E-11	7.2E-11	4.3E-11	2.6E-09
PM149	Class: Y	2.24E-08					
	1 Yr:		5.4E-09	1.1E-12	1.4E-12	4.3E-13	9.0E-10
	50 Yr:		5.4E-09	1.1E-12	1.4E-12	4.3E-13	9.0E-10
PM151	Class: Y	4.42E-07					
	1 Yr:		3.4E-09	1.6E-11	1.7E-11	7.9E-12	5.9E-10
	50 Yr:		3.4E-09	1.6E-11	1.7E-11	7.9E-12	5.9E-10
SM147	Class: W	0.00E00					
	1 Yr:		2.8E-07	1.3E-05	1.1E-06	1.8E-11	9.6E-06
	50 Yr:		2.8E-07	1.3E-05	1.1E-06	1.8E-11	9.6E-06
SM151	Class: W	7.79E-13					
	1 Yr:		3.6E-09	1.0E-07	8.8E-09	1.7E-13	4.0E-09
	50 Yr:		3.6E-09	1.0E-07	8.8E-09	1.7E-13	4.0E-09
SM153	Class: W	6.46E-08					
	1 Yr:		5.0E-09	6.3E-11	3.1E-11	2.7E-12	7.9E-10
	50 Yr:		5.0E-09	6.3E-11	3.1E-11	2.7E-12	7.9E-10
EU152	Class: W	1.67E-06					
	1 Yr:		7.2E-08	1.9E-07	7.1E-08	8.3E-09	4.3E-08
	50 Yr:		7.2E-08	1.9E-07	7.1E-08	8.3E-09	4.3E-08
EU154	Class: W	1.82E-06					
	1 Yr:		1.2E-07	3.9E-07	9.4E-08	7.6E-09	5.6E-08
	50 Yr:		1.2E-07	3.9E-07	9.4E-08	7.6E-09	5.6E-08
EU155	Class: W	6.78E-08					
	1 Yr:		2.3E-08	1.1E-07	1.1E-08	2.7E-10	7.6E-09
	50 Yr:		2.3E-08	1.1E-07	1.1E-08	2.7E-10	7.6E-09
EU156	Class: W	2.02E-06					
	1 Yr:		2.7E-08	1.3E-09	7.7E-10	2.2E-10	4.2E-09
	50 Yr:		2.7E-08	1.3E-09	7.7E-10	2.2E-10	4.2E-09
GD153	Class: D	9.84E-08					
	1 Yr:		8.6E-10	4.8E-08	6.1E-09	2.1E-10	2.5E-09
	50 Yr:		8.6E-10	4.8E-08	6.1E-09	2.1E-10	2.5E-09
TB160	Class: W	1.64E-06					
	1 Yr:		5.7E-08	1.4E-08	3.6E-09	6.4E-10	8.6E-09
	50 Yr:		5.7E-08	1.4E-08	3.6E-09	6.4E-10	8.6E-09
HO166M	Class: W	2.48E-06					
	1 Yr:		1.3E-07	6.9E-07	1.5E-07	2.1E-08	1.2E-07

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             50 Yr:            1.3E-07   6.9E-07   1.5E-07   2.1E-08   1.2E-07
W 181   Class: D     3.69E-08
              1 Yr:            5.4E-12   5.6E-11   2.0E-11   3.1E-12   3.3E-11
             50 Yr:            5.4E-12   5.6E-11   2.0E-11   3.1E-12   3.3E-11
W 187   Class: D     6.72E-07
              1 Yr:            4.8E-11   5.6E-11   3.0E-11   1.4E-11   2.3E-10
             50 Yr:            4.8E-11   5.6E-11   3.0E-11   1.4E-11   2.3E-10
W 185   Class: D     1.57E-09
              1 Yr:            2.7E-11   1.3E-10   6.1E-11   3.0E-12   1.4E-10
             50 Yr:            2.7E-11   1.3E-10   6.1E-11   3.0E-12   1.4E-10
RE187   Class: W     0.00E00
              1 Yr:            4.4E-11   1.7E-13   1.7E-13   5.9E-12   7.5E-12
             50 Yr:            4.4E-11   1.7E-13   1.7E-13   5.9E-12   7.5E-12
IR192   Class: Y     1.14E-06
              1 Yr:            6.1E-08   6.7E-10   7.1E-10   5.5E-10   8.2E-09
             50 Yr:            6.1E-08   6.7E-10   7.1E-10   5.5E-10   8.2E-09
HG203   Class: D     3.28E-07
              1 Yr:            3.6E-10   4.1E-10   3.6E-10   3.4E-10   5.5E-10
             50 Yr:            3.6E-10   4.1E-10   3.6E-10   3.4E-10   5.5E-10
RN222   NobleGas     5.61E-10
              1 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
             50 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
TH227   Class: Y     1.40E-07
              1 Yr:            1.1E-04   1.3E-07   1.2E-08   2.8E-10   1.3E-05
             50 Yr:            1.1E-04   1.3E-07   1.2E-08   2.8E-10   1.3E-05
TH228   Class: Y     2.56E-09
              1 Yr:            3.9E-04   2.6E-05   2.2E-06   5.9E-08   4.7E-05
             50 Yr:            3.9E-04   2.6E-05   2.2E-06   5.9E-08   4.7E-05
TH229   Class: Y     1.06E-07
              1 Yr:            5.4E-04   5.0E-04   2.6E-05   1.7E-06   7.6E-05
             50 Yr:            5.4E-04   5.0E-04   2.6E-05   1.7E-06   7.6E-05
TH230   Class: Y     4.70E-10
              1 Yr:            8.3E-05   2.6E-04   1.0E-05   3.1E-07   1.5E-05
             50 Yr:            8.3E-05   2.6E-04   1.0E-05   3.1E-07   1.5E-05
TH231   Class: Y     1.45E-08
              1 Yr:            2.7E-09   5.5E-11   3.0E-12   4.1E-13   4.1E-10
             50 Yr:            2.7E-09   5.5E-11   3.0E-12   4.1E-13   4.1E-10
TH232   Class: Y     2.29E-10
              1 Yr:            1.6E-04   2.8E-04   1.3E-05   8.8E-07   2.5E-05
             50 Yr:            1.6E-04   2.8E-04   1.3E-05   8.8E-07   2.5E-05
TH234   Class: Y     9.30E-09
              1 Yr:            6.8E-08   8.2E-11   6.4E-11   7.8E-12   9.1E-09
             50 Yr:            6.8E-08   8.2E-11   6.4E-11   7.8E-12   9.1E-09
RA223   Class: W     1.73E-07
              1 Yr:            7.7E-05   3.1E-06   2.1E-07   3.2E-09   9.4E-06
             50 Yr:            7.7E-05   3.1E-06   2.1E-07   3.2E-09   9.4E-06
RA224   Class: W     1.36E-08
              1 Yr:            3.1E-05   1.4E-06   9.2E-08   2.3E-09   3.7E-06
             50 Yr:            3.1E-05   1.4E-06   9.2E-08   2.3E-09   3.7E-06
RA225   Class: W     7.60E-09
              1 Yr:            6.5E-05   5.2E-06   4.4E-07   5.3E-09   7.9E-06
             50 Yr:            6.5E-05   5.2E-06   4.4E-07   5.3E-09   7.9E-06
RA226   Class: W     8.96E-09
              1 Yr:            3.3E-05   3.4E-05   1.5E-06   2.8E-08   4.5E-06
             50 Yr:            3.3E-05   3.4E-05   1.5E-06   2.8E-08   4.5E-06
RA228   Class: W     0.00E00
              1 Yr:            1.2E-05   1.2E-04   1.0E-05   2.7E-07   4.3E-06
             50 Yr:            1.2E-05   1.2E-04   1.0E-05   2.7E-07   4.3E-06
PB210   Class: D     1.42E-09
              1 Yr:            1.8E-07   4.6E-05   4.0E-06   1.8E-07   1.3E-06
             50 Yr:            1.8E-07   4.6E-05   4.0E-06   1.8E-07   1.3E-06
PB212   Class: D     1.97E-07
              1 Yr:            1.0E-08   2.4E-07   1.8E-08   3.1E-09   2.1E-08
             50 Yr:            1.0E-08   2.4E-07   1.8E-08   3.1E-09   2.1E-08
BI210   Class: W     8.14E-09
              1 Yr:            9.3E-07   5.4E-11   5.4E-11   5.4E-11   1.1E-07
             50 Yr:            9.3E-07   5.4E-11   5.4E-11   5.4E-11   1.1E-07
BI212   Class: W     2.83E-07
              1 Yr:            2.5E-07   2.5E-11   2.5E-11   2.4E-11   3.8E-08
             50 Yr:            2.5E-07   2.5E-11   2.5E-11   2.4E-11   3.8E-08
PO210   Class: W     1.23E-11
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              1 Yr:            3.1E-05   4.6E-07   6.2E-07   5.7E-08   4.0E-06
             50 Yr:            3.1E-05   4.6E-07   6.2E-07   5.7E-08   4.0E-06
U 232   Class: Y     3.72E-10
              1 Yr:            3.1E-04   4.6E-05   3.5E-06   1.9E-07   3.8E-05
             50 Yr:            3.1E-04   4.6E-05   3.5E-06   1.9E-07   3.8E-05
U 233   Class: Y     4.48E-10
              1 Yr:            8.7E-05   1.4E-06   8.4E-08   1.8E-08   1.1E-05
             50 Yr:            8.7E-05   1.4E-06   8.4E-08   1.8E-08   1.1E-05
U 234   Class: Y     1.93E-10
              1 Yr:            8.5E-05   1.1E-06   6.6E-08   1.7E-08   1.0E-05
             50 Yr:            8.5E-05   1.1E-06   6.6E-08   1.7E-08   1.0E-05
U 235   Class: Y     2.04E-07
              1 Yr:            7.6E-05   9.9E-07   6.4E-08   1.7E-08   9.2E-06
             50 Yr:            7.6E-05   9.9E-07   6.4E-08   1.7E-08   9.2E-06
U 236   Class: Y     1.22E-10
              1 Yr:            7.9E-05   1.0E-06   6.3E-08   1.6E-08   9.5E-06
             50 Yr:            7.9E-05   1.0E-06   6.3E-08   1.6E-08   9.5E-06
U 237   Class: Y     1.67E-07
              1 Yr:            1.8E-08   4.6E-11   2.2E-11   1.4E-11   2.4E-09
             50 Yr:            1.8E-08   4.6E-11   2.2E-11   1.4E-11   2.4E-09
U 238   Class: Y     7.92E-11
              1 Yr:            7.2E-05   9.5E-07   6.2E-08   1.5E-08   8.7E-06
             50 Yr:            7.2E-05   9.5E-07   6.2E-08   1.5E-08   8.7E-06
U 240   Class: Y     1.85E-09
              1 Yr:            3.6E-09   5.0E-11   1.2E-11   4.9E-12   7.1E-10
             50 Yr:            3.6E-09   5.0E-11   1.2E-11   4.9E-12   7.1E-10
PA231   Class: Y     4.95E-08
              1 Yr:            1.5E-04   5.9E-04   2.4E-05   1.4E-06   3.0E-05
             50 Yr:            1.5E-04   5.9E-04   2.4E-05   1.4E-06   3.0E-05
PA233   Class: Y     2.70E-07
              1 Yr:            3.8E-08   2.0E-10   9.6E-11   6.0E-11   4.9E-09
             50 Yr:            3.8E-08   2.0E-10   9.6E-11   6.0E-11   4.9E-09
PA234   Class: Y     2.75E-06
              1 Yr:            2.3E-09   2.2E-11   2.9E-11   1.6E-11   5.2E-10
             50 Yr:            2.3E-09   2.2E-11   2.9E-11   1.6E-11   5.2E-10
AC225   Class: Y     2.01E-08
              1 Yr:            8.9E-05   5.9E-08   8.7E-09   2.4E-09   1.1E-05
             50 Yr:            8.9E-05   5.9E-08   8.7E-09   2.4E-09   1.1E-05
AC227   Class: Y     1.62E-10
              1 Yr:            4.4E-04   1.8E-04   1.1E-05   9.3E-07   5.9E-05
             50 Yr:            4.4E-04   1.8E-04   1.1E-05   9.3E-07   5.9E-05
AC228   Class: Y     1.42E-06
              1 Yr:            1.4E-07   9.3E-09   8.0E-10   2.9E-11   1.7E-08
             50 Yr:            1.4E-07   9.3E-09   8.0E-10   2.9E-11   1.7E-08
FR223   Class: D     6.97E-08
              1 Yr:            1.0E-09   9.4E-10   9.4E-10   9.4E-10   1.1E-09
             50 Yr:            1.0E-09   9.4E-10   9.4E-10   9.4E-10   1.1E-09
NP237   Class: W     2.81E-08
              1 Yr:            3.4E-05   8.6E-04   3.7E-05   1.7E-06   2.2E-05
             50 Yr:            3.4E-05   8.6E-04   3.7E-05   1.7E-06   2.2E-05
NP238   Class: W     8.07E-07
              1 Yr:            6.7E-09   5.6E-08   2.6E-09   1.3E-10   2.2E-09
             50 Yr:            6.7E-09   5.6E-08   2.6E-09   1.3E-10   2.2E-09
NP239   Class: W     2.19E-07
              1 Yr:            8.1E-09   5.3E-10   5.7E-11   9.7E-12   1.2E-09
             50 Yr:            8.1E-09   5.3E-10   5.7E-11   9.7E-12   1.2E-09
PU236   Class: Y     1.48E-10
              1 Yr:            8.5E-05   4.5E-05   2.6E-06   9.5E-08   1.2E-05
             50 Yr:            8.5E-05   4.5E-05   2.6E-06   9.5E-08   1.2E-05
PU237   Class: Y     5.58E-08
              1 Yr:            3.6E-09   8.4E-11   3.0E-11   2.3E-11   4.8E-10
             50 Yr:            3.6E-09   8.4E-11   3.0E-11   2.3E-11   4.8E-10
PU238   Class: Y     1.11E-10
              1 Yr:            1.0E-04   1.5E-04   7.5E-06   3.0E-07   1.7E-05
             50 Yr:            1.0E-04   1.5E-04   7.5E-06   3.0E-07   1.7E-05
PU239   Class: Y     1.10E-10
              1 Yr:            9.6E-05   1.7E-04   8.5E-06   3.5E-07   1.7E-05
             50 Yr:            9.6E-05   1.7E-04   8.5E-06   3.5E-07   1.7E-05
PU240   Class: Y     1.08E-10
              1 Yr:            9.6E-05   1.7E-04   8.5E-06   3.5E-07   1.7E-05
             50 Yr:            9.6E-05   1.7E-04   8.5E-06   3.5E-07   1.7E-05
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PU241	Class: Y	2.00E-12					
	1 Yr:		4.4E-07	4.0E-06	1.7E-07	8.0E-09	1.7E-07
	50 Yr:		4.4E-07	4.0E-06	1.7E-07	8.0E-09	1.7E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		8.9E-05	1.6E-04	8.1E-06	3.3E-07	1.6E-05
	50 Yr:		8.9E-05	1.6E-04	8.1E-06	3.3E-07	1.6E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		6.0E-10	1.4E-11	9.8E-13	1.8E-13	9.2E-11
	50 Yr:		6.0E-10	1.4E-11	9.8E-13	1.8E-13	9.2E-11
PU244	Class: Y	6.56E-11					
	1 Yr:		8.2E-05	1.5E-04	7.6E-06	3.2E-07	1.5E-05
	50 Yr:		8.2E-05	1.5E-04	7.6E-06	3.2E-07	1.5E-05
AM241	Class: W	2.13E-08					
	1 Yr:		4.4E-05	1.4E-03	6.0E-05	3.1E-06	4.0E-05
	50 Yr:		4.4E-05	1.4E-03	6.0E-05	3.1E-06	4.0E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		1.0E-05	1.4E-03	5.6E-05	3.1E-06	3.5E-05
	50 Yr:		1.0E-05	1.4E-03	5.6E-05	3.1E-06	3.5E-05
AM242	Class: W	1.93E-08					
	1 Yr:		1.4E-07	1.1E-07	1.1E-08	1.3E-10	2.1E-08
	50 Yr:		1.4E-07	1.1E-07	1.1E-08	1.3E-10	2.1E-08
AM243	Class: W	5.87E-08					
	1 Yr:		4.2E-05	1.4E-03	6.0E-05	3.1E-06	4.0E-05
	50 Yr:		4.2E-05	1.4E-03	6.0E-05	3.1E-06	4.0E-05
CM242	Class: W	1.27E-10					
	1 Yr:		4.3E-05	3.2E-05	3.2E-06	3.7E-08	6.3E-06
	50 Yr:		4.3E-05	3.2E-05	3.2E-06	3.7E-08	6.3E-06
CM243	Class: W	1.67E-07					
	1 Yr:		4.8E-05	9.5E-04	4.7E-05	1.8E-06	3.0E-05
	50 Yr:		4.8E-05	9.5E-04	4.7E-05	1.8E-06	3.0E-05
CM244	Class: W	1.08E-10					
	1 Yr:		4.7E-05	7.5E-04	4.1E-05	1.3E-06	2.6E-05
	50 Yr:		4.7E-05	7.5E-04	4.1E-05	1.3E-06	2.6E-05
CM245	Class: W	1.10E-07					
	1 Yr:		4.3E-05	1.5E-03	6.1E-05	3.3E-06	4.1E-05
	50 Yr:		4.3E-05	1.5E-03	6.1E-05	3.3E-06	4.1E-05
CM246	Class: W	9.78E-11					
	1 Yr:		4.3E-05	1.5E-03	6.1E-05	3.2E-06	4.1E-05
	50 Yr:		4.3E-05	1.5E-03	6.1E-05	3.2E-06	4.1E-05
CM247	Class: W	4.38E-07					
	1 Yr:		3.7E-05	1.4E-03	5.6E-05	3.0E-06	3.7E-05
	50 Yr:		3.7E-05	1.4E-03	5.6E-05	3.0E-06	3.7E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix A.3

Age 3650 days

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

			AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D		0.00E00					
	1 Yr:			8.0E-12	8.0E-12	8.0E-12	8.0E-12	8.2E-12
	50 Yr:			8.0E-12	8.0E-12	8.0E-12	8.0E-12	8.2E-12
BE10	Class: Y		4.35E-09					
	1 Yr:			3.3E-07	5.9E-09	2.4E-09	7.6E-11	4.1E-08
	50 Yr:			3.3E-07	5.9E-09	2.4E-09	7.6E-11	4.1E-08
C 14	Class: D		8.20E-11					
	1 Yr:			2.9E-10	2.8E-10	2.8E-10	2.8E-10	2.9E-10
	50 Yr:			2.9E-10	2.8E-10	2.8E-10	2.8E-10	2.9E-10
F 18	Class: D		1.44E-06					
	1 Yr:			3.6E-11	4.6E-11	5.9E-11	5.1E-12	5.6E-11
	50 Yr:			3.6E-11	4.6E-11	5.9E-11	5.1E-12	5.6E-11
NA22	Class: D		3.22E-06					
	1 Yr:			1.7E-09	3.9E-09	3.0E-09	1.8E-09	2.4E-09
	50 Yr:			1.7E-09	3.9E-09	3.0E-09	1.8E-09	2.4E-09
NA24	Class: D		6.56E-06					
	1 Yr:			2.5E-10	3.8E-10	2.9E-10	2.3E-10	5.8E-10
	50 Yr:			2.5E-10	3.8E-10	2.9E-10	2.3E-10	5.8E-10
P 32	Class: D		1.69E-08					
	1 Yr:			6.1E-10	6.1E-09	8.3E-09	5.8E-10	1.8E-09
	50 Yr:			6.1E-10	6.1E-09	8.3E-09	5.8E-10	1.8E-09
P 33	Class: D		4.57E-10					
	1 Yr:			1.0E-10	1.0E-09	5.1E-10	8.2E-11	2.0E-10
	50 Yr:			1.0E-10	1.0E-09	5.1E-10	8.2E-11	2.0E-10
S 35	Class: W		9.81E-11					
	1 Yr:			1.6E-08	1.5E-11	1.5E-11	1.5E-11	2.0E-09
	50 Yr:			1.6E-08	1.5E-11	1.5E-11	1.5E-11	2.0E-09
CL36	Class: D		5.23E-09					
	1 Yr:			6.3E-10	6.0E-10	6.0E-10	6.0E-10	7.1E-10
	50 Yr:			6.3E-10	6.0E-10	6.0E-10	6.0E-10	7.1E-10
AR39	NobleGas		3.63E-09					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas		1.94E-06					
	1 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:			0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D		2.50E-07					
	1 Yr:			3.6E-09	3.6E-09	3.6E-09	3.6E-09	4.5E-09
	50 Yr:			3.6E-09	3.6E-09	3.6E-09	3.6E-09	4.5E-09
CA41	Class: W		0.00E00					
	1 Yr:			2.8E-10	3.0E-09	7.9E-10	1.5E-12	1.7E-10
	50 Yr:			2.8E-10	3.0E-09	7.9E-10	1.5E-12	1.7E-10
CA45	Class: W		4.83E-10					
	1 Yr:			2.8E-08	5.6E-09	1.9E-09	1.6E-11	3.8E-09
	50 Yr:			2.8E-08	5.6E-09	1.9E-09	1.6E-11	3.8E-09
SC46	Class: Y		2.95E-06					
	1 Yr:			6.2E-08	1.9E-09	2.1E-09	2.0E-09	9.8E-09
	50 Yr:			6.2E-08	1.9E-09	2.1E-09	2.0E-09	9.8E-09
CR51	Class: Y		4.35E-08					
	1 Yr:			2.9E-10	1.9E-11	1.8E-11	1.7E-11	6.5E-11
	50 Yr:			2.9E-10	1.9E-11	1.8E-11	1.7E-11	6.5E-11
MN54	Class: W		1.21E-06					
	1 Yr:			9.3E-09	1.8E-09	1.5E-09	1.1E-09	2.4E-09
	50 Yr:			9.3E-09	1.8E-09	1.5E-09	1.1E-09	2.4E-09
MN56	Class: W		2.58E-06					
	1 Yr:			5.1E-10	1.4E-11	1.7E-11	1.1E-11	2.4E-10
	50 Yr:			5.1E-10	1.4E-11	1.7E-11	1.1E-11	2.4E-10
FE55	Class: W		0.00E00					
	1 Yr:			6.8E-10	1.5E-09	2.2E-09	1.4E-10	6.2E-10

	50 Yr:		6.8E-10	1.5E-09	2.2E-09	1.4E-10	6.2E-10
FE59	Class: W	1.77E-06					
	1 Yr:		3.1E-08	2.0E-09	2.5E-09	1.2E-09	5.5E-09
	50 Yr:		3.1E-08	2.0E-09	2.5E-09	1.2E-09	5.5E-09
CO57	Class: Y	1.57E-07					
	1 Yr:		9.7E-09	5.7E-10	3.0E-10	3.4E-10	1.5E-09
	50 Yr:		9.7E-09	5.7E-10	3.0E-10	3.4E-10	1.5E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		1.8E-08	8.1E-10	9.1E-10	8.8E-10	3.2E-09
	50 Yr:		1.8E-08	8.1E-10	9.1E-10	8.8E-10	3.2E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		2.4E-07	1.2E-08	1.4E-08	1.4E-08	4.0E-08
	50 Yr:		2.4E-07	1.2E-08	1.4E-08	1.4E-08	4.0E-08
NI59	Class: W	0.00E00					
	1 Yr:		8.1E-10	1.0E-10	1.0E-10	1.0E-10	2.0E-10
	50 Yr:		8.1E-10	1.0E-10	1.0E-10	1.0E-10	2.0E-10
NI63	Class: W	0.00E00					
	1 Yr:		3.7E-09	2.5E-10	2.5E-10	2.5E-10	7.0E-10
	50 Yr:		3.7E-09	2.5E-10	2.5E-10	2.5E-10	7.0E-10
NI65	Class: W	8.42E-07					
	1 Yr:		4.3E-10	4.3E-12	5.1E-12	3.8E-12	1.6E-10
	50 Yr:		4.3E-10	4.3E-12	5.1E-12	3.8E-12	1.6E-10
CU64	Class: D	2.69E-07					
	1 Yr:		3.3E-11	1.8E-11	1.8E-11	1.8E-11	7.6E-11
	50 Yr:		3.3E-11	1.8E-11	1.8E-11	1.8E-11	7.6E-11
ZN65	Class: Y	8.61E-07					
	1 Yr:		1.5E-08	1.2E-09	1.3E-09	1.3E-09	3.0E-09
	50 Yr:		1.5E-08	1.2E-09	1.3E-09	1.3E-09	3.0E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		1.8E-09	1.4E-11	1.9E-11	9.5E-12	5.4E-10
	50 Yr:		1.8E-09	1.4E-11	1.9E-11	9.5E-12	5.4E-10
ZN69	Class: Y	6.31E-09					
	1 Yr:		1.6E-10	4.9E-15	5.3E-15	3.9E-15	4.7E-11
	50 Yr:		1.6E-10	4.9E-15	5.3E-15	3.9E-15	4.7E-11
AS76	Class: W	6.50E-07					
	1 Yr:		4.7E-09	7.2E-11	7.7E-11	7.0E-11	1.4E-09
	50 Yr:		4.7E-09	7.2E-11	7.7E-11	7.0E-11	1.4E-09
SE75	Class: W	5.30E-07					
	1 Yr:		7.5E-09	8.1E-10	6.1E-10	5.7E-10	1.8E-09
	50 Yr:		7.5E-09	8.1E-10	6.1E-10	5.7E-10	1.8E-09
SE79	Class: W	1.24E-10					
	1 Yr:		2.6E-08	2.6E-10	2.6E-10	2.6E-10	4.8E-09
	50 Yr:		2.6E-08	2.6E-10	2.6E-10	2.6E-10	4.8E-09
BR82	Class: D	3.85E-06					
	1 Yr:		3.1E-10	3.1E-10	2.9E-10	3.2E-10	7.1E-10
	50 Yr:		3.1E-10	3.1E-10	2.9E-10	3.2E-10	7.1E-10
BR83	Class: D	1.68E-08					
	1 Yr:		3.5E-11	6.3E-12	6.3E-12	6.3E-12	3.1E-11
	50 Yr:		3.5E-11	6.3E-12	6.3E-12	6.3E-12	3.1E-11
BR84	Class: D	2.84E-06					
	1 Yr:		4.4E-11	6.7E-12	6.4E-12	6.9E-12	4.4E-11
	50 Yr:		4.4E-11	6.7E-12	6.4E-12	6.9E-12	4.4E-11
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					

	1 Yr:		1.6E-09	5.4E-09	3.3E-09	1.6E-09	2.0E-09
	50 Yr:		1.6E-09	5.4E-09	3.3E-09	1.6E-09	2.0E-09
RB87	Class: D	1.04E-09					
	1 Yr:		8.7E-10	3.0E-09	1.8E-09	8.4E-10	1.1E-09
	50 Yr:		8.7E-10	3.0E-09	1.8E-09	8.4E-10	1.1E-09
RB88	Class: D	1.05E-06					
	1 Yr:		4.4E-11	3.8E-12	3.6E-12	3.6E-12	3.2E-11
	50 Yr:		4.4E-11	3.8E-12	3.6E-12	3.6E-12	3.2E-11
RB89	Class: D	3.19E-06					
	1 Yr:		3.0E-11	4.6E-12	3.7E-12	3.4E-12	2.7E-11
	50 Yr:		3.0E-11	4.6E-12	3.7E-12	3.4E-12	2.7E-11
SR85	Class: D	7.06E-07					
	1 Yr:		6.1E-10	2.8E-09	1.9E-09	5.4E-10	9.6E-10
	50 Yr:		6.1E-10	2.8E-09	1.9E-09	5.4E-10	9.6E-10
SR89	Class: D	1.38E-08					
	1 Yr:		3.5E-10	1.8E-08	1.1E-08	3.2E-10	2.3E-09
	50 Yr:		3.5E-10	1.8E-08	1.1E-08	3.2E-10	2.3E-09
SR90	Class: D	3.10E-09					
	1 Yr:		1.3E-09	7.5E-07	2.6E-07	1.2E-09	4.1E-08
	50 Yr:		1.3E-09	7.5E-07	2.6E-07	1.2E-09	4.1E-08
SR91	Class: D	1.03E-06					
	1 Yr:		8.0E-11	4.0E-10	2.9E-10	4.3E-11	3.2E-10
	50 Yr:		8.0E-11	4.0E-10	2.9E-10	4.3E-11	3.2E-10
SR92	Class: D	2.02E-06					
	1 Yr:		5.4E-11	2.8E-10	1.3E-10	2.4E-11	2.0E-10
	50 Yr:		5.4E-11	2.8E-10	1.3E-10	2.4E-11	2.0E-10
Y 90	Class: Y	2.50E-08					
	1 Yr:		1.1E-08	2.1E-12	2.9E-12	8.6E-14	2.7E-09
	50 Yr:		1.1E-08	2.1E-12	2.9E-12	8.6E-14	2.7E-09
Y 91M	Class: Y	7.47E-07					
	1 Yr:		7.0E-11	1.3E-12	1.5E-12	1.1E-12	2.0E-11
	50 Yr:		7.0E-11	1.3E-12	1.5E-12	1.1E-12	2.0E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		9.6E-08	9.6E-11	1.3E-10	4.9E-12	1.3E-08
	50 Yr:		9.6E-08	9.6E-11	1.3E-10	4.9E-12	1.3E-08
Y 92	Class: Y	4.16E-07					
	1 Yr:		9.5E-10	2.3E-12	3.0E-12	1.8E-12	3.5E-10
	50 Yr:		9.5E-10	2.3E-12	3.0E-12	1.8E-12	3.5E-10
Y 93	Class: Y	1.67E-07					
	1 Yr:		2.2E-09	2.3E-12	3.0E-12	1.5E-12	8.6E-10
	50 Yr:		2.2E-09	2.3E-12	3.0E-12	1.5E-12	8.6E-10
ZR93	Class: W	0.00E00					
	1 Yr:		4.2E-09	1.7E-07	1.6E-08	4.4E-12	4.2E-09
	50 Yr:		4.2E-09	1.7E-07	1.6E-08	4.4E-12	4.2E-09
ZR95	Class: W	1.06E-06					
	1 Yr:		4.2E-08	1.8E-08	3.7E-09	9.9E-10	6.8E-09
	50 Yr:		4.2E-08	1.8E-08	3.7E-09	9.9E-10	6.8E-09
ZR97	Class: W	2.81E-07					
	1 Yr:		4.7E-09	1.1E-10	1.5E-10	4.8E-11	1.8E-09
	50 Yr:		4.7E-09	1.1E-10	1.5E-10	4.8E-11	1.8E-09
NB93M	Class: Y	9.62E-11					
	1 Yr:		2.0E-08	7.3E-11	3.3E-11	7.0E-12	2.5E-09
	50 Yr:		2.0E-08	7.3E-11	3.3E-11	7.0E-12	2.5E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		3.8E-07	1.4E-08	1.6E-08	1.4E-08	5.8E-08
	50 Yr:		3.8E-07	1.4E-08	1.6E-08	1.4E-08	5.8E-08
NB95M	Class: Y	8.64E-08					
	1 Yr:		8.2E-09	5.6E-11	5.3E-11	4.5E-11	1.3E-09
	50 Yr:		8.2E-09	5.6E-11	5.3E-11	4.5E-11	1.3E-09
NB95	Class: Y	1.10E-06					
	1 Yr:		1.6E-08	3.9E-10	4.4E-10	4.0E-10	2.6E-09
	50 Yr:		1.6E-08	3.9E-10	4.4E-10	4.0E-10	2.6E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		2.2E-10	2.2E-12	2.6E-12	1.9E-12	8.1E-11
	50 Yr:		2.2E-10	2.2E-12	2.6E-12	1.9E-12	8.1E-11
MO93	Class: D	5.46E-10					
	1 Yr:		1.5E-10	2.5E-08	7.6E-09	1.1E-10	1.3E-09
	50 Yr:		1.5E-10	2.5E-08	7.6E-09	1.1E-10	1.3E-09

MO99	Class: D	2.20E-07					
	1 Yr:		2.2E-10	6.3E-10	4.6E-10	1.8E-10	4.8E-10
	50 Yr:		2.2E-10	6.3E-10	4.6E-10	1.8E-10	4.8E-10
TC99M	Class: W	1.66E-07					
	1 Yr:		1.0E-10	4.2E-12	2.8E-12	1.3E-11	3.4E-11
	50 Yr:		1.0E-10	4.2E-12	2.8E-12	1.3E-11	3.4E-11
TC99	Class: W	9.05E-10					
	1 Yr:		4.4E-08	1.8E-11	1.8E-11	5.5E-10	5.6E-09
	50 Yr:		4.4E-08	1.8E-11	1.8E-11	5.5E-10	5.6E-09
TC101	Class: W	4.76E-07					
	1 Yr:		4.5E-11	3.2E-13	2.8E-13	2.8E-12	2.1E-11
	50 Yr:		4.5E-11	3.2E-13	2.8E-13	2.8E-12	2.1E-11
RU103	Class: Y	6.59E-07					
	1 Yr:		3.0E-08	2.7E-10	3.0E-10	2.8E-10	4.2E-09
	50 Yr:		3.0E-08	2.7E-10	3.0E-10	2.8E-10	4.2E-09
RU105	Class: Y	1.13E-06					
	1 Yr:		1.1E-09	1.0E-11	1.3E-11	7.4E-12	3.2E-10
	50 Yr:		1.1E-09	1.0E-11	1.3E-11	7.4E-12	3.2E-10
RU106	Class: Y	0.00E00					
	1 Yr:		7.1E-07	8.4E-10	8.9E-10	9.0E-10	9.0E-08
	50 Yr:		7.1E-07	8.4E-10	8.9E-10	9.0E-10	9.0E-08
RH103M	Class: Y	1.90E-10					
	1 Yr:		2.4E-11	7.7E-15	3.3E-15	1.8E-15	4.3E-12
	50 Yr:		2.4E-11	7.7E-15	3.3E-15	1.8E-15	4.3E-12
RH105	Class: Y	1.10E-07					
	1 Yr:		3.0E-09	7.1E-12	7.9E-12	5.0E-12	5.6E-10
	50 Yr:		3.0E-09	7.1E-12	7.9E-12	5.0E-12	5.6E-10
PD103	Class: Y	1.68E-09					
	1 Yr:		4.7E-09	1.2E-11	3.4E-12	5.3E-13	6.8E-10
	50 Yr:		4.7E-09	1.2E-11	3.4E-12	5.3E-13	6.8E-10
PD107	Class: Y	0.00E00					
	1 Yr:		6.2E-09	5.1E-13	2.4E-13	4.0E-14	7.7E-10
	50 Yr:		6.2E-09	5.1E-13	2.4E-13	4.0E-14	7.7E-10
PD109	Class: Y	1.33E-08					
	1 Yr:		2.9E-09	1.2E-12	5.6E-13	1.8E-13	6.3E-10
	50 Yr:		2.9E-09	1.2E-12	5.6E-13	1.8E-13	6.3E-10
AG110M	Class: D	4.01E-06					
	1 Yr:		8.2E-09	5.5E-09	5.7E-09	4.3E-09	9.8E-09
	50 Yr:		8.2E-09	5.5E-09	5.7E-09	4.3E-09	9.8E-09
AG111	Class: D	4.38E-08					
	1 Yr:		2.2E-10	1.8E-10	1.8E-10	1.8E-10	8.8E-10
	50 Yr:		2.2E-10	1.8E-10	1.8E-10	1.8E-10	8.8E-10
CD109	Class: D	7.22E-09					
	1 Yr:		3.0E-09	3.6E-09	2.3E-09	2.5E-09	1.4E-08
	50 Yr:		3.0E-09	3.6E-09	2.3E-09	2.5E-09	1.4E-08
CD113M	Class: D	2.86E-09					
	1 Yr:		2.2E-08	2.2E-08	2.2E-08	2.2E-08	1.4E-07
	50 Yr:		2.2E-08	2.2E-08	2.2E-08	2.2E-08	1.4E-07
CD115M	Class: D	4.67E-08					
	1 Yr:		1.7E-09	1.7E-09	1.7E-09	1.7E-09	9.9E-09
	50 Yr:		1.7E-09	1.7E-09	1.7E-09	1.7E-09	9.9E-09
CD115	Class: D	3.31E-07					
	1 Yr:		1.6E-10	1.3E-10	1.3E-10	1.0E-10	7.6E-10
	50 Yr:		1.6E-10	1.3E-10	1.3E-10	1.0E-10	7.6E-10
IN111	Class: D	5.30E-07					
	1 Yr:		8.1E-11	2.7E-10	3.1E-10	5.3E-11	2.7E-10
	50 Yr:		8.1E-11	2.7E-10	3.1E-10	5.3E-11	2.7E-10
IN114M	Class: D	1.23E-07					
	1 Yr:		3.1E-09	6.9E-08	1.0E-07	3.0E-09	1.9E-08
	50 Yr:		3.1E-09	6.9E-08	1.0E-07	3.0E-09	1.9E-08
IN115M	Class: D	2.17E-07					
	1 Yr:		2.3E-11	2.7E-11	3.7E-11	5.5E-12	5.2E-11
	50 Yr:		2.3E-11	2.7E-11	3.7E-11	5.5E-12	5.2E-11
SN117M	Class: W	1.93E-07					
	1 Yr:		2.5E-08	1.6E-09	2.3E-10	4.6E-11	3.4E-09
	50 Yr:		2.5E-08	1.6E-09	2.3E-10	4.6E-11	3.4E-09
SN119M	Class: W	2.23E-09					
	1 Yr:		2.3E-08	1.2E-09	5.4E-10	6.9E-11	3.1E-09
	50 Yr:		2.3E-08	1.2E-09	5.4E-10	6.9E-11	3.1E-09
SN121M	Class: W	1.66E-09					
	1 Yr:		4.7E-08	4.3E-09	2.1E-09	2.4E-10	6.3E-09

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             50 Yr:            4.7E-08   4.3E-09   2.1E-09   2.4E-10   6.3E-09
SN121   Class: W     1.23E-09
              1 Yr:            2.0E-09   7.4E-11   8.9E-12   6.9E-13   3.6E-10
             50 Yr:            2.0E-09   7.4E-11   8.9E-12   6.9E-13   3.6E-10
SN123   Class: W     2.20E-08
              1 Yr:            8.6E-08   3.6E-09   1.8E-09   2.0E-10   1.2E-08
             50 Yr:            8.6E-08   3.6E-09   1.8E-09   2.0E-10   1.2E-08
SN125   Class: W     4.86E-07
              1 Yr:            2.7E-08   9.2E-10   7.5E-10   8.8E-11   5.0E-09
             50 Yr:            2.7E-08   9.2E-10   7.5E-10   8.8E-11   5.0E-09
SN126   Class: W     5.83E-08
              1 Yr:            2.5E-07   3.8E-08   2.2E-08   6.9E-09   4.1E-08
             50 Yr:            2.5E-07   3.8E-08   2.2E-08   6.9E-09   4.1E-08
SB124   Class: W     2.72E-06
              1 Yr:            6.1E-08   3.1E-09   1.9E-09   1.1E-09   9.6E-09
             50 Yr:            6.1E-08   3.1E-09   1.9E-09   1.1E-09   9.6E-09
SB125   Class: W     5.90E-07
              1 Yr:            4.5E-08   1.1E-08   2.5E-09   8.6E-10   6.9E-09
             50 Yr:            4.5E-08   1.1E-08   2.5E-09   8.6E-10   6.9E-09
SB126M  Class: W     2.21E-06
              1 Yr:            6.3E-11   1.7E-12   1.7E-12   1.6E-12   3.5E-11
             50 Yr:            6.3E-11   1.7E-12   1.7E-12   1.6E-12   3.5E-11
SB126   Class: W     4.04E-06
              1 Yr:            2.3E-08   1.1E-09   9.6E-10   6.2E-10   5.1E-09
             50 Yr:            2.3E-08   1.1E-09   9.6E-10   6.2E-10   5.1E-09
SB127   Class: W     9.84E-07
              1 Yr:            1.5E-08   2.1E-10   2.2E-10   7.2E-11   2.7E-09
             50 Yr:            1.5E-08   2.1E-10   2.2E-10   7.2E-11   2.7E-09
TE123M  Class: W     1.84E-07
              1 Yr:            4.0E-08   1.7E-08   2.2E-09   9.0E-10   5.7E-09
             50 Yr:            4.0E-08   1.7E-08   2.2E-09   9.0E-10   5.7E-09
TE125M  Class: W     1.06E-08
              1 Yr:            3.5E-08   8.2E-09   9.6E-10   6.2E-10   4.7E-09
             50 Yr:            3.5E-08   8.2E-09   9.6E-10   6.2E-10   4.7E-09
TE127M  Class: W     3.56E-09
              1 Yr:            7.6E-08   1.5E-08   5.2E-09   2.1E-09   1.1E-08
             50 Yr:            7.6E-08   1.5E-08   5.2E-09   2.1E-09   1.1E-08
TE127   Class: W     1.05E-08
              1 Yr:            9.9E-10   3.5E-12   4.1E-12   7.2E-12   2.4E-10
             50 Yr:            9.9E-10   3.5E-12   4.1E-12   7.2E-12   2.4E-10
TE129M  Class: W     4.92E-08
              1 Yr:            6.6E-08   4.7E-09   2.8E-09   2.5E-09   9.7E-09
             50 Yr:            6.6E-08   4.7E-09   2.8E-09   2.5E-09   9.7E-09
TE129   Class: W     9.05E-08
              1 Yr:            2.0E-10   7.2E-13   7.0E-13   7.4E-13   6.5E-11
             50 Yr:            2.0E-10   7.2E-13   7.0E-13   7.4E-13   6.5E-11
TE131M  Class: W     2.07E-06
              1 Yr:            6.2E-09   2.1E-10   1.5E-10   6.6E-09   1.9E-09
             50 Yr:            6.2E-09   2.1E-10   1.5E-10   6.6E-09   1.9E-09
TE131   Class: W     6.09E-07
              1 Yr:            1.2E-10   9.5E-13   8.6E-13   1.2E-10   5.2E-11
             50 Yr:            1.2E-10   9.5E-13   8.6E-13   1.2E-10   5.2E-11
TE132   Class: W     2.95E-07
              1 Yr:            1.4E-08   5.2E-10   3.6E-10   1.1E-08   4.1E-09
             50 Yr:            1.4E-08   5.2E-10   3.6E-10   1.1E-08   4.1E-09
TE133M  Class: W     3.41E-06
              1 Yr:            3.5E-10   8.0E-12   9.0E-12   4.3E-10   1.7E-10
             50 Yr:            3.5E-10   8.0E-12   9.0E-12   4.3E-10   1.7E-10
TE133   Class: W     1.37E-06
              1 Yr:            7.2E-11   9.0E-13   9.4E-13   9.5E-11   3.8E-11
             50 Yr:            7.2E-11   9.0E-13   9.4E-13   9.5E-11   3.8E-11
TE134   Class: W     1.24E-06
              1 Yr:            2.7E-10   7.3E-12   8.4E-12   6.1E-11   1.2E-10
             50 Yr:            2.7E-10   7.3E-12   8.4E-12   6.1E-11   1.2E-10
I 125   Class: D     1.19E-08
              1 Yr:            3.4E-11   8.2E-11   1.8E-11   2.3E-07   1.1E-08
             50 Yr:            3.4E-11   8.2E-11   1.8E-11   2.3E-07   1.1E-08
I 129   Class: D     8.92E-09
              1 Yr:            9.1E-11   1.5E-10   5.5E-11   1.3E-06   6.7E-08
             50 Yr:            9.1E-11   1.5E-10   5.5E-11   1.3E-06   6.7E-08
I 130   Class: D     3.05E-06
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	1 Yr:		9.9E-11	6.3E-11	5.7E-11	3.1E-08	1.7E-09
	50 Yr:		9.9E-11	6.3E-11	5.7E-11	3.1E-08	1.7E-09
I 131	Class: D	5.33E-07					
	1 Yr:		1.1E-10	7.8E-11	6.0E-11	3.7E-07	1.9E-08
	50 Yr:		1.1E-10	7.8E-11	6.0E-11	3.7E-07	1.9E-08
I 132	Class: D	3.31E-06					
	1 Yr:		5.7E-11	2.3E-11	2.1E-11	3.4E-09	2.2E-10
	50 Yr:		5.7E-11	2.3E-11	2.1E-11	3.4E-09	2.2E-10
I 133	Class: D	8.70E-07					
	1 Yr:		7.1E-11	3.8E-11	3.5E-11	7.4E-08	3.8E-09
	50 Yr:		7.1E-11	3.8E-11	3.5E-11	7.4E-08	3.8E-09
I 134	Class: D	3.85E-06					
	1 Yr:		4.4E-11	1.1E-11	1.0E-11	6.5E-10	9.8E-11
	50 Yr:		4.4E-11	1.1E-11	1.0E-11	6.5E-10	9.8E-11
I 135	Class: D	2.38E-06					
	1 Yr:		6.6E-11	3.4E-11	3.1E-11	1.5E-08	8.0E-10
	50 Yr:		6.6E-11	3.4E-11	3.1E-11	1.5E-08	8.0E-10
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		3.2E-11	4.4E-12	3.6E-12	3.8E-12	2.5E-11
	50 Yr:		3.2E-11	4.4E-12	3.6E-12	3.8E-12	2.5E-11
CS134	Class: D	2.23E-06					
	1 Yr:		4.6E-09	5.1E-09	4.7E-09	5.1E-09	5.3E-09
	50 Yr:		4.6E-09	5.1E-09	4.7E-09	5.1E-09	5.3E-09
CS135	Class: D	3.00E-10					
	1 Yr:		5.5E-10	5.4E-10	5.4E-10	5.4E-10	6.1E-10
	50 Yr:		5.5E-10	5.4E-10	5.4E-10	5.4E-10	6.1E-10
CS136	Class: D	3.13E-06					
	1 Yr:		1.5E-09	1.6E-09	1.5E-09	1.6E-09	2.0E-09
	50 Yr:		1.5E-09	1.6E-09	1.5E-09	1.6E-09	2.0E-09
CS137	Class: D	2.93E-09					
	1 Yr:		3.3E-09	3.5E-09	3.3E-09	3.5E-09	3.8E-09
	50 Yr:		3.3E-09	3.5E-09	3.3E-09	3.5E-09	3.8E-09
CS138	Class: D	3.63E-06					
	1 Yr:		4.5E-11	7.9E-12	7.5E-12	8.1E-12	5.0E-11
	50 Yr:		4.5E-11	7.9E-12	7.5E-12	8.1E-12	5.0E-11
BA139	Class: D	8.04E-08					
	1 Yr:		3.9E-11	3.6E-11	2.6E-11	2.7E-12	6.0E-11
	50 Yr:		3.9E-11	3.6E-11	2.6E-11	2.7E-12	6.0E-11
BA140	Class: D	2.55E-07					
	1 Yr:		5.0E-10	9.5E-09	4.7E-09	4.0E-10	2.4E-09
	50 Yr:		5.0E-10	9.5E-09	4.7E-09	4.0E-10	2.4E-09
BA141	Class: D	1.24E-06					
	1 Yr:		3.2E-11	1.9E-11	1.2E-11	1.9E-12	3.8E-11
	50 Yr:		3.2E-11	1.9E-11	1.2E-11	1.9E-12	3.8E-11
BA142	Class: D	1.53E-06					
	1 Yr:		2.4E-11	8.2E-12	6.6E-12	2.1E-12	2.8E-11
	50 Yr:		2.4E-11	8.2E-12	6.6E-12	2.1E-12	2.8E-11
LA140	Class: D	3.50E-06					
	1 Yr:		3.2E-10	4.7E-10	5.8E-10	1.6E-10	1.2E-09
	50 Yr:		3.2E-10	4.7E-10	5.8E-10	1.6E-10	1.2E-09

LA141	Class: D	9.08E-08					
	1 Yr:		5.6E-11	1.3E-10	5.1E-11	1.7E-11	1.4E-10
	50 Yr:		5.6E-11	1.3E-10	5.1E-11	1.7E-11	1.4E-10
LA142	Class: D	4.32E-06					
	1 Yr:		5.7E-11	2.1E-11	2.3E-11	1.7E-11	1.1E-10
	50 Yr:		5.7E-11	2.1E-11	2.3E-11	1.7E-11	1.1E-10
CE141	Class: Y	9.81E-08					
	1 Yr:		4.0E-08	2.0E-10	5.8E-11	4.4E-11	5.2E-09
	50 Yr:		4.0E-08	2.0E-10	5.8E-11	4.4E-11	5.2E-09
CE143	Class: Y	3.82E-07					
	1 Yr:		6.7E-09	2.6E-11	2.4E-11	1.2E-11	1.4E-09
	50 Yr:		6.7E-09	2.6E-11	2.4E-11	1.2E-11	1.4E-09
CE144	Class: Y	2.41E-08					
	1 Yr:		5.7E-07	3.5E-09	2.7E-09	2.4E-10	7.3E-08
	50 Yr:		5.7E-07	3.5E-09	2.7E-09	2.4E-10	7.3E-08
PR143	Class: Y	6.12E-09					
	1 Yr:		2.5E-08	3.4E-12	4.7E-12	2.6E-14	3.6E-09
	50 Yr:		2.5E-08	3.4E-12	4.7E-12	2.6E-14	3.6E-09
PR144M	Class: Y	6.97E-09					
	1 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
	50 Yr:		4.0E-11	1.5E-14	1.8E-14	8.7E-15	5.1E-12
PR144	Class: Y	8.36E-08					
	1 Yr:		7.6E-11	2.4E-14	2.5E-14	2.5E-14	3.3E-11
	50 Yr:		7.6E-11	2.4E-14	2.5E-14	2.5E-14	3.3E-11
ND147	Class: Y	1.81E-07					
	1 Yr:		2.4E-08	1.3E-10	5.1E-11	3.1E-11	3.5E-09
	50 Yr:		2.4E-08	1.3E-10	5.1E-11	3.1E-11	3.5E-09
PM147	Class: Y	2.73E-10					
	1 Yr:		5.3E-08	5.2E-09	5.6E-10	6.4E-14	6.7E-09
	50 Yr:		5.3E-08	5.2E-09	5.6E-10	6.4E-14	6.7E-09
PM148M	Class: Y	2.84E-06					
	1 Yr:		5.4E-08	1.3E-09	1.3E-09	1.2E-09	8.4E-09
	50 Yr:		5.4E-08	1.3E-09	1.3E-09	1.2E-09	8.4E-09
PM148	Class: Y	8.70E-07					
	1 Yr:		1.8E-08	7.5E-11	9.6E-11	6.4E-11	3.7E-09
	50 Yr:		1.8E-08	7.5E-11	9.6E-11	6.4E-11	3.7E-09
PM149	Class: Y	2.24E-08					
	1 Yr:		5.8E-09	1.8E-12	2.2E-12	6.6E-13	1.2E-09
	50 Yr:		5.8E-09	1.8E-12	2.2E-12	6.6E-13	1.2E-09
PM151	Class: Y	4.42E-07					
	1 Yr:		3.6E-09	2.4E-11	2.4E-11	1.2E-11	8.1E-10
	50 Yr:		3.6E-09	2.4E-11	2.4E-11	1.2E-11	8.1E-10
SM147	Class: W	0.00E00					
	1 Yr:		3.8E-07	1.3E-05	1.3E-06	2.8E-11	1.1E-05
	50 Yr:		3.8E-07	1.3E-05	1.3E-06	2.8E-11	1.1E-05
SM151	Class: W	7.79E-13					
	1 Yr:		4.6E-09	1.1E-07	1.0E-08	2.6E-13	4.5E-09
	50 Yr:		4.6E-09	1.1E-07	1.0E-08	2.6E-13	4.5E-09
SM153	Class: W	6.46E-08					
	1 Yr:		5.3E-09	1.1E-10	5.2E-11	4.5E-12	1.0E-09
	50 Yr:		5.3E-09	1.1E-10	5.2E-11	4.5E-12	1.0E-09
EU152	Class: W	1.67E-06					
	1 Yr:		8.2E-08	2.0E-07	8.2E-08	9.2E-09	4.9E-08
	50 Yr:		8.2E-08	2.0E-07	8.2E-08	9.2E-09	4.9E-08
EU154	Class: W	1.82E-06					
	1 Yr:		1.3E-07	4.3E-07	1.1E-07	8.6E-09	6.5E-08
	50 Yr:		1.3E-07	4.3E-07	1.1E-07	8.6E-09	6.5E-08
EU155	Class: W	6.78E-08					
	1 Yr:		2.6E-08	1.3E-07	1.5E-08	3.4E-10	9.2E-09
	50 Yr:		2.6E-08	1.3E-07	1.5E-08	3.4E-10	9.2E-09
EU156	Class: W	2.02E-06					
	1 Yr:		3.1E-08	2.1E-09	1.1E-09	3.2E-10	5.3E-09
	50 Yr:		3.1E-08	2.1E-09	1.1E-09	3.2E-10	5.3E-09
GD153	Class: D	9.84E-08					
	1 Yr:		1.2E-09	7.9E-08	9.9E-09	2.9E-10	3.9E-09
	50 Yr:		1.2E-09	7.9E-08	9.9E-09	2.9E-10	3.9E-09
TB160	Class: W	1.64E-06					
	1 Yr:		6.2E-08	2.2E-08	5.2E-09	9.0E-10	1.0E-08
	50 Yr:		6.2E-08	2.2E-08	5.2E-09	9.0E-10	1.0E-08
HO166M	Class: W	2.48E-06					
	1 Yr:		1.4E-07	7.1E-07	1.6E-07	2.2E-08	1.3E-07

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             50 Yr:            1.4E-07   7.1E-07   1.6E-07   2.2E-08   1.3E-07
W 181   Class: D     3.69E-08
              1 Yr:            9.0E-12   9.1E-11   3.2E-11   4.7E-12   5.9E-11
             50 Yr:            9.0E-12   9.1E-11   3.2E-11   4.7E-12   5.9E-11
W 187   Class: D     6.72E-07
              1 Yr:            5.9E-11   9.9E-11   4.8E-11   2.2E-11   4.3E-10
             50 Yr:            5.9E-11   9.9E-11   4.8E-11   2.2E-11   4.3E-10
W 185   Class: D     1.57E-09
              1 Yr:            2.9E-11   2.3E-10   1.1E-10   5.3E-12   2.7E-10
             50 Yr:            2.9E-11   2.3E-10   1.1E-10   5.3E-12   2.7E-10
RE187   Class: W     0.00E00
              1 Yr:            6.7E-11   3.2E-13   3.2E-13   9.9E-12   1.2E-11
             50 Yr:            6.7E-11   3.2E-13   3.2E-13   9.9E-12   1.2E-11
IR192   Class: Y     1.14E-06
              1 Yr:            6.8E-08   8.7E-10   8.4E-10   8.3E-10   9.5E-09
             50 Yr:            6.8E-08   8.7E-10   8.4E-10   8.3E-10   9.5E-09
HG203   Class: D     3.28E-07
              1 Yr:            5.7E-10   6.6E-10   5.7E-10   5.7E-10   9.0E-10
             50 Yr:            5.7E-10   6.6E-10   5.7E-10   5.7E-10   9.0E-10
RN222   NobleGas     5.61E-10
              1 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
             50 Yr:            0.0E-00   0.0E-00   0.0E-00   0.0E-00   0.0E-00
TH227   Class: Y     1.40E-07
              1 Yr:            1.2E-04   1.8E-07   1.7E-08   4.7E-10   1.4E-05
             50 Yr:            1.2E-04   1.8E-07   1.7E-08   4.7E-10   1.4E-05
TH228   Class: Y     2.56E-09
              1 Yr:            4.5E-04   3.0E-05   3.0E-06   7.3E-08   5.5E-05
             50 Yr:            4.5E-04   3.0E-05   3.0E-06   7.3E-08   5.5E-05
TH229   Class: Y     1.06E-07
              1 Yr:            6.3E-04   4.8E-04   2.7E-05   1.8E-06   8.7E-05
             50 Yr:            6.3E-04   4.8E-04   2.7E-05   1.8E-06   8.7E-05
TH230   Class: Y     4.70E-10
              1 Yr:            9.9E-05   2.4E-04   1.1E-05   3.4E-07   1.7E-05
             50 Yr:            9.9E-05   2.4E-04   1.1E-05   3.4E-07   1.7E-05
TH231   Class: Y     1.45E-08
              1 Yr:            2.9E-09   5.4E-11   3.7E-12   6.2E-13   5.3E-10
             50 Yr:            2.9E-09   5.4E-11   3.7E-12   6.2E-13   5.3E-10
TH232   Class: Y     2.29E-10
              1 Yr:            1.7E-04   2.6E-04   1.4E-05   9.5E-07   2.7E-05
             50 Yr:            1.7E-04   2.6E-04   1.4E-05   9.5E-07   2.7E-05
TH234   Class: Y     9.30E-09
              1 Yr:            7.9E-08   1.4E-10   1.0E-10   1.2E-11   1.2E-08
             50 Yr:            7.9E-08   1.4E-10   1.0E-10   1.2E-11   1.2E-08
RA223   Class: W     1.73E-07
              1 Yr:            8.2E-05   3.8E-06   2.3E-07   6.4E-09   9.9E-06
             50 Yr:            8.2E-05   3.8E-06   2.3E-07   6.4E-09   9.9E-06
RA224   Class: W     1.36E-08
              1 Yr:            3.2E-05   1.9E-06   1.1E-07   4.7E-09   3.9E-06
             50 Yr:            3.2E-05   1.9E-06   1.1E-07   4.7E-09   3.9E-06
RA225   Class: W     7.60E-09
              1 Yr:            6.9E-05   6.8E-06   5.5E-07   9.7E-09   8.4E-06
             50 Yr:            6.9E-05   6.8E-06   5.5E-07   9.7E-09   8.4E-06
RA226   Class: W     8.96E-09
              1 Yr:            3.8E-05   1.5E-05   9.2E-07   3.2E-08   4.9E-06
             50 Yr:            3.8E-05   1.5E-05   9.2E-07   3.2E-08   4.9E-06
RA228   Class: W     0.00E00
              1 Yr:            1.4E-05   1.1E-04   1.0E-05   2.9E-07   4.6E-06
             50 Yr:            1.4E-05   1.1E-04   1.0E-05   2.9E-07   4.6E-06
PB210   Class: D     1.42E-09
              1 Yr:            2.7E-07   3.1E-05   4.6E-06   2.7E-07   1.4E-06
             50 Yr:            2.7E-07   3.1E-05   4.6E-06   2.7E-07   1.4E-06
PB212   Class: D     1.97E-07
              1 Yr:            1.3E-08   3.4E-07   2.5E-08   6.4E-09   3.6E-08
             50 Yr:            1.3E-08   3.4E-07   2.5E-08   6.4E-09   3.6E-08
BI210   Class: W     8.14E-09
              1 Yr:            1.1E-06   8.7E-11   8.7E-11   8.7E-11   1.3E-07
             50 Yr:            1.1E-06   8.7E-11   8.7E-11   8.7E-11   1.3E-07
BI212   Class: W     2.83E-07
              1 Yr:            2.5E-07   4.3E-11   4.4E-11   4.3E-11   4.4E-08
             50 Yr:            2.5E-07   4.3E-11   4.4E-11   4.3E-11   4.4E-08
PO210   Class: W     1.23E-11
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	1 Yr:		3.5E-05	7.9E-07	1.1E-06	9.6E-08	4.6E-06
	50 Yr:		3.5E-05	7.9E-07	1.1E-06	9.6E-08	4.6E-06
U 232	Class: Y	3.72E-10					
	1 Yr:		3.5E-04	4.5E-05	3.9E-06	1.9E-07	4.3E-05
	50 Yr:		3.5E-04	4.5E-05	3.9E-06	1.9E-07	4.3E-05
U 233	Class: Y	4.48E-10					
	1 Yr:		1.0E-04	1.3E-06	8.4E-08	1.9E-08	1.2E-05
	50 Yr:		1.0E-04	1.3E-06	8.4E-08	1.9E-08	1.2E-05
U 234	Class: Y	1.93E-10					
	1 Yr:		1.0E-04	9.2E-07	6.6E-08	1.7E-08	1.2E-05
	50 Yr:		1.0E-04	9.2E-07	6.6E-08	1.7E-08	1.2E-05
U 235	Class: Y	2.04E-07					
	1 Yr:		9.1E-05	8.6E-07	6.4E-08	1.8E-08	1.1E-05
	50 Yr:		9.1E-05	8.6E-07	6.4E-08	1.8E-08	1.1E-05
U 236	Class: Y	1.22E-10					
	1 Yr:		9.4E-05	8.7E-07	6.3E-08	1.6E-08	1.1E-05
	50 Yr:		9.4E-05	8.7E-07	6.3E-08	1.6E-08	1.1E-05
U 237	Class: Y	1.67E-07					
	1 Yr:		1.9E-08	6.6E-11	3.0E-11	2.1E-11	2.7E-09
	50 Yr:		1.9E-08	6.6E-11	3.0E-11	2.1E-11	2.7E-09
U 238	Class: Y	7.92E-11					
	1 Yr:		8.6E-05	8.2E-07	6.2E-08	1.5E-08	1.0E-05
	50 Yr:		8.6E-05	8.2E-07	6.2E-08	1.5E-08	1.0E-05
U 240	Class: Y	1.85E-09					
	1 Yr:		3.9E-09	4.9E-11	1.7E-11	7.3E-12	1.1E-09
	50 Yr:		3.9E-09	4.9E-11	1.7E-11	7.3E-12	1.1E-09
PA231	Class: Y	4.95E-08					
	1 Yr:		1.7E-04	5.5E-04	2.5E-05	1.5E-06	3.2E-05
	50 Yr:		1.7E-04	5.5E-04	2.5E-05	1.5E-06	3.2E-05
PA233	Class: Y	2.70E-07					
	1 Yr:		4.1E-08	3.0E-10	1.2E-10	9.2E-11	5.4E-09
	50 Yr:		4.1E-08	3.0E-10	1.2E-10	9.2E-11	5.4E-09
PA234	Class: Y	2.75E-06					
	1 Yr:		2.4E-09	3.4E-11	4.2E-11	2.3E-11	7.4E-10
	50 Yr:		2.4E-09	3.4E-11	4.2E-11	2.3E-11	7.4E-10
AC225	Class: Y	2.01E-08					
	1 Yr:		9.3E-05	1.0E-07	1.6E-08	4.9E-09	1.1E-05
	50 Yr:		9.3E-05	1.0E-07	1.6E-08	4.9E-09	1.1E-05
AC227	Class: Y	1.62E-10					
	1 Yr:		5.3E-04	1.6E-04	1.1E-05	9.5E-07	6.9E-05
	50 Yr:		5.3E-04	1.6E-04	1.1E-05	9.5E-07	6.9E-05
AC228	Class: Y	1.42E-06					
	1 Yr:		1.7E-07	1.1E-08	1.1E-09	3.8E-11	2.0E-08
	50 Yr:		1.7E-07	1.1E-08	1.1E-09	3.8E-11	2.0E-08
FR223	Class: D	6.97E-08					
	1 Yr:		1.8E-09	1.7E-09	1.7E-09	1.7E-09	1.9E-09
	50 Yr:		1.8E-09	1.7E-09	1.7E-09	1.7E-09	1.9E-09
NP237	Class: W	2.81E-08					
	1 Yr:		4.0E-05	6.8E-04	4.2E-05	2.0E-06	2.2E-05
	50 Yr:		4.0E-05	6.8E-04	4.2E-05	2.0E-06	2.2E-05
NP238	Class: W	8.07E-07					
	1 Yr:		7.4E-09	4.5E-08	3.0E-09	1.6E-10	2.5E-09
	50 Yr:		7.4E-09	4.5E-08	3.0E-09	1.6E-10	2.5E-09
NP239	Class: W	2.19E-07					
	1 Yr:		8.4E-09	6.9E-10	8.8E-11	1.5E-11	1.4E-09
	50 Yr:		8.4E-09	6.9E-10	8.8E-11	1.5E-11	1.4E-09
PU236	Class: Y	1.48E-10					
	1 Yr:		1.0E-04	4.0E-05	2.7E-06	1.1E-07	1.4E-05
	50 Yr:		1.0E-04	4.0E-05	2.7E-06	1.1E-07	1.4E-05
PU237	Class: Y	5.58E-08					
	1 Yr:		4.2E-09	1.1E-10	3.9E-11	3.5E-11	5.9E-10
	50 Yr:		4.2E-09	1.1E-10	3.9E-11	3.5E-11	5.9E-10
PU238	Class: Y	1.11E-10					
	1 Yr:		1.2E-04	1.3E-04	7.3E-06	3.3E-07	1.9E-05
	50 Yr:		1.2E-04	1.3E-04	7.3E-06	3.3E-07	1.9E-05
PU239	Class: Y	1.10E-10					
	1 Yr:		1.1E-04	1.5E-04	8.3E-06	3.8E-07	1.9E-05
	50 Yr:		1.1E-04	1.5E-04	8.3E-06	3.8E-07	1.9E-05
PU240	Class: Y	1.08E-10					
	1 Yr:		1.1E-04	1.5E-04	8.3E-06	3.8E-07	1.9E-05
	50 Yr:		1.1E-04	1.5E-04	8.3E-06	3.8E-07	1.9E-05

PU241	Class: Y	2.00E-12					
	1 Yr:		4.6E-07	3.5E-06	1.7E-07	8.7E-09	1.7E-07
	50 Yr:		4.6E-07	3.5E-06	1.7E-07	8.7E-09	1.7E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		1.1E-04	1.4E-04	7.9E-06	3.6E-07	1.7E-05
	50 Yr:		1.1E-04	1.4E-04	7.9E-06	3.6E-07	1.7E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		6.2E-10	1.3E-11	1.1E-12	2.8E-13	1.4E-10
	50 Yr:		6.2E-10	1.3E-11	1.1E-12	2.8E-13	1.4E-10
PU244	Class: Y	6.56E-11					
	1 Yr:		9.7E-05	1.3E-04	7.4E-06	3.5E-07	1.6E-05
	50 Yr:		9.7E-05	1.3E-04	7.4E-06	3.5E-07	1.6E-05
AM241	Class: W	2.13E-08					
	1 Yr:		5.1E-05	1.2E-03	6.9E-05	3.6E-06	4.1E-05
	50 Yr:		5.1E-05	1.2E-03	6.9E-05	3.6E-06	4.1E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		1.2E-05	1.2E-03	6.3E-05	3.6E-06	3.4E-05
	50 Yr:		1.2E-05	1.2E-03	6.3E-05	3.6E-06	3.4E-05
AM242	Class: W	1.93E-08					
	1 Yr:		1.6E-07	1.4E-07	1.7E-08	1.8E-10	2.4E-08
	50 Yr:		1.6E-07	1.4E-07	1.7E-08	1.8E-10	2.4E-08
AM243	Class: W	5.87E-08					
	1 Yr:		4.8E-05	1.2E-03	6.8E-05	3.6E-06	4.0E-05
	50 Yr:		4.8E-05	1.2E-03	6.8E-05	3.6E-06	4.0E-05
CM242	Class: W	1.27E-10					
	1 Yr:		4.8E-05	4.3E-05	5.0E-06	5.3E-08	7.3E-06
	50 Yr:		4.8E-05	4.3E-05	5.0E-06	5.3E-08	7.3E-06
CM243	Class: W	1.67E-07					
	1 Yr:		5.4E-05	8.0E-04	5.7E-05	2.0E-06	3.2E-05
	50 Yr:		5.4E-05	8.0E-04	5.7E-05	2.0E-06	3.2E-05
CM244	Class: W	1.08E-10					
	1 Yr:		5.4E-05	6.4E-04	5.0E-05	1.5E-06	2.7E-05
	50 Yr:		5.4E-05	6.4E-04	5.0E-05	1.5E-06	2.7E-05
CM245	Class: W	1.10E-07					
	1 Yr:		4.9E-05	1.3E-03	7.0E-05	3.8E-06	4.1E-05
	50 Yr:		4.9E-05	1.3E-03	7.0E-05	3.8E-06	4.1E-05
CM246	Class: W	9.78E-11					
	1 Yr:		4.9E-05	1.2E-03	6.9E-05	3.7E-06	4.1E-05
	50 Yr:		4.9E-05	1.2E-03	6.9E-05	3.7E-06	4.1E-05
CM247	Class: W	4.38E-07					
	1 Yr:		4.3E-05	1.1E-03	6.4E-05	3.4E-06	3.7E-05
	50 Yr:		4.3E-05	1.1E-03	6.4E-05	3.4E-06	3.7E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix A.4

Age 1825 days

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

			AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D		0.00E00					
		1 Yr:		1.1E-11	1.1E-11	1.1E-11	1.1E-11	1.1E-11
		50 Yr:		1.1E-11	1.1E-11	1.1E-11	1.1E-11	1.1E-11
BE10	Class: Y		4.35E-09					
		1 Yr:		4.9E-07	8.4E-09	3.7E-09	1.1E-10	6.1E-08
		50 Yr:		4.9E-07	8.4E-09	3.7E-09	1.1E-10	6.1E-08
C 14	Class: D		8.20E-11					
		1 Yr:		3.6E-10	3.4E-10	3.4E-10	3.4E-10	3.7E-10
		50 Yr:		3.6E-10	3.4E-10	3.4E-10	3.4E-10	3.7E-10
F 18	Class: D		1.44E-06					
		1 Yr:		4.8E-11	7.9E-11	1.0E-10	6.6E-12	9.2E-11
		50 Yr:		4.8E-11	7.9E-11	1.0E-10	6.6E-12	9.2E-11
NA22	Class: D		3.22E-06					
		1 Yr:		2.6E-09	6.2E-09	4.5E-09	2.8E-09	3.8E-09
		50 Yr:		2.6E-09	6.2E-09	4.5E-09	2.8E-09	3.8E-09
NA24	Class: D		6.56E-06					
		1 Yr:		3.8E-10	6.0E-10	4.4E-10	3.4E-10	9.6E-10
		50 Yr:		3.8E-10	6.0E-10	4.4E-10	3.4E-10	9.6E-10
P 32	Class: D		1.69E-08					
		1 Yr:		1.0E-09	1.1E-08	1.6E-08	9.6E-10	3.2E-09
		50 Yr:		1.0E-09	1.1E-08	1.6E-08	9.6E-10	3.2E-09
P 33	Class: D		4.57E-10					
		1 Yr:		1.6E-10	1.8E-09	9.5E-10	1.4E-10	3.1E-10
		50 Yr:		1.6E-10	1.8E-09	9.5E-10	1.4E-10	3.1E-10
S 35	Class: W		9.81E-11					
		1 Yr:		2.1E-08	2.6E-11	2.6E-11	2.6E-11	2.8E-09
		50 Yr:		2.1E-08	2.6E-11	2.6E-11	2.6E-11	2.8E-09
CL36	Class: D		5.23E-09					
		1 Yr:		1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.2E-09
		50 Yr:		1.0E-09	1.0E-09	1.0E-09	1.0E-09	1.2E-09
AR39	NobleGas		3.63E-09					
		1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
		50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas		1.94E-06					
		1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
		50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D		2.50E-07					
		1 Yr:		6.0E-09	6.0E-09	6.0E-09	6.0E-09	7.4E-09
		50 Yr:		6.0E-09	6.0E-09	6.0E-09	6.0E-09	7.4E-09
CA41	Class: W		0.00E00					
		1 Yr:		4.8E-10	2.0E-09	6.7E-10	2.7E-12	1.7E-10
		50 Yr:		4.8E-10	2.0E-09	6.7E-10	2.7E-12	1.7E-10
CA45	Class: W		4.83E-10					
		1 Yr:		3.8E-08	7.6E-09	2.3E-09	3.4E-11	5.3E-09
		50 Yr:		3.8E-08	7.6E-09	2.3E-09	3.4E-11	5.3E-09
SC46	Class: Y		2.95E-06					
		1 Yr:		8.6E-08	3.1E-09	2.9E-09	3.3E-09	1.4E-08
		50 Yr:		8.6E-08	3.1E-09	2.9E-09	3.3E-09	1.4E-08
CR51	Class: Y		4.35E-08					
		1 Yr:		4.5E-10	3.0E-11	2.5E-11	2.8E-11	1.0E-10
		50 Yr:		4.5E-10	3.0E-11	2.5E-11	2.8E-11	1.0E-10
MN54	Class: W		1.21E-06					
		1 Yr:		1.4E-08	3.0E-09	2.1E-09	1.8E-09	3.9E-09
		50 Yr:		1.4E-08	3.0E-09	2.1E-09	1.8E-09	3.9E-09
MN56	Class: W		2.58E-06					
		1 Yr:		7.2E-10	2.2E-11	2.4E-11	1.6E-11	3.7E-10
		50 Yr:		7.2E-10	2.2E-11	2.4E-11	1.6E-11	3.7E-10
FE55	Class: W		0.00E00					
		1 Yr:		1.2E-09	2.3E-09	3.5E-09	2.4E-10	9.9E-10
		50 Yr:		1.2E-09	2.3E-09	3.5E-09	2.4E-10	9.9E-10
FE59	Class: W		1.77E-06					

	1 Yr:		4.2E-08	3.5E-09	4.1E-09	1.9E-09	7.9E-09
	50 Yr:		4.2E-08	3.5E-09	4.1E-09	1.9E-09	7.9E-09
CO57	Class: Y	1.57E-07					
	1 Yr:		1.5E-08	8.8E-10	4.1E-10	5.8E-10	2.3E-09
	50 Yr:		1.5E-08	8.8E-10	4.1E-10	5.8E-10	2.3E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		2.5E-08	1.3E-09	1.2E-09	1.5E-09	4.6E-09
	50 Yr:		2.5E-08	1.3E-09	1.2E-09	1.5E-09	4.6E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		3.4E-07	2.0E-08	1.9E-08	2.3E-08	5.9E-08
	50 Yr:		3.4E-07	2.0E-08	1.9E-08	2.3E-08	5.9E-08
NI59	Class: W	0.00E00					
	1 Yr:		1.4E-09	1.7E-10	1.7E-10	1.7E-10	3.4E-10
	50 Yr:		1.4E-09	1.7E-10	1.7E-10	1.7E-10	3.4E-10
NI63	Class: W	0.00E00					
	1 Yr:		5.8E-09	4.1E-10	4.1E-10	4.1E-10	1.1E-09
	50 Yr:		5.8E-09	4.1E-10	4.1E-10	4.1E-10	1.1E-09
NI65	Class: W	8.42E-07					
	1 Yr:		5.9E-10	6.6E-12	6.9E-12	5.6E-12	2.4E-10
	50 Yr:		5.9E-10	6.6E-12	6.9E-12	5.6E-12	2.4E-10
CU64	Class: D	2.69E-07					
	1 Yr:		4.9E-11	2.9E-11	2.8E-11	2.8E-11	1.2E-10
	50 Yr:		4.9E-11	2.9E-11	2.8E-11	2.8E-11	1.2E-10
ZN65	Class: Y	8.61E-07					
	1 Yr:		2.2E-08	1.9E-09	1.8E-09	2.1E-09	4.4E-09
	50 Yr:		2.2E-08	1.9E-09	1.8E-09	2.1E-09	4.4E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		2.4E-09	2.2E-11	2.4E-11	1.4E-11	8.2E-10
	50 Yr:		2.4E-09	2.2E-11	2.4E-11	1.4E-11	8.2E-10
ZN69	Class: Y	6.31E-09					
	1 Yr:		2.1E-10	8.2E-15	9.1E-15	6.4E-15	6.9E-11
	50 Yr:		2.1E-10	8.2E-15	9.1E-15	6.4E-15	6.9E-11
AS76	Class: W	6.50E-07					
	1 Yr:		6.8E-09	1.2E-10	1.2E-10	1.1E-10	2.2E-09
	50 Yr:		6.8E-09	1.2E-10	1.2E-10	1.1E-10	2.2E-09
SE75	Class: W	5.30E-07					
	1 Yr:		1.1E-08	1.2E-09	8.4E-10	9.6E-10	2.5E-09
	50 Yr:		1.1E-08	1.2E-09	8.4E-10	9.6E-10	2.5E-09
SE79	Class: W	1.24E-10					
	1 Yr:		3.7E-08	4.4E-10	4.4E-10	4.4E-10	6.9E-09
	50 Yr:		3.7E-08	4.4E-10	4.4E-10	4.4E-10	6.9E-09
BR82	Class: D	3.85E-06					
	1 Yr:		4.7E-10	4.6E-10	4.1E-10	4.8E-10	1.2E-09
	50 Yr:		4.7E-10	4.6E-10	4.1E-10	4.8E-10	1.2E-09
BR83	Class: D	1.68E-08					
	1 Yr:		4.7E-11	1.1E-11	1.0E-11	1.1E-11	5.0E-11
	50 Yr:		4.7E-11	1.1E-11	1.0E-11	1.1E-11	5.0E-11
BR84	Class: D	2.84E-06					
	1 Yr:		6.2E-11	1.1E-11	9.9E-12	1.1E-11	7.1E-11
	50 Yr:		6.2E-11	1.1E-11	9.9E-12	1.1E-11	7.1E-11
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					
	1 Yr:		2.7E-09	9.6E-09	5.9E-09	2.7E-09	3.4E-09
	50 Yr:		2.7E-09	9.6E-09	5.9E-09	2.7E-09	3.4E-09

RB87	Class: D	1.04E-09					
	1 Yr:		1.4E-09	5.3E-09	3.2E-09	1.4E-09	1.8E-09
	50 Yr:		1.4E-09	5.3E-09	3.2E-09	1.4E-09	1.8E-09
RB88	Class: D	1.05E-06					
	1 Yr:		6.4E-11	6.3E-12	5.9E-12	5.8E-12	5.2E-11
	50 Yr:		6.4E-11	6.3E-12	5.9E-12	5.8E-12	5.2E-11
RB89	Class: D	3.19E-06					
	1 Yr:		4.3E-11	7.6E-12	5.9E-12	5.2E-12	4.3E-11
	50 Yr:		4.3E-11	7.6E-12	5.9E-12	5.2E-12	4.3E-11
SR85	Class: D	7.06E-07					
	1 Yr:		6.8E-10	2.9E-09	1.8E-09	6.0E-10	1.1E-09
	50 Yr:		6.8E-10	2.9E-09	1.8E-09	6.0E-10	1.1E-09
SR89	Class: D	1.38E-08					
	1 Yr:		6.6E-10	2.2E-08	1.2E-08	6.1E-10	3.2E-09
	50 Yr:		6.6E-10	2.2E-08	1.2E-08	6.1E-10	3.2E-09
SR90	Class: D	3.10E-09					
	1 Yr:		2.1E-09	4.5E-07	1.9E-07	2.0E-09	3.1E-08
	50 Yr:		2.1E-09	4.5E-07	1.9E-07	2.0E-09	3.1E-08
SR91	Class: D	1.03E-06					
	1 Yr:		1.3E-10	5.3E-10	3.7E-10	7.3E-11	5.2E-10
	50 Yr:		1.3E-10	5.3E-10	3.7E-10	7.3E-11	5.2E-10
SR92	Class: D	2.02E-06					
	1 Yr:		8.3E-11	3.9E-10	1.8E-10	4.3E-11	3.3E-10
	50 Yr:		8.3E-11	3.9E-10	1.8E-10	4.3E-11	3.3E-10
Y 90	Class: Y	2.50E-08					
	1 Yr:		1.5E-08	3.9E-12	5.5E-12	1.5E-13	4.2E-09
	50 Yr:		1.5E-08	3.9E-12	5.5E-12	1.5E-13	4.2E-09
Y 91M	Class: Y	7.47E-07					
	1 Yr:		1.0E-10	2.0E-12	2.0E-12	1.5E-12	3.2E-11
	50 Yr:		1.0E-10	2.0E-12	2.0E-12	1.5E-12	3.2E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		1.4E-07	1.8E-10	2.5E-10	8.1E-12	1.9E-08
	50 Yr:		1.4E-07	1.8E-10	2.5E-10	8.1E-12	1.9E-08
Y 92	Class: Y	4.16E-07					
	1 Yr:		1.4E-09	3.5E-12	3.9E-12	2.5E-12	5.5E-10
	50 Yr:		1.4E-09	3.5E-12	3.9E-12	2.5E-12	5.5E-10
Y 93	Class: Y	1.67E-07					
	1 Yr:		3.2E-09	3.6E-12	4.1E-12	2.2E-12	1.4E-09
	50 Yr:		3.2E-09	3.6E-12	4.1E-12	2.2E-12	1.4E-09
ZR93	Class: W	0.00E00					
	1 Yr:		6.6E-09	8.7E-08	9.2E-09	6.9E-12	2.9E-09
	50 Yr:		6.6E-09	8.7E-08	9.2E-09	6.9E-12	2.9E-09
ZR95	Class: W	1.06E-06					
	1 Yr:		5.7E-08	3.2E-08	5.8E-09	1.6E-09	9.7E-09
	50 Yr:		5.7E-08	3.2E-08	5.8E-09	1.6E-09	9.7E-09
ZR97	Class: W	2.81E-07					
	1 Yr:		6.5E-09	1.9E-10	2.3E-10	7.2E-11	2.8E-09
	50 Yr:		6.5E-09	1.9E-10	2.3E-10	7.2E-11	2.8E-09
NB93M	Class: Y	9.62E-11					
	1 Yr:		3.2E-08	1.5E-10	6.6E-11	1.1E-11	4.0E-09
	50 Yr:		3.2E-08	1.5E-10	6.6E-11	1.1E-11	4.0E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		5.3E-07	2.1E-08	2.1E-08	2.2E-08	8.3E-08
	50 Yr:		5.3E-07	2.1E-08	2.1E-08	2.2E-08	8.3E-08
NB95M	Class: Y	8.64E-08					
	1 Yr:		1.1E-08	9.8E-11	7.7E-11	7.4E-11	1.9E-09
	50 Yr:		1.1E-08	9.8E-11	7.7E-11	7.4E-11	1.9E-09
NB95	Class: Y	1.10E-06					
	1 Yr:		2.2E-08	6.4E-10	6.0E-10	6.7E-10	3.6E-09
	50 Yr:		2.2E-08	6.4E-10	6.0E-10	6.7E-10	3.6E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		2.9E-10	3.3E-12	3.4E-12	2.6E-12	1.2E-10
	50 Yr:		2.9E-10	3.3E-12	3.4E-12	2.6E-12	1.2E-10
MO93	Class: D	5.46E-10					
	1 Yr:		2.6E-10	2.9E-08	9.2E-09	1.8E-10	1.7E-09
	50 Yr:		2.6E-10	2.9E-08	9.2E-09	1.8E-10	1.7E-09
MO99	Class: D	2.20E-07					
	1 Yr:		3.5E-10	1.1E-09	8.2E-10	2.9E-10	7.7E-10

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             50 Yr:            3.5E-10   1.1E-09   8.2E-10   2.9E-10   7.7E-10
TC99M   Class: W     1.66E-07
              1 Yr:            1.3E-10   6.1E-12   3.6E-12   2.7E-11   5.1E-11
             50 Yr:            1.3E-10   6.1E-12   3.6E-12   2.7E-11   5.1E-11
TC99    Class: W     9.05E-10
              1 Yr:            6.1E-08   3.0E-11   3.0E-11   1.3E-09   7.9E-09
             50 Yr:            6.1E-08   3.0E-11   3.0E-11   1.3E-09   7.9E-09
TC101   Class: W     4.76E-07
              1 Yr:            5.9E-11   4.8E-13   3.8E-13   6.1E-12   3.2E-11
             50 Yr:            5.9E-11   4.8E-13   3.8E-13   6.1E-12   3.2E-11
RU103   Class: Y     6.59E-07
              1 Yr:            4.2E-08   4.4E-10   4.1E-10   4.9E-10   6.0E-09
             50 Yr:            4.2E-08   4.4E-10   4.1E-10   4.9E-10   6.0E-09
RU105   Class: Y     1.13E-06
              1 Yr:            1.4E-09   1.5E-11   1.6E-11   1.1E-11   4.9E-10
             50 Yr:            1.4E-09   1.5E-11   1.6E-11   1.1E-11   4.9E-10
RU106   Class: Y     0.00E00
              1 Yr:            1.1E-06   1.4E-09   1.3E-09   1.6E-09   1.4E-07
             50 Yr:            1.1E-06   1.4E-09   1.3E-09   1.6E-09   1.4E-07
RH103M  Class: Y     1.90E-10
              1 Yr:            3.5E-11   1.5E-14   5.5E-15   3.3E-15   6.7E-12
             50 Yr:            3.5E-11   1.5E-14   5.5E-15   3.3E-15   6.7E-12
RH105   Class: Y     1.10E-07
              1 Yr:            4.0E-09   1.1E-11   1.0E-11   7.9E-12   8.0E-10
             50 Yr:            4.0E-09   1.1E-11   1.0E-11   7.9E-12   8.0E-10
PD103   Class: Y     1.68E-09
              1 Yr:            7.1E-09   2.7E-11   6.2E-12   1.8E-12   1.0E-09
             50 Yr:            7.1E-09   2.7E-11   6.2E-12   1.8E-12   1.0E-09
PD107   Class: Y     0.00E00
              1 Yr:            1.0E-08   8.5E-13   4.3E-13   6.4E-14   1.3E-09
             50 Yr:            1.0E-08   8.5E-13   4.3E-13   6.4E-14   1.3E-09
PD109   Class: Y     1.33E-08
              1 Yr:            3.9E-09   2.2E-12   8.8E-13   3.1E-13   9.4E-10
             50 Yr:            3.9E-09   2.2E-12   8.8E-13   3.1E-13   9.4E-10
AG110M  Class: D     4.01E-06
              1 Yr:            1.2E-08   8.3E-09   7.9E-09   7.0E-09   1.5E-08
             50 Yr:            1.2E-08   8.3E-09   7.9E-09   7.0E-09   1.5E-08
AG111   Class: D     4.38E-08
              1 Yr:            3.5E-10   3.1E-10   3.1E-10   3.0E-10   1.4E-09
             50 Yr:            3.5E-10   3.1E-10   3.1E-10   3.0E-10   1.4E-09
CD109   Class: D     7.22E-09
              1 Yr:            5.0E-09   6.2E-09   3.9E-09   4.2E-09   2.1E-08
             50 Yr:            5.0E-09   6.2E-09   3.9E-09   4.2E-09   2.1E-08
CD113M  Class: D     2.86E-09
              1 Yr:            3.1E-08   3.1E-08   3.1E-08   3.1E-08   1.8E-07
             50 Yr:            3.1E-08   3.1E-08   3.1E-08   3.1E-08   1.8E-07
CD115M  Class: D     4.67E-08
              1 Yr:            2.9E-09   2.9E-09   2.9E-09   2.8E-09   1.5E-08
             50 Yr:            2.9E-09   2.9E-09   2.9E-09   2.8E-09   1.5E-08
CD115   Class: D     3.31E-07
              1 Yr:            2.4E-10   2.0E-10   2.0E-10   1.7E-10   1.2E-09
             50 Yr:            2.4E-10   2.0E-10   2.0E-10   1.7E-10   1.2E-09
IN111   Class: D     5.30E-07
              1 Yr:            1.2E-10   4.6E-10   5.3E-10   8.1E-11   4.3E-10
             50 Yr:            1.2E-10   4.6E-10   5.3E-10   8.1E-11   4.3E-10
IN114M  Class: D     1.23E-07
              1 Yr:            5.2E-09   1.3E-07   1.9E-07   5.1E-09   3.4E-08
             50 Yr:            5.2E-09   1.3E-07   1.9E-07   5.1E-09   3.4E-08
IN115M  Class: D     2.17E-07
              1 Yr:            3.1E-11   5.0E-11   6.9E-11   8.9E-12   8.4E-11
             50 Yr:            3.1E-11   5.0E-11   6.9E-11   8.9E-12   8.4E-11
SN117M  Class: W     1.93E-07
              1 Yr:            3.2E-08   3.0E-09   4.1E-10   7.6E-11   4.6E-09
             50 Yr:            3.2E-08   3.0E-09   4.1E-10   7.6E-11   4.6E-09
SN119M  Class: W     2.23E-09
              1 Yr:            3.4E-08   2.3E-09   1.0E-09   1.2E-10   4.7E-09
             50 Yr:            3.4E-08   2.3E-09   1.0E-09   1.2E-10   4.7E-09
SN121M  Class: W     1.66E-09
              1 Yr:            6.5E-08   7.9E-09   3.8E-09   4.1E-10   9.1E-09
             50 Yr:            6.5E-08   7.9E-09   3.8E-09   4.1E-10   9.1E-09
SN121   Class: W     1.23E-09
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	1 Yr:		2.6E-09	1.4E-10	1.7E-11	1.2E-12	5.1E-10
	50 Yr:		2.6E-09	1.4E-10	1.7E-11	1.2E-12	5.1E-10
SN123	Class: W	2.20E-08					
	1 Yr:		1.3E-07	6.7E-09	3.4E-09	3.5E-10	1.8E-08
	50 Yr:		1.3E-07	6.7E-09	3.4E-09	3.5E-10	1.8E-08
SN125	Class: W	4.86E-07					
	1 Yr:		3.9E-08	1.7E-09	1.4E-09	1.4E-10	7.6E-09
	50 Yr:		3.9E-08	1.7E-09	1.4E-09	1.4E-10	7.6E-09
SN126	Class: W	5.83E-08					
	1 Yr:		3.7E-07	6.6E-08	3.8E-08	1.1E-08	6.2E-08
	50 Yr:		3.7E-07	6.6E-08	3.8E-08	1.1E-08	6.2E-08
SB124	Class: W	2.72E-06					
	1 Yr:		8.6E-08	5.4E-09	3.0E-09	1.9E-09	1.4E-08
	50 Yr:		8.6E-08	5.4E-09	3.0E-09	1.9E-09	1.4E-08
SB125	Class: W	5.90E-07					
	1 Yr:		6.4E-08	2.0E-08	4.2E-09	1.5E-09	1.0E-08
	50 Yr:		6.4E-08	2.0E-08	4.2E-09	1.5E-09	1.0E-08
SB126M	Class: W	2.21E-06					
	1 Yr:		8.6E-11	2.6E-12	2.3E-12	2.2E-12	5.5E-11
	50 Yr:		8.6E-11	2.6E-12	2.3E-12	2.2E-12	5.5E-11
SB126	Class: W	4.04E-06					
	1 Yr:		3.2E-08	1.8E-09	1.4E-09	1.0E-09	7.5E-09
	50 Yr:		3.2E-08	1.8E-09	1.4E-09	1.0E-09	7.5E-09
SB127	Class: W	9.84E-07					
	1 Yr:		2.0E-08	3.6E-10	3.6E-10	1.2E-10	3.9E-09
	50 Yr:		2.0E-08	3.6E-10	3.6E-10	1.2E-10	3.9E-09
TE123M	Class: W	1.84E-07					
	1 Yr:		5.4E-08	3.2E-08	4.0E-09	1.9E-09	8.0E-09
	50 Yr:		5.4E-08	3.2E-08	4.0E-09	1.9E-09	8.0E-09
TE125M	Class: W	1.06E-08					
	1 Yr:		4.7E-08	1.5E-08	1.8E-09	1.4E-09	6.5E-09
	50 Yr:		4.7E-08	1.5E-08	1.8E-09	1.4E-09	6.5E-09
TE127M	Class: W	3.56E-09					
	1 Yr:		1.1E-07	2.7E-08	9.8E-09	4.7E-09	1.5E-08
	50 Yr:		1.1E-07	2.7E-08	9.8E-09	4.7E-09	1.5E-08
TE127	Class: W	1.05E-08					
	1 Yr:		1.3E-09	6.1E-12	7.3E-12	1.5E-11	3.6E-10
	50 Yr:		1.3E-09	6.1E-12	7.3E-12	1.5E-11	3.6E-10
TE129M	Class: W	4.92E-08					
	1 Yr:		9.2E-08	8.6E-09	5.2E-09	5.7E-09	1.4E-08
	50 Yr:		9.2E-08	8.6E-09	5.2E-09	5.7E-09	1.4E-08
TE129	Class: W	9.05E-08					
	1 Yr:		2.6E-10	1.2E-12	1.1E-12	1.3E-12	9.9E-11
	50 Yr:		2.6E-10	1.2E-12	1.1E-12	1.3E-12	9.9E-11
TE131M	Class: W	2.07E-06					
	1 Yr:		8.4E-09	3.6E-10	2.1E-10	1.3E-08	3.1E-09
	50 Yr:		8.4E-09	3.6E-10	2.1E-10	1.3E-08	3.1E-09
TE131	Class: W	6.09E-07					
	1 Yr:		1.7E-10	1.5E-12	1.2E-12	2.4E-10	8.2E-11
	50 Yr:		1.7E-10	1.5E-12	1.2E-12	2.4E-10	8.2E-11
TE132	Class: W	2.95E-07					
	1 Yr:		1.9E-08	8.7E-10	4.9E-10	2.5E-08	6.5E-09
	50 Yr:		1.9E-08	8.7E-10	4.9E-10	2.5E-08	6.5E-09
TE133M	Class: W	3.41E-06					
	1 Yr:		4.8E-10	1.2E-11	1.2E-11	9.4E-10	2.8E-10
	50 Yr:		4.8E-10	1.2E-11	1.2E-11	9.4E-10	2.8E-10
TE133	Class: W	1.37E-06					
	1 Yr:		9.8E-11	1.4E-12	1.3E-12	2.1E-10	6.1E-11
	50 Yr:		9.8E-11	1.4E-12	1.3E-12	2.1E-10	6.1E-11
TE134	Class: W	1.24E-06					
	1 Yr:		3.7E-10	1.1E-11	1.1E-11	1.3E-10	1.9E-10
	50 Yr:		3.7E-10	1.1E-11	1.1E-11	1.3E-10	1.9E-10
I 125	Class: D	1.19E-08					
	1 Yr:		4.7E-11	9.2E-11	2.0E-11	3.0E-07	1.5E-08
	50 Yr:		4.7E-11	9.2E-11	2.0E-11	3.0E-07	1.5E-08
I 129	Class: D	8.92E-09					
	1 Yr:		8.5E-11	1.1E-10	4.2E-11	1.2E-06	6.1E-08
	50 Yr:		8.5E-11	1.1E-10	4.2E-11	1.2E-06	6.1E-08
I 130	Class: D	3.05E-06					
	1 Yr:		1.5E-10	9.4E-11	8.0E-11	6.8E-08	3.5E-09
	50 Yr:		1.5E-10	9.4E-11	8.0E-11	6.8E-08	3.5E-09

I 131	Class: D	5.33E-07					
	1 Yr:		1.6E-10	1.1E-10	8.4E-11	7.3E-07	3.7E-08
	50 Yr:		1.6E-10	1.1E-10	8.4E-11	7.3E-07	3.7E-08
I 132	Class: D	3.31E-06					
	1 Yr:		8.1E-11	3.4E-11	3.1E-11	7.6E-09	4.6E-10
	50 Yr:		8.1E-11	3.4E-11	3.1E-11	7.6E-09	4.6E-10
I 133	Class: D	8.70E-07					
	1 Yr:		1.1E-10	5.9E-11	5.3E-11	1.6E-07	8.3E-09
	50 Yr:		1.1E-10	5.9E-11	5.3E-11	1.6E-07	8.3E-09
I 134	Class: D	3.85E-06					
	1 Yr:		6.1E-11	1.6E-11	1.5E-11	1.5E-09	1.8E-10
	50 Yr:		6.1E-11	1.6E-11	1.5E-11	1.5E-09	1.8E-10
I 135	Class: D	2.38E-06					
	1 Yr:		9.6E-11	5.1E-11	4.5E-11	3.3E-08	1.7E-09
	50 Yr:		9.6E-11	5.1E-11	4.5E-11	3.3E-08	1.7E-09
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		4.1E-11	6.6E-12	5.4E-12	5.7E-12	3.8E-11
	50 Yr:		4.1E-11	6.6E-12	5.4E-12	5.7E-12	3.8E-11
CS134	Class: D	2.23E-06					
	1 Yr:		4.1E-09	4.5E-09	4.1E-09	4.7E-09	5.2E-09
	50 Yr:		4.1E-09	4.5E-09	4.1E-09	4.7E-09	5.2E-09
CS135	Class: D	3.00E-10					
	1 Yr:		5.3E-10	5.0E-10	5.0E-10	5.0E-10	6.2E-10
	50 Yr:		5.3E-10	5.0E-10	5.0E-10	5.0E-10	6.2E-10
CS136	Class: D	3.13E-06					
	1 Yr:		1.9E-09	2.2E-09	1.9E-09	2.2E-09	2.9E-09
	50 Yr:		1.9E-09	2.2E-09	1.9E-09	2.2E-09	2.9E-09
CS137	Class: D	2.93E-09					
	1 Yr:		3.0E-09	3.1E-09	2.9E-09	3.2E-09	3.7E-09
	50 Yr:		3.0E-09	3.1E-09	2.9E-09	3.2E-09	3.7E-09
CS138	Class: D	3.63E-06					
	1 Yr:		6.4E-11	1.2E-11	1.1E-11	1.3E-11	8.2E-11
	50 Yr:		6.4E-11	1.2E-11	1.1E-11	1.3E-11	8.2E-11
BA139	Class: D	8.04E-08					
	1 Yr:		5.5E-11	5.0E-11	3.5E-11	5.2E-12	1.1E-10
	50 Yr:		5.5E-11	5.0E-11	3.5E-11	5.2E-12	1.1E-10
BA140	Class: D	2.55E-07					
	1 Yr:		5.5E-10	1.1E-08	4.8E-09	4.2E-10	3.6E-09
	50 Yr:		5.5E-10	1.1E-08	4.8E-09	4.2E-10	3.6E-09
BA141	Class: D	1.24E-06					
	1 Yr:		4.4E-11	2.5E-11	1.6E-11	3.3E-12	6.4E-11
	50 Yr:		4.4E-11	2.5E-11	1.6E-11	3.3E-12	6.4E-11
BA142	Class: D	1.53E-06					
	1 Yr:		3.2E-11	1.1E-11	8.5E-12	3.2E-12	4.6E-11
	50 Yr:		3.2E-11	1.1E-11	8.5E-12	3.2E-12	4.6E-11
LA140	Class: D	3.50E-06					
	1 Yr:		4.8E-10	7.9E-10	9.6E-10	2.5E-10	2.0E-09
	50 Yr:		4.8E-10	7.9E-10	9.6E-10	2.5E-10	2.0E-09
LA141	Class: D	9.08E-08					
	1 Yr:		8.2E-11	2.4E-10	9.3E-11	2.8E-11	2.3E-10

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             50 Yr:            8.2E-11   2.4E-10   9.3E-11   2.8E-11   2.3E-10
LA142   Class: D     4.32E-06
              1 Yr:            8.2E-11   3.4E-11   3.5E-11   2.6E-11   1.8E-10
             50 Yr:            8.2E-11   3.4E-11   3.5E-11   2.6E-11   1.8E-10
CE141   Class: Y     9.81E-08
              1 Yr:            5.3E-08   4.1E-10   9.3E-11   7.4E-11   7.1E-09
             50 Yr:            5.3E-08   4.1E-10   9.3E-11   7.4E-11   7.1E-09
CE143   Class: Y     3.82E-07
              1 Yr:            9.2E-09   4.2E-11   3.3E-11   1.9E-11   2.1E-09
             50 Yr:            9.2E-09   4.2E-11   3.3E-11   1.9E-11   2.1E-09
CE144   Class: Y     2.41E-08
              1 Yr:            8.7E-07   7.8E-09   6.1E-09   4.1E-10   1.1E-07
             50 Yr:            8.7E-07   7.8E-09   6.1E-09   4.1E-10   1.1E-07
PR143   Class: Y     6.12E-09
              1 Yr:            3.4E-08   6.3E-12   9.0E-12   4.4E-14   5.1E-09
             50 Yr:            3.4E-08   6.3E-12   9.0E-12   4.4E-14   5.1E-09
PR144M  Class: Y     6.97E-09
              1 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
             50 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
PR144   Class: Y     8.36E-08
              1 Yr:            1.1E-10   3.7E-14   3.4E-14   3.5E-14   5.2E-11
             50 Yr:            1.1E-10   3.7E-14   3.4E-14   3.5E-14   5.2E-11
ND147   Class: Y     1.81E-07
              1 Yr:            3.3E-08   2.3E-10   7.5E-11   5.4E-11   4.9E-09
             50 Yr:            3.3E-08   2.3E-10   7.5E-11   5.4E-11   4.9E-09
PM147   Class: Y     2.73E-10
              1 Yr:            7.8E-08   9.0E-09   1.0E-09   1.1E-13   9.9E-09
             50 Yr:            7.8E-08   9.0E-09   1.0E-09   1.1E-13   9.9E-09
PM148M  Class: Y     2.84E-06
              1 Yr:            7.5E-08   2.1E-09   1.8E-09   2.1E-09   1.2E-08
             50 Yr:            7.5E-08   2.1E-09   1.8E-09   2.1E-09   1.2E-08
PM148   Class: Y     8.70E-07
              1 Yr:            2.6E-08   1.2E-10   1.3E-10   1.0E-10   5.5E-09
             50 Yr:            2.6E-08   1.2E-10   1.3E-10   1.0E-10   5.5E-09
PM149   Class: Y     2.24E-08
              1 Yr:            7.9E-09   2.9E-12   3.4E-12   1.1E-12   1.8E-09
             50 Yr:            7.9E-09   2.9E-12   3.4E-12   1.1E-12   1.8E-09
PM151   Class: Y     4.42E-07
              1 Yr:            4.8E-09   3.7E-11   3.1E-11   1.9E-11   1.3E-09
             50 Yr:            4.8E-09   3.7E-11   3.1E-11   1.9E-11   1.3E-09
SM147   Class: W     0.00E00
              1 Yr:            6.2E-07   1.9E-05   2.0E-06   4.9E-11   1.6E-05
             50 Yr:            6.2E-07   1.9E-05   2.0E-06   4.9E-11   1.6E-05
SM151   Class: W     7.79E-13
              1 Yr:            7.1E-09   1.5E-07   1.6E-08   4.4E-13   6.6E-09
             50 Yr:            7.1E-09   1.5E-07   1.6E-08   4.4E-13   6.6E-09
SM153   Class: W     6.46E-08
              1 Yr:            7.1E-09   2.0E-10   9.5E-11   7.5E-12   1.5E-09
             50 Yr:            7.1E-09   2.0E-10   9.5E-11   7.5E-12   1.5E-09
EU152   Class: W     1.67E-06
              1 Yr:            1.2E-07   3.1E-07   1.2E-07   1.3E-08   7.1E-08
             50 Yr:            1.2E-07   3.1E-07   1.2E-07   1.3E-08   7.1E-08
EU154   Class: W     1.82E-06
              1 Yr:            1.9E-07   6.9E-07   1.8E-07   1.2E-08   9.7E-08
             50 Yr:            1.9E-07   6.9E-07   1.8E-07   1.2E-08   9.7E-08
EU155   Class: W     6.78E-08
              1 Yr:            3.7E-08   2.2E-07   2.6E-08   5.3E-10   1.4E-08
             50 Yr:            3.7E-08   2.2E-07   2.6E-08   5.3E-10   1.4E-08
EU156   Class: W     2.02E-06
              1 Yr:            4.3E-08   3.8E-09   1.9E-09   5.1E-10   7.7E-09
             50 Yr:            4.3E-08   3.8E-09   1.9E-09   5.1E-10   7.7E-09
GD153   Class: D     9.84E-08
              1 Yr:            1.9E-09   1.4E-07   1.8E-08   4.6E-10   6.5E-09
             50 Yr:            1.9E-09   1.4E-07   1.8E-08   4.6E-10   6.5E-09
TB160   Class: W     1.64E-06
              1 Yr:            8.6E-08   4.0E-08   9.0E-09   1.4E-09   1.5E-08
             50 Yr:            8.6E-08   4.0E-08   9.0E-09   1.4E-09   1.5E-08
HO166M  Class: W     2.48E-06
              1 Yr:            1.9E-07   9.9E-07   2.2E-07   2.9E-08   1.8E-07
             50 Yr:            1.9E-07   9.9E-07   2.2E-07   2.9E-08   1.8E-07
W 181   Class: D     3.69E-08
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	1 Yr:		1.4E-11	1.5E-10	5.2E-11	7.3E-12	9.5E-11
	50 Yr:		1.4E-11	1.5E-10	5.2E-11	7.3E-12	9.5E-11
W 187	Class: D	6.72E-07					
	1 Yr:		8.5E-11	1.7E-10	7.4E-11	3.4E-11	7.0E-10
	50 Yr:		8.5E-11	1.7E-10	7.4E-11	3.4E-11	7.0E-10
W 185	Class: D	1.57E-09					
	1 Yr:		4.0E-11	4.3E-10	2.1E-10	8.8E-12	4.4E-10
	50 Yr:		4.0E-11	4.3E-10	2.1E-10	8.8E-12	4.4E-10
RE187	Class: W	0.00E00					
	1 Yr:		1.2E-10	5.3E-13	5.3E-13	2.3E-11	2.0E-11
	50 Yr:		1.2E-10	5.3E-13	5.3E-13	2.3E-11	2.0E-11
IR192	Class: Y	1.14E-06					
	1 Yr:		9.4E-08	1.4E-09	1.1E-09	1.4E-09	1.4E-08
	50 Yr:		9.4E-08	1.4E-09	1.1E-09	1.4E-09	1.4E-08
HG203	Class: D	3.28E-07					
	1 Yr:		9.0E-10	1.0E-09	8.9E-10	9.3E-10	1.4E-09
	50 Yr:		9.0E-10	1.0E-09	8.9E-10	9.3E-10	1.4E-09
RN222	NobleGas	5.61E-10					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
TH227	Class: Y	1.40E-07					
	1 Yr:		1.6E-04	2.8E-07	2.9E-08	8.1E-10	1.9E-05
	50 Yr:		1.6E-04	2.8E-07	2.9E-08	8.1E-10	1.9E-05
TH228	Class: Y	2.56E-09					
	1 Yr:		6.7E-04	4.5E-05	5.1E-06	1.3E-07	8.2E-05
	50 Yr:		6.7E-04	4.5E-05	5.1E-06	1.3E-07	8.2E-05
TH229	Class: Y	1.06E-07					
	1 Yr:		9.6E-04	5.3E-04	3.6E-05	2.4E-06	1.3E-04
	50 Yr:		9.6E-04	5.3E-04	3.6E-05	2.4E-06	1.3E-04
TH230	Class: Y	4.70E-10					
	1 Yr:		1.5E-04	2.5E-04	1.4E-05	4.6E-07	2.4E-05
	50 Yr:		1.5E-04	2.5E-04	1.4E-05	4.6E-07	2.4E-05
TH231	Class: Y	1.45E-08					
	1 Yr:		4.0E-09	6.2E-11	5.1E-12	9.9E-13	7.7E-10
	50 Yr:		4.0E-09	6.2E-11	5.1E-12	9.9E-13	7.7E-10
TH232	Class: Y	2.29E-10					
	1 Yr:		2.5E-04	2.9E-04	1.8E-05	1.2E-06	3.7E-05
	50 Yr:		2.5E-04	2.9E-04	1.8E-05	1.2E-06	3.7E-05
TH234	Class: Y	9.30E-09					
	1 Yr:		1.1E-07	2.5E-10	1.9E-10	2.0E-11	1.7E-08
	50 Yr:		1.1E-07	2.5E-10	1.9E-10	2.0E-11	1.7E-08
RA223	Class: W	1.73E-07					
	1 Yr:		1.1E-04	4.5E-06	2.6E-07	1.2E-08	1.3E-05
	50 Yr:		1.1E-04	4.5E-06	2.6E-07	1.2E-08	1.3E-05
RA224	Class: W	1.36E-08					
	1 Yr:		4.4E-05	2.3E-06	1.3E-07	8.3E-09	5.3E-06
	50 Yr:		4.4E-05	2.3E-06	1.3E-07	8.3E-09	5.3E-06
RA225	Class: W	7.60E-09					
	1 Yr:		9.2E-05	9.4E-06	8.3E-07	1.8E-08	1.1E-05
	50 Yr:		9.2E-05	9.4E-06	8.3E-07	1.8E-08	1.1E-05
RA226	Class: W	8.96E-09					
	1 Yr:		5.7E-05	8.6E-06	6.7E-07	4.8E-08	7.0E-06
	50 Yr:		5.7E-05	8.6E-06	6.7E-07	4.8E-08	7.0E-06
RA228	Class: W	0.00E00					
	1 Yr:		2.2E-05	1.2E-04	1.4E-05	4.4E-07	6.3E-06
	50 Yr:		2.2E-05	1.2E-04	1.4E-05	4.4E-07	6.3E-06
PB210	Class: D	1.42E-09					
	1 Yr:		3.7E-07	2.3E-05	5.4E-06	3.7E-07	1.6E-06
	50 Yr:		3.7E-07	2.3E-05	5.4E-06	3.7E-07	1.6E-06
PB212	Class: D	1.97E-07					
	1 Yr:		2.1E-08	4.6E-07	3.5E-08	1.2E-08	5.5E-08
	50 Yr:		2.1E-08	4.6E-07	3.5E-08	1.2E-08	5.5E-08
BI210	Class: W	8.14E-09					
	1 Yr:		1.5E-06	1.5E-10	1.5E-10	1.5E-10	1.9E-07
	50 Yr:		1.5E-06	1.5E-10	1.5E-10	1.5E-10	1.9E-07
BI212	Class: W	2.83E-07					
	1 Yr:		3.3E-07	7.2E-11	7.2E-11	7.1E-11	6.1E-08
	50 Yr:		3.3E-07	7.2E-11	7.2E-11	7.1E-11	6.1E-08
PO210	Class: W	1.23E-11					
	1 Yr:		5.1E-05	1.5E-06	2.0E-06	1.6E-07	6.7E-06
	50 Yr:		5.1E-05	1.5E-06	2.0E-06	1.6E-07	6.7E-06

U 232	Class: Y	3.72E-10					
	1 Yr:		5.3E-04	5.5E-05	5.5E-06	2.4E-07	6.6E-05
	50 Yr:		5.3E-04	5.5E-05	5.5E-06	2.4E-07	6.6E-05
U 233	Class: Y	4.48E-10					
	1 Yr:		1.6E-04	1.2E-06	9.2E-08	2.3E-08	1.9E-05
	50 Yr:		1.6E-04	1.2E-06	9.2E-08	2.3E-08	1.9E-05
U 234	Class: Y	1.93E-10					
	1 Yr:		1.6E-04	8.3E-07	7.1E-08	2.1E-08	1.9E-05
	50 Yr:		1.6E-04	8.3E-07	7.1E-08	2.1E-08	1.9E-05
U 235	Class: Y	2.04E-07					
	1 Yr:		1.4E-04	7.9E-07	6.8E-08	2.2E-08	1.7E-05
	50 Yr:		1.4E-04	7.9E-07	6.8E-08	2.2E-08	1.7E-05
U 236	Class: Y	1.22E-10					
	1 Yr:		1.5E-04	7.9E-07	6.7E-08	2.0E-08	1.8E-05
	50 Yr:		1.5E-04	7.9E-07	6.7E-08	2.0E-08	1.8E-05
U 237	Class: Y	1.67E-07					
	1 Yr:		2.5E-08	9.9E-11	3.9E-11	3.6E-11	3.7E-09
	50 Yr:		2.5E-08	9.9E-11	3.9E-11	3.6E-11	3.7E-09
U 238	Class: Y	7.92E-11					
	1 Yr:		1.3E-04	7.5E-07	6.7E-08	1.9E-08	1.6E-05
	50 Yr:		1.3E-04	7.5E-07	6.7E-08	1.9E-08	1.6E-05
U 240	Class: Y	1.85E-09					
	1 Yr:		5.4E-09	5.7E-11	2.1E-11	1.1E-11	1.6E-09
	50 Yr:		5.4E-09	5.7E-11	2.1E-11	1.1E-11	1.6E-09
PA231	Class: Y	4.95E-08					
	1 Yr:		2.5E-04	5.9E-04	3.2E-05	2.0E-06	4.3E-05
	50 Yr:		2.5E-04	5.9E-04	3.2E-05	2.0E-06	4.3E-05
PA233	Class: Y	2.70E-07					
	1 Yr:		5.5E-08	5.1E-10	1.8E-10	1.6E-10	7.5E-09
	50 Yr:		5.5E-08	5.1E-10	1.8E-10	1.6E-10	7.5E-09
PA234	Class: Y	2.75E-06					
	1 Yr:		3.2E-09	5.2E-11	5.4E-11	3.3E-11	1.1E-09
	50 Yr:		3.2E-09	5.2E-11	5.4E-11	3.3E-11	1.1E-09
AC225	Class: Y	2.01E-08					
	1 Yr:		1.2E-04	1.9E-07	2.9E-08	8.0E-09	1.5E-05
	50 Yr:		1.2E-04	1.9E-07	2.9E-08	8.0E-09	1.5E-05
AC227	Class: Y	1.62E-10					
	1 Yr:		8.2E-04	1.8E-04	1.6E-05	1.2E-06	1.1E-04
	50 Yr:		8.2E-04	1.8E-04	1.6E-05	1.2E-06	1.1E-04
AC228	Class: Y	1.42E-06					
	1 Yr:		2.5E-07	1.6E-08	1.9E-09	6.4E-11	3.0E-08
	50 Yr:		2.5E-07	1.6E-08	1.9E-09	6.4E-11	3.0E-08
FR223	Class: D	6.97E-08					
	1 Yr:		3.0E-09	2.9E-09	2.9E-09	2.9E-09	3.2E-09
	50 Yr:		3.0E-09	2.9E-09	2.9E-09	2.9E-09	3.2E-09
NP237	Class: W	2.81E-08					
	1 Yr:		5.9E-05	6.8E-04	6.3E-05	2.8E-06	2.8E-05
	50 Yr:		5.9E-05	6.8E-04	6.3E-05	2.8E-06	2.8E-05
NP238	Class: W	8.07E-07					
	1 Yr:		1.0E-08	4.7E-08	4.7E-09	2.2E-10	3.5E-09
	50 Yr:		1.0E-08	4.7E-08	4.7E-09	2.2E-10	3.5E-09
NP239	Class: W	2.19E-07					
	1 Yr:		1.1E-08	1.1E-09	1.5E-10	2.4E-11	2.0E-09
	50 Yr:		1.1E-08	1.1E-09	1.5E-10	2.4E-11	2.0E-09
PU236	Class: Y	1.48E-10					
	1 Yr:		1.5E-04	4.4E-05	3.7E-06	1.5E-07	2.0E-05
	50 Yr:		1.5E-04	4.4E-05	3.7E-06	1.5E-07	2.0E-05
PU237	Class: Y	5.58E-08					
	1 Yr:		6.2E-09	1.8E-10	5.5E-11	5.9E-11	8.9E-10
	50 Yr:		6.2E-09	1.8E-10	5.5E-11	5.9E-11	8.9E-10
PU238	Class: Y	1.11E-10					
	1 Yr:		1.8E-04	1.3E-04	9.3E-06	4.5E-07	2.7E-05
	50 Yr:		1.8E-04	1.3E-04	9.3E-06	4.5E-07	2.7E-05
PU239	Class: Y	1.10E-10					
	1 Yr:		1.7E-04	1.5E-04	1.0E-05	5.2E-07	2.7E-05
	50 Yr:		1.7E-04	1.5E-04	1.0E-05	5.2E-07	2.7E-05
PU240	Class: Y	1.08E-10					
	1 Yr:		1.7E-04	1.5E-04	1.0E-05	5.2E-07	2.7E-05
	50 Yr:		1.7E-04	1.5E-04	1.0E-05	5.2E-07	2.7E-05
PU241	Class: Y	2.00E-12					
	1 Yr:		6.4E-07	3.6E-06	1.9E-07	1.1E-08	2.0E-07

	50 Yr:		6.4E-07	3.6E-06	1.9E-07	1.1E-08	2.0E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		1.6E-04	1.5E-04	9.8E-06	4.9E-07	2.5E-05
	50 Yr:		1.6E-04	1.5E-04	9.8E-06	4.9E-07	2.5E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		8.2E-10	1.4E-11	1.4E-12	4.1E-13	2.1E-10
	50 Yr:		8.2E-10	1.4E-11	1.4E-12	4.1E-13	2.1E-10
PU244	Class: Y	6.56E-11					
	1 Yr:		1.5E-04	1.4E-04	9.3E-06	4.7E-07	2.3E-05
	50 Yr:		1.5E-04	1.4E-04	9.3E-06	4.7E-07	2.3E-05
AM241	Class: W	2.13E-08					
	1 Yr:		7.3E-05	1.2E-03	1.0E-04	4.8E-06	5.1E-05
	50 Yr:		7.3E-05	1.2E-03	1.0E-04	4.8E-06	5.1E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		1.8E-05	1.2E-03	9.1E-05	4.8E-06	4.1E-05
	50 Yr:		1.8E-05	1.2E-03	9.1E-05	4.8E-06	4.1E-05
AM242	Class: W	1.93E-08					
	1 Yr:		2.2E-07	2.4E-07	3.2E-08	3.0E-10	3.6E-08
	50 Yr:		2.2E-07	2.4E-07	3.2E-08	3.0E-10	3.6E-08
AM243	Class: W	5.87E-08					
	1 Yr:		6.9E-05	1.2E-03	1.0E-04	4.9E-06	5.0E-05
	50 Yr:		6.9E-05	1.2E-03	1.0E-04	4.9E-06	5.0E-05
CM242	Class: W	1.27E-10					
	1 Yr:		6.7E-05	7.0E-05	9.4E-06	8.7E-08	1.1E-05
	50 Yr:		6.7E-05	7.0E-05	9.4E-06	8.7E-08	1.1E-05
CM243	Class: W	1.67E-07					
	1 Yr:		7.8E-05	8.8E-04	9.0E-05	2.8E-06	4.2E-05
	50 Yr:		7.8E-05	8.8E-04	9.0E-05	2.8E-06	4.2E-05
CM244	Class: W	1.08E-10					
	1 Yr:		7.7E-05	7.4E-04	8.2E-05	2.1E-06	3.8E-05
	50 Yr:		7.7E-05	7.4E-04	8.2E-05	2.1E-06	3.8E-05
CM245	Class: W	1.10E-07					
	1 Yr:		7.1E-05	1.3E-03	1.0E-04	5.1E-06	5.2E-05
	50 Yr:		7.1E-05	1.3E-03	1.0E-04	5.1E-06	5.2E-05
CM246	Class: W	9.78E-11					
	1 Yr:		7.1E-05	1.3E-03	1.0E-04	4.9E-06	5.1E-05
	50 Yr:		7.1E-05	1.3E-03	1.0E-04	4.9E-06	5.1E-05
CM247	Class: W	4.38E-07					
	1 Yr:		6.4E-05	1.2E-03	9.5E-05	4.6E-06	4.7E-05
	50 Yr:		6.4E-05	1.2E-03	9.5E-05	4.6E-06	4.7E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix A.5

Age 365 days

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

			AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D		0.00E00					
		1 Yr:		1.9E-11	1.9E-11	1.9E-11	1.9E-11	2.0E-11
		50 Yr:		1.9E-11	1.9E-11	1.9E-11	1.9E-11	2.0E-11
BE10	Class: Y		4.35E-09					
		1 Yr:		7.2E-07	1.2E-08	5.9E-09	1.6E-10	9.0E-08
		50 Yr:		7.2E-07	1.2E-08	5.9E-09	1.6E-10	9.0E-08
C 14	Class: D		8.20E-11					
		1 Yr:		6.4E-10	6.2E-10	6.2E-10	6.2E-10	6.8E-10
		50 Yr:		6.4E-10	6.2E-10	6.2E-10	6.2E-10	6.8E-10
F 18	Class: D		1.44E-06					
		1 Yr:		7.8E-11	1.3E-10	2.4E-10	1.1E-11	1.9E-10
		50 Yr:		7.8E-11	1.3E-10	2.4E-10	1.1E-11	1.9E-10
NA22	Class: D		3.22E-06					
		1 Yr:		5.3E-09	1.1E-08	9.1E-09	5.5E-09	7.3E-09
		50 Yr:		5.3E-09	1.1E-08	9.1E-09	5.5E-09	7.3E-09
NA24	Class: D		6.56E-06					
		1 Yr:		7.7E-10	1.1E-09	9.2E-10	6.8E-10	1.9E-09
		50 Yr:		7.7E-10	1.1E-09	9.2E-10	6.8E-10	1.9E-09
P 32	Class: D		1.69E-08					
		1 Yr:		2.3E-09	1.8E-08	3.7E-08	2.2E-09	7.5E-09
		50 Yr:		2.3E-09	1.8E-08	3.7E-08	2.2E-09	7.5E-09
P 33	Class: D		4.57E-10					
		1 Yr:		3.5E-10	3.0E-09	2.3E-09	3.1E-10	7.8E-10
		50 Yr:		3.5E-10	3.0E-09	2.3E-09	3.1E-10	7.8E-10
S 35	Class: W		9.81E-11					
		1 Yr:		3.4E-08	5.5E-11	5.5E-11	5.5E-11	4.5E-09
		50 Yr:		3.4E-08	5.5E-11	5.5E-11	5.5E-11	4.5E-09
CL36	Class: D		5.23E-09					
		1 Yr:		2.4E-09	2.3E-09	2.3E-09	2.3E-09	2.6E-09
		50 Yr:		2.4E-09	2.3E-09	2.3E-09	2.3E-09	2.6E-09
AR39	NobleGas		3.63E-09					
		1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
		50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas		1.94E-06					
		1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
		50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D		2.50E-07					
		1 Yr:		1.4E-08	1.4E-08	1.3E-08	1.4E-08	1.7E-08
		50 Yr:		1.4E-08	1.4E-08	1.3E-08	1.4E-08	1.7E-08
CA41	Class: W		0.00E00					
		1 Yr:		8.9E-10	2.1E-09	8.7E-10	5.3E-12	2.6E-10
		50 Yr:		8.9E-10	2.1E-09	8.7E-10	5.3E-12	2.6E-10
CA45	Class: W		4.83E-10					
		1 Yr:		6.1E-08	1.2E-08	4.7E-09	6.9E-11	8.7E-09
		50 Yr:		6.1E-08	1.2E-08	4.7E-09	6.9E-11	8.7E-09
SC46	Class: Y		2.95E-06					
		1 Yr:		1.4E-07	5.7E-09	4.4E-09	5.6E-09	2.3E-08
		50 Yr:		1.4E-07	5.7E-09	4.4E-09	5.6E-09	2.3E-08
CR51	Class: Y		4.35E-08					
		1 Yr:		7.9E-10	5.7E-11	4.1E-11	4.9E-11	2.1E-10
		50 Yr:		7.9E-10	5.7E-11	4.1E-11	4.9E-11	2.1E-10
MN54	Class: W		1.21E-06					
		1 Yr:		2.1E-08	5.1E-09	3.3E-09	3.0E-09	6.3E-09
		50 Yr:		2.1E-08	5.1E-09	3.3E-09	3.0E-09	6.3E-09
MN56	Class: W		2.58E-06					
		1 Yr:		1.2E-09	4.4E-11	4.6E-11	2.8E-11	7.8E-10
		50 Yr:		1.2E-09	4.4E-11	4.6E-11	2.8E-11	7.8E-10
FE55	Class: W		0.00E00					
		1 Yr:		2.1E-09	3.3E-09	4.3E-09	4.0E-10	1.4E-09
		50 Yr:		2.1E-09	3.3E-09	4.3E-09	4.0E-10	1.4E-09
FE59	Class: W		1.77E-06					

	1 Yr:		6.7E-08	7.2E-09	7.3E-09	3.7E-09	1.3E-08
	50 Yr:		6.7E-08	7.2E-09	7.3E-09	3.7E-09	1.3E-08
CO57	Class: Y	1.57E-07					
	1 Yr:		2.3E-08	1.5E-09	6.0E-10	9.1E-10	3.7E-09
	50 Yr:		2.3E-08	1.5E-09	6.0E-10	9.1E-10	3.7E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		3.9E-08	2.5E-09	1.9E-09	2.4E-09	7.5E-09
	50 Yr:		3.9E-08	2.5E-09	1.9E-09	2.4E-09	7.5E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		4.9E-07	3.2E-08	2.6E-08	3.5E-08	8.6E-08
	50 Yr:		4.9E-07	3.2E-08	2.6E-08	3.5E-08	8.6E-08
NI59	Class: W	0.00E00					
	1 Yr:		2.5E-09	2.8E-10	2.8E-10	2.8E-10	6.1E-10
	50 Yr:		2.5E-09	2.8E-10	2.8E-10	2.8E-10	6.1E-10
NI63	Class: W	0.00E00					
	1 Yr:		9.7E-09	6.8E-10	6.8E-10	6.8E-10	1.9E-09
	50 Yr:		9.7E-09	6.8E-10	6.8E-10	6.8E-10	1.9E-09
NI65	Class: W	8.42E-07					
	1 Yr:		9.5E-10	1.4E-11	1.2E-11	1.0E-11	5.2E-10
	50 Yr:		9.5E-10	1.4E-11	1.2E-11	1.0E-11	5.2E-10
CU64	Class: D	2.69E-07					
	1 Yr:		9.4E-11	6.2E-11	5.9E-11	6.1E-11	2.7E-10
	50 Yr:		9.4E-11	6.2E-11	5.9E-11	6.1E-11	2.7E-10
ZN65	Class: Y	8.61E-07					
	1 Yr:		3.2E-08	3.4E-09	2.6E-09	3.5E-09	6.8E-09
	50 Yr:		3.2E-08	3.4E-09	2.6E-09	3.5E-09	6.8E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		3.9E-09	4.5E-11	4.0E-11	2.4E-11	1.7E-09
	50 Yr:		3.9E-09	4.5E-11	4.0E-11	2.4E-11	1.7E-09
ZN69	Class: Y	6.31E-09					
	1 Yr:		3.2E-10	1.8E-14	2.2E-14	1.5E-14	1.5E-10
	50 Yr:		3.2E-10	1.8E-14	2.2E-14	1.5E-14	1.5E-10
AS76	Class: W	6.50E-07					
	1 Yr:		1.1E-08	2.7E-10	2.6E-10	2.5E-10	4.6E-09
	50 Yr:		1.1E-08	2.7E-10	2.6E-10	2.5E-10	4.6E-09
SE75	Class: W	5.30E-07					
	1 Yr:		1.7E-08	2.3E-09	1.4E-09	1.7E-09	4.6E-09
	50 Yr:		1.7E-08	2.3E-09	1.4E-09	1.7E-09	4.6E-09
SE79	Class: W	1.24E-10					
	1 Yr:		5.9E-08	8.4E-10	8.4E-10	8.4E-10	1.1E-08
	50 Yr:		5.9E-08	8.4E-10	8.4E-10	8.4E-10	1.1E-08
BR82	Class: D	3.85E-06					
	1 Yr:		9.5E-10	9.1E-10	7.8E-10	9.6E-10	2.2E-09
	50 Yr:		9.5E-10	9.1E-10	7.8E-10	9.6E-10	2.2E-09
BR83	Class: D	1.68E-08					
	1 Yr:		8.2E-11	2.4E-11	2.4E-11	2.4E-11	1.2E-10
	50 Yr:		8.2E-11	2.4E-11	2.4E-11	2.4E-11	1.2E-10
BR84	Class: D	2.84E-06					
	1 Yr:		1.1E-10	2.3E-11	2.1E-11	2.2E-11	1.6E-10
	50 Yr:		1.1E-10	2.3E-11	2.1E-11	2.2E-11	1.6E-10
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					
	1 Yr:		6.1E-09	1.7E-08	1.4E-08	6.0E-09	7.7E-09
	50 Yr:		6.1E-09	1.7E-08	1.4E-08	6.0E-09	7.7E-09

RB87	Class: D	1.04E-09					
	1 Yr:		3.2E-09	9.4E-09	7.5E-09	3.2E-09	4.1E-09
	50 Yr:		3.2E-09	9.4E-09	7.5E-09	3.2E-09	4.1E-09
RB88	Class: D	1.05E-06					
	1 Yr:		1.1E-10	1.4E-11	1.3E-11	1.3E-11	1.2E-10
	50 Yr:		1.1E-10	1.4E-11	1.3E-11	1.3E-11	1.2E-10
RB89	Class: D	3.19E-06					
	1 Yr:		7.2E-11	1.5E-11	1.3E-11	1.1E-11	9.3E-11
	50 Yr:		7.2E-11	1.5E-11	1.3E-11	1.1E-11	9.3E-11
SR85	Class: D	7.06E-07					
	1 Yr:		1.5E-09	6.2E-09	3.7E-09	1.1E-09	2.3E-09
	50 Yr:		1.5E-09	6.2E-09	3.7E-09	1.1E-09	2.3E-09
SR89	Class: D	1.38E-08					
	1 Yr:		1.4E-09	3.9E-08	2.9E-08	1.3E-09	7.3E-09
	50 Yr:		1.4E-09	3.9E-08	2.9E-08	1.3E-09	7.3E-09
SR90	Class: D	3.10E-09					
	1 Yr:		4.3E-09	5.8E-07	3.3E-07	4.3E-09	5.2E-08
	50 Yr:		4.3E-09	5.8E-07	3.3E-07	4.3E-09	5.2E-08
SR91	Class: D	1.03E-06					
	1 Yr:		2.4E-10	9.4E-10	8.3E-10	1.4E-10	1.1E-09
	50 Yr:		2.4E-10	9.4E-10	8.3E-10	1.4E-10	1.1E-09
SR92	Class: D	2.02E-06					
	1 Yr:		1.6E-10	6.9E-10	4.0E-10	8.6E-11	7.1E-10
	50 Yr:		1.6E-10	6.9E-10	4.0E-10	8.6E-11	7.1E-10
Y 90	Class: Y	2.50E-08					
	1 Yr:		2.6E-08	6.1E-12	1.3E-11	3.2E-13	8.8E-09
	50 Yr:		2.6E-08	6.1E-12	1.3E-11	3.2E-13	8.8E-09
Y 91M	Class: Y	7.47E-07					
	1 Yr:		1.7E-10	3.9E-12	3.5E-12	2.5E-12	5.9E-11
	50 Yr:		1.7E-10	3.9E-12	3.5E-12	2.5E-12	5.9E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		2.4E-07	2.6E-10	5.2E-10	1.5E-11	3.4E-08
	50 Yr:		2.4E-07	2.6E-10	5.2E-10	1.5E-11	3.4E-08
Y 92	Class: Y	4.16E-07					
	1 Yr:		2.3E-09	7.2E-12	6.5E-12	4.3E-12	1.2E-09
	50 Yr:		2.3E-09	7.2E-12	6.5E-12	4.3E-12	1.2E-09
Y 93	Class: Y	1.67E-07					
	1 Yr:		5.3E-09	7.2E-12	7.0E-12	3.8E-12	3.0E-09
	50 Yr:		5.3E-09	7.2E-12	7.0E-12	3.8E-12	3.0E-09
ZR93	Class: W	0.00E00					
	1 Yr:		1.1E-08	5.7E-08	8.1E-09	1.4E-11	3.1E-09
	50 Yr:		1.1E-08	5.7E-08	8.1E-09	1.4E-11	3.1E-09
ZR95	Class: W	1.06E-06					
	1 Yr:		9.1E-08	4.3E-08	1.0E-08	2.5E-09	1.6E-08
	50 Yr:		9.1E-08	4.3E-08	1.0E-08	2.5E-09	1.6E-08
ZR97	Class: W	2.81E-07					
	1 Yr:		1.1E-08	3.5E-10	4.7E-10	1.3E-10	5.3E-09
	50 Yr:		1.1E-08	3.5E-10	4.7E-10	1.3E-10	5.3E-09
NB93M	Class: Y	9.62E-11					
	1 Yr:		5.1E-08	2.7E-10	1.3E-10	2.0E-11	6.5E-09
	50 Yr:		5.1E-08	2.7E-10	1.3E-10	2.0E-11	6.5E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		7.6E-07	3.2E-08	2.7E-08	3.2E-08	1.2E-07
	50 Yr:		7.6E-07	3.2E-08	2.7E-08	3.2E-08	1.2E-07
NB95M	Class: Y	8.64E-08					
	1 Yr:		1.7E-08	1.8E-10	1.3E-10	1.2E-10	3.4E-09
	50 Yr:		1.7E-08	1.8E-10	1.3E-10	1.2E-10	3.4E-09
NB95	Class: Y	1.10E-06					
	1 Yr:		3.5E-08	1.2E-09	9.5E-10	1.1E-09	5.9E-09
	50 Yr:		3.5E-08	1.2E-09	9.5E-10	1.1E-09	5.9E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		4.7E-10	6.7E-12	5.7E-12	4.3E-12	2.6E-10
	50 Yr:		4.7E-10	6.7E-12	5.7E-12	4.3E-12	2.6E-10
MO93	Class: D	5.46E-10					
	1 Yr:		5.7E-10	4.1E-08	1.3E-08	3.8E-10	2.6E-09
	50 Yr:		5.7E-10	4.1E-08	1.3E-08	3.8E-10	2.6E-09
MO99	Class: D	2.20E-07					
	1 Yr:		7.4E-10	2.0E-09	1.9E-09	6.4E-10	1.7E-09

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             50 Yr:            7.4E-10   2.0E-09   1.9E-09   6.4E-10   1.7E-09
TC99M   Class: W     1.66E-07
              1 Yr:            2.0E-10   1.2E-11   5.9E-12   5.7E-11   9.9E-11
             50 Yr:            2.0E-10   1.2E-11   5.9E-12   5.7E-11   9.9E-11
TC99    Class: W     9.05E-10
              1 Yr:            9.7E-08   6.2E-11   6.2E-11   2.5E-09   1.3E-08
             50 Yr:            9.7E-08   6.2E-11   6.2E-11   2.5E-09   1.3E-08
TC101   Class: W     4.76E-07
              1 Yr:            9.4E-11   9.4E-13   7.0E-13   1.3E-11   7.2E-11
             50 Yr:            9.4E-11   9.4E-13   7.0E-13   1.3E-11   7.2E-11
RU103   Class: Y     6.59E-07
              1 Yr:            6.7E-08   8.5E-10   6.6E-10   7.6E-10   9.9E-09
             50 Yr:            6.7E-08   8.5E-10   6.6E-10   7.6E-10   9.9E-09
RU105   Class: Y     1.13E-06
              1 Yr:            2.3E-09   3.1E-11   2.7E-11   1.8E-11   9.9E-10
             50 Yr:            2.3E-09   3.1E-11   2.7E-11   1.8E-11   9.9E-10
RU106   Class: Y     0.00E00
              1 Yr:            1.7E-06   2.5E-09   2.2E-09   2.5E-09   2.2E-07
             50 Yr:            1.7E-06   2.5E-09   2.2E-09   2.5E-09   2.2E-07
RH103M  Class: Y     1.90E-10
              1 Yr:            5.3E-11   4.6E-14   1.3E-14   8.7E-15   1.3E-11
             50 Yr:            5.3E-11   4.6E-14   1.3E-14   8.7E-15   1.3E-11
RH105   Class: Y     1.10E-07
              1 Yr:            6.3E-09   2.2E-11   1.8E-11   1.5E-11   1.7E-09
             50 Yr:            6.3E-09   2.2E-11   1.8E-11   1.5E-11   1.7E-09
PD103   Class: Y     1.68E-09
              1 Yr:            1.1E-08   7.9E-11   1.4E-11   6.5E-12   1.8E-09
             50 Yr:            1.1E-08   7.9E-11   1.4E-11   6.5E-12   1.8E-09
PD107   Class: Y     0.00E00
              1 Yr:            1.6E-08   1.2E-12   7.8E-13   1.1E-13   2.0E-09
             50 Yr:            1.6E-08   1.2E-12   7.8E-13   1.1E-13   2.0E-09
PD109   Class: Y     1.33E-08
              1 Yr:            6.1E-09   5.6E-12   1.8E-12   6.9E-13   1.9E-09
             50 Yr:            6.1E-09   5.6E-12   1.8E-12   6.9E-13   1.9E-09
AG110M  Class: D     4.01E-06
              1 Yr:            2.3E-08   1.6E-08   1.4E-08   1.3E-08   2.8E-08
             50 Yr:            2.3E-08   1.6E-08   1.4E-08   1.3E-08   2.8E-08
AG111   Class: D     4.38E-08
              1 Yr:            7.5E-10   6.8E-10   6.8E-10   6.8E-10   3.2E-09
             50 Yr:            7.5E-10   6.8E-10   6.8E-10   6.8E-10   3.2E-09
CD109   Class: D     7.22E-09
              1 Yr:            9.7E-09   1.3E-08   7.5E-09   8.0E-09   3.7E-08
             50 Yr:            9.7E-09   1.3E-08   7.5E-09   8.0E-09   3.7E-08
CD113M  Class: D     2.86E-09
              1 Yr:            5.1E-08   5.1E-08   5.1E-08   5.1E-08   2.7E-07
             50 Yr:            5.1E-08   5.1E-08   5.1E-08   5.1E-08   2.7E-07
CD115M  Class: D     4.67E-08
              1 Yr:            6.4E-09   6.3E-09   6.2E-09   6.2E-09   3.2E-08
             50 Yr:            6.4E-09   6.3E-09   6.2E-09   6.2E-09   3.2E-08
CD115   Class: D     3.31E-07
              1 Yr:            5.0E-10   4.4E-10   4.0E-10   3.7E-10   2.6E-09
             50 Yr:            5.0E-10   4.4E-10   4.0E-10   3.7E-10   2.6E-09
IN111   Class: D     5.30E-07
              1 Yr:            2.3E-10   1.2E-09   1.2E-09   1.6E-10   8.7E-10
             50 Yr:            2.3E-10   1.2E-09   1.2E-09   1.6E-10   8.7E-10
IN114M  Class: D     1.23E-07
              1 Yr:            1.1E-08   3.7E-07   4.4E-07   1.1E-08   7.8E-08
             50 Yr:            1.1E-08   3.7E-07   4.4E-07   1.1E-08   7.8E-08
IN115M  Class: D     2.17E-07
              1 Yr:            5.5E-11   1.4E-10   1.6E-10   1.9E-11   1.9E-10
             50 Yr:            5.5E-11   1.4E-10   1.6E-10   1.9E-11   1.9E-10
SN117M  Class: W     1.93E-07
              1 Yr:            5.0E-08   4.6E-09   8.9E-10   1.4E-10   7.7E-09
             50 Yr:            5.0E-08   4.6E-09   8.9E-10   1.4E-10   7.7E-09
SN119M  Class: W     2.23E-09
              1 Yr:            5.5E-08   3.5E-09   2.0E-09   2.4E-10   7.8E-09
             50 Yr:            5.5E-08   3.5E-09   2.0E-09   2.4E-10   7.8E-09
SN121M  Class: W     1.66E-09
              1 Yr:            1.1E-07   1.2E-08   7.1E-09   7.1E-10   1.5E-08
             50 Yr:            1.1E-07   1.2E-08   7.1E-09   7.1E-10   1.5E-08
SN121   Class: W     1.23E-09
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	1 Yr:		4.1E-09	2.1E-10	3.9E-11	2.6E-12	1.1E-09
	50 Yr:		4.1E-09	2.1E-10	3.9E-11	2.6E-12	1.1E-09
SN123	Class: W	2.20E-08					
	1 Yr:		2.1E-07	1.0E-08	7.0E-09	6.9E-10	3.1E-08
	50 Yr:		2.1E-07	1.0E-08	7.0E-09	6.9E-10	3.1E-08
SN125	Class: W	4.86E-07					
	1 Yr:		6.5E-08	2.6E-09	3.1E-09	2.6E-10	1.5E-08
	50 Yr:		6.5E-08	2.6E-09	3.1E-09	2.6E-10	1.5E-08
SN126	Class: W	5.83E-08					
	1 Yr:		6.0E-07	9.8E-08	6.5E-08	1.8E-08	1.0E-07
	50 Yr:		6.0E-07	9.8E-08	6.5E-08	1.8E-08	1.0E-07
SB124	Class: W	2.72E-06					
	1 Yr:		1.4E-07	8.8E-09	5.5E-09	3.1E-09	2.4E-08
	50 Yr:		1.4E-07	8.8E-09	5.5E-09	3.1E-09	2.4E-08
SB125	Class: W	5.90E-07					
	1 Yr:		1.0E-07	2.9E-08	7.2E-09	2.3E-09	1.6E-08
	50 Yr:		1.0E-07	2.9E-08	7.2E-09	2.3E-09	1.6E-08
SB126M	Class: W	2.21E-06					
	1 Yr:		1.4E-10	5.0E-12	4.1E-12	3.7E-12	1.2E-10
	50 Yr:		1.4E-10	5.0E-12	4.1E-12	3.7E-12	1.2E-10
SB126	Class: W	4.04E-06					
	1 Yr:		5.1E-08	3.2E-09	2.4E-09	1.7E-09	1.4E-08
	50 Yr:		5.1E-08	3.2E-09	2.4E-09	1.7E-09	1.4E-08
SB127	Class: W	9.84E-07					
	1 Yr:		3.1E-08	6.2E-10	7.4E-10	2.0E-10	7.4E-09
	50 Yr:		3.1E-08	6.2E-10	7.4E-10	2.0E-10	7.4E-09
TE123M	Class: W	1.84E-07					
	1 Yr:		8.5E-08	4.8E-08	8.3E-09	3.9E-09	1.3E-08
	50 Yr:		8.5E-08	4.8E-08	8.3E-09	3.9E-09	1.3E-08
TE125M	Class: W	1.06E-08					
	1 Yr:		7.4E-08	2.4E-08	4.0E-09	3.0E-09	1.1E-08
	50 Yr:		7.4E-08	2.4E-08	4.0E-09	3.0E-09	1.1E-08
TE127M	Class: W	3.56E-09					
	1 Yr:		1.7E-07	4.1E-08	2.1E-08	9.7E-09	2.6E-08
	50 Yr:		1.7E-07	4.1E-08	2.1E-08	9.7E-09	2.6E-08
TE127	Class: W	1.05E-08					
	1 Yr:		2.1E-09	1.2E-11	1.7E-11	3.4E-11	7.3E-10
	50 Yr:		2.1E-09	1.2E-11	1.7E-11	3.4E-11	7.3E-10
TE129M	Class: W	4.92E-08					
	1 Yr:		1.5E-07	1.4E-08	1.2E-08	1.2E-08	2.6E-08
	50 Yr:		1.5E-07	1.4E-08	1.2E-08	1.2E-08	2.6E-08
TE129	Class: W	9.05E-08					
	1 Yr:		4.2E-10	2.6E-12	2.4E-12	2.8E-12	2.2E-10
	50 Yr:		4.2E-10	2.6E-12	2.4E-12	2.8E-12	2.2E-10
TE131M	Class: W	2.07E-06					
	1 Yr:		1.3E-08	6.5E-10	3.9E-10	2.5E-08	5.9E-09
	50 Yr:		1.3E-08	6.5E-10	3.9E-10	2.5E-08	5.9E-09
TE131	Class: W	6.09E-07					
	1 Yr:		2.7E-10	2.9E-12	2.2E-12	4.6E-10	1.7E-10
	50 Yr:		2.7E-10	2.9E-12	2.2E-12	4.6E-10	1.7E-10
TE132	Class: W	2.95E-07					
	1 Yr:		3.0E-08	1.6E-09	8.6E-10	5.3E-08	1.3E-08
	50 Yr:		3.0E-08	1.6E-09	8.6E-10	5.3E-08	1.3E-08
TE133M	Class: W	3.41E-06					
	1 Yr:		7.7E-10	2.5E-11	2.1E-11	2.0E-09	5.9E-10
	50 Yr:		7.7E-10	2.5E-11	2.1E-11	2.0E-09	5.9E-10
TE133	Class: W	1.37E-06					
	1 Yr:		1.6E-10	2.7E-12	2.3E-12	4.5E-10	1.3E-10
	50 Yr:		1.6E-10	2.7E-12	2.3E-12	4.5E-10	1.3E-10
TE134	Class: W	1.24E-06					
	1 Yr:		5.9E-10	2.3E-11	1.9E-11	2.8E-10	4.0E-10
	50 Yr:		5.9E-10	2.3E-11	1.9E-11	2.8E-10	4.0E-10
I 125	Class: D	1.19E-08					
	1 Yr:		1.0E-10	1.6E-10	3.8E-11	4.6E-07	2.3E-08
	50 Yr:		1.0E-10	1.6E-10	3.8E-11	4.6E-07	2.3E-08
I 129	Class: D	8.92E-09					
	1 Yr:		1.5E-10	1.8E-10	7.1E-11	1.7E-06	8.6E-08
	50 Yr:		1.5E-10	1.8E-10	7.1E-11	1.7E-06	8.6E-08
I 130	Class: D	3.05E-06					
	1 Yr:		2.8E-10	1.8E-10	1.6E-10	1.4E-07	7.4E-09
	50 Yr:		2.8E-10	1.8E-10	1.6E-10	1.4E-07	7.4E-09

I 131	Class: D	5.33E-07					
	1 Yr:		3.0E-10	2.0E-10	1.6E-10	1.4E-06	7.2E-08
	50 Yr:		3.0E-10	2.0E-10	1.6E-10	1.4E-06	7.2E-08
I 132	Class: D	3.31E-06					
	1 Yr:		1.5E-10	6.9E-11	6.1E-11	1.6E-08	9.7E-10
	50 Yr:		1.5E-10	6.9E-11	6.1E-11	1.6E-08	9.7E-10
I 133	Class: D	8.70E-07					
	1 Yr:		2.0E-10	1.2E-10	1.1E-10	3.5E-07	1.8E-08
	50 Yr:		2.0E-10	1.2E-10	1.1E-10	3.5E-07	1.8E-08
I 134	Class: D	3.85E-06					
	1 Yr:		1.1E-10	3.3E-11	2.9E-11	3.1E-09	3.7E-10
	50 Yr:		1.1E-10	3.3E-11	2.9E-11	3.1E-09	3.7E-10
I 135	Class: D	2.38E-06					
	1 Yr:		1.8E-10	1.0E-10	9.0E-11	7.0E-08	3.7E-09
	50 Yr:		1.8E-10	1.0E-10	9.0E-11	7.0E-08	3.7E-09
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		6.7E-11	1.4E-11	1.2E-11	1.2E-11	8.6E-11
	50 Yr:		6.7E-11	1.4E-11	1.2E-11	1.2E-11	8.6E-11
CS134	Class: D	2.23E-06					
	1 Yr:		5.6E-09	5.9E-09	5.2E-09	6.3E-09	7.4E-09
	50 Yr:		5.6E-09	5.9E-09	5.2E-09	6.3E-09	7.4E-09
CS135	Class: D	3.00E-10					
	1 Yr:		7.7E-10	7.3E-10	7.3E-10	7.3E-10	9.9E-10
	50 Yr:		7.7E-10	7.3E-10	7.3E-10	7.3E-10	9.9E-10
CS136	Class: D	3.13E-06					
	1 Yr:		3.5E-09	3.8E-09	3.2E-09	4.0E-09	5.3E-09
	50 Yr:		3.5E-09	3.8E-09	3.2E-09	4.0E-09	5.3E-09
CS137	Class: D	2.93E-09					
	1 Yr:		4.2E-09	4.3E-09	4.0E-09	4.4E-09	5.4E-09
	50 Yr:		4.2E-09	4.3E-09	4.0E-09	4.4E-09	5.4E-09
CS138	Class: D	3.63E-06					
	1 Yr:		1.1E-10	2.6E-11	2.4E-11	2.6E-11	1.8E-10
	50 Yr:		1.1E-10	2.6E-11	2.4E-11	2.6E-11	1.8E-10
BA139	Class: D	8.04E-08					
	1 Yr:		9.2E-11	8.8E-11	8.0E-11	1.1E-11	2.4E-10
	50 Yr:		9.2E-11	8.8E-11	8.0E-11	1.1E-11	2.4E-10
BA140	Class: D	2.55E-07					
	1 Yr:		1.3E-09	2.0E-08	1.1E-08	8.4E-10	7.8E-09
	50 Yr:		1.3E-09	2.0E-08	1.1E-08	8.4E-10	7.8E-09
BA141	Class: D	1.24E-06					
	1 Yr:		7.3E-11	4.5E-11	3.7E-11	6.6E-12	1.4E-10
	50 Yr:		7.3E-11	4.5E-11	3.7E-11	6.6E-12	1.4E-10
BA142	Class: D	1.53E-06					
	1 Yr:		5.3E-11	2.1E-11	1.8E-11	5.8E-12	9.8E-11
	50 Yr:		5.3E-11	2.1E-11	1.8E-11	5.8E-12	9.8E-11
LA140	Class: D	3.50E-06					
	1 Yr:		9.5E-10	1.4E-09	2.0E-09	4.9E-10	4.2E-09
	50 Yr:		9.5E-10	1.4E-09	2.0E-09	4.9E-10	4.2E-09
LA141	Class: D	9.08E-08					
	1 Yr:		1.5E-10	3.9E-10	2.1E-10	6.2E-11	5.5E-10

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             50 Yr:            1.5E-10   3.9E-10   2.1E-10   6.2E-11   5.5E-10
LA142   Class: D     4.32E-06
              1 Yr:            1.5E-10   6.6E-11   7.0E-11   5.1E-11   3.8E-10
             50 Yr:            1.5E-10   6.6E-11   7.0E-11   5.1E-11   3.8E-10
CE141   Class: Y     9.81E-08
              1 Yr:            8.5E-08   6.8E-10   1.7E-10   1.3E-10   1.2E-08
             50 Yr:            8.5E-08   6.8E-10   1.7E-10   1.3E-10   1.2E-08
CE143   Class: Y     3.82E-07
              1 Yr:            1.5E-08   9.1E-11   5.5E-11   3.3E-11   4.1E-09
             50 Yr:            1.5E-08   9.1E-11   5.5E-11   3.3E-11   4.1E-09
CE144   Class: Y     2.41E-08
              1 Yr:            1.4E-06   1.1E-08   1.1E-08   6.8E-10   1.8E-07
             50 Yr:            1.4E-06   1.1E-08   1.1E-08   6.8E-10   1.8E-07
PR143   Class: Y     6.12E-09
              1 Yr:            5.5E-08   9.6E-12   2.1E-11   9.6E-14   9.2E-09
             50 Yr:            5.5E-08   9.6E-12   2.1E-11   9.6E-14   9.2E-09
PR144M  Class: Y     6.97E-09
              1 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
             50 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
PR144   Class: Y     8.36E-08
              1 Yr:            1.8E-10   7.4E-14   6.2E-14   5.9E-14   1.2E-10
             50 Yr:            1.8E-10   7.4E-14   6.2E-14   5.9E-14   1.2E-10
ND147   Class: Y     1.81E-07
              1 Yr:            5.2E-08   4.0E-10   1.3E-10   9.0E-11   8.7E-09
             50 Yr:            5.2E-08   4.0E-10   1.3E-10   9.0E-11   8.7E-09
PM147   Class: Y     2.73E-10
              1 Yr:            1.2E-07   1.3E-08   1.7E-09   1.9E-13   1.6E-08
             50 Yr:            1.2E-07   1.3E-08   1.7E-09   1.9E-13   1.6E-08
PM148M  Class: Y     2.84E-06
              1 Yr:            1.2E-07   4.0E-09   2.9E-09   3.3E-09   2.0E-08
             50 Yr:            1.2E-07   4.0E-09   2.9E-09   3.3E-09   2.0E-08
PM148   Class: Y     8.70E-07
              1 Yr:            4.2E-08   2.4E-10   2.1E-10   1.8E-10   1.1E-08
             50 Yr:            4.2E-08   2.4E-10   2.1E-10   1.8E-10   1.1E-08
PM149   Class: Y     2.24E-08
              1 Yr:            1.3E-08   5.3E-12   7.0E-12   1.8E-12   3.7E-09
             50 Yr:            1.3E-08   5.3E-12   7.0E-12   1.8E-12   3.7E-09
PM151   Class: Y     4.42E-07
              1 Yr:            7.6E-09   7.6E-11   4.9E-11   3.2E-11   2.7E-09
             50 Yr:            7.6E-09   7.6E-11   4.9E-11   3.2E-11   2.7E-09
SM147   Class: W     0.00E00
              1 Yr:            1.1E-06   2.6E-05   3.1E-06   9.7E-11   2.3E-05
             50 Yr:            1.1E-06   2.6E-05   3.1E-06   9.7E-11   2.3E-05
SM151   Class: W     7.79E-13
              1 Yr:            1.2E-08   2.1E-07   2.6E-08   8.7E-13   1.0E-08
             50 Yr:            1.2E-08   2.1E-07   2.6E-08   8.7E-13   1.0E-08
SM153   Class: W     6.46E-08
              1 Yr:            1.1E-08   3.3E-10   2.1E-10   1.5E-11   2.9E-09
             50 Yr:            1.1E-08   3.3E-10   2.1E-10   1.5E-11   2.9E-09
EU152   Class: W     1.67E-06
              1 Yr:            1.8E-07   4.4E-07   1.9E-07   1.8E-08   1.0E-07
             50 Yr:            1.8E-07   4.4E-07   1.9E-07   1.8E-08   1.0E-07
EU154   Class: W     1.82E-06
              1 Yr:            3.0E-07   1.0E-06   2.9E-07   1.8E-08   1.5E-07
             50 Yr:            3.0E-07   1.0E-06   2.9E-07   1.8E-08   1.5E-07
EU155   Class: W     6.78E-08
              1 Yr:            5.9E-08   3.3E-07   4.5E-08   8.2E-10   2.3E-08
             50 Yr:            5.9E-08   3.3E-07   4.5E-08   8.2E-10   2.3E-08
EU156   Class: W     2.02E-06
              1 Yr:            6.9E-08   6.1E-09   3.9E-09   8.8E-10   1.4E-08
             50 Yr:            6.9E-08   6.1E-09   3.9E-09   8.8E-10   1.4E-08
GD153   Class: D     9.84E-08
              1 Yr:            3.3E-09   2.2E-07   3.7E-08   8.0E-10   1.2E-08
             50 Yr:            3.3E-09   2.2E-07   3.7E-08   8.0E-10   1.2E-08
TB160   Class: W     1.64E-06
              1 Yr:            1.4E-07   5.9E-08   1.8E-08   2.4E-09   2.5E-08
             50 Yr:            1.4E-07   5.9E-08   1.8E-08   2.4E-09   2.5E-08
HO166M  Class: W     2.48E-06
              1 Yr:            2.8E-07   1.4E-06   3.0E-07   4.0E-08   2.5E-07
             50 Yr:            2.8E-07   1.4E-06   3.0E-07   4.0E-08   2.5E-07
W 181   Class: D     3.69E-08
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	1 Yr:		3.0E-11	2.7E-10	1.1E-10	1.4E-11	2.0E-10
	50 Yr:		3.0E-11	2.7E-10	1.1E-10	1.4E-11	2.0E-10
W 187	Class: D	6.72E-07					
	1 Yr:		1.6E-10	3.0E-10	1.5E-10	7.0E-11	1.5E-09
	50 Yr:		1.6E-10	3.0E-10	1.5E-10	7.0E-11	1.5E-09
W 185	Class: D	1.57E-09					
	1 Yr:		6.7E-11	6.7E-10	4.7E-10	2.0E-11	1.0E-09
	50 Yr:		6.7E-11	6.7E-10	4.7E-10	2.0E-11	1.0E-09
RE187	Class: W	0.00E00					
	1 Yr:		2.1E-10	1.2E-12	1.2E-12	4.9E-11	4.0E-11
	50 Yr:		2.1E-10	1.2E-12	1.2E-12	4.9E-11	4.0E-11
IR192	Class: Y	1.14E-06					
	1 Yr:		1.5E-07	2.6E-09	1.8E-09	2.3E-09	2.3E-08
	50 Yr:		1.5E-07	2.6E-09	1.8E-09	2.3E-09	2.3E-08
HG203	Class: D	3.28E-07					
	1 Yr:		1.9E-09	2.1E-09	1.8E-09	1.9E-09	2.9E-09
	50 Yr:		1.9E-09	2.1E-09	1.8E-09	1.9E-09	2.9E-09
RN222	NobleGas	5.61E-10					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
TH227	Class: Y	1.40E-07					
	1 Yr:		2.5E-04	4.4E-07	6.5E-08	1.6E-09	3.0E-05
	50 Yr:		2.5E-04	4.4E-07	6.5E-08	1.6E-09	3.0E-05
TH228	Class: Y	2.56E-09					
	1 Yr:		1.1E-03	5.8E-05	8.6E-06	2.2E-07	1.3E-04
	50 Yr:		1.1E-03	5.8E-05	8.6E-06	2.2E-07	1.3E-04
TH229	Class: Y	1.06E-07					
	1 Yr:		1.5E-03	5.7E-04	4.7E-05	3.0E-06	1.9E-04
	50 Yr:		1.5E-03	5.7E-04	4.7E-05	3.0E-06	1.9E-04
TH230	Class: Y	4.70E-10					
	1 Yr:		2.4E-04	2.6E-04	2.0E-05	6.1E-07	3.5E-05
	50 Yr:		2.4E-04	2.6E-04	2.0E-05	6.1E-07	3.5E-05
TH231	Class: Y	1.45E-08					
	1 Yr:		6.2E-09	7.3E-11	7.8E-12	1.8E-12	1.7E-09
	50 Yr:		6.2E-09	7.3E-11	7.8E-12	1.8E-12	1.7E-09
TH232	Class: Y	2.29E-10					
	1 Yr:		3.5E-04	3.0E-04	2.3E-05	1.6E-06	5.0E-05
	50 Yr:		3.5E-04	3.0E-04	2.3E-05	1.6E-06	5.0E-05
TH234	Class: Y	9.30E-09					
	1 Yr:		1.9E-07	4.1E-10	4.3E-10	3.5E-11	3.1E-08
	50 Yr:		1.9E-07	4.1E-10	4.3E-10	3.5E-11	3.1E-08
RA223	Class: W	1.73E-07					
	1 Yr:		1.7E-04	8.3E-06	6.3E-07	2.6E-08	2.1E-05
	50 Yr:		1.7E-04	8.3E-06	6.3E-07	2.6E-08	2.1E-05
RA224	Class: W	1.36E-08					
	1 Yr:		6.7E-05	4.3E-06	3.2E-07	1.9E-08	8.2E-06
	50 Yr:		6.7E-05	4.3E-06	3.2E-07	1.9E-08	8.2E-06
RA225	Class: W	7.60E-09					
	1 Yr:		1.4E-04	1.6E-05	1.9E-06	3.7E-08	1.8E-05
	50 Yr:		1.4E-04	1.6E-05	1.9E-06	3.7E-08	1.8E-05
RA226	Class: W	8.96E-09					
	1 Yr:		9.0E-05	1.1E-05	1.1E-06	8.0E-08	1.1E-05
	50 Yr:		9.0E-05	1.1E-05	1.1E-06	8.0E-08	1.1E-05
RA228	Class: W	0.00E00					
	1 Yr:		3.6E-05	1.6E-04	2.4E-05	7.5E-07	1.0E-05
	50 Yr:		3.6E-05	1.6E-04	2.4E-05	7.5E-07	1.0E-05
PB210	Class: D	1.42E-09					
	1 Yr:		7.4E-07	3.0E-05	1.0E-05	7.4E-07	2.9E-06
	50 Yr:		7.4E-07	3.0E-05	1.0E-05	7.4E-07	2.9E-06
PB212	Class: D	1.97E-07					
	1 Yr:		3.9E-08	8.2E-07	8.1E-08	2.6E-08	1.3E-07
	50 Yr:		3.9E-08	8.2E-07	8.1E-08	2.6E-08	1.3E-07
BI210	Class: W	8.14E-09					
	1 Yr:		2.4E-06	3.1E-10	3.1E-10	3.1E-10	3.0E-07
	50 Yr:		2.4E-06	3.1E-10	3.1E-10	3.1E-10	3.0E-07
BI212	Class: W	2.83E-07					
	1 Yr:		5.0E-07	1.6E-10	1.6E-10	1.6E-10	1.1E-07
	50 Yr:		5.0E-07	1.6E-10	1.6E-10	1.6E-10	1.1E-07
PO210	Class: W	1.23E-11					
	1 Yr:		8.0E-05	4.1E-06	4.6E-06	3.5E-07	1.1E-05
	50 Yr:		8.0E-05	4.1E-06	4.6E-06	3.5E-07	1.1E-05

U 232	Class: Y	3.72E-10					
	1 Yr:		7.9E-04	6.7E-05	7.8E-06	3.2E-07	9.7E-05
	50 Yr:		7.9E-04	6.7E-05	7.8E-06	3.2E-07	9.7E-05
U 233	Class: Y	4.48E-10					
	1 Yr:		2.4E-04	1.3E-06	1.1E-07	2.8E-08	2.9E-05
	50 Yr:		2.4E-04	1.3E-06	1.1E-07	2.8E-08	2.9E-05
U 234	Class: Y	1.93E-10					
	1 Yr:		2.4E-04	8.9E-07	8.6E-08	2.6E-08	2.9E-05
	50 Yr:		2.4E-04	8.9E-07	8.6E-08	2.6E-08	2.9E-05
U 235	Class: Y	2.04E-07					
	1 Yr:		2.2E-04	8.4E-07	8.3E-08	2.8E-08	2.6E-05
	50 Yr:		2.2E-04	8.4E-07	8.3E-08	2.8E-08	2.6E-05
U 236	Class: Y	1.22E-10					
	1 Yr:		2.2E-04	8.4E-07	8.1E-08	2.5E-08	2.7E-05
	50 Yr:		2.2E-04	8.4E-07	8.1E-08	2.5E-08	2.7E-05
U 237	Class: Y	1.67E-07					
	1 Yr:		3.9E-08	2.0E-10	6.4E-11	6.2E-11	6.4E-09
	50 Yr:		3.9E-08	2.0E-10	6.4E-11	6.2E-11	6.4E-09
U 238	Class: Y	7.92E-11					
	1 Yr:		2.1E-04	8.1E-07	8.1E-08	2.4E-08	2.5E-05
	50 Yr:		2.1E-04	8.1E-07	8.1E-08	2.4E-08	2.5E-05
U 240	Class: Y	1.85E-09					
	1 Yr:		8.6E-09	7.9E-11	3.4E-11	1.8E-11	3.4E-09
	50 Yr:		8.6E-09	7.9E-11	3.4E-11	1.8E-11	3.4E-09
PA231	Class: Y	4.95E-08					
	1 Yr:		3.6E-04	6.1E-04	3.9E-05	2.5E-06	5.9E-05
	50 Yr:		3.6E-04	6.1E-04	3.9E-05	2.5E-06	5.9E-05
PA233	Class: Y	2.70E-07					
	1 Yr:		8.7E-08	8.4E-10	3.2E-10	2.6E-10	1.3E-08
	50 Yr:		8.7E-08	8.4E-10	3.2E-10	2.6E-10	1.3E-08
PA234	Class: Y	2.75E-06					
	1 Yr:		5.0E-09	1.1E-10	8.7E-11	5.7E-11	2.2E-09
	50 Yr:		5.0E-09	1.1E-10	8.7E-11	5.7E-11	2.2E-09
AC225	Class: Y	2.01E-08					
	1 Yr:		1.9E-04	4.0E-07	8.7E-08	1.9E-08	2.3E-05
	50 Yr:		1.9E-04	4.0E-07	8.7E-08	1.9E-08	2.3E-05
AC227	Class: Y	1.62E-10					
	1 Yr:		1.3E-03	2.0E-04	2.3E-05	1.6E-06	1.6E-04
	50 Yr:		1.3E-03	2.0E-04	2.3E-05	1.6E-06	1.6E-04
AC228	Class: Y	1.42E-06					
	1 Yr:		3.9E-07	2.1E-08	3.2E-09	1.1E-10	4.9E-08
	50 Yr:		3.9E-07	2.1E-08	3.2E-09	1.1E-10	4.9E-08
FR223	Class: D	6.97E-08					
	1 Yr:		6.9E-09	6.7E-09	6.7E-09	6.7E-09	7.4E-09
	50 Yr:		6.9E-09	6.7E-09	6.7E-09	6.7E-09	7.4E-09
NP237	Class: W	2.81E-08					
	1 Yr:		9.4E-05	8.3E-04	1.0E-04	4.2E-06	4.1E-05
	50 Yr:		9.4E-05	8.3E-04	1.0E-04	4.2E-06	4.1E-05
NP238	Class: W	8.07E-07					
	1 Yr:		1.7E-08	5.9E-08	7.8E-09	3.6E-10	5.8E-09
	50 Yr:		1.7E-08	5.9E-08	7.8E-09	3.6E-10	5.8E-09
NP239	Class: W	2.19E-07					
	1 Yr:		1.7E-08	1.9E-09	3.0E-10	4.3E-11	4.2E-09
	50 Yr:		1.7E-08	1.9E-09	3.0E-10	4.3E-11	4.2E-09
PU236	Class: Y	1.48E-10					
	1 Yr:		2.4E-04	4.8E-05	5.7E-06	2.2E-07	3.1E-05
	50 Yr:		2.4E-04	4.8E-05	5.7E-06	2.2E-07	3.1E-05
PU237	Class: Y	5.58E-08					
	1 Yr:		1.0E-08	3.4E-10	9.4E-11	9.9E-11	1.5E-09
	50 Yr:		1.0E-08	3.4E-10	9.4E-11	9.9E-11	1.5E-09
PU238	Class: Y	1.11E-10					
	1 Yr:		2.8E-04	1.3E-04	1.3E-05	6.0E-07	4.0E-05
	50 Yr:		2.8E-04	1.3E-04	1.3E-05	6.0E-07	4.0E-05
PU239	Class: Y	1.10E-10					
	1 Yr:		2.7E-04	1.6E-04	1.4E-05	6.9E-07	3.9E-05
	50 Yr:		2.7E-04	1.6E-04	1.4E-05	6.9E-07	3.9E-05
PU240	Class: Y	1.08E-10					
	1 Yr:		2.7E-04	1.6E-04	1.4E-05	6.9E-07	3.9E-05
	50 Yr:		2.7E-04	1.6E-04	1.4E-05	6.9E-07	3.9E-05
PU241	Class: Y	2.00E-12					
	1 Yr:		8.6E-07	3.4E-06	2.0E-07	1.4E-08	2.4E-07

	50 Yr:		8.6E-07	3.4E-06	2.0E-07	1.4E-08	2.4E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		2.5E-04	1.5E-04	1.3E-05	6.6E-07	3.6E-05
	50 Yr:		2.5E-04	1.5E-04	1.3E-05	6.6E-07	3.6E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		1.3E-09	1.6E-11	2.1E-12	7.1E-13	4.1E-10
	50 Yr:		1.3E-09	1.6E-11	2.1E-12	7.1E-13	4.1E-10
PU244	Class: Y	6.56E-11					
	1 Yr:		2.3E-04	1.4E-04	1.2E-05	6.3E-07	3.4E-05
	50 Yr:		2.3E-04	1.4E-04	1.2E-05	6.3E-07	3.4E-05
AM241	Class: W	2.13E-08					
	1 Yr:		1.2E-04	1.4E-03	1.8E-04	6.4E-06	7.0E-05
	50 Yr:		1.2E-04	1.4E-03	1.8E-04	6.4E-06	7.0E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		2.8E-05	1.3E-03	1.5E-04	6.3E-06	5.3E-05
	50 Yr:		2.8E-05	1.3E-03	1.5E-04	6.3E-06	5.3E-05
AM242	Class: W	1.93E-08					
	1 Yr:		3.5E-07	4.1E-07	8.4E-08	5.4E-10	5.9E-08
	50 Yr:		3.5E-07	4.1E-07	8.4E-08	5.4E-10	5.9E-08
AM243	Class: W	5.87E-08					
	1 Yr:		1.1E-04	1.4E-03	1.8E-04	6.5E-06	6.8E-05
	50 Yr:		1.1E-04	1.4E-03	1.8E-04	6.5E-06	6.8E-05
CM242	Class: W	1.27E-10					
	1 Yr:		1.1E-04	1.2E-04	2.5E-05	1.6E-07	1.8E-05
	50 Yr:		1.1E-04	1.2E-04	2.5E-05	1.6E-07	1.8E-05
CM243	Class: W	1.67E-07					
	1 Yr:		1.2E-04	1.1E-03	1.7E-04	3.9E-06	6.1E-05
	50 Yr:		1.2E-04	1.1E-03	1.7E-04	3.9E-06	6.1E-05
CM244	Class: W	1.08E-10					
	1 Yr:		1.2E-04	9.6E-04	1.6E-04	3.0E-06	5.6E-05
	50 Yr:		1.2E-04	9.6E-04	1.6E-04	3.0E-06	5.6E-05
CM245	Class: W	1.10E-07					
	1 Yr:		1.1E-04	1.4E-03	1.8E-04	6.7E-06	7.0E-05
	50 Yr:		1.1E-04	1.4E-03	1.8E-04	6.7E-06	7.0E-05
CM246	Class: W	9.78E-11					
	1 Yr:		1.1E-04	1.4E-03	1.8E-04	6.5E-06	6.9E-05
	50 Yr:		1.1E-04	1.4E-03	1.8E-04	6.5E-06	6.9E-05
CM247	Class: W	4.38E-07					
	1 Yr:		1.0E-04	1.3E-03	1.7E-04	6.1E-06	6.4E-05
	50 Yr:		1.0E-04	1.3E-03	1.7E-04	6.1E-06	6.4E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix A.6

Age 100 days

Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion FGR12/13

		AIR SUBMERSION Sv/Yr per Bq/m3	Acute Inhal. Committed Dose Equivalent LUNGS Sv/Bq	BONE SURFACE Sv/Bq	RED MARROW Sv/Bq	THYROID Sv/Bq	EFF DOSE EQUIV. Sv/Bq
H 3	Class: D	0.00E00					
	1 Yr:		2.5E-11	2.5E-11	2.5E-11	2.5E-11	2.6E-11
	50 Yr:		2.5E-11	2.5E-11	2.5E-11	2.5E-11	2.6E-11
BE10	Class: Y	4.35E-09					
	1 Yr:		7.7E-07	1.8E-08	1.0E-08	2.8E-10	9.8E-08
	50 Yr:		7.7E-07	1.8E-08	1.0E-08	2.8E-10	9.8E-08
C 14	Class: D	8.20E-11					
	1 Yr:		5.5E-10	5.2E-10	5.2E-10	5.2E-10	6.0E-10
	50 Yr:		5.5E-10	5.2E-10	5.2E-10	5.2E-10	6.0E-10
F 18	Class: D	1.44E-06					
	1 Yr:		1.0E-10	1.7E-10	4.0E-10	1.5E-11	2.7E-10
	50 Yr:		1.0E-10	1.7E-10	4.0E-10	1.5E-11	2.7E-10
NA22	Class: D	3.22E-06					
	1 Yr:		7.2E-09	1.5E-08	1.3E-08	7.3E-09	9.6E-09
	50 Yr:		7.2E-09	1.5E-08	1.3E-08	7.3E-09	9.6E-09
NA24	Class: D	6.56E-06					
	1 Yr:		1.1E-09	1.5E-09	1.4E-09	9.5E-10	2.4E-09
	50 Yr:		1.1E-09	1.5E-09	1.4E-09	9.5E-10	2.4E-09
P 32	Class: D	1.69E-08					
	1 Yr:		3.6E-09	2.4E-08	6.5E-08	3.5E-09	1.2E-08
	50 Yr:		3.6E-09	2.4E-08	6.5E-08	3.5E-09	1.2E-08
P 33	Class: D	4.57E-10					
	1 Yr:		5.5E-10	4.0E-09	3.8E-09	5.0E-10	1.2E-09
	50 Yr:		5.5E-10	4.0E-09	3.8E-09	5.0E-10	1.2E-09
S 35	Class: W	9.81E-11					
	1 Yr:		4.3E-08	1.0E-10	1.0E-10	1.0E-10	5.9E-09
	50 Yr:		4.3E-08	1.0E-10	1.0E-10	1.0E-10	5.9E-09
CL36	Class: D	5.23E-09					
	1 Yr:		3.6E-09	3.5E-09	3.5E-09	3.5E-09	3.9E-09
	50 Yr:		3.6E-09	3.5E-09	3.5E-09	3.5E-09	3.9E-09
AR39	NobleGas	3.63E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
AR41	NobleGas	1.94E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
K 40	Class: D	2.50E-07					
	1 Yr:		1.9E-08	1.9E-08	1.9E-08	2.0E-08	2.4E-08
	50 Yr:		1.9E-08	1.9E-08	1.9E-08	2.0E-08	2.4E-08
CA41	Class: W	0.00E00					
	1 Yr:		1.1E-09	3.7E-09	1.7E-09	8.0E-12	4.1E-10
	50 Yr:		1.1E-09	3.7E-09	1.7E-09	8.0E-12	4.1E-10
CA45	Class: W	4.83E-10					
	1 Yr:		7.7E-08	2.7E-08	1.2E-08	9.3E-11	1.2E-08
	50 Yr:		7.7E-08	2.7E-08	1.2E-08	9.3E-11	1.2E-08
SC46	Class: Y	2.95E-06					
	1 Yr:		1.6E-07	6.8E-09	5.0E-09	6.3E-09	2.8E-08
	50 Yr:		1.6E-07	6.8E-09	5.0E-09	6.3E-09	2.8E-08
CR51	Class: Y	4.35E-08					
	1 Yr:		1.0E-09	8.4E-11	6.1E-11	6.7E-11	2.6E-10
	50 Yr:		1.0E-09	8.4E-11	6.1E-11	6.7E-11	2.6E-10
MN54	Class: W	1.21E-06					
	1 Yr:		2.4E-08	7.0E-09	4.5E-09	3.7E-09	7.6E-09
	50 Yr:		2.4E-08	7.0E-09	4.5E-09	3.7E-09	7.6E-09
MN56	Class: W	2.58E-06					
	1 Yr:		1.5E-09	6.6E-11	7.3E-11	4.2E-11	1.1E-09
	50 Yr:		1.5E-09	6.6E-11	7.3E-11	4.2E-11	1.1E-09
FE55	Class: W	0.00E00					
	1 Yr:		2.7E-09	4.5E-09	5.6E-09	5.4E-10	1.9E-09
	50 Yr:		2.7E-09	4.5E-09	5.6E-09	5.4E-10	1.9E-09
FE59	Class: W	1.77E-06					

	1 Yr:		8.5E-08	1.4E-08	1.4E-08	5.5E-09	1.8E-08
	50 Yr:		8.5E-08	1.4E-08	1.4E-08	5.5E-09	1.8E-08
CO57	Class: Y	1.57E-07					
	1 Yr:		2.7E-08	1.7E-09	6.5E-10	9.6E-10	4.3E-09
	50 Yr:		2.7E-08	1.7E-09	6.5E-10	9.6E-10	4.3E-09
CO58	Class: Y	1.40E-06					
	1 Yr:		4.7E-08	3.0E-09	2.2E-09	2.8E-09	9.0E-09
	50 Yr:		4.7E-08	3.0E-09	2.2E-09	2.8E-09	9.0E-09
CO60	Class: Y	3.75E-06					
	1 Yr:		5.2E-07	3.4E-08	2.7E-08	3.6E-08	9.2E-08
	50 Yr:		5.2E-07	3.4E-08	2.7E-08	3.6E-08	9.2E-08
NI59	Class: W	0.00E00					
	1 Yr:		3.1E-09	3.6E-10	3.6E-10	3.6E-10	7.8E-10
	50 Yr:		3.1E-09	3.6E-10	3.6E-10	3.6E-10	7.8E-10
NI63	Class: W	0.00E00					
	1 Yr:		1.3E-08	8.6E-10	8.6E-10	8.6E-10	2.5E-09
	50 Yr:		1.3E-08	8.6E-10	8.6E-10	8.6E-10	2.5E-09
NI65	Class: W	8.42E-07					
	1 Yr:		1.2E-09	2.0E-11	1.7E-11	1.5E-11	7.7E-10
	50 Yr:		1.2E-09	2.0E-11	1.7E-11	1.5E-11	7.7E-10
CU64	Class: D	2.69E-07					
	1 Yr:		1.5E-10	1.1E-10	1.0E-10	1.1E-10	2.9E-10
	50 Yr:		1.5E-10	1.1E-10	1.0E-10	1.1E-10	2.9E-10
ZN65	Class: Y	8.61E-07					
	1 Yr:		3.6E-08	4.0E-09	3.0E-09	3.9E-09	7.7E-09
	50 Yr:		3.6E-08	4.0E-09	3.0E-09	3.9E-09	7.7E-09
ZN69M	Class: Y	5.83E-07					
	1 Yr:		5.0E-09	6.3E-11	5.6E-11	3.4E-11	2.2E-09
	50 Yr:		5.0E-09	6.3E-11	5.6E-11	3.4E-11	2.2E-09
ZN69	Class: Y	6.31E-09					
	1 Yr:		4.2E-10	4.4E-14	5.7E-14	3.8E-14	2.3E-10
	50 Yr:		4.2E-10	4.4E-14	5.7E-14	3.8E-14	2.3E-10
AS76	Class: W	6.50E-07					
	1 Yr:		1.5E-08	7.0E-10	6.7E-10	6.9E-10	5.0E-09
	50 Yr:		1.5E-08	7.0E-10	6.7E-10	6.9E-10	5.0E-09
SE75	Class: W	5.30E-07					
	1 Yr:		2.1E-08	3.1E-09	1.9E-09	2.2E-09	6.0E-09
	50 Yr:		2.1E-08	3.1E-09	1.9E-09	2.2E-09	6.0E-09
SE79	Class: W	1.24E-10					
	1 Yr:		7.4E-08	1.3E-09	1.3E-09	1.3E-09	1.4E-08
	50 Yr:		7.4E-08	1.3E-09	1.3E-09	1.3E-09	1.4E-08
BR82	Class: D	3.85E-06					
	1 Yr:		1.3E-09	1.3E-09	1.1E-09	1.3E-09	2.8E-09
	50 Yr:		1.3E-09	1.3E-09	1.1E-09	1.3E-09	2.8E-09
BR83	Class: D	1.68E-08					
	1 Yr:		1.1E-10	3.7E-11	3.7E-11	3.7E-11	1.8E-10
	50 Yr:		1.1E-10	3.7E-11	3.7E-11	3.7E-11	1.8E-10
BR84	Class: D	2.84E-06					
	1 Yr:		1.4E-10	3.3E-11	3.1E-11	3.3E-11	2.4E-10
	50 Yr:		1.4E-10	3.3E-11	3.1E-11	3.3E-11	2.4E-10
KR83M	NobleGas	3.78E-11					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85M	NobleGas	2.17E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR85	NobleGas	7.57E-09					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR87	NobleGas	1.26E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR88	NobleGas	3.07E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
KR89	NobleGas	3.45E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
RB86	Class: D	1.56E-07					
	1 Yr:		9.0E-09	2.2E-08	2.2E-08	8.9E-09	1.2E-08
	50 Yr:		9.0E-09	2.2E-08	2.2E-08	8.9E-09	1.2E-08

RB87	Class: D	1.04E-09					
	1 Yr:		4.5E-09	1.2E-08	1.1E-08	4.4E-09	6.0E-09
	50 Yr:		4.5E-09	1.2E-08	1.1E-08	4.4E-09	6.0E-09
RB88	Class: D	1.05E-06					
	1 Yr:		1.5E-10	2.1E-11	2.0E-11	2.0E-11	2.0E-10
	50 Yr:		1.5E-10	2.1E-11	2.0E-11	2.0E-11	2.0E-10
RB89	Class: D	3.19E-06					
	1 Yr:		9.5E-11	2.0E-11	1.9E-11	1.5E-11	1.4E-10
	50 Yr:		9.5E-11	2.0E-11	1.9E-11	1.5E-11	1.4E-10
SR85	Class: D	7.06E-07					
	1 Yr:		3.4E-09	1.6E-08	9.4E-09	2.2E-09	4.4E-09
	50 Yr:		3.4E-09	1.6E-08	9.4E-09	2.2E-09	4.4E-09
SR89	Class: D	1.38E-08					
	1 Yr:		1.7E-09	9.0E-08	8.9E-08	1.6E-09	1.5E-08
	50 Yr:		1.7E-09	9.0E-08	8.9E-08	1.6E-09	1.5E-08
SR90	Class: D	3.10E-09					
	1 Yr:		6.6E-09	1.3E-06	8.4E-07	6.6E-09	1.2E-07
	50 Yr:		6.6E-09	1.3E-06	8.4E-07	6.6E-09	1.2E-07
SR91	Class: D	1.03E-06					
	1 Yr:		3.0E-10	1.9E-09	2.2E-09	1.7E-10	1.5E-09
	50 Yr:		3.0E-10	1.9E-09	2.2E-09	1.7E-10	1.5E-09
SR92	Class: D	2.02E-06					
	1 Yr:		1.9E-10	1.4E-09	1.0E-09	9.8E-11	9.0E-10
	50 Yr:		1.9E-10	1.4E-09	1.0E-09	9.8E-11	9.0E-10
Y 90	Class: Y	2.50E-08					
	1 Yr:		3.3E-08	1.3E-11	3.8E-11	8.6E-13	1.3E-08
	50 Yr:		3.3E-08	1.3E-11	3.8E-11	8.6E-13	1.3E-08
Y 91M	Class: Y	7.47E-07					
	1 Yr:		2.1E-10	5.3E-12	4.6E-12	3.3E-12	7.5E-11
	50 Yr:		2.1E-10	5.3E-12	4.6E-12	3.3E-12	7.5E-11
Y 91	Class: Y	1.96E-08					
	1 Yr:		2.9E-07	3.7E-10	9.4E-10	2.1E-11	4.3E-08
	50 Yr:		2.9E-07	3.7E-10	9.4E-10	2.1E-11	4.3E-08
Y 92	Class: Y	4.16E-07					
	1 Yr:		3.0E-09	9.9E-12	8.7E-12	5.8E-12	1.9E-09
	50 Yr:		3.0E-09	9.9E-12	8.7E-12	5.8E-12	1.9E-09
Y 93	Class: Y	1.67E-07					
	1 Yr:		6.9E-09	1.0E-11	1.1E-11	5.0E-12	4.6E-09
	50 Yr:		6.9E-09	1.0E-11	1.1E-11	5.0E-12	4.6E-09
ZR93	Class: W	0.00E00					
	1 Yr:		1.4E-08	4.2E-08	6.9E-09	1.9E-11	3.3E-09
	50 Yr:		1.4E-08	4.2E-08	6.9E-09	1.9E-11	3.3E-09
ZR95	Class: W	1.06E-06					
	1 Yr:		1.1E-07	4.2E-08	1.2E-08	2.9E-09	2.0E-08
	50 Yr:		1.1E-07	4.2E-08	1.2E-08	2.9E-09	2.0E-08
ZR97	Class: W	2.81E-07					
	1 Yr:		1.4E-08	4.9E-10	8.0E-10	1.9E-10	7.8E-09
	50 Yr:		1.4E-08	4.9E-10	8.0E-10	1.9E-10	7.8E-09
NB93M	Class: Y	9.62E-11					
	1 Yr:		5.7E-08	4.0E-10	2.3E-10	2.7E-11	7.3E-09
	50 Yr:		5.7E-08	4.0E-10	2.3E-10	2.7E-11	7.3E-09
NB94	Class: Y	2.27E-06					
	1 Yr:		7.9E-07	3.4E-08	2.8E-08	3.3E-08	1.2E-07
	50 Yr:		7.9E-07	3.4E-08	2.8E-08	3.3E-08	1.2E-07
NB95M	Class: Y	8.64E-08					
	1 Yr:		2.2E-08	3.0E-10	2.4E-10	1.5E-10	4.6E-09
	50 Yr:		2.2E-08	3.0E-10	2.4E-10	1.5E-10	4.6E-09
NB95	Class: Y	1.10E-06					
	1 Yr:		4.4E-08	1.6E-09	1.2E-09	1.3E-09	7.6E-09
	50 Yr:		4.4E-08	1.6E-09	1.2E-09	1.3E-09	7.6E-09
NB97M	Class: Y	1.04E-06					
	1 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
	50 Yr:		2.4E-12	2.3E-14	3.1E-14	2.8E-14	3.5E-13
NB97	Class: Y	9.43E-07					
	1 Yr:		6.1E-10	9.1E-12	7.4E-12	5.8E-12	3.9E-10
	50 Yr:		6.1E-10	9.1E-12	7.4E-12	5.8E-12	3.9E-10
MO93	Class: D	5.46E-10					
	1 Yr:		8.1E-10	4.6E-08	1.5E-08	5.7E-10	3.1E-09
	50 Yr:		8.1E-10	4.6E-08	1.5E-08	5.7E-10	3.1E-09
MO99	Class: D	2.20E-07					
	1 Yr:		1.2E-09	2.8E-09	3.3E-09	1.0E-09	2.3E-09

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             50 Yr:            1.2E-09   2.8E-09   3.3E-09   1.0E-09   2.3E-09
TC99M   Class: W     1.66E-07
              1 Yr:            2.7E-10   1.6E-11   7.7E-12   8.9E-11   1.3E-10
             50 Yr:            2.7E-10   1.6E-11   7.7E-12   8.9E-11   1.3E-10
TC99    Class: W     9.05E-10
              1 Yr:            1.2E-07   1.1E-10   1.1E-10   3.5E-09   1.7E-08
             50 Yr:            1.2E-07   1.1E-10   1.1E-10   3.5E-09   1.7E-08
TC101   Class: W     4.76E-07
              1 Yr:            1.2E-10   1.3E-12   9.6E-13   1.5E-11   1.1E-10
             50 Yr:            1.2E-10   1.3E-12   9.6E-13   1.5E-11   1.1E-10
RU103   Class: Y     6.59E-07
              1 Yr:            8.6E-08   1.1E-09   8.0E-10   9.5E-10   1.3E-08
             50 Yr:            8.6E-08   1.1E-09   8.0E-10   9.5E-10   1.3E-08
RU105   Class: Y     1.13E-06
              1 Yr:            2.9E-09   4.3E-11   3.4E-11   2.5E-11   1.4E-09
             50 Yr:            2.9E-09   4.3E-11   3.4E-11   2.5E-11   1.4E-09
RU106   Class: Y     0.00E00
              1 Yr:            1.9E-06   3.6E-09   3.2E-09   3.6E-09   2.5E-07
             50 Yr:            1.9E-06   3.6E-09   3.2E-09   3.6E-09   2.5E-07
RH103M  Class: Y     1.90E-10
              1 Yr:            7.5E-11   9.7E-14   3.1E-14   2.5E-14   2.0E-11
             50 Yr:            7.5E-11   9.7E-14   3.1E-14   2.5E-14   2.0E-11
RH105   Class: Y     1.10E-07
              1 Yr:            8.2E-09   3.9E-11   3.3E-11   3.0E-11   2.4E-09
             50 Yr:            8.2E-09   3.9E-11   3.3E-11   3.0E-11   2.4E-09
PD103   Class: Y     1.68E-09
              1 Yr:            1.5E-08   1.5E-10   2.8E-11   1.3E-11   2.5E-09
             50 Yr:            1.5E-08   1.5E-10   2.8E-11   1.3E-11   2.5E-09
PD107   Class: Y     0.00E00
              1 Yr:            1.7E-08   3.9E-12   3.4E-12   4.5E-13   2.2E-09
             50 Yr:            1.7E-08   3.9E-12   3.4E-12   4.5E-13   2.2E-09
PD109   Class: Y     1.33E-08
              1 Yr:            8.1E-09   1.9E-11   1.2E-11   3.8E-12   2.7E-09
             50 Yr:            8.1E-09   1.9E-11   1.2E-11   3.8E-12   2.7E-09
AG110M  Class: D     4.01E-06
              1 Yr:            2.8E-08   2.1E-08   1.7E-08   1.7E-08   3.5E-08
             50 Yr:            2.8E-08   2.1E-08   1.7E-08   1.7E-08   3.5E-08
AG111   Class: D     4.38E-08
              1 Yr:            1.1E-09   1.1E-09   1.0E-09   1.0E-09   4.8E-09
             50 Yr:            1.1E-09   1.1E-09   1.0E-09   1.0E-09   4.8E-09
CD109   Class: D     7.22E-09
              1 Yr:            1.2E-08   1.6E-08   9.2E-09   9.9E-09   4.5E-08
             50 Yr:            1.2E-08   1.6E-08   9.2E-09   9.9E-09   4.5E-08
CD113M  Class: D     2.86E-09
              1 Yr:            5.8E-08   5.8E-08   5.8E-08   5.8E-08   3.0E-07
             50 Yr:            5.8E-08   5.8E-08   5.8E-08   5.8E-08   3.0E-07
CD115M  Class: D     4.67E-08
              1 Yr:            9.1E-09   9.0E-09   9.0E-09   8.9E-09   4.5E-08
             50 Yr:            9.1E-09   9.0E-09   9.0E-09   8.9E-09   4.5E-08
CD115   Class: D     3.31E-07
              1 Yr:            7.3E-10   6.6E-10   5.9E-10   5.6E-10   3.9E-09
             50 Yr:            7.3E-10   6.6E-10   5.9E-10   5.6E-10   3.9E-09
IN111   Class: D     5.30E-07
              1 Yr:            3.1E-10   2.1E-09   1.9E-09   2.2E-10   1.2E-09
             50 Yr:            3.1E-10   2.1E-09   1.9E-09   2.2E-10   1.2E-09
IN114M  Class: D     1.23E-07
              1 Yr:            1.6E-08   6.2E-07   6.8E-07   1.5E-08   1.2E-07
             50 Yr:            1.6E-08   6.2E-07   6.8E-07   1.5E-08   1.2E-07
IN115M  Class: D     2.17E-07
              1 Yr:            7.4E-11   2.6E-10   2.7E-10   2.8E-11   2.8E-10
             50 Yr:            7.4E-11   2.6E-10   2.7E-10   2.8E-11   2.8E-10
SN117M  Class: W     1.93E-07
              1 Yr:            6.4E-08   6.3E-09   1.6E-09   1.8E-10   1.0E-08
             50 Yr:            6.4E-08   6.3E-09   1.6E-09   1.8E-10   1.0E-08
SN119M  Class: W     2.23E-09
              1 Yr:            7.1E-08   4.2E-09   2.8E-09   3.2E-10   1.0E-08
             50 Yr:            7.1E-08   4.2E-09   2.8E-09   3.2E-10   1.0E-08
SN121M  Class: W     1.66E-09
              1 Yr:            1.3E-07   1.3E-08   8.9E-09   8.7E-10   1.9E-08
             50 Yr:            1.3E-07   1.3E-08   8.9E-09   8.7E-10   1.9E-08
SN121   Class: W     1.23E-09
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	1 Yr:		5.3E-09	3.0E-10	7.7E-11	4.6E-12	1.5E-09
	50 Yr:		5.3E-09	3.0E-10	7.7E-11	4.6E-12	1.5E-09
SN123	Class: W	2.20E-08					
	1 Yr:		2.5E-07	1.2E-08	1.0E-08	9.5E-10	4.0E-08
	50 Yr:		2.5E-07	1.2E-08	1.0E-08	9.5E-10	4.0E-08
SN125	Class: W	4.86E-07					
	1 Yr:		8.2E-08	3.4E-09	5.5E-09	3.7E-10	2.1E-08
	50 Yr:		8.2E-08	3.4E-09	5.5E-09	3.7E-10	2.1E-08
SN126	Class: W	5.83E-08					
	1 Yr:		7.1E-07	1.1E-07	7.9E-08	2.0E-08	1.2E-07
	50 Yr:		7.1E-07	1.1E-07	7.9E-08	2.0E-08	1.2E-07
SB124	Class: W	2.72E-06					
	1 Yr:		1.7E-07	1.1E-08	7.5E-09	3.7E-09	3.1E-08
	50 Yr:		1.7E-07	1.1E-08	7.5E-09	3.7E-09	3.1E-08
SB125	Class: W	5.90E-07					
	1 Yr:		1.2E-07	3.1E-08	8.6E-09	2.6E-09	2.0E-08
	50 Yr:		1.2E-07	3.1E-08	8.6E-09	2.6E-09	2.0E-08
SB126M	Class: W	2.21E-06					
	1 Yr:		1.8E-10	6.8E-12	5.5E-12	5.0E-12	1.7E-10
	50 Yr:		1.8E-10	6.8E-12	5.5E-12	5.0E-12	1.7E-10
SB126	Class: W	4.04E-06					
	1 Yr:		6.5E-08	4.2E-09	3.3E-09	2.1E-09	1.8E-08
	50 Yr:		6.5E-08	4.2E-09	3.3E-09	2.1E-09	1.8E-08
SB127	Class: W	9.84E-07					
	1 Yr:		4.0E-08	8.2E-10	1.2E-09	2.7E-10	1.0E-08
	50 Yr:		4.0E-08	8.2E-10	1.2E-09	2.7E-10	1.0E-08
TE123M	Class: W	1.84E-07					
	1 Yr:		1.1E-07	7.2E-08	1.5E-08	5.5E-09	1.8E-08
	50 Yr:		1.1E-07	7.2E-08	1.5E-08	5.5E-09	1.8E-08
TE125M	Class: W	1.06E-08					
	1 Yr:		9.4E-08	3.7E-08	8.1E-09	4.4E-09	1.4E-08
	50 Yr:		9.4E-08	3.7E-08	8.1E-09	4.4E-09	1.4E-08
TE127M	Class: W	3.56E-09					
	1 Yr:		2.1E-07	6.1E-08	3.9E-08	1.4E-08	3.5E-08
	50 Yr:		2.1E-07	6.1E-08	3.9E-08	1.4E-08	3.5E-08
TE127	Class: W	1.05E-08					
	1 Yr:		2.7E-09	2.4E-11	4.1E-11	5.9E-11	1.1E-09
	50 Yr:		2.7E-09	2.4E-11	4.1E-11	5.9E-11	1.1E-09
TE129M	Class: W	4.92E-08					
	1 Yr:		1.9E-07	2.3E-08	2.6E-08	1.9E-08	3.5E-08
	50 Yr:		1.9E-07	2.3E-08	2.6E-08	1.9E-08	3.5E-08
TE129	Class: W	9.05E-08					
	1 Yr:		5.5E-10	4.3E-12	4.1E-12	4.5E-12	3.4E-10
	50 Yr:		5.5E-10	4.3E-12	4.1E-12	4.5E-12	3.4E-10
TE131M	Class: W	2.07E-06					
	1 Yr:		1.7E-08	1.1E-09	6.8E-10	3.7E-08	8.0E-09
	50 Yr:		1.7E-08	1.1E-09	6.8E-10	3.7E-08	8.0E-09
TE131	Class: W	6.09E-07					
	1 Yr:		3.4E-10	4.1E-12	3.0E-12	6.8E-10	2.7E-10
	50 Yr:		3.4E-10	4.1E-12	3.0E-12	6.8E-10	2.7E-10
TE132	Class: W	2.95E-07					
	1 Yr:		4.0E-08	2.6E-09	1.4E-09	8.7E-08	1.6E-08
	50 Yr:		4.0E-08	2.6E-09	1.4E-09	8.7E-08	1.6E-08
TE133M	Class: W	3.41E-06					
	1 Yr:		1.0E-09	3.5E-11	2.8E-11	3.3E-09	8.6E-10
	50 Yr:		1.0E-09	3.5E-11	2.8E-11	3.3E-09	8.6E-10
TE133	Class: W	1.37E-06					
	1 Yr:		2.1E-10	3.8E-12	3.0E-12	7.3E-10	2.0E-10
	50 Yr:		2.1E-10	3.8E-12	3.0E-12	7.3E-10	2.0E-10
TE134	Class: W	1.24E-06					
	1 Yr:		7.6E-10	3.2E-11	2.5E-11	3.8E-10	5.5E-10
	50 Yr:		7.6E-10	3.2E-11	2.5E-11	3.8E-10	5.5E-10
I 125	Class: D	1.19E-08					
	1 Yr:		1.3E-10	2.3E-10	5.2E-11	4.1E-07	2.1E-08
	50 Yr:		1.3E-10	2.3E-10	5.2E-11	4.1E-07	2.1E-08
I 129	Class: D	8.92E-09					
	1 Yr:		1.8E-10	2.3E-10	8.9E-11	1.4E-06	7.2E-08
	50 Yr:		1.8E-10	2.3E-10	8.9E-11	1.4E-06	7.2E-08
I 130	Class: D	3.05E-06					
	1 Yr:		3.8E-10	2.5E-10	2.1E-10	1.6E-07	8.2E-09
	50 Yr:		3.8E-10	2.5E-10	2.1E-10	1.6E-07	8.2E-09

I 131	Class: D	5.33E-07					
	1 Yr:		3.9E-10	2.6E-10	2.2E-10	1.4E-06	7.2E-08
	50 Yr:		3.9E-10	2.6E-10	2.2E-10	1.4E-06	7.2E-08
I 132	Class: D	3.31E-06					
	1 Yr:		2.0E-10	9.8E-11	8.6E-11	1.8E-08	1.1E-09
	50 Yr:		2.0E-10	9.8E-11	8.6E-11	1.8E-08	1.1E-09
I 133	Class: D	8.70E-07					
	1 Yr:		2.8E-10	1.8E-10	1.6E-10	3.8E-07	1.9E-08
	50 Yr:		2.8E-10	1.8E-10	1.6E-10	3.8E-07	1.9E-08
I 134	Class: D	3.85E-06					
	1 Yr:		1.4E-10	4.7E-11	4.1E-11	3.4E-09	4.6E-10
	50 Yr:		1.4E-10	4.7E-11	4.1E-11	3.4E-09	4.6E-10
I 135	Class: D	2.38E-06					
	1 Yr:		2.5E-10	1.4E-10	1.3E-10	7.7E-08	4.1E-09
	50 Yr:		2.5E-10	1.4E-10	1.3E-10	7.7E-08	4.1E-09
XE131M	NobleGas	1.10E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133M	NobleGas	4.07E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE133	NobleGas	4.23E-08					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135M	NobleGas	5.99E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE135	NobleGas	3.50E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE137	NobleGas	4.34E-07					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
XE138	NobleGas	1.73E-06					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
CS134M	Class: D	2.51E-08					
	1 Yr:		8.9E-11	2.2E-11	1.8E-11	1.9E-11	1.3E-10
	50 Yr:		8.9E-11	2.2E-11	1.8E-11	1.9E-11	1.3E-10
CS134	Class: D	2.23E-06					
	1 Yr:		9.0E-09	9.5E-09	8.3E-09	1.0E-08	1.1E-08
	50 Yr:		9.0E-09	9.5E-09	8.3E-09	1.0E-08	1.1E-08
CS135	Class: D	3.00E-10					
	1 Yr:		1.4E-09	1.3E-09	1.3E-09	1.3E-09	1.7E-09
	50 Yr:		1.4E-09	1.3E-09	1.3E-09	1.3E-09	1.7E-09
CS136	Class: D	3.13E-06					
	1 Yr:		5.2E-09	5.7E-09	4.7E-09	5.8E-09	7.3E-09
	50 Yr:		5.2E-09	5.7E-09	4.7E-09	5.8E-09	7.3E-09
CS137	Class: D	2.93E-09					
	1 Yr:		7.1E-09	7.3E-09	6.8E-09	7.4E-09	8.8E-09
	50 Yr:		7.1E-09	7.3E-09	6.8E-09	7.4E-09	8.8E-09
CS138	Class: D	3.63E-06					
	1 Yr:		1.5E-10	3.8E-11	3.5E-11	3.7E-11	2.6E-10
	50 Yr:		1.5E-10	3.8E-11	3.5E-11	3.7E-11	2.6E-10
BA139	Class: D	8.04E-08					
	1 Yr:		1.2E-10	1.7E-10	2.1E-10	1.3E-11	3.3E-10
	50 Yr:		1.2E-10	1.7E-10	2.1E-10	1.3E-11	3.3E-10
BA140	Class: D	2.55E-07					
	1 Yr:		3.3E-09	5.8E-08	4.3E-08	2.1E-09	1.3E-08
	50 Yr:		3.3E-09	5.8E-08	4.3E-08	2.1E-09	1.3E-08
BA141	Class: D	1.24E-06					
	1 Yr:		9.4E-11	9.5E-11	9.8E-11	8.2E-12	1.9E-10
	50 Yr:		9.4E-11	9.5E-11	9.8E-11	8.2E-12	1.9E-10
BA142	Class: D	1.53E-06					
	1 Yr:		6.9E-11	3.8E-11	4.2E-11	7.5E-12	1.3E-10
	50 Yr:		6.9E-11	3.8E-11	4.2E-11	7.5E-12	1.3E-10
LA140	Class: D	3.50E-06					
	1 Yr:		1.3E-09	1.9E-09	3.2E-09	6.8E-10	5.8E-09
	50 Yr:		1.3E-09	1.9E-09	3.2E-09	6.8E-10	5.8E-09
LA141	Class: D	9.08E-08					
	1 Yr:		2.1E-10	4.7E-10	3.4E-10	9.5E-11	8.6E-10

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             50 Yr:            2.1E-10   4.7E-10   3.4E-10   9.5E-11   8.6E-10
LA142   Class: D     4.32E-06
              1 Yr:            2.0E-10   9.3E-11   1.0E-10   7.3E-11   5.3E-10
             50 Yr:            2.0E-10   9.3E-11   1.0E-10   7.3E-11   5.3E-10
CE141   Class: Y     9.81E-08
              1 Yr:            1.1E-07   2.2E-09   5.4E-10   1.5E-10   1.6E-08
             50 Yr:            1.1E-07   2.2E-09   5.4E-10   1.5E-10   1.6E-08
CE143   Class: Y     3.82E-07
              1 Yr:            1.9E-08   1.5E-10   1.2E-10   4.4E-11   5.9E-09
             50 Yr:            1.9E-08   1.5E-10   1.2E-10   4.4E-11   5.9E-09
CE144   Class: Y     2.41E-08
              1 Yr:            1.6E-06   2.4E-08   2.8E-08   9.8E-10   2.1E-07
             50 Yr:            1.6E-06   2.4E-08   2.8E-08   9.8E-10   2.1E-07
PR143   Class: Y     6.12E-09
              1 Yr:            7.0E-08   3.8E-11   1.1E-10   4.9E-13   1.2E-08
             50 Yr:            7.0E-08   3.8E-11   1.1E-10   4.9E-13   1.2E-08
PR144M  Class: Y     6.97E-09
              1 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
             50 Yr:            4.0E-11   1.5E-14   1.8E-14   8.7E-15   5.1E-12
PR144   Class: Y     8.36E-08
              1 Yr:            2.3E-10   1.0E-13   8.2E-14   8.0E-14   1.9E-10
             50 Yr:            2.3E-10   1.0E-13   8.2E-14   8.0E-14   1.9E-10
ND147   Class: Y     1.81E-07
              1 Yr:            6.7E-08   6.4E-10   2.7E-10   1.1E-10   1.2E-08
             50 Yr:            6.7E-08   6.4E-10   2.7E-10   1.1E-10   1.2E-08
PM147   Class: Y     2.73E-10
              1 Yr:            1.4E-07   1.8E-08   2.6E-09   2.9E-13   1.9E-08
             50 Yr:            1.4E-07   1.8E-08   2.6E-09   2.9E-13   1.9E-08
PM148M  Class: Y     2.84E-06
              1 Yr:            1.5E-07   5.5E-09   3.7E-09   3.9E-09   2.5E-08
             50 Yr:            1.5E-07   5.5E-09   3.7E-09   3.9E-09   2.5E-08
PM148   Class: Y     8.70E-07
              1 Yr:            5.4E-08   3.5E-10   4.0E-10   2.2E-10   1.5E-08
             50 Yr:            5.4E-08   3.5E-10   4.0E-10   2.2E-10   1.5E-08
PM149   Class: Y     2.24E-08
              1 Yr:            1.7E-08   1.5E-11   3.4E-11   2.6E-12   5.3E-09
             50 Yr:            1.7E-08   1.5E-11   3.4E-11   2.6E-12   5.3E-09
PM151   Class: Y     4.42E-07
              1 Yr:            9.9E-09   1.1E-10   7.1E-11   4.2E-11   3.5E-09
             50 Yr:            9.9E-09   1.1E-10   7.1E-11   4.2E-11   3.5E-09
SM147   Class: W     0.00E00
              1 Yr:            1.4E-06   2.6E-05   3.3E-06   1.3E-10   2.4E-05
             50 Yr:            1.4E-06   2.6E-05   3.3E-06   1.3E-10   2.4E-05
SM151   Class: W     7.79E-13
              1 Yr:            1.5E-08   2.2E-07   2.8E-08   1.2E-12   1.1E-08
             50 Yr:            1.5E-08   2.2E-07   2.8E-08   1.2E-12   1.1E-08
SM153   Class: W     6.46E-08
              1 Yr:            1.5E-08   4.3E-10   3.7E-10   2.0E-11   4.2E-09
             50 Yr:            1.5E-08   4.3E-10   3.7E-10   2.0E-11   4.2E-09
EU152   Class: W     1.67E-06
              1 Yr:            2.0E-07   4.5E-07   2.0E-07   1.9E-08   1.1E-07
             50 Yr:            2.0E-07   4.5E-07   2.0E-07   1.9E-08   1.1E-07
EU154   Class: W     1.82E-06
              1 Yr:            3.5E-07   1.0E-06   3.2E-07   1.9E-08   1.6E-07
             50 Yr:            3.5E-07   1.0E-06   3.2E-07   1.9E-08   1.6E-07
EU155   Class: W     6.78E-08
              1 Yr:            7.4E-08   3.3E-07   5.0E-08   8.7E-10   2.6E-08
             50 Yr:            7.4E-08   3.3E-07   5.0E-08   8.7E-10   2.6E-08
EU156   Class: W     2.02E-06
              1 Yr:            8.8E-08   7.5E-09   5.9E-09   1.1E-09   1.9E-08
             50 Yr:            8.8E-08   7.5E-09   5.9E-09   1.1E-09   1.9E-08
GD153   Class: D     9.84E-08
              1 Yr:            3.9E-09   2.5E-07   4.8E-08   9.7E-10   1.5E-08
             50 Yr:            3.9E-09   2.5E-07   4.8E-08   9.7E-10   1.5E-08
TB160   Class: W     1.64E-06
              1 Yr:            1.7E-07   6.7E-08   2.4E-08   2.8E-09   3.2E-08
             50 Yr:            1.7E-07   6.7E-08   2.4E-08   2.8E-09   3.2E-08
HO166M  Class: W     2.48E-06
              1 Yr:            3.2E-07   1.4E-06   3.1E-07   4.1E-08   2.6E-07
             50 Yr:            3.2E-07   1.4E-06   3.1E-07   4.1E-08   2.6E-07
W 181   Class: D     3.69E-08
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	1 Yr:		4.2E-11	3.7E-10	1.6E-10	2.1E-11	2.6E-10
	50 Yr:		4.2E-11	3.7E-10	1.6E-10	2.1E-11	2.6E-10
W 187	Class: D	6.72E-07					
	1 Yr:		2.2E-10	4.3E-10	2.5E-10	1.1E-10	2.1E-09
	50 Yr:		2.2E-10	4.3E-10	2.5E-10	1.1E-10	2.1E-09
W 185	Class: D	1.57E-09					
	1 Yr:		9.6E-11	8.9E-10	7.9E-10	3.5E-11	1.4E-09
	50 Yr:		9.6E-11	8.9E-10	7.9E-10	3.5E-11	1.4E-09
RE187	Class: W	0.00E00					
	1 Yr:		2.6E-10	2.1E-12	2.1E-12	6.4E-11	5.7E-11
	50 Yr:		2.6E-10	2.1E-12	2.1E-12	6.4E-11	5.7E-11
IR192	Class: Y	1.14E-06					
	1 Yr:		1.9E-07	3.1E-09	2.1E-09	2.7E-09	2.8E-08
	50 Yr:		1.9E-07	3.1E-09	2.1E-09	2.7E-09	2.8E-08
HG203	Class: D	3.28E-07					
	1 Yr:		2.6E-09	2.9E-09	2.5E-09	2.7E-09	4.1E-09
	50 Yr:		2.6E-09	2.9E-09	2.5E-09	2.7E-09	4.1E-09
RN222	NobleGas	5.61E-10					
	1 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
	50 Yr:		0.0E-00	0.0E-00	0.0E-00	0.0E-00	0.0E-00
TH227	Class: Y	1.40E-07					
	1 Yr:		3.2E-04	1.8E-06	3.5E-07	5.4E-09	3.9E-05
	50 Yr:		3.2E-04	1.8E-06	3.5E-07	5.4E-09	3.9E-05
TH228	Class: Y	2.56E-09					
	1 Yr:		1.3E-03	8.0E-05	1.4E-05	3.5E-07	1.6E-04
	50 Yr:		1.3E-03	8.0E-05	1.4E-05	3.5E-07	1.6E-04
TH229	Class: Y	1.06E-07					
	1 Yr:		1.6E-03	6.0E-04	5.6E-05	3.5E-06	2.1E-04
	50 Yr:		1.6E-03	6.0E-04	5.6E-05	3.5E-06	2.1E-04
TH230	Class: Y	4.70E-10					
	1 Yr:		2.7E-04	2.7E-04	2.4E-05	7.3E-07	4.0E-05
	50 Yr:		2.7E-04	2.7E-04	2.4E-05	7.3E-07	4.0E-05
TH231	Class: Y	1.45E-08					
	1 Yr:		8.3E-09	1.1E-10	1.6E-11	2.8E-12	2.4E-09
	50 Yr:		8.3E-09	1.1E-10	1.6E-11	2.8E-12	2.4E-09
TH232	Class: Y	2.29E-10					
	1 Yr:		3.7E-04	3.1E-04	2.7E-05	1.8E-06	5.4E-05
	50 Yr:		3.7E-04	3.1E-04	2.7E-05	1.8E-06	5.4E-05
TH234	Class: Y	9.30E-09					
	1 Yr:		2.4E-07	1.5E-09	2.0E-09	5.6E-11	4.1E-08
	50 Yr:		2.4E-07	1.5E-09	2.0E-09	5.6E-11	4.1E-08
RA223	Class: W	1.73E-07					
	1 Yr:		2.2E-04	3.1E-05	3.2E-06	4.8E-08	2.8E-05
	50 Yr:		2.2E-04	3.1E-05	3.2E-06	4.8E-08	2.8E-05
RA224	Class: W	1.36E-08					
	1 Yr:		8.9E-05	1.4E-05	1.5E-06	3.7E-08	1.1E-05
	50 Yr:		8.9E-05	1.4E-05	1.5E-06	3.7E-08	1.1E-05
RA225	Class: W	7.60E-09					
	1 Yr:		1.9E-04	4.4E-05	6.3E-06	5.4E-08	2.4E-05
	50 Yr:		1.9E-04	4.4E-05	6.3E-06	5.4E-08	2.4E-05
RA226	Class: W	8.96E-09					
	1 Yr:		1.2E-04	3.2E-05	3.8E-06	1.2E-07	1.5E-05
	50 Yr:		1.2E-04	3.2E-05	3.8E-06	1.2E-07	1.5E-05
RA228	Class: W	0.00E00					
	1 Yr:		4.2E-05	2.7E-04	4.1E-05	1.2E-06	1.5E-05
	50 Yr:		4.2E-05	2.7E-04	4.1E-05	1.2E-06	1.5E-05
PB210	Class: D	1.42E-09					
	1 Yr:		1.2E-06	4.8E-05	1.8E-05	1.2E-06	4.6E-06
	50 Yr:		1.2E-06	4.8E-05	1.8E-05	1.2E-06	4.6E-06
PB212	Class: D	1.97E-07					
	1 Yr:		5.3E-08	1.7E-06	2.0E-07	3.5E-08	2.0E-07
	50 Yr:		5.3E-08	1.7E-06	2.0E-07	3.5E-08	2.0E-07
BI210	Class: W	8.14E-09					
	1 Yr:		3.2E-06	4.9E-10	4.9E-10	4.9E-10	3.9E-07
	50 Yr:		3.2E-06	4.9E-10	4.9E-10	4.9E-10	3.9E-07
BI212	Class: W	2.83E-07					
	1 Yr:		6.6E-07	2.7E-10	2.6E-10	2.6E-10	1.6E-07
	50 Yr:		6.6E-07	2.7E-10	2.6E-10	2.6E-10	1.6E-07
PO210	Class: W	1.23E-11					
	1 Yr:		1.1E-04	8.8E-06	9.1E-06	6.4E-07	1.5E-05
	50 Yr:		1.1E-04	8.8E-06	9.1E-06	6.4E-07	1.5E-05

U 232	Class: Y	3.72E-10					
	1 Yr:		8.3E-04	7.2E-05	9.0E-06	4.3E-07	1.0E-04
	50 Yr:		8.3E-04	7.2E-05	9.0E-06	4.3E-07	1.0E-04
U 233	Class: Y	4.48E-10					
	1 Yr:		2.8E-04	2.5E-06	2.6E-07	4.7E-08	3.4E-05
	50 Yr:		2.8E-04	2.5E-06	2.6E-07	4.7E-08	3.4E-05
U 234	Class: Y	1.93E-10					
	1 Yr:		2.7E-04	2.1E-06	2.3E-07	4.4E-08	3.3E-05
	50 Yr:		2.7E-04	2.1E-06	2.3E-07	4.4E-08	3.3E-05
U 235	Class: Y	2.04E-07					
	1 Yr:		2.5E-04	2.0E-06	2.2E-07	4.5E-08	3.0E-05
	50 Yr:		2.5E-04	2.0E-06	2.2E-07	4.5E-08	3.0E-05
U 236	Class: Y	1.22E-10					
	1 Yr:		2.6E-04	2.0E-06	2.2E-07	4.2E-08	3.1E-05
	50 Yr:		2.6E-04	2.0E-06	2.2E-07	4.2E-08	3.1E-05
U 237	Class: Y	1.67E-07					
	1 Yr:		5.1E-08	6.9E-10	1.4E-10	7.6E-11	8.7E-09
	50 Yr:		5.1E-08	6.9E-10	1.4E-10	7.6E-11	8.7E-09
U 238	Class: Y	7.92E-11					
	1 Yr:		2.4E-04	1.9E-06	2.2E-07	4.0E-08	2.9E-05
	50 Yr:		2.4E-04	1.9E-06	2.2E-07	4.0E-08	2.9E-05
U 240	Class: Y	1.85E-09					
	1 Yr:		1.1E-08	1.6E-10	6.3E-11	2.5E-11	5.0E-09
	50 Yr:		1.1E-08	1.6E-10	6.3E-11	2.5E-11	5.0E-09
PA231	Class: Y	4.95E-08					
	1 Yr:		3.9E-04	6.2E-04	4.5E-05	2.8E-06	6.4E-05
	50 Yr:		3.9E-04	6.2E-04	4.5E-05	2.8E-06	6.4E-05
PA233	Class: Y	2.70E-07					
	1 Yr:		1.1E-07	1.9E-09	7.5E-10	3.1E-10	1.7E-08
	50 Yr:		1.1E-07	1.9E-09	7.5E-10	3.1E-10	1.7E-08
PA234	Class: Y	2.75E-06					
	1 Yr:		6.6E-09	1.5E-10	1.1E-10	7.5E-11	3.0E-09
	50 Yr:		6.6E-09	1.5E-10	1.1E-10	7.5E-11	3.0E-09
AC225	Class: Y	2.01E-08					
	1 Yr:		2.5E-04	1.5E-06	4.3E-07	3.3E-08	3.1E-05
	50 Yr:		2.5E-04	1.5E-06	4.3E-07	3.3E-08	3.1E-05
AC227	Class: Y	1.62E-10					
	1 Yr:		1.4E-03	2.3E-04	2.9E-05	1.9E-06	1.8E-04
	50 Yr:		1.4E-03	2.3E-04	2.9E-05	1.9E-06	1.8E-04
AC228	Class: Y	1.42E-06					
	1 Yr:		4.7E-07	2.9E-08	5.1E-09	1.6E-10	5.9E-08
	50 Yr:		4.7E-07	2.9E-08	5.1E-09	1.6E-10	5.9E-08
FR223	Class: D	6.97E-08					
	1 Yr:		1.0E-08	1.0E-08	1.0E-08	1.0E-08	1.1E-08
	50 Yr:		1.0E-08	1.0E-08	1.0E-08	1.0E-08	1.1E-08
NP237	Class: W	2.81E-08					
	1 Yr:		1.2E-04	7.9E-04	1.1E-04	4.5E-06	4.4E-05
	50 Yr:		1.2E-04	7.9E-04	1.1E-04	4.5E-06	4.4E-05
NP238	Class: W	8.07E-07					
	1 Yr:		2.1E-08	5.6E-08	8.5E-09	4.1E-10	7.4E-09
	50 Yr:		2.1E-08	5.6E-08	8.5E-09	4.1E-10	7.4E-09
NP239	Class: W	2.19E-07					
	1 Yr:		2.3E-08	2.2E-09	4.8E-10	5.8E-11	5.9E-09
	50 Yr:		2.3E-08	2.2E-09	4.8E-10	5.8E-11	5.9E-09
PU236	Class: Y	1.48E-10					
	1 Yr:		2.8E-04	4.4E-05	5.9E-06	2.3E-07	3.6E-05
	50 Yr:		2.8E-04	4.4E-05	5.9E-06	2.3E-07	3.6E-05
PU237	Class: Y	5.58E-08					
	1 Yr:		1.3E-08	4.1E-10	1.2E-10	1.1E-10	2.0E-09
	50 Yr:		1.3E-08	4.1E-10	1.2E-10	1.1E-10	2.0E-09
PU238	Class: Y	1.11E-10					
	1 Yr:		3.2E-04	1.2E-04	1.2E-05	5.9E-07	4.5E-05
	50 Yr:		3.2E-04	1.2E-04	1.2E-05	5.9E-07	4.5E-05
PU239	Class: Y	1.10E-10					
	1 Yr:		3.0E-04	1.4E-04	1.3E-05	6.7E-07	4.3E-05
	50 Yr:		3.0E-04	1.4E-04	1.3E-05	6.7E-07	4.3E-05
PU240	Class: Y	1.08E-10					
	1 Yr:		3.0E-04	1.4E-04	1.3E-05	6.7E-07	4.3E-05
	50 Yr:		3.0E-04	1.4E-04	1.3E-05	6.7E-07	4.3E-05
PU241	Class: Y	2.00E-12					
	1 Yr:		8.4E-07	3.1E-06	1.9E-07	1.3E-08	2.2E-07

	50 Yr:		8.4E-07	3.1E-06	1.9E-07	1.3E-08	2.2E-07
PU242	Class: Y	9.18E-11					
	1 Yr:		2.8E-04	1.4E-04	1.3E-05	6.4E-07	4.0E-05
	50 Yr:		2.8E-04	1.4E-04	1.3E-05	6.4E-07	4.0E-05
PU243	Class: Y	3.04E-08					
	1 Yr:		1.7E-09	1.6E-11	2.4E-12	9.4E-13	6.0E-10
	50 Yr:		1.7E-09	1.6E-11	2.4E-12	9.4E-13	6.0E-10
PU244	Class: Y	6.56E-11					
	1 Yr:		2.6E-04	1.3E-04	1.2E-05	6.1E-07	3.8E-05
	50 Yr:		2.6E-04	1.3E-04	1.2E-05	6.1E-07	3.8E-05
AM241	Class: W	2.13E-08					
	1 Yr:		1.5E-04	1.3E-03	2.0E-04	6.5E-06	7.4E-05
	50 Yr:		1.5E-04	1.3E-03	2.0E-04	6.5E-06	7.4E-05
AM242M	Class: W	7.85E-10					
	1 Yr:		3.2E-05	1.2E-03	1.6E-04	6.3E-06	5.3E-05
	50 Yr:		3.2E-05	1.2E-03	1.6E-04	6.3E-06	5.3E-05
AM242	Class: W	1.93E-08					
	1 Yr:		4.5E-07	4.1E-07	1.1E-07	7.0E-10	7.5E-08
	50 Yr:		4.5E-07	4.1E-07	1.1E-07	7.0E-10	7.5E-08
AM243	Class: W	5.87E-08					
	1 Yr:		1.4E-04	1.3E-03	1.9E-04	6.5E-06	7.2E-05
	50 Yr:		1.4E-04	1.3E-03	1.9E-04	6.5E-06	7.2E-05
CM242	Class: W	1.27E-10					
	1 Yr:		1.4E-04	1.2E-04	3.3E-05	2.1E-07	2.2E-05
	50 Yr:		1.4E-04	1.2E-04	3.3E-05	2.1E-07	2.2E-05
CM243	Class: W	1.67E-07					
	1 Yr:		1.6E-04	1.0E-03	1.9E-04	4.0E-06	6.7E-05
	50 Yr:		1.6E-04	1.0E-03	1.9E-04	4.0E-06	6.7E-05
CM244	Class: W	1.08E-10					
	1 Yr:		1.6E-04	9.2E-04	1.8E-04	3.2E-06	6.2E-05
	50 Yr:		1.6E-04	9.2E-04	1.8E-04	3.2E-06	6.2E-05
CM245	Class: W	1.10E-07					
	1 Yr:		1.4E-04	1.3E-03	2.0E-04	6.8E-06	7.4E-05
	50 Yr:		1.4E-04	1.3E-03	2.0E-04	6.8E-06	7.4E-05
CM246	Class: W	9.78E-11					
	1 Yr:		1.4E-04	1.3E-03	2.0E-04	6.6E-06	7.3E-05
	50 Yr:		1.4E-04	1.3E-03	2.0E-04	6.6E-06	7.3E-05
CM247	Class: W	4.38E-07					
	1 Yr:		1.3E-04	1.2E-03	1.8E-04	6.2E-06	6.7E-05
	50 Yr:		1.3E-04	1.2E-03	1.8E-04	6.2E-06	6.7E-05
CM248	Class: W	7.44E-11					
	1 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
	50 Yr:		6.3E-05	7.8E-03	6.2E-04	2.2E-08	4.2E-04
CF252	Class: W	1.15E-10					
	1 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05
	50 Yr:		3.5E-05	6.6E-04	5.3E-05	1.1E-08	3.5E-05

Appendix B DCF Ratios

Appendix B.1

The following figures (Figure B.1 – B.6) show the ratio of the revised Dose Conversion Factor (DCF) from FGR12/13 to the original HUDUFACT.dat DCF value. Only those radionuclides that had the largest differences (i.e., a ratio <0.1 or >10) are displayed. Some radionuclides show large changes from the original HUDUFACT.dat values to those found in FGR12/13, this is due to changes in dose conversion calculations and different dose modeling updates as new guidance has come available. Full listing of ratios are given in Appendix B.3.

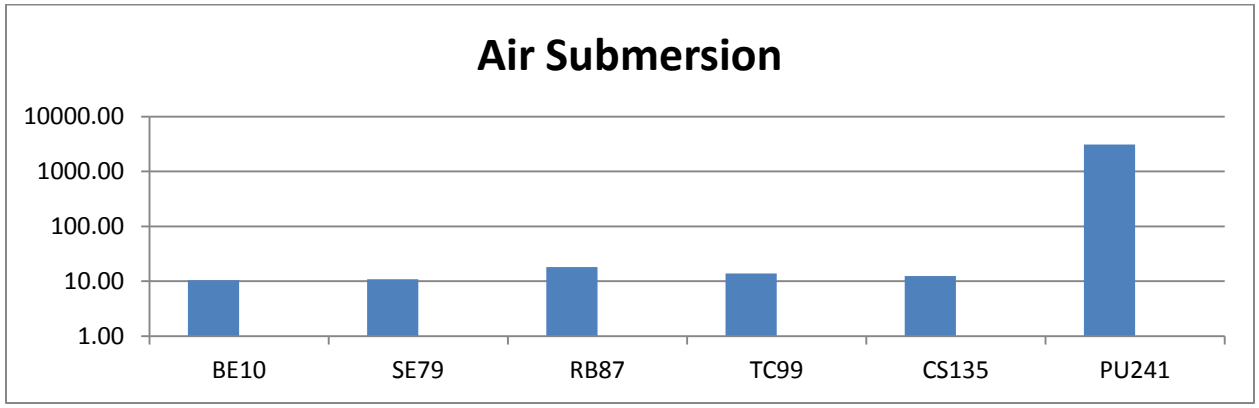

Figure B.1: Ratio of the revised FGR12 air submersion DCF to the original HUDUFACT.dat air submersion DCF for those radionuclides having the largest differences (y-axis uses log scale).

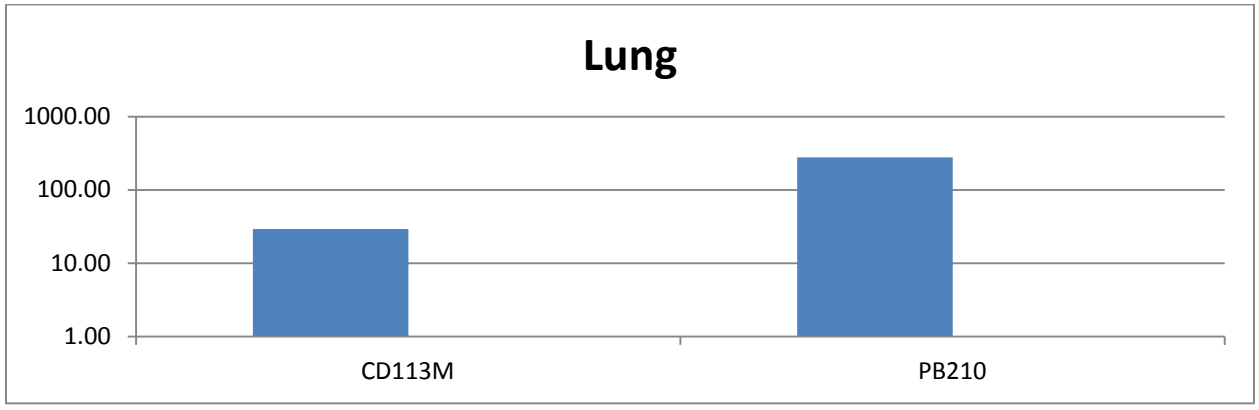

Figure B.2: Ratio of the revised FGR 13 lung DCF to the original HUDUFACT.dat lung DCF for those radionuclides having the largest differences (y-axis uses log scale).

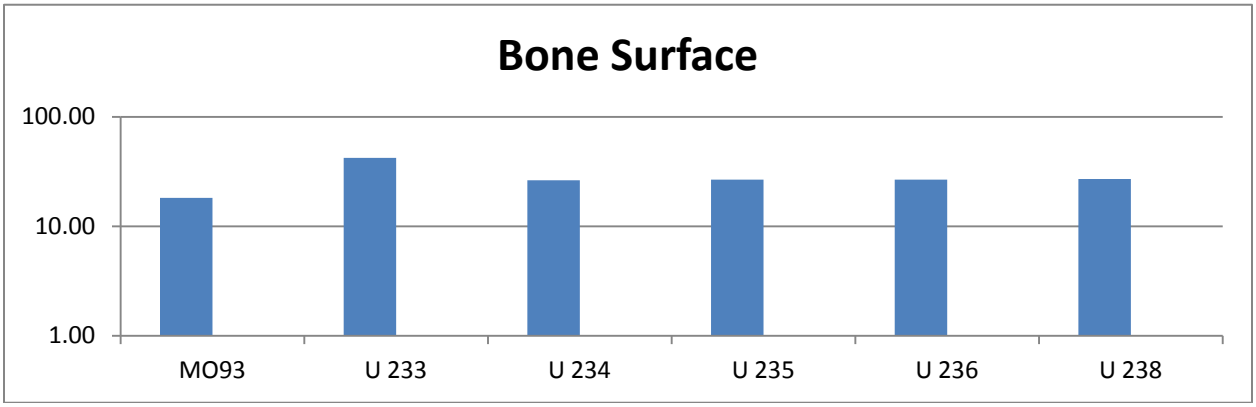

Figure B.3: Ratio of the revised FGR 13 bone surface DCF to the original HUDUFACT.dat bone surface DCF for those radionuclides having the largest differences (y-axis uses log scale).

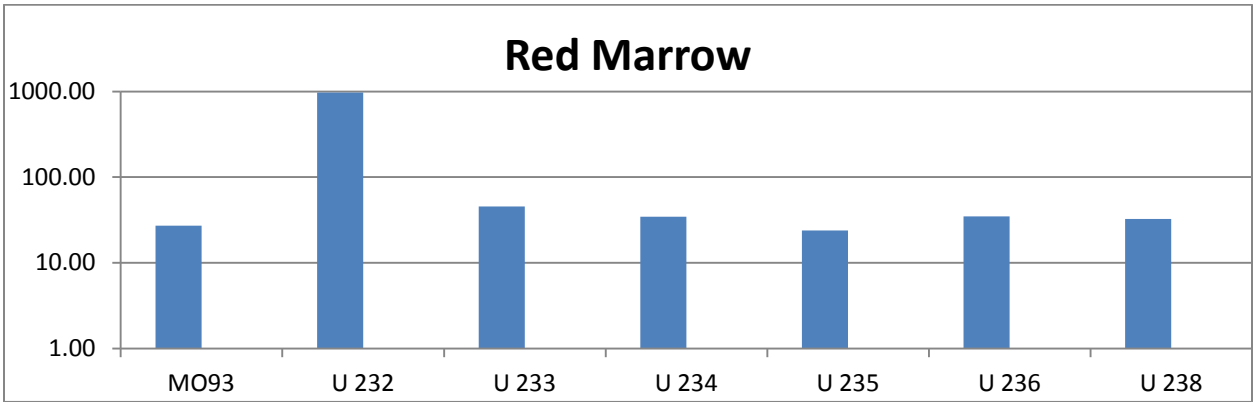

Figure B.4: Ratio of the revised FGR 13 red marrow DCF to the original HUDUFACT.dat red marrow DCF for those radionuclides having the largest differences (y-axis uses log scale).

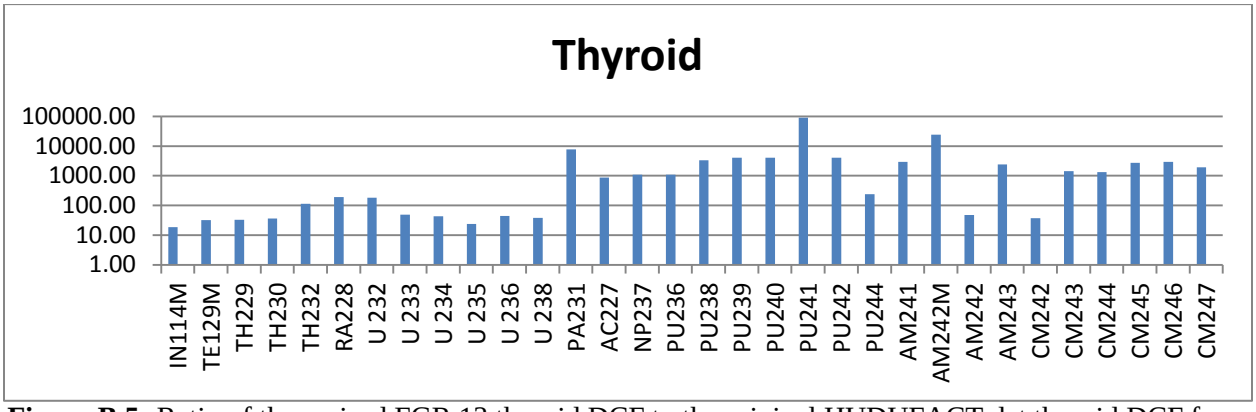

Figure B.5: Ratio of the revised FGR 13 thyroid DCF to the original HUDUFACT.dat thyroid DCF for those radionuclides having the largest differences (y-axis uses log scale).

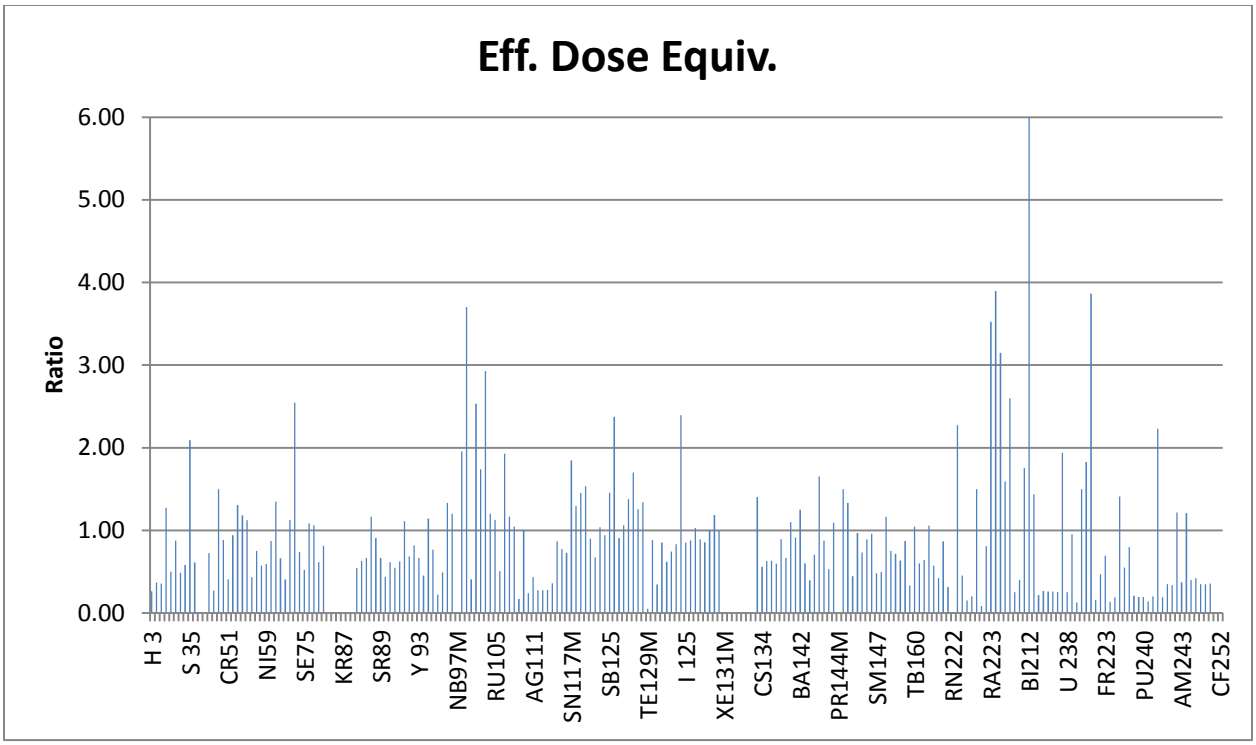

Figure B.6: Ratio of the revised FGR13 effective dose equivalent DCFs to the original HUDUFACT.dat effective dose equivalent DCFs for the various radionuclides (note: not all radionuclide labels are displayed).

Appendix B.2

Listing of the revised FGR12/13 and Original HUDUFACT.dat DCFs (for adult) (Note: values with a * indicate where values were not in FGR12 and/or FGR 13; therefore original HUDUFACT.dat values were used where updated values were not found)

source	nuclide	air submersion Sv/Yr per Bq/m3	lung Sv/Bq	bone surface Sv/Bq	red marrow Sv/Bq	thyroid Sv/Bq	eff dose equiv Sv/Bq
FGR12/13	H 3	0.00E+00	6.20E-12	6.20E-12	6.20E-12	6.20E-12	6.30E-12
original	H 3	2.00E-16	2.50E-11	1.30E-11	2.50E-11	2.50E-11	2.40E-11
FGR12/13	BE10	4.40E-09	2.80E-07	6.20E-09	2.10E-09	7.10E-11	3.50E-08
original	BE10	4.20E-10	7.70E-07	2.20E-08	6.70E-09	1.00E-11	9.50E-08
FGR12/13	C 14	8.20E-11	2.00E-10	1.90E-10	1.90E-10	1.90E-10	2.00E-10
original	C 14	1.40E-11	5.80E-10	3.00E-10	5.80E-10	5.80E-10	5.60E-10
FGR12/13	F 18	1.40E-06	2.60E-11	2.50E-11	2.70E-11	3.40E-12	2.80E-11
original	F 18	1.90E-06	1.10E-10	2.40E-11	2.50E-11	4.10E-12	2.20E-11
FGR12/13	NA22	3.20E-06	9.20E-10	2.20E-09	1.60E-09	9.60E-10	1.30E-09
original	NA22	3.90E-06	2.40E-09	4.00E-09	3.30E-09	2.10E-09	2.60E-09
FGR12/13	NA24	6.60E-06	1.40E-10	2.00E-10	1.50E-10	1.20E-10	2.80E-10
original	NA24	8.10E-06	1.20E-09	2.80E-10	2.20E-10	1.60E-10	3.20E-10
FGR12/13	P 32	1.70E-08	3.00E-10	3.30E-09	3.30E-09	2.70E-10	7.80E-10
original	P 32	6.30E-09	2.00E-09	5.90E-09	6.20E-09	5.10E-10	1.60E-09
FGR12/13	P 33	4.60E-10	5.30E-11	5.50E-10	2.10E-10	3.80E-11	9.30E-11
original	P 33	4.90E-11	2.30E-10	1.00E-09	3.90E-10	7.30E-11	1.60E-10
FGR12/13	S 35	9.80E-11	1.20E-08	7.80E-12	7.80E-12	7.80E-12	1.40E-09
original	S 35	1.60E-11	5.10E-09	2.20E-11	4.60E-11	4.60E-11	6.70E-10
FGR12/13	CL36	5.20E-09	3.00E-10	2.70E-10	2.70E-10	2.70E-10	3.30E-10
original	CL36	7.50E-10	8.20E-10	2.60E-10	5.10E-10	5.30E-10	5.40E-10
*FGR12/13	AR39	3.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	AR39	4.20E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	AR41	1.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	AR41	2.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FGR12/13	K 40	2.50E-07	1.70E-09	1.70E-09	1.70E-09	1.70E-09	2.10E-09

original	K 40	2.90E-07	1.80E-09	1.60E-09	3.00E-09	3.10E-09	2.90E-09
FGR12/13	CA41	0.00E+00	1.60E-10	1.30E-09	4.90E-10	9.50E-13	9.50E-11
original	CA41	2.70E-10	4.40E-10	3.60E-09	1.50E-09	9.10E-13	3.50E-10
FGR12/13	CA45	4.80E-10	2.10E-08	1.90E-09	9.30E-10	1.20E-11	2.70E-09
original	CA45	5.10E-11	9.60E-09	4.30E-09	3.00E-09	2.00E-11	1.80E-09
FGR12/13	SC46	3.00E-06	4.50E-08	1.20E-09	1.60E-09	1.20E-09	6.80E-09
original	SC46	3.60E-06	4.60E-08	1.70E-09	2.20E-09	2.10E-09	7.70E-09
FGR12/13	CR51	4.40E-08	1.80E-10	1.20E-11	1.30E-11	9.00E-12	3.70E-11
original	CR51	6.40E-08	5.30E-10	1.40E-11	1.90E-11	1.10E-11	9.10E-11
FGR12/13	MN54	1.20E-06	6.50E-09	1.20E-09	1.20E-09	6.70E-10	1.60E-09
original	MN54	1.50E-06	6.70E-09	1.20E-09	1.10E-09	7.40E-10	1.70E-09
FGR12/13	MN56	2.60E-06	3.80E-10	7.70E-12	9.90E-12	6.40E-12	1.20E-10
original	MN56	3.20E-06	5.50E-10	8.60E-12	1.10E-11	6.50E-12	9.20E-11
FGR12/13	FE55	0.00E+00	4.00E-10	6.70E-10	1.30E-09	9.60E-11	3.90E-10
original	FE55	6.10E-10	9.00E-10	7.50E-11	1.60E-10	1.90E-10	3.30E-10
FGR12/13	FE59	1.80E-06	2.30E-08	9.80E-10	1.40E-09	6.80E-10	3.70E-09
original	FE59	1.90E-06	1.40E-08	9.30E-10	1.20E-09	1.20E-09	3.30E-09
FGR12/13	CO57	1.60E-07	6.60E-09	4.00E-10	2.40E-10	1.90E-10	1.00E-09
original	CO57	1.80E-07	1.70E-08	4.40E-10	5.70E-10	2.70E-10	2.30E-09
FGR12/13	CO58	1.40E-06	1.30E-08	5.20E-10	7.10E-10	5.20E-10	2.10E-09
original	CO58	1.80E-06	1.60E-08	6.80E-10	9.40E-10	8.80E-10	2.80E-09
FGR12/13	CO60	3.80E-06	1.80E-07	9.30E-09	1.20E-08	9.90E-09	3.10E-08
original	CO60	4.30E-06	3.50E-07	1.30E-08	1.70E-08	1.60E-08	5.40E-08
FGR12/13	NI59	0.00E+00	4.70E-10	7.80E-11	7.80E-11	7.80E-11	1.30E-10
original	NI59	7.40E-10	1.10E-09	4.30E-11	8.70E-11	1.10E-10	2.20E-10
FGR12/13	NI63	0.00E+00	2.50E-09	1.80E-10	1.80E-10	1.80E-10	4.70E-10
original	NI63	6.50E-13	2.80E-09	1.20E-10	2.40E-10	2.40E-10	5.40E-10
FGR12/13	NI65	8.40E-07	3.20E-10	2.30E-12	3.00E-12	2.20E-12	8.50E-11
original	NI65	1.00E-06	4.00E-10	2.60E-12	3.80E-12	2.40E-12	6.30E-11

FGR12/13	CU64	2.70E-07	2.10E-11	9.20E-12	9.20E-12	8.90E-12	3.50E-11
original	CU64	3.60E-07	2.00E-10	2.30E-11	1.40E-11	1.20E-11	5.30E-11
FGR12/13	ZN65	8.60E-07	1.00E-08	7.90E-10	1.00E-09	7.90E-10	2.00E-09
original	ZN65	1.10E-06	2.10E-08	3.30E-09	3.60E-09	3.10E-09	4.90E-09
FGR12/13	ZN69M	5.80E-07	1.30E-09	8.00E-12	1.20E-11	5.70E-12	2.70E-10
original	ZN69M	9.20E-07	1.00E-09	2.60E-11	3.30E-11	1.40E-11	2.40E-10
FGR12/13	ZN69	6.30E-09	1.20E-10	2.20E-15	2.20E-15	1.70E-15	2.80E-11
original	ZN69	1.30E-09	8.10E-11	4.50E-14	5.90E-14	2.90E-14	1.10E-11
FGR12/13	AS76	6.50E-07	3.40E-09	3.40E-11	3.80E-11	3.20E-11	7.40E-10
original	AS76	8.60E-07	5.20E-09	4.20E-11	6.70E-11	5.00E-11	1.00E-09
FGR12/13	SE75	5.30E-07	5.30E-09	5.20E-10	4.30E-10	3.20E-10	1.10E-09
original	SE75	6.10E-07	5.30E-09	1.10E-09	1.40E-09	8.70E-10	2.10E-09
FGR12/13	SE79	1.20E-10	1.90E-08	1.40E-10	1.40E-10	1.40E-10	2.60E-09
original	SE79	1.10E-11	9.30E-09	3.10E-10	6.10E-10	6.10E-10	2.40E-09
FGR12/13	BR82	3.80E-06	1.70E-10	1.70E-10	1.60E-10	1.70E-10	3.50E-10
original	BR82	4.80E-06	7.40E-10	1.00E-10	2.40E-10	2.50E-10	3.30E-10
FGR12/13	BR83	1.70E-08	2.50E-11	2.90E-12	2.90E-12	2.90E-12	1.60E-11
original	BR83	1.50E-08	1.60E-10	1.90E-12	3.70E-12	3.80E-12	2.60E-11
FGR12/13	BR84	2.80E-06	3.00E-11	3.40E-12	3.30E-12	3.50E-12	2.20E-11
original	BR84	3.30E-06	1.60E-10	1.80E-12	3.00E-12	3.30E-12	2.70E-11
*FGR12/13	KR83M	3.80E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR83M	5.20E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	KR85M	2.20E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR85M	2.30E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	KR85	7.60E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR85	4.80E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	KR87	1.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR87	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*FGR12/13	KR88	3.10E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR88	3.60E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	KR89	3.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	KR89	3.50E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FGR12/13	RB86	1.60E-07	7.70E-10	2.80E-09	1.40E-09	7.40E-10	9.30E-10
original	RB86	1.60E-07	2.00E-09	4.60E-09	2.70E-09	1.40E-09	1.70E-09
FGR12/13	RB87	1.00E-09	4.10E-10	1.60E-09	7.80E-10	3.90E-10	5.00E-10
original	RB87	5.50E-11	3.50E-10	2.50E-09	1.40E-09	7.30E-10	7.90E-10
FGR12/13	RB88	1.10E-06	3.10E-11	1.90E-12	1.70E-12	1.70E-12	1.60E-11
original	RB88	1.30E-06	1.50E-10	1.80E-12	1.80E-12	1.40E-12	2.40E-11
FGR12/13	RB89	3.20E-06	2.20E-11	2.40E-12	1.90E-12	1.80E-12	1.40E-11
original	RB89	3.70E-06	7.00E-11	2.70E-12	2.20E-12	1.70E-12	1.20E-11
FGR12/13	SR85	7.10E-07	2.20E-10	7.30E-10	7.40E-10	2.00E-10	3.80E-10
original	SR85	9.60E-07	3.70E-10	9.90E-10	8.70E-10	2.90E-10	4.20E-10
FGR12/13	SR89	1.40E-08	2.00E-10	5.40E-09	4.30E-09	1.80E-10	1.00E-09
original	SR89	4.80E-09	1.70E-09	8.30E-09	5.20E-09	2.10E-10	1.50E-09
FGR12/13	SR90	3.10E-09	6.20E-10	3.70E-07	1.60E-07	6.00E-10	2.40E-08
original	SR90	3.50E-10	1.10E-09	6.50E-07	2.90E-07	3.40E-10	5.50E-08
FGR12/13	SR91	1.00E-06	5.20E-11	1.40E-10	1.30E-10	2.60E-11	1.60E-10
original	SR91	1.20E-06	9.00E-10	1.10E-10	1.10E-10	3.60E-11	2.60E-10
FGR12/13	SR92	2.00E-06	3.70E-11	8.90E-11	6.10E-11	1.60E-11	9.80E-11
original	SR92	2.60E-06	7.10E-10	3.10E-11	3.00E-11	2.00E-11	1.80E-10
FGR12/13	Y 90	2.50E-08	7.80E-09	1.20E-12	1.20E-12	4.20E-14	1.50E-09
original	Y 90	1.30E-08	9.70E-09	1.60E-11	1.60E-11	5.50E-13	2.40E-09
FGR12/13	Y 91M	7.50E-07	5.00E-11	7.20E-13	9.40E-13	6.80E-13	1.10E-11
original	Y 91M	1.10E-06	7.10E-11	6.30E-13	8.00E-13	5.10E-13	9.90E-12
FGR12/13	Y 91	2.00E-08	7.00E-08	6.40E-11	6.40E-11	2.80E-12	8.90E-09
original	Y 91	1.10E-08	9.90E-08	3.20E-10	3.10E-10	8.50E-12	1.30E-08
FGR12/13	Y 92	4.20E-07	7.00E-10	1.30E-12	1.80E-12	1.10E-12	1.80E-10

original	Y 92	5.10E-07	1.30E-09	1.60E-12	2.30E-12	1.10E-12	2.20E-10
FGR12/13	Y 93	1.70E-07	1.60E-09	1.30E-12	1.80E-12	9.00E-13	4.20E-10
original	Y 93	1.80E-07	2.70E-09	3.40E-12	4.40E-12	9.60E-13	6.30E-10
FGR12/13	ZR93	0.00E+00	2.80E-09	5.00E-07	4.00E-08	3.50E-12	1.00E-08
original	ZR93	4.80E-13	3.30E-09	5.40E-07	4.40E-08	2.80E-12	2.20E-08
FGR12/13	ZR95	1.10E-06	3.10E-08	1.30E-08	2.40E-09	6.50E-10	4.80E-09
original	ZR95	1.30E-06	1.80E-08	2.30E-08	3.30E-09	7.70E-10	4.20E-09
FGR12/13	ZR97	2.80E-07	3.40E-09	6.40E-11	7.80E-11	2.80E-11	9.20E-10
original	ZR97	3.40E-07	4.00E-09	1.30E-10	1.50E-10	3.80E-11	1.20E-09
FGR12/13	NB93M	9.60E-11	1.40E-08	5.40E-11	2.00E-11	4.70E-12	1.80E-09
original	NB93M	2.90E-10	6.70E-08	2.20E-10	2.40E-11	2.40E-12	8.10E-09
FGR12/13	NB94	2.30E-06	3.20E-07	1.20E-08	1.50E-08	1.20E-08	4.90E-08
original	NB94	2.60E-06	7.40E-07	1.60E-08	1.80E-08	1.80E-08	1.00E-07
FGR12/13	NB95M	8.60E-08	6.20E-09	3.40E-11	3.80E-11	2.60E-11	8.80E-10
original	NB95M	1.00E-07	3.10E-09	6.40E-11	5.70E-11	3.70E-11	6.60E-10
FGR12/13	NB95	1.10E-06	1.20E-08	2.50E-10	3.40E-10	2.30E-10	1.80E-09
original	NB95	1.50E-06	8.40E-09	5.20E-10	4.50E-10	3.60E-10	1.50E-09
*FGR12/13	NB97M	1.00E-06	9.90E-99	9.90E-99	9.90E-99	9.90E-99	9.90E-99
original	NB97M	1.10E-06	2.40E-12	2.30E-14	3.10E-14	2.80E-14	3.50E-13
FGR12/13	NB97	9.40E-07	1.70E-10	1.20E-12	1.60E-12	1.10E-12	4.50E-11
original	NB97	1.20E-06	1.60E-10	8.60E-13	1.20E-12	9.50E-13	2.30E-11
FGR12/13	MO93	5.50E-10	8.20E-11	2.00E-08	6.00E-09	5.70E-11	1.00E-09
original	MO93	1.40E-09	6.40E-11	1.10E-09	2.20E-10	7.30E-11	2.70E-10
FGR12/13	MO99	2.20E-07	1.20E-10	3.30E-10	2.00E-10	8.40E-11	2.20E-10
original	MO99	2.50E-07	1.10E-09	6.60E-10	4.10E-10	1.20E-10	5.40E-10
FGR12/13	TC99M	1.70E-07	7.60E-11	2.30E-12	1.70E-12	5.50E-12	1.90E-11
original	TC99M	1.60E-07	3.10E-11	1.50E-12	2.50E-12	2.20E-11	7.50E-12
FGR12/13	TC99	9.10E-10	3.20E-08	9.20E-12	9.20E-12	2.40E-10	4.00E-09
original	TC99	6.60E-11	1.60E-08	2.10E-11	4.00E-11	4.90E-09	2.30E-09

FGR12/13	TC101	4.80E-07	3.40E-11	1.80E-13	1.70E-13	1.20E-12	1.20E-11
original	TC101	7.00E-07	3.10E-11	1.40E-13	1.90E-13	2.50E-12	4.10E-12
FGR12/13	RU103	6.60E-07	2.20E-08	1.70E-10	2.40E-10	1.60E-10	3.00E-09
original	RU103	9.40E-07	1.60E-08	2.20E-10	3.10E-10	2.50E-10	2.50E-09
FGR12/13	RU105	1.10E-06	8.00E-10	5.60E-12	7.90E-12	4.50E-12	1.80E-10
original	RU105	1.40E-06	7.00E-10	4.90E-12	8.50E-12	4.40E-12	1.60E-10
FGR12/13	RU106	0.00E+00	5.30E-07	5.40E-10	6.70E-10	5.40E-10	6.60E-08
original	RU106	4.20E-07	1.00E-06	6.40E-10	1.10E-09	1.00E-09	1.30E-07
FGR12/13	RH103M	1.90E-10	1.80E-11	3.00E-15	1.30E-15	7.10E-16	2.70E-12
original	RH103M	1.30E-09	9.90E-12	2.60E-15	3.80E-15	1.60E-15	1.40E-12
FGR12/13	RH105	1.10E-07	2.30E-09	3.90E-12	4.60E-12	2.60E-12	3.50E-10
original	RH105	1.60E-07	1.00E-09	3.90E-12	7.80E-12	3.10E-12	3.00E-10
FGR12/13	PD103	1.70E-09	3.40E-09	4.10E-12	1.40E-12	1.20E-13	4.50E-10
original	PD103	1.10E-08	2.70E-09	4.70E-12	7.10E-12	1.50E-13	4.30E-10
FGR12/13	PD107	0.00E+00	4.80E-09	4.30E-13	1.60E-13	2.90E-14	5.90E-10
original	PD107	2.20E-14	2.90E-08	3.70E-13	1.40E-13	2.60E-14	3.50E-09
FGR12/13	PD109	1.30E-08	2.20E-09	5.40E-13	2.50E-13	8.10E-14	3.70E-10
original	PD109	1.10E-08	1.50E-09	1.00E-12	1.60E-12	2.20E-13	3.70E-10
FGR12/13	AG110M	4.00E-06	4.60E-09	3.20E-09	3.60E-09	2.30E-09	5.50E-09
original	AG110M	4.90E-06	1.10E-08	3.30E-09	4.90E-09	3.10E-09	2.30E-08
FGR12/13	AG111	4.40E-08	1.10E-10	8.90E-11	8.90E-11	8.70E-11	4.00E-10
original	AG111	5.10E-08	1.00E-09	5.10E-11	9.00E-11	7.50E-11	9.20E-10
FGR12/13	CD109	7.20E-09	1.60E-09	1.90E-09	1.30E-09	1.40E-09	8.20E-09
original	CD109	1.00E-08	7.80E-10	1.20E-09	2.70E-09	2.50E-09	3.00E-08
FGR12/13	CD113M	2.90E-09	1.70E-08	1.70E-08	1.70E-08	1.70E-08	1.10E-07
original	CD113M	4.10E-10	5.80E-10	1.20E-08	2.90E-08	3.00E-08	4.00E-07
FGR12/13	CD115M	4.70E-08	8.60E-10	8.30E-10	8.40E-10	8.20E-10	5.30E-09
original	CD115M	4.50E-08	1.90E-09	8.20E-10	1.60E-09	1.60E-09	1.90E-08

FGR12/13	CD115	3.30E-07	8.60E-11	6.40E-11	6.80E-11	5.20E-11	3.60E-10
original	CD115	3.80E-07	1.10E-09	9.00E-11	1.20E-10	8.70E-11	1.00E-09
FGR12/13	IN111	5.30E-07	4.60E-11	1.20E-10	1.60E-10	3.00E-11	1.30E-10
original	IN111	5.50E-07	1.90E-10	1.10E-10	9.80E-11	1.90E-11	1.50E-10
FGR12/13	IN114M	1.20E-07	1.60E-09	2.30E-08	4.30E-08	1.50E-09	9.30E-09
original	IN114M	2.10E-07	2.80E-09	1.80E-08	6.10E-09	8.00E-11	1.20E-08
FGR12/13	IN115M	2.20E-07	1.60E-11	1.00E-11	1.60E-11	2.90E-12	2.40E-11
original	IN115M	3.10E-07	1.30E-10	6.50E-12	5.10E-12	2.50E-12	3.30E-11
FGR12/13	SN117M	1.90E-07	1.90E-08	9.50E-10	1.10E-10	2.40E-11	2.40E-09
original	SN117M	1.70E-07	6.20E-09	2.20E-09	2.70E-10	3.10E-11	1.30E-09
FGR12/13	SN119M	2.20E-09	1.70E-08	8.00E-10	2.70E-10	3.90E-11	2.20E-09
original	SN119M	7.20E-09	1.10E-08	1.10E-09	4.70E-10	4.20E-11	1.70E-09
FGR12/13	SN121M	1.70E-09	3.40E-08	3.20E-09	1.10E-09	1.50E-10	4.50E-09
original	SN121M	0.00E+00	2.00E-08	3.90E-09	1.50E-09	1.60E-10	3.10E-09
FGR12/13	SN121	1.20E-09	1.50E-09	4.20E-11	3.60E-12	3.30E-13	2.30E-10
original	SN121	0.00E+00	5.30E-10	8.50E-12	3.60E-12	8.80E-13	1.50E-10
FGR12/13	SN123	2.20E-08	6.20E-08	2.30E-09	8.50E-10	1.10E-10	8.10E-09
original	SN123	1.50E-08	6.10E-08	3.80E-09	1.40E-09	1.70E-10	9.00E-09
FGR12/13	SN125	4.90E-07	2.00E-08	5.80E-10	3.50E-10	5.00E-11	3.10E-09
original	SN125	5.50E-07	2.30E-08	1.10E-09	7.30E-10	7.70E-11	4.60E-09
FGR12/13	SN126	5.80E-08	1.80E-07	2.80E-08	1.50E-08	4.70E-09	2.80E-08
original	SN126	4.60E-08	1.50E-07	3.30E-08	1.70E-08	4.60E-09	2.70E-08
FGR12/13	SB124	2.70E-06	4.40E-08	1.90E-09	1.20E-09	6.60E-10	6.40E-09
original	SB124	3.60E-06	4.20E-08	1.30E-09	1.10E-09	6.80E-10	6.80E-09
FGR12/13	SB125	5.90E-07	3.20E-08	8.70E-09	1.70E-09	5.50E-10	4.80E-09
original	SB125	8.40E-07	2.20E-08	1.00E-09	5.20E-10	3.20E-10	3.30E-09
FGR12/13	SB126M	2.20E-06	4.70E-11	9.60E-13	1.10E-12	9.60E-13	1.90E-11
original	SB126M	2.90E-06	5.80E-11	7.80E-13	9.60E-13	7.70E-13	8.00E-12
FGR12/13	SB126	4.00E-06	1.70E-08	6.50E-10	6.50E-10	3.60E-10	2.90E-09

original	SB126	4.90E-06	1.40E-08	7.00E-10	8.00E-10	4.80E-10	3.20E-09
FGR12/13	SB127	9.80E-07	1.10E-08	1.20E-10	1.20E-10	4.20E-11	1.70E-09
original	SB127	1.20E-06	6.90E-09	1.40E-10	1.60E-10	6.00E-11	1.60E-09
FGR12/13	TE123M	1.80E-07	3.00E-08	1.10E-08	1.10E-09	4.10E-10	4.00E-09
original	TE123M	1.60E-07	1.30E-08	2.40E-08	2.40E-09	1.40E-10	2.90E-09
FGR12/13	TE125M	1.10E-08	2.60E-08	4.80E-09	4.20E-10	2.60E-10	3.40E-09
original	TE125M	2.40E-08	1.00E-08	1.20E-08	1.20E-09	4.00E-11	2.00E-09
FGR12/13	TE127M	3.60E-09	5.60E-08	9.00E-09	2.30E-09	8.60E-10	7.40E-09
original	TE127M	7.50E-09	3.30E-08	2.10E-08	5.40E-09	1.00E-10	5.90E-09
FGR12/13	TE127	1.10E-08	7.50E-10	1.70E-12	1.70E-12	2.80E-12	1.30E-10
original	TE127	1.10E-08	4.30E-10	5.10E-12	5.80E-12	1.90E-12	9.70E-11
FGR12/13	TE129M	4.90E-08	4.80E-08	2.70E-09	1.20E-09	1.00E-09	6.50E-09
original	TE129M	5.90E-08	3.90E-08	7.10E-09	3.10E-09	3.10E-11	1.30E-07
FGR12/13	TE129	9.10E-08	1.50E-10	3.60E-13	3.50E-13	3.50E-13	3.70E-11
original	TE129	1.10E-07	1.60E-10	9.80E-13	1.00E-12	8.60E-14	4.20E-11
FGR12/13	TE131M	2.10E-06	4.60E-09	1.20E-10	8.80E-11	2.70E-09	1.10E-09
original	TE131M	2.60E-06	2.20E-09	2.50E-10	1.40E-10	3.20E-08	3.20E-09
FGR12/13	TE131	6.10E-07	9.30E-11	5.30E-13	5.20E-13	4.80E-11	2.90E-11
original	TE131	7.30E-07	8.00E-11	4.90E-13	5.90E-13	5.70E-10	3.40E-11
FGR12/13	TE132	2.90E-07	1.00E-08	2.90E-10	2.20E-10	4.30E-09	2.10E-09
original	TE132	3.80E-07	1.40E-09	4.40E-10	8.60E-11	4.30E-08	3.40E-09
FGR12/13	TE133M	3.40E-06	2.60E-10	4.40E-12	5.50E-12	1.60E-10	8.90E-11
original	TE133M	4.10E-06	2.10E-10	3.10E-12	4.00E-12	2.20E-09	1.20E-10
FGR12/13	TE133	1.40E-06	5.30E-11	5.10E-13	5.80E-13	3.60E-11	2.00E-11
original	TE133	1.80E-06	4.80E-11	2.80E-13	3.70E-13	5.00E-10	2.40E-11
FGR12/13	TE134	1.20E-06	2.10E-10	4.10E-12	5.10E-12	2.60E-11	6.70E-11
original	TE134	1.60E-06	6.20E-11	1.20E-12	1.20E-12	3.60E-10	2.80E-11
FGR12/13	I 125	1.20E-08	1.50E-11	5.80E-11	1.10E-11	1.00E-07	5.20E-09
original	I 125	2.80E-08	1.10E-10	1.60E-10	1.20E-10	2.00E-07	6.10E-09

FGR12/13	I 129	8.90E-09	6.20E-11	1.40E-10	4.80E-11	7.20E-07	3.60E-08
original	I 129	1.60E-08	2.40E-10	7.00E-10	3.60E-10	1.40E-06	4.10E-08
FGR12/13	I 130	3.10E-06	5.60E-11	3.60E-11	3.30E-11	1.30E-08	6.80E-10
original	I 130	3.70E-06	6.20E-10	5.40E-10	1.90E-10	1.60E-08	6.60E-10
FGR12/13	I 131	5.30E-07	6.00E-11	4.90E-11	3.70E-11	1.50E-07	7.40E-09
original	I 131	6.70E-07	6.50E-10	2.30E-09	2.70E-10	2.70E-07	8.30E-09
FGR12/13	I 132	3.30E-06	3.60E-11	1.20E-11	1.20E-11	1.40E-09	9.40E-11
original	I 132	4.20E-06	2.80E-10	6.90E-11	7.00E-11	1.30E-09	1.10E-10
FGR12/13	I 133	8.70E-07	4.20E-11	2.00E-11	1.90E-11	2.90E-08	1.50E-09
original	I 133	1.10E-06	8.30E-10	2.90E-10	2.20E-10	4.30E-08	1.50E-09
FGR12/13	I 134	3.80E-06	3.00E-11	5.80E-12	5.50E-12	2.60E-10	4.50E-11
original	I 134	4.70E-06	1.50E-10	2.80E-11	2.80E-11	2.00E-10	3.80E-11
FGR12/13	I 135	2.40E-06	4.00E-11	1.80E-11	1.70E-11	5.80E-09	3.20E-10
original	I 135	2.90E-06	4.60E-10	1.80E-10	1.30E-10	6.80E-09	3.20E-10
*FGR12/13	XE131M	1.10E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE131M	1.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE133M	4.10E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE133M	5.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE133	4.20E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE133	4.30E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE135M	6.00E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE135M	7.90E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE135	3.50E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE135	4.00E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE137	9.90E-99	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE137	4.30E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
*FGR12/13	XE138	1.70E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	XE138	2.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

FGR12/13	CS134M	2.50E-08	2.40E-11	2.80E-12	2.40E-12	2.40E-12	1.40E-11
original	CS134M	3.40E-08	6.50E-11	9.00E-13	1.80E-12	1.70E-12	1.00E-11
FGR12/13	CS134	2.20E-06	6.00E-09	6.80E-09	6.40E-09	6.30E-09	6.70E-09
original	CS134	2.90E-06	8.10E-09	8.30E-09	1.10E-08	1.10E-08	1.20E-08
FGR12/13	CS135	3.00E-10	6.70E-10	6.50E-10	6.50E-10	6.50E-10	6.90E-10
original	CS135	2.40E-11	2.10E-10	6.00E-10	1.20E-09	1.20E-09	1.10E-09
FGR12/13	CS136	3.10E-06	9.70E-10	1.10E-09	9.90E-10	1.00E-09	1.20E-09
original	CS136	3.70E-06	1.90E-09	6.80E-10	1.70E-09	1.90E-09	1.90E-09
FGR12/13	CS137	2.90E-09	4.30E-09	4.70E-09	4.50E-09	4.40E-09	4.70E-09
original	CS137	9.80E-07	4.00E-09	4.50E-09	7.00E-09	8.10E-09	7.90E-09
FGR12/13	CS138	3.60E-06	3.10E-11	4.10E-12	3.90E-12	4.30E-12	2.50E-11
original	CS138	4.50E-06	1.60E-10	2.40E-12	3.50E-12	3.80E-12	2.80E-11
FGR12/13	BA139	8.00E-08	2.90E-11	1.20E-11	1.20E-11	1.70E-12	3.40E-11
original	BA139	5.50E-08	2.60E-10	2.60E-12	2.90E-12	1.70E-12	5.10E-11
FGR12/13	BA140	2.50E-07	1.50E-10	2.10E-09	1.50E-09	1.20E-10	1.00E-09
original	BA140	3.50E-07	1.50E-09	2.30E-09	1.10E-09	1.20E-10	9.10E-10
FGR12/13	BA141	1.20E-06	2.40E-11	6.00E-12	5.60E-12	1.20E-12	2.10E-11
original	BA141	1.60E-06	1.20E-10	3.80E-12	1.80E-12	1.00E-12	2.30E-11
FGR12/13	BA142	1.50E-06	1.80E-11	3.10E-12	3.30E-12	1.30E-12	1.50E-11
original	BA142	1.60E-06	5.60E-11	1.20E-12	1.50E-12	1.00E-12	1.20E-11
FGR12/13	LA140	3.50E-06	1.80E-10	2.70E-10	3.00E-10	9.00E-11	5.70E-10
original	LA140	4.10E-06	1.70E-09	4.30E-10	4.80E-10	1.30E-10	9.50E-10
FGR12/13	LA141	9.10E-08	3.70E-11	7.40E-11	2.30E-11	8.10E-12	6.30E-11
original	LA141	9.80E-08	6.60E-10	1.30E-10	3.70E-11	1.00E-11	1.60E-10
FGR12/13	LA142	4.30E-06	3.70E-11	1.20E-11	1.20E-11	9.60E-12	5.20E-11
original	LA142	5.20E-06	3.20E-10	1.30E-11	1.60E-11	9.30E-12	7.40E-11
FGR12/13	CE141	9.80E-08	3.00E-08	1.10E-10	3.70E-11	2.30E-11	3.80E-09
original	CE141	9.40E-08	1.60E-08	2.70E-10	9.00E-11	2.60E-11	2.30E-09
FGR12/13	CE143	3.80E-07	5.00E-09	1.40E-11	1.50E-11	6.70E-12	8.30E-10

original	CE143	4.10E-07	4.00E-09	1.70E-11	3.10E-11	6.50E-12	9.50E-10
FGR12/13	CE144	2.40E-08	4.20E-07	2.10E-09	1.20E-09	1.40E-10	5.30E-08
original	CE144	2.40E-08	7.90E-07	4.10E-09	2.00E-09	1.50E-10	1.00E-07
FGR12/13	PR143	6.10E-09	1.80E-08	2.00E-12	2.00E-12	1.30E-14	2.40E-09
original	PR143	1.30E-09	1.30E-08	1.50E-11	1.50E-11	9.80E-14	2.20E-09
FGR12/13	PR144M	7.00E-09	9.90E-99	9.90E-99	9.90E-99	9.90E-99	9.90E-99
original	PR144M	1.00E-08	4.00E-11	1.50E-14	1.80E-14	8.70E-15	5.10E-12
FGR12/13	PR144	8.40E-08	5.70E-11	1.40E-14	1.60E-14	1.60E-14	1.80E-11
original	PR144	8.00E-08	9.70E-11	2.10E-14	2.70E-14	1.80E-14	1.20E-11
FGR12/13	ND147	1.80E-07	1.80E-08	9.90E-11	3.40E-11	1.60E-11	2.40E-09
original	ND147	2.20E-07	1.00E-08	3.10E-10	7.70E-11	1.90E-11	1.80E-09
FGR12/13	PM147	2.70E-10	3.90E-08	4.90E-09	4.00E-10	4.00E-14	4.90E-09
original	PM147	3.70E-11	7.80E-08	2.00E-08	1.50E-09	5.20E-14	1.10E-08
FGR12/13	PM148M	2.80E-06	3.90E-08	8.30E-10	1.00E-09	7.00E-10	5.80E-09
original	PM148M	3.80E-06	3.60E-08	1.40E-09	1.40E-09	1.00E-09	6.00E-09
FGR12/13	PM148	8.70E-07	1.30E-08	4.50E-11	6.40E-11	3.80E-11	2.20E-09
original	PM148	1.10E-06	1.40E-08	7.40E-11	1.10E-10	3.90E-11	3.00E-09
FGR12/13	PM149	2.20E-08	4.30E-09	1.00E-12	1.10E-12	3.80E-13	7.30E-10
original	PM149	1.90E-08	3.20E-09	5.30E-12	5.80E-12	4.40E-13	8.20E-10
FGR12/13	PM151	4.40E-07	2.70E-09	1.40E-11	1.50E-11	7.00E-12	4.70E-10
original	PM151	5.80E-07	1.70E-09	1.70E-11	2.80E-11	6.60E-12	4.90E-10
FGR12/13	SM147	0.00E+00	2.40E-07	1.40E-05	1.10E-06	1.60E-11	9.60E-06
original	SM147	0.00E+00	7.60E-06	3.40E-04	2.80E-05	4.00E-10	2.00E-05
FGR12/13	SM151	7.80E-13	3.10E-09	1.10E-07	8.70E-09	1.50E-13	4.00E-09
original	SM151	8.00E-12	3.30E-09	1.40E-07	1.10E-08	1.70E-13	8.10E-09
FGR12/13	SM153	6.50E-08	4.00E-09	6.30E-11	2.30E-11	2.20E-12	6.30E-10
original	SM153	8.40E-08	2.10E-09	1.60E-10	7.10E-11	2.90E-12	5.40E-10
FGR12/13	EU152	1.70E-06	6.30E-08	2.00E-07	7.10E-08	8.30E-09	4.20E-08
original	EU152	2.10E-06	5.80E-08	2.40E-07	8.00E-08	8.00E-09	5.60E-08

FGR12/13	EU154	1.80E-06	1.00E-07	4.10E-07	9.20E-08	7.50E-09	5.30E-08
original	EU154	2.10E-06	7.90E-08	5.20E-07	1.10E-07	6.70E-09	7.40E-08
FGR12/13	EU155	6.80E-08	1.90E-08	1.20E-07	1.00E-08	2.60E-10	7.00E-09
original	EU155	7.20E-08	1.20E-08	1.50E-07	1.40E-08	1.30E-10	1.10E-08
FGR12/13	EU156	2.00E-06	2.20E-08	1.30E-09	6.30E-10	1.90E-10	3.40E-09
original	EU156	2.50E-06	1.90E-08	2.80E-09	1.20E-09	2.30E-10	3.90E-09
FGR12/13	GD153	9.80E-08	7.10E-10	4.90E-08	4.80E-09	1.90E-10	2.10E-09
original	GD153	1.20E-07	1.30E-09	9.20E-08	1.10E-08	2.60E-10	6.30E-09
FGR12/13	TB160	1.60E-06	4.60E-08	1.40E-08	2.90E-09	5.60E-10	7.00E-09
original	TB160	1.80E-06	3.00E-08	2.50E-08	4.50E-09	6.50E-10	6.70E-09
FGR12/13	HO166M	2.50E-06	1.20E-07	7.20E-07	1.50E-07	2.10E-08	1.20E-07
original	HO166M	2.70E-06	1.10E-07	8.90E-07	1.60E-07	2.10E-08	2.00E-07
FGR12/13	W 181	3.70E-08	4.30E-12	5.20E-11	1.60E-11	2.80E-12	2.70E-11
original	W 181	3.30E-08	5.40E-11	7.30E-11	5.40E-11	3.90E-12	4.20E-11
FGR12/13	W 187	6.70E-07	3.80E-11	5.50E-11	2.50E-11	1.20E-11	1.90E-10
original	W 187	8.40E-07	6.20E-10	1.10E-10	3.70E-11	1.60E-11	1.80E-10
FGR12/13	W 185	1.60E-09	2.10E-11	1.30E-10	4.60E-11	2.50E-12	1.20E-10
original	W 185	2.10E-10	3.90E-10	2.70E-10	9.20E-11	4.70E-12	2.10E-10
FGR12/13	RE187	0.00E+00	3.80E-11	1.50E-13	1.50E-13	3.80E-12	6.30E-12
original	RE187	0.00E+00	1.10E-10	1.30E-13	2.70E-13	6.90E-12	1.50E-11
FGR12/13	IR192	1.10E-06	4.90E-08	5.70E-10	6.60E-10	4.70E-10	6.60E-09
original	IR192	1.60E-06	5.30E-08	6.80E-10	9.20E-10	6.40E-10	7.60E-09
FGR12/13	HG203	3.30E-07	3.10E-10	3.70E-10	3.10E-10	2.90E-10	4.70E-10
original	HG203	3.20E-07	6.60E-10	6.10E-10	9.30E-10	8.30E-10	1.50E-09
*FGR12/13	RN222	5.60E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
original	RN222	3.30E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FGR12/13	TH227	1.40E-07	8.60E-05	7.40E-08	6.40E-09	2.90E-10	1.00E-05
original	TH227	1.70E-07	3.60E-05	1.60E-06	1.30E-07	3.00E-09	4.40E-06

FGR12/13	TH228	2.60E-09	3.30E-04	2.40E-05	1.90E-06	6.90E-08	4.00E-05
original	TH228	2.50E-09	6.60E-04	2.20E-04	1.70E-05	4.50E-08	8.80E-05
FGR12/13	TH229	1.10E-07	5.00E-04	5.10E-04	2.50E-05	1.70E-06	7.10E-05
original	TH229	1.00E-07	2.00E-03	5.70E-03	4.60E-04	5.20E-08	4.70E-04
FGR12/13	TH230	4.70E-10	7.70E-05	2.80E-04	1.00E-05	3.00E-07	1.40E-05
original	TH230	5.10E-10	3.00E-04	8.50E-04	7.00E-05	8.20E-09	7.00E-05
FGR12/13	TH231	1.40E-08	2.20E-09	5.60E-11	2.80E-12	3.60E-13	3.30E-10
original	TH231	1.40E-08	8.10E-10	2.90E-10	3.70E-12	2.80E-13	2.20E-10
FGR12/13	TH232	2.30E-10	1.60E-04	2.90E-04	1.20E-05	8.20E-07	2.50E-05
original	TH232	3.50E-10	8.90E-04	4.70E-03	3.80E-04	7.20E-09	3.00E-04
FGR12/13	TH234	9.30E-09	5.80E-08	7.40E-11	4.40E-11	6.70E-12	7.70E-09
original	TH234	3.90E-08	6.40E-08	4.10E-10	2.40E-10	1.20E-11	9.50E-09
FGR12/13	RA223	1.70E-07	6.20E-05	7.80E-07	7.50E-08	3.40E-09	7.40E-06
original	RA223	4.90E-07	1.70E-05	9.00E-07	6.20E-08	9.50E-09	2.10E-06
FGR12/13	RA224	1.40E-08	2.50E-05	4.10E-07	4.00E-08	2.30E-09	3.00E-06
original	RA224	1.70E-08	6.20E-06	2.30E-07	1.90E-08	6.40E-09	7.70E-07
FGR12/13	RA225	7.60E-09	5.20E-05	2.20E-06	2.00E-07	6.40E-09	6.30E-06
original	RA225	1.30E-08	1.60E-05	1.30E-06	8.20E-08	2.40E-09	2.00E-06
FGR12/13	RA226	9.00E-09	2.80E-05	7.40E-06	5.20E-07	2.40E-08	3.50E-06
original	RA226	6.60E-09	1.60E-05	7.00E-06	3.90E-07	2.80E-09	2.20E-06
FGR12/13	RA228	0.00E+00	9.70E-06	5.60E-05	4.70E-06	2.10E-07	2.60E-06
original	RA228	5.40E-14	6.70E-06	5.70E-06	5.50E-07	1.10E-09	1.00E-06
FGR12/13	PB210	1.40E-09	1.20E-07	2.90E-05	3.20E-06	1.20E-07	9.10E-07
original	PB210	2.20E-09	4.30E-10	5.40E-05	3.80E-06	3.20E-07	3.60E-06
FGR12/13	PB212	2.00E-07	8.70E-09	8.50E-08	1.10E-08	3.40E-09	1.80E-08
original	PB212	2.30E-07	1.80E-07	3.90E-07	3.50E-08	3.40E-09	4.50E-08
FGR12/13	BI210	8.10E-09	7.70E-07	4.70E-11	4.70E-11	4.70E-11	9.30E-08
original	BI210	2.10E-09	4.30E-07	3.80E-11	6.70E-11	6.60E-11	5.30E-08
FGR12/13	BI212	2.80E-07	2.00E-07	2.10E-11	2.10E-11	2.10E-11	3.10E-08

original	BI212	2.80E-06	3.80E-08	2.40E-10	6.70E-11	5.00E-11	5.10E-09
FGR12/13	PO210	1.20E-11	2.60E-05	2.80E-07	4.60E-07	4.90E-08	3.30E-06
original	PO210	1.60E-11	1.30E-05	6.50E-08	1.30E-07	1.30E-07	2.30E-06
FGR12/13	U 232	3.70E-10	3.00E-04	4.10E-05	3.30E-06	2.00E-07	3.70E-05
original	U 232	4.90E-10	1.40E-03	5.00E-06	3.40E-09	1.10E-09	1.70E-04
FGR12/13	U 233	4.50E-10	8.00E-05	8.00E-07	6.80E-08	1.80E-08	9.60E-06
original	U 233	4.20E-10	3.00E-04	1.90E-08	1.50E-09	3.70E-10	3.60E-05
FGR12/13	U 234	1.90E-10	7.80E-05	5.00E-07	5.20E-08	1.60E-08	9.40E-06
original	U 234	3.60E-10	3.00E-04	1.90E-08	1.50E-09	3.70E-10	3.60E-05
FGR12/13	U 235	2.00E-07	7.00E-05	4.80E-07	5.00E-08	1.60E-08	8.50E-06
original	U 235	1.70E-07	2.80E-04	1.80E-08	2.10E-09	6.70E-10	3.30E-05
FGR12/13	U 236	1.20E-10	7.30E-05	4.80E-07	4.90E-08	1.50E-08	8.70E-06
original	U 236	2.80E-10	2.80E-04	1.80E-08	1.40E-09	3.40E-10	3.40E-05
FGR12/13	U 237	1.70E-07	1.40E-08	3.40E-11	1.90E-11	1.10E-11	1.90E-09
original	U 237	2.10E-07	4.90E-09	7.20E-11	5.50E-11	1.10E-11	9.80E-10
FGR12/13	U 238	7.90E-11	6.70E-05	4.60E-07	4.90E-08	1.50E-08	8.00E-06
original	U 238	2.40E-10	2.70E-04	1.70E-08	1.50E-09	3.90E-10	3.20E-05
FGR12/13	U 240	1.90E-09	2.90E-09	5.10E-11	1.10E-11	4.40E-12	5.80E-10
original	U 240	6.50E-07	2.30E-09	9.80E-12	1.20E-11	4.00E-12	6.10E-10
FGR12/13	PA231	5.00E-08	1.50E-04	6.00E-04	2.40E-05	1.30E-06	2.90E-05
original	PA231	5.50E-08	7.50E-04	3.60E-03	2.90E-04	1.70E-10	2.30E-04
FGR12/13	PA233	2.70E-07	3.00E-08	1.80E-10	8.30E-11	5.00E-11	3.90E-09
original	PA233	4.00E-07	1.70E-08	4.60E-10	1.60E-10	5.70E-11	2.60E-09
FGR12/13	PA234	2.80E-06	1.80E-09	1.90E-11	2.60E-11	1.40E-11	4.20E-10
original	PA234	3.40E-06	9.20E-10	1.90E-11	2.90E-11	1.30E-11	2.30E-10
FGR12/13	AC225	2.00E-08	7.10E-05	3.80E-08	4.70E-09	2.00E-09	8.50E-06
original	AC225	4.50E-07	1.80E-05	4.70E-07	3.80E-08	2.10E-10	2.20E-06
FGR12/13	AC227	1.60E-10	4.10E-04	1.90E-04	1.00E-05	9.50E-07	5.50E-05
original	AC227	2.10E-10	1.50E-03	2.90E-03	2.30E-04	1.10E-09	3.50E-04

FGR12/13	AC228	1.40E-06	1.20E-07	8.60E-09	6.80E-10	3.20E-11	1.50E-08
original	AC228	1.70E-06	2.40E-07	5.60E-08	4.10E-09	6.50E-12	3.20E-08
FGR12/13	FR223	7.00E-08	8.60E-10	8.00E-10	8.00E-10	8.00E-10	9.00E-10
original	FR223	7.00E-08	2.00E-09	6.10E-10	1.20E-09	1.20E-09	1.30E-09
FGR12/13	NP237	2.80E-08	2.90E-05	1.00E-03	3.90E-05	1.30E-06	2.30E-05
original	NP237	2.50E-08	1.60E-05	3.90E-03	3.10E-04	1.20E-09	1.70E-04
FGR12/13	NP238	8.10E-07	5.50E-09	6.80E-08	2.80E-09	1.00E-10	2.10E-09
original	NP238	9.60E-07	3.30E-09	2.40E-07	1.90E-08	2.40E-11	1.10E-08
FGR12/13	NP239	2.20E-07	6.30E-09	5.20E-10	4.50E-11	8.20E-12	9.30E-10
original	NP239	2.60E-07	2.30E-09	2.20E-09	1.40E-10	7.50E-12	6.60E-10
FGR12/13	PU236	1.50E-10	7.40E-05	5.10E-05	2.80E-06	8.80E-08	1.10E-05
original	PU236	3.30E-10	1.50E-04	4.80E-05	3.60E-06	8.00E-11	2.00E-05
FGR12/13	PU237	5.60E-08	2.90E-09	7.40E-11	2.80E-11	1.80E-11	3.90E-10
original	PU237	7.00E-08	3.40E-09	1.30E-10	7.10E-11	2.10E-11	4.90E-10
FGR12/13	PU238	1.10E-10	9.30E-05	1.60E-04	8.30E-06	2.80E-07	1.60E-05
original	PU238	2.70E-10	3.20E-04	7.30E-04	5.90E-05	8.50E-11	7.70E-05
FGR12/13	PU239	1.10E-10	8.70E-05	1.80E-04	9.10E-06	3.20E-07	1.60E-05
original	PU239	1.80E-10	3.10E-04	8.50E-04	6.50E-05	8.00E-11	8.20E-05
FGR12/13	PU240	1.10E-10	8.80E-05	1.80E-04	9.10E-06	3.20E-07	1.60E-05
original	PU240	2.60E-10	3.10E-04	8.50E-04	6.50E-05	8.00E-11	8.20E-05
FGR12/13	PU241	2.00E-12	4.60E-07	4.10E-06	1.80E-07	7.10E-09	1.80E-07
original	PU241	6.50E-16	3.10E-06	1.80E-05	1.40E-06	8.00E-14	1.30E-06
FGR12/13	PU242	9.20E-11	8.10E-05	1.80E-04	8.70E-06	3.00E-07	1.50E-05
original	PU242	2.20E-10	2.90E-04	7.20E-04	6.00E-05	7.40E-11	7.40E-05
FGR12/13	PU243	3.00E-08	4.70E-10	1.50E-11	9.90E-13	1.60E-13	8.70E-11
original	PU243	2.40E-08	2.00E-10	5.80E-11	6.30E-13	1.10E-13	3.90E-11
FGR12/13	PU244	6.60E-11	7.50E-05	1.60E-04	8.20E-06	2.90E-07	1.40E-05
original	PU244	1.80E-10	2.90E-04	7.30E-04	5.80E-05	1.20E-09	7.40E-05

FGR12/13	AM241	2.10E-08	3.70E-05	1.70E-03	5.80E-05	2.90E-06	4.20E-05
original	AM241	1.90E-08	1.80E-05	2.20E-03	1.70E-04	1.00E-09	1.20E-04
FGR12/13	AM242M	7.90E-10	8.80E-06	1.70E-03	5.50E-05	2.90E-06	3.70E-05
original	AM242M	1.00E-09	3.80E-06	2.00E-03	1.70E-04	1.20E-10	1.10E-04
FGR12/13	AM242	1.90E-08	1.20E-07	9.20E-08	6.30E-09	1.20E-10	1.70E-08
original	AM242	2.00E-08	4.70E-08	1.60E-07	1.10E-08	2.50E-12	1.40E-08
FGR12/13	AM243	5.90E-08	3.50E-05	1.70E-03	5.70E-05	2.90E-06	4.10E-05
original	AM243	4.70E-08	1.70E-05	2.10E-03	1.70E-04	1.20E-09	1.10E-04
FGR12/13	CM242	1.30E-10	3.50E-05	2.70E-05	1.90E-06	3.50E-08	5.20E-06
original	CM242	2.70E-10	1.40E-05	4.70E-05	3.20E-06	9.40E-10	4.30E-06
FGR12/13	CM243	1.70E-07	4.00E-05	1.20E-03	4.50E-05	1.70E-06	3.20E-05
original	CM243	1.90E-07	1.80E-05	1.40E-03	1.20E-04	1.20E-09	8.00E-05
FGR12/13	CM244	1.10E-10	3.90E-05	9.20E-04	3.90E-05	1.30E-06	2.70E-05
original	CM244	2.40E-10	1.80E-05	1.10E-03	9.20E-05	9.90E-10	6.40E-05
FGR12/13	CM245	1.10E-07	3.60E-05	1.80E-03	5.90E-05	3.00E-06	4.20E-05
original	CM245	9.60E-08	1.70E-05	2.10E-03	1.70E-04	1.10E-09	1.20E-04
FGR12/13	CM246	9.80E-11	3.60E-05	1.70E-03	5.80E-05	2.90E-06	4.20E-05
original	CM246	2.10E-10	1.70E-05	2.20E-03	1.70E-04	9.90E-10	1.20E-04
FGR12/13	CM247	4.40E-07	3.20E-05	1.60E-03	5.40E-05	2.70E-06	3.90E-05
original	CM247	7.40E-07	1.50E-05	2.00E-03	1.60E-04	1.40E-09	1.10E-04
*FGR12/13	CM248	7.40E-11	6.30E-05	7.80E-03	6.20E-04	2.20E-08	4.20E-04
original	CM248	1.70E-10	6.30E-05	7.80E-03	6.20E-04	2.20E-08	4.20E-04
*FGR12/13	CF252	1.10E-10	3.50E-05	6.60E-04	5.30E-05	1.10E-08	3.50E-05
original	CF252	1.70E-10	3.50E-05	6.60E-04	5.30E-05	1.10E-08	3.50E-05

Appendix B.3

Ratio of the revised FGR12/13 DCFs to the original HUDUFACT.dat DCFs (for adult only) (NAN is given where both values were zero)

nuclide	air submersion FGR/ Org.	lung FGR/ Org.	bone surface FGR/ Org.	red marrow FGR/ Org.	thyroid FGR/ Org.	eff dose equiv FGR/ Org.
H 3	0.00	0.25	0.48	0.25	0.25	0.26
H 3						
BE10	10.48	0.36	0.28	0.31	7.10	0.37
BE10						
C 14	5.86	0.34	0.63	0.33	0.33	0.36
C 14						
F 18	0.74	0.24	1.04	1.08	0.83	1.27
F 18						
NA22	0.82	0.38	0.55	0.48	0.46	0.50
NA22						
NA24	0.81	0.12	0.71	0.68	0.75	0.88
NA24						
P 32	2.70	0.15	0.56	0.53	0.53	0.49
P 32						
P 33	9.39	0.23	0.55	0.54	0.52	0.58
P 33						
S 35	6.13	2.35	0.35	0.17	0.17	2.09
S 35						
CL36	6.93	0.37	1.04	0.53	0.51	0.61
CL36						
AR39	8.57	NAN	NAN	NAN	NAN	NAN
AR39						
AR41	0.90	NAN	NAN	NAN	NAN	NAN
AR41						
K 40	0.86	0.94	1.06	0.57	0.55	0.72

K 40

CA41	0.00	0.36	0.36	0.33	1.04	0.27
CA41						
CA45	9.41	2.19	0.44	0.31	0.60	1.50
CA45						
SC46	0.83	0.98	0.71	0.73	0.57	0.88
SC46						
CR51	0.69	0.34	0.86	0.68	0.82	0.41
CR51						
MN54	0.80	0.97	1.00	1.09	0.91	0.94
MN54						
MN56	0.81	0.69	0.90	0.90	0.98	1.30
MN56						
FE55	0.00	0.44	8.93	8.13	0.51	1.18
FE55						
FE59	0.95	1.64	1.05	1.17	0.57	1.12
FE59						
CO57	0.89	0.39	0.91	0.42	0.70	0.43
CO57						
CO58	0.78	0.81	0.76	0.76	0.59	0.75
CO58						
CO60	0.88	0.51	0.72	0.71	0.62	0.57
CO60						
NI59	0.00	0.43	1.81	0.90	0.71	0.59
NI59						
NI63	0.00	0.89	1.50	0.75	0.75	0.87
NI63						
NI65	0.84	0.80	0.88	0.79	0.92	1.35
NI65						

CU64	0.75	0.11	0.40	0.66	0.74	0.66
CU64						
ZN65	0.78	0.48	0.24	0.28	0.25	0.41
ZN65						
ZN69M	0.63	1.30	0.31	0.36	0.41	1.13
ZN69M						
ZN69	4.85	1.48	0.05	0.04	0.06	2.55
ZN69						
AS76	0.76	0.65	0.81	0.57	0.64	0.74
AS76						
SE75	0.87	1.00	0.47	0.31	0.37	0.52
SE75						
SE79	10.91	2.04	0.45	0.23	0.23	1.08
SE79						
BR82	0.79	0.23	1.70	0.67	0.68	1.06
BR82						
BR83	1.13	0.16	1.53	0.78	0.76	0.62
BR83						
BR84	0.85	0.19	1.89	1.10	1.06	0.81
BR84						
KR83M	0.07	NAN	NAN	NAN	NAN	NAN
KR83M						
KR85M	0.96	NAN	NAN	NAN	NAN	NAN
KR85M						
KR85	1.58	NAN	NAN	NAN	NAN	NAN
KR85						
KR87	0.76	NAN	NAN	NAN	NAN	NAN
KR87						

KR88	0.86	NAN	NAN	NAN	NAN	NAN
KR88						
KR89	1.00	NAN	NAN	NAN	NAN	NAN
KR89						
RB86	1.00	0.39	0.61	0.52	0.53	0.55
RB86						
RB87	18.18	1.17	0.64	0.56	0.53	0.63
RB87						
RB88	0.85	0.21	1.06	0.94	1.21	0.67
RB88						
RB89	0.86	0.31	0.89	0.86	1.06	1.17
RB89						
SR85	0.74	0.59	0.74	0.85	0.69	0.90
SR85						
SR89	2.92	0.12	0.65	0.83	0.86	0.67
SR89						
SR90	8.86	0.56	0.57	0.55	1.76	0.44
SR90						
SR91	0.83	0.06	1.27	1.18	0.72	0.62
SR91						
SR92	0.77	0.05	2.87	2.03	0.80	0.54
SR92						
Y 90	1.92	0.80	0.08	0.08	0.08	0.63
Y 90						
Y 91M	0.68	0.70	1.14	1.18	1.33	1.11
Y 91M						
Y 91	1.82	0.71	0.20	0.21	0.33	0.68
Y 91						
Y 92	0.82	0.54	0.81	0.78	1.00	0.82

Y 92						
Y 93	0.94	0.59	0.38	0.41	0.94	0.67
Y 93						
ZR93	0.00	0.85	0.93	0.91	1.25	0.45
ZR93						
ZR95	0.85	1.72	0.57	0.73	0.84	1.14
ZR95						
ZR97	0.82	0.85	0.49	0.52	0.74	0.77
ZR97						
NB93M	0.33	0.21	0.25	0.83	1.96	0.22
NB93M						
NB94	0.88	0.43	0.75	0.83	0.67	0.49
NB94						
NB95M	0.86	2.00	0.53	0.67	0.70	1.33
NB95M						
NB95	0.73	1.43	0.48	0.76	0.64	1.20
NB95						
NB97M	0.91	0.00	0.00	0.00	0.00	0.00
NB97M						
NB97	0.78	1.06	1.40	1.33	1.16	1.96
NB97						
MO93	0.39	1.28	18.18	27.27	0.78	3.70
MO93						
MO99	0.88	0.11	0.50	0.49	0.70	0.41
MO99						
TC99M	1.06	2.45	1.53	0.68	0.25	2.53
TC99M						
TC99	13.79	2.00	0.44	0.23	0.05	1.74
TC99						

TC101	0.69	1.10	1.29	0.89	0.48	2.93
TC101						
RU103	0.70	1.38	0.77	0.77	0.64	1.20
RU103						
RU105	0.79	1.14	1.14	0.93	1.02	1.13
RU105						
RU106	0.00	0.53	0.84	0.61	0.54	0.51
RU106						
RH103M	0.15	1.82	1.15	0.34	0.44	1.93
RH103M						
RH105	0.69	2.30	1.00	0.59	0.84	1.17
RH105						
PD103	0.15	1.26	0.87	0.20	0.80	1.05
PD103						
PD107	0.00	0.17	1.16	1.14	1.12	0.17
PD107						
PD109	1.18	1.47	0.54	0.16	0.37	1.00
PD109						
AG110M	0.82	0.42	0.97	0.73	0.74	0.24
AG110M						
AG111	0.86	0.11	1.75	0.99	1.16	0.43
AG111						
CD109	0.72	2.05	1.58	0.48	0.56	0.27
CD109						
CD113M	7.07	29.31	1.42	0.59	0.57	0.28
CD113M						
CD115M	1.04	0.45	1.01	0.53	0.51	0.28
CD115M						

CD115	0.87	0.08	0.71	0.57	0.60	0.36
CD115						
IN111	0.96	0.24	1.09	1.63	1.58	0.87
IN111						
IN114M	0.57	0.57	1.28	7.05	18.75	0.78
IN114M						
IN115M	0.71	0.12	1.54	3.14	1.16	0.73
IN115M						
SN117M	1.12	3.06	0.43	0.41	0.77	1.85
SN117M						
SN119M	0.31	1.55	0.73	0.57	0.93	1.29
SN119M						
SN121M	NAN	1.70	0.82	0.73	0.94	1.45
SN121M						
SN121	NAN	2.83	4.94	1.00	0.38	1.53
SN121						
SN123	1.47	1.02	0.61	0.61	0.65	0.90
SN123						
SN125	0.89	0.87	0.53	0.48	0.65	0.67
SN125						
SN126	1.26	1.20	0.85	0.88	1.02	1.04
SN126						
SB124	0.75	1.05	1.46	1.09	0.97	0.94
SB124						
SB125	0.70	1.45	8.70	3.27	1.72	1.45
SB125						
SB126M	0.76	0.81	1.23	1.15	1.25	2.38
SB126M						
SB126	0.82	1.21	0.93	0.81	0.75	0.91

SB126

SB127	0.82	1.59	0.86	0.75	0.70	1.06
SB127						
TE123M	1.13	2.31	0.46	0.46	2.93	1.38
TE123M						
TE125M	0.46	2.60	0.40	0.35	6.50	1.70
TE125M						
TE127M	0.48	1.70	0.43	0.43	8.60	1.25
TE127M						
TE127	1.00	1.74	0.33	0.29	1.47	1.34
TE127						
TE129M	0.83	1.23	0.38	0.39	32.26	0.05
TE129M						
TE129	0.83	0.94	0.37	0.35	4.07	0.88
TE129						
TE131M	0.81	2.09	0.48	0.63	0.08	0.34
TE131M						
TE131	0.84	1.16	1.08	0.88	0.08	0.85
TE131						
TE132	0.76	7.14	0.66	2.56	0.10	0.62
TE132						
TE133M	0.83	1.24	1.42	1.38	0.07	0.74
TE133M						
TE133	0.78	1.10	1.82	1.57	0.07	0.83
TE133						
TE134	0.75	3.39	3.42	4.25	0.07	2.39
TE134						
I 125	0.43	0.14	0.36	0.09	0.50	0.85
I 125						

I 129	0.56	0.26	0.20	0.13	0.51	0.88
I 129						
I 130	0.84	0.09	0.07	0.17	0.81	1.03
I 130						
I 131	0.79	0.09	0.02	0.14	0.56	0.89
I 131						
I 132	0.79	0.13	0.17	0.17	1.08	0.85
I 132						
I 133	0.79	0.05	0.07	0.09	0.67	1.00
I 133						
I 134	0.81	0.20	0.21	0.20	1.30	1.18
I 134						
I 135	0.83	0.09	0.10	0.13	0.85	1.00
I 135						
XE131M	0.79	NAN	NAN	NAN	NAN	NAN
XE131M						
XE133M	0.79	NAN	NAN	NAN	NAN	NAN
XE133M						
XE133	0.98	NAN	NAN	NAN	NAN	NAN
XE133						
XE135M	0.76	NAN	NAN	NAN	NAN	NAN
XE135M						
XE135	0.88	NAN	NAN	NAN	NAN	NAN
XE135						
XE137	0.00	NAN	NAN	NAN	NAN	NAN
XE137						
XE138	0.77	NAN	NAN	NAN	NAN	NAN
XE138						

CS134M	0.74	0.37	3.11	1.33	1.41	1.40
CS134M						
CS134	0.76	0.74	0.82	0.58	0.57	0.56
CS134						
CS135	12.50	3.19	1.08	0.54	0.54	0.63
CS135						
CS136	0.84	0.51	1.62	0.58	0.53	0.63
CS136						
CS137	0.00	1.08	1.04	0.64	0.54	0.59
CS137						
CS138	0.80	0.19	1.71	1.11	1.13	0.89
CS138						
BA139	1.45	0.11	4.62	4.14	1.00	0.67
BA139						
BA140	0.71	0.10	0.91	1.36	1.00	1.10
BA140						
BA141	0.75	0.20	1.58	3.11	1.20	0.91
BA141						
BA142	0.94	0.32	2.58	2.20	1.30	1.25
BA142						
LA140	0.85	0.11	0.63	0.63	0.69	0.60
LA140						
LA141	0.93	0.06	0.57	0.62	0.81	0.39
LA141						
LA142	0.83	0.12	0.92	0.75	1.03	0.70
LA142						
CE141	1.04	1.88	0.41	0.41	0.88	1.65
CE141						
CE143	0.93	1.25	0.82	0.48	1.03	0.87

CE143						
CE144	1.00	0.53	0.51	0.60	0.93	0.53
CE144						
PR143	4.69	1.38	0.13	0.13	0.13	1.09
PR143						
PR144M	0.70	0.00	0.00	0.00	0.00	0.00
PR144M						
PR144	1.05	0.59	0.67	0.59	0.89	1.50
PR144						
ND147	0.82	1.80	0.32	0.44	0.84	1.33
ND147						
PM147	7.30	0.50	0.25	0.27	0.77	0.45
PM147						
PM148M	0.74	1.08	0.59	0.71	0.70	0.97
PM148M						
PM148	0.79	0.93	0.61	0.58	0.97	0.73
PM148						
PM149	1.16	1.34	0.19	0.19	0.86	0.89
PM149						
PM151	0.76	1.59	0.82	0.54	1.06	0.96
PM151						
SM147	NAN	0.03	0.04	0.04	0.04	0.48
SM147						
SM151	0.10	0.94	0.79	0.79	0.88	0.49
SM151						
SM153	0.77	1.90	0.39	0.32	0.76	1.17
SM153						
EU152	0.81	1.09	0.83	0.89	1.04	0.75
EU152						

EU154	0.86	1.27	0.79	0.84	1.12	0.72
EU154						
EU155	0.94	1.58	0.80	0.71	2.00	0.64
EU155						
EU156	0.80	1.16	0.46	0.53	0.83	0.87
EU156						
GD153	0.82	0.55	0.53	0.44	0.73	0.33
GD153						
TB160	0.89	1.53	0.56	0.64	0.86	1.04
TB160						
HO166M	0.93	1.09	0.81	0.94	1.00	0.60
HO166M						
W 181	1.12	0.08	0.71	0.30	0.72	0.64
W 181						
W 187	0.80	0.06	0.50	0.68	0.75	1.06
W 187						
W 185	7.62	0.05	0.48	0.50	0.53	0.57
W 185						
RE187	NAN	0.35	1.15	0.56	0.55	0.42
RE187						
IR192	0.69	0.92	0.84	0.72	0.73	0.87
IR192						
HG203	1.03	0.47	0.61	0.33	0.35	0.31
HG203						
RN222	0.00	NAN	NAN	NAN	NAN	NAN
RN222						
TH227	0.82	2.39	0.05	0.05	0.10	2.27
TH227						

TH228	1.04	0.50	0.11	0.11	1.53	0.45
TH228						
TH229	1.10	0.25	0.09	0.05	32.69	0.15
TH229						
TH230	0.92	0.26	0.33	0.14	36.59	0.20
TH230						
TH231	1.00	2.72	0.19	0.76	1.29	1.50
TH231						
TH232	0.66	0.18	0.06	0.03	113.89	0.08
TH232						
TH234	0.24	0.91	0.18	0.18	0.56	0.81
TH234						
RA223	0.35	3.65	0.87	1.21	0.36	3.52
RA223						
RA224	0.82	4.03	1.78	2.11	0.36	3.90
RA224						
RA225	0.58	3.25	1.69	2.44	2.67	3.15
RA225						
RA226	1.36	1.75	1.06	1.33	8.57	1.59
RA226						
RA228	0.00	1.45	9.82	8.55	190.91	2.60
RA228						
PB210	0.64	279.07	0.54	0.84	0.38	0.25
PB210						
PB212	0.87	0.05	0.22	0.31	1.00	0.40
PB212						
BI210	3.86	1.79	1.24	0.70	0.71	1.75
BI210						
BI212	0.10	5.26	0.09	0.31	0.42	6.08

BI212

PO210	0.75	2.00	4.31	3.54	0.38	1.43
PO210						
U 232	0.76	0.21	8.20	970.59	181.82	0.22
U 232						
U 233	1.07	0.27	42.11	45.33	48.65	0.27
U 233						
U 234	0.53	0.26	26.32	34.67	43.24	0.26
U 234						
U 235	1.18	0.25	26.67	23.81	23.88	0.26
U 235						
U 236	0.43	0.26	26.67	35.00	44.12	0.26
U 236						
U 237	0.81	2.86	0.47	0.35	1.00	1.94
U 237						
U 238	0.33	0.25	27.06	32.67	38.46	0.25
U 238						
U 240	0.00	1.26	5.20	0.92	1.10	0.95
U 240						
PA231	0.91	0.20	0.17	0.08	7647.06	0.13
PA231						
PA233	0.68	1.76	0.39	0.52	0.88	1.50
PA233						
PA234	0.82	1.96	1.00	0.90	1.08	1.83
PA234						
AC225	0.04	3.94	0.08	0.12	9.52	3.86
AC225						
AC227	0.76	0.27	0.07	0.04	863.64	0.16
AC227						

AC228	0.82	0.50	0.15	0.17	4.92	0.47
AC228						
FR223	1.00	0.43	1.31	0.67	0.67	0.69
FR223						
NP237	1.12	1.81	0.26	0.13	1083.33	0.14
NP237						
NP238	0.84	1.67	0.28	0.15	4.17	0.19
NP238						
NP239	0.85	2.74	0.24	0.32	1.09	1.41
NP239						
PU236	0.45	0.49	1.06	0.78	1100.00	0.55
PU236						
PU237	0.80	0.85	0.57	0.39	0.86	0.80
PU237						
PU238	0.41	0.29	0.22	0.14	3294.12	0.21
PU238						
PU239	0.61	0.28	0.21	0.14	4000.00	0.20
PU239						
PU240	0.42	0.28	0.21	0.14	4000.00	0.20
PU240						
PU241	3076.92	0.15	0.23	0.13	88750.00	0.14
PU241						
PU242	0.42	0.28	0.25	0.15	4054.05	0.20
PU242						
PU243	1.25	2.35	0.26	1.57	1.45	2.23
PU243						
PU244	0.37	0.26	0.22	0.14	241.67	0.19
PU244						

AM241	1.11	2.06	0.77	0.34	2900.00	0.35
AM241						
AM242M	0.79	2.32	0.85	0.32	24166.67	0.34
AM242M						
AM242	0.95	2.55	0.58	0.57	48.00	1.21
AM242						
AM243	1.26	2.06	0.81	0.34	2416.67	0.37
AM243						
CM242	0.48	2.50	0.57	0.59	37.23	1.21
CM242						
CM243	0.89	2.22	0.86	0.38	1416.67	0.40
CM243						
CM244	0.46	2.17	0.84	0.42	1313.13	0.42
CM244						
CM245	1.15	2.12	0.86	0.35	2727.27	0.35
CM245						
CM246	0.47	2.12	0.77	0.34	2929.29	0.35
CM246						
CM247	0.59	2.13	0.80	0.34	1928.57	0.35
CM247						
CM248	0.44	1.00	1.00	1.00	1.00	1.00
CM248						
CF252	0.65	1.00	1.00	1.00	1.00	1.00
CF252						

Appendix C Scripts

Appendix C.1

Script to create updated HUDUFACT file from FGR12/13

```
Sub Create_APGEMS_Dose_File()

    Dim blnFound13 As Boolean
    Dim blnFound12 As Boolean

    'BEGIN GENERAL INPUTS
    '********************
    'ages for age-based inhalation DCF's: 100 days, 1 year, 5 years, 10 years, 15 years, and 20
years
    strAges = "100,365,1825,3650,5475,7300"
    'file path to newly-created APGEMS age-based DCF files
    strOutputFilePath = "C:\Projects\APGEMS_Dose_Update\Dose_Files\"
    'END GENERAL INPUTS



    'BEGIN INPUT FILES
    '*****************
    'FGR13 Age-specific absorbed dose coefficients for inhalation
    strFInputInh = "C:\Projects\APGEMS_Dose_Update\Dose_Files\FGR13INH.txt"
    'FGR 12 Table III.1 for air submersion
    strFInputSub = "C:\Projects\APGEMS_Dose_Update\Dose_Files\F12TIII1.txt"
    'APGEMS HUDUFACT.DAT file (tab-delimited version!)
    strFInputHUDU = "C:\Projects\APGEMS_Dose_Update\Dose_Files\HUDUFACT.txt"
    'END INPUT FILES

    'BEGIN PROGRAM
    '*************

    'general declarations
    blnFound13 = False
    blnFound12 = False

    'create file system object for writing output files
    Set filesys = CreateObject("Scripting.FileSystemObject")

    'create log file to compare original APGEMS DCFs to new FGR12/13 DCFs (this is for adult DCFs
only!)
    strFLog = strOutputFilePath & "log.dat"
    'create log file
    Set fLog = filesys.CreateTextFile(strFLog, True)
    'log file header
    fLog.WriteLine "source,nuclide,air submersion,lung,bone surface,red marrow,thyroid,eff dose
equiv"
    fLog.WriteLine ",,Sv/Yr per Bq/m3,Sv/Bq,Sv/Bq,Sv/Bq,Sv/Bq,Sv/Bq"

    'for each age group, build new DCF file
    arrAge = Split(strAges, ",")

    For intI = 0 To UBound(arrAge)

        'create new APGEMS dose output filename
        strFOutputAPGEMS = strOutputFilePath & arrAge(intI) & ".dat"
        'create file
        Set fAPGEMS = filesys.CreateTextFile(strFOutputAPGEMS, True)
        'write new header

        fAPGEMS.WriteLine "Dose Equiv. Factors for Acute Inhalation and Ext Air Submersion
FGR12/13"
```

```
        fAPGEMS.WriteLine "                        AIR         Acute Inhal. Committed Dose
Equivalent"
        fAPGEMS.WriteLine "                    SUBMERSION              BONE      RED
EFF DOSE"
        fAPGEMS.WriteLine "                    Sv/Yr per     LUNGS    SURFACE   MARROW    THYROID
EQUIV."
        fAPGEMS.WriteLine "                       Bq/m3      Sv/Bq     Sv/Bq     Sv/Bq     Sv/Bq
Sv/Bq"

        'open and read original APGEMS HUDUFACT.DAT file
        intAPGEMS = 1
        Open strFInputHUDU For Input As intAPGEMS
        'read past header (5 lines)
        For intJ = 1 To 5
            Line Input #intAPGEMS, strData
        Next
        'read each radionuclide and its corresponding values
        Do While Not EOF(intAPGEMS)

            'READ FROM ORIGINAL APGEMS FILE; GET RADIONUCLIDE AND OLD DCFs
            'get radionuclide
            Line Input #intAPGEMS, strData
            arrNuclide = Split(strData, vbTab)
            'store in variables for later use in searching FGR12/13 files
            strNuclide = LCase(Trim(Left(arrNuclide(0), 2)) & Mid(arrNuclide(0), 3,
Len(arrNuclide(0))))
            strTemp = Trim(arrNuclide(1))
            'map AGPGEMs class to corresponding FGR13 class
            Select Case strTemp
                Case "Class: D"
                    strClass = "F"
                Case "Class: W"
                    strClass = "M"
                Case "Class: Y"
                    strClass = "S"
                Case "NobleGas"
                    strClass = "V"
                Case Else
                    strClass = "NO MAPPING"
            End Select
            'get 1 year DCF (used in comparison only)
            Line Input #intAPGEMS, strData
            arr1YearDCF = Split(strData, vbTab)
            'get 50 year DCF (used in comparison only)
            Line Input #intAPGEMS, strData
            arr50YearDCF = Split(strData, vbTab)

            'BEGIN READ FGR13 FILE; FIND RADIONUCLIDE; GET NEW DCFs
            intFGR13 = 2
            Open strFInputInh For Input As intFGR13
            'read past header
            Line Input #intFGR13, strData
            Line Input #intFGR13, strData
            'read each radionuclide and its corresponding values

            'initalize FGR13 values prior to looping on nuclides in file
            strFGR13Lung = ""
            strFGR13Bone = ""
            strFGR13Marrow = ""
            strFGR13Thyroid = ""
            strFGR13Effective = ""
            'nuclide not found
            blnFound13 = False

            Do While Not EOF(intFGR13)
                'read data line for nuclide
                Line Input #intFGR13, strData
                arrFGR13_1 = Split(strData, vbTab)

                'check if 2nd line (for H dose)
                If arrFGR13_1(6) = 2 Then
```

```
                    'read that line too!
                    Line Input #intFGR13, strData
                    arrFGR13_2 = Split(strData, vbTab)
                End If
                'get radionuclide name
                arrTemp = Split(arrFGR13_1(0), "-")
                strFGR13Nuclide = LCase(arrTemp(0)) & arrTemp(1)

                'compare FGR13 nuclide to APGEMS nuclide
                If strFGR13Nuclide = strNuclide Then
                    'check age
                    If (arrFGR13_1(1) = arrAge(intI)) Or (arrAge(intI) = 7300 And ((arrFGR13_1(1)
= 7300) Or (arrFGR13_1(1) = 9125))) Then
                        'check lung transfer class
                        If arrFGR13_1(3) = strClass Then
                            'everything matches; get FGR13 DCFs
                            If arrFGR13_1(6) = 1 Then
                                strFGR13Lung = arrFGR13_1(38)
                                strFGR13Bone = arrFGR13_1(10)
                                strFGR13Marrow = arrFGR13_1(30)
                                strFGR13Thyroid = arrFGR13_1(35)
                                strFGR13Effective = arrFGR13_1(40)
                            ElseIf arrFGR13_1(6) = 2 Then
                                If arrFGR13_1(7) = "L" And arrFGR13_2(7) = "H" Then
                                    strFGR13Lung = 20# * arrFGR13_2(38) + arrFGR13_1(38)
                                    strFGR13Bone = 20# * arrFGR13_2(10) + arrFGR13_1(10)
                                    strFGR13Marrow = 20# * arrFGR13_2(30) + arrFGR13_1(30)
                                    strFGR13Thyroid = 20# * arrFGR13_2(35) + arrFGR13_1(35)
                                    If arrFGR13_2(40) <> "|" Then
                                        strFGR13Effective = 20# * arrFGR13_2(40) + arrFGR13_1(40)
                                    Else
                                        strFGR13Effective = arrFGR13_1(40)
                                    End If
                                Else
                                    strFGR13Lung = "PROBLEM"
                                End If

                            End If

                            'indicate nuclide has been found
                            blnFound13 = True
                            Exit Do
                        End If
                    End If
                End If
            Loop
            'END READ FGR13 FILE; FIND RADIONUCLIDE; GET NEW DCFs


            'BEGIN READ FGR12 FILE; FIND RADIONUCLIDE; GET NEW DCFs
            intFGR12 = 3
            Open strFInputSub For Input As intFGR12
            'read past header
            Line Input #intFGR12, strData
            Line Input #intFGR12, strData
            Line Input #intFGR12, strData
            'read each radionuclide and its corresponding values

            'initalize FGR13 values prior to looping on nuclides in file
            strFGR12Effective = ""
            'nuclide not found
            blnFound12 = False

            Do While Not EOF(intFGR12)
                'read data line for nuclide
                Line Input #intFGR12, strData
                arrFGR12_1 = Split(strData, vbTab)

                'get radionuclide name
                arrTemp = Split(arrFGR12_1(0), "-")
                strFGR12Nuclide = LCase(arrTemp(0)) & arrTemp(1)
```

```
                'compare FGR12 nuclide to APGEMS nuclide
                If strFGR12Nuclide = strNuclide Then
                    'column 27 (0-based array) contains effective submersion dose in units of
Sv/s per Bq/m3
                    strFGR12Effective = arrFGR12_1(27)

                    'convert to APGEMS HUDUFACT units of Sv/Yr per Bq/m3
                    strFGR12Effective = strFGR12Effective * 31536000

                    'indicate nuclide has been found
                    blnFound12 = True
                    Exit Do
                End If
            Loop

            'END READ FGR12 FILE; FIND RADIONUCLIDE; GET NEW DCFs

            'BEGIN WRITE OUTPUT FILE
            'deal with missing values
            If blnFound13 = False Then
                'set values to missing
                'strFGR13Lung = 9.9E-99
                'strFGR13Bone = 9.9E-99
                'strFGR13Marrow = 9.9E-99
                'strFGR13Thyroid = 9.9E-99
                'strFGR13Effective = 9.9E-99
                'set to HUDUFACT originals
                strFGR13Lung = arr50YearDCF(4)
                strFGR13Bone = arr50YearDCF(5)
                strFGR13Marrow = arr50YearDCF(6)
                strFGR13Thyroid = arr50YearDCF(7)
                strFGR13Effective = arr50YearDCF(8)
            End If
            If blnFound12 = False Then
                'set values to missing
                'strFGR12Effective = 9.9E-99
                'set to HUDUFACT originals
                strFGR12Effective = arrNuclide(3)
            End If

            'write new APGEMS DCF values
            fAPGEMS.WriteLine " " & Format(arrNuclide(0), "!@@@@@@@@") & arrNuclide(1) & "     "
& Format(strFGR12Effective, "0.00E-00")
            fAPGEMS.WriteLine "                1 Yr:            " & Format(strFGR13Lung, "0.0E-
00") & "   " & Format(strFGR13Bone, "0.0E-00") & "   " & Format(strFGR13Marrow, "0.0E-00") & "
" & Format(strFGR13Thyroid, "0.0E-00") & "   " & Format(strFGR13Effective, "0.0E-00")
            fAPGEMS.WriteLine "               50 Yr:            " & Format(strFGR13Lung, "0.0E-
00") & "   " & Format(strFGR13Bone, "0.0E-00") & "   " & Format(strFGR13Marrow, "0.0E-00") & "
" & Format(strFGR13Thyroid, "0.0E-00") & "   " & Format(strFGR13Effective, "0.0E-00")

            'log file
            If arrAge(intI) = 7300 Then
                'adult
                'new FGR12/13 values
                If (blnFound12 = False) Or (blnFound13 = False) Then
                    '* to indicate old HUDUFACT values are being used
                    fLog.WriteLine "*FGR12/13," & arrNuclide(0) & "," & Format(strFGR12Effective,
"0.00E-00") & "," & Format(strFGR13Lung, "0.0E-00") & "," & Format(strFGR13Bone, "0.0E-00") & ","
& Format(strFGR13Marrow, "0.0E-00") & "," & Format(strFGR13Thyroid, "0.0E-00") & "," &
Format(strFGR13Effective, "0.0E-00")
                Else
                    'new FGR12/13 values being used
                    fLog.WriteLine "FGR12/13," & arrNuclide(0) & "," & Format(strFGR12Effective,
"0.00E-00") & "," & Format(strFGR13Lung, "0.0E-00") & "," & Format(strFGR13Bone, "0.0E-00") & ","
& Format(strFGR13Marrow, "0.0E-00") & "," & Format(strFGR13Thyroid, "0.0E-00") & "," &
Format(strFGR13Effective, "0.0E-00")
                End If
                'orignal APGEMS HUDUFACT values
                fLog.WriteLine "original," & arrNuclide(0) & "," & Format(arrNuclide(3), "0.00E-
00") & "," & Format(arr50YearDCF(4), "0.0E-00") & "," & Format(arr50YearDCF(5), "0.0E-00") & ","
```

```
& Format(arr50YearDCF(6), "0.0E-00") & "," & Format(arr50YearDCF(7), "0.0E-00") & "," &
Format(arr50YearDCF(8), "0.0E-00")
                fLog.WriteLine ""
            End If

            Close (intFGR13)
            Close (intFGR12)
            'END WRITE OUTPUT FILE

        Loop

        'close original APGEMS file
        Close (intAPGEMS)
        'close new APGEMS DCF File
        fAPGEMS.Close
    Next

    Close (intAPGEMS)

    'close new APGEMS DCF file
    fAPGEMS.Close
    'close log file
    fLog.Close

End Sub
```

Appendix C.2

Script to create ratios and plot points

```
Sub APGEMS_Ratio()
'
' APGEMS_Ratio Macro
'
'
'this does the ratio of FGR12-13/APGEMS
strJ = ""
strB = ""

For intI = 3 To 675 Step 3
    strJ = "J" & intI
    strO = "O" & intI
    strJO = strJ & ":" & strO

    Range(strJ).Select
    ActiveCell.FormulaR1C1 = "=RC[-7]/R[1]C[-7]"
    Range(strJ).Select
    ActiveWindow.ScrollColumn = 2
    ActiveWindow.ScrollColumn = 3
    ActiveWindow.SmallScroll ToRight:=1
    Range(strJO).Select
    Selection.FillRight
Next

'this charts the ratio of FGR12-13/APGEMS


    'ActiveSheet.Shapes.AddChart.Select
    'ActiveChart.SetSourceData Source:=Range("'log'!$J$1:$O$3")
    'ActiveChart.ChartType = xlColumnClustered
    'ActiveChart.PlotArea.Select
For intJ = 1 To 6
    Select Case intJ
        Case 1
            strAlpha = "J"
        Case 2
            strAlpha = "K"
        Case 3
            strAlpha = "L"
        Case 4
            strAlpha = "M"
        Case 5
            strAlpha = "N"
        Case 6
            strAlpha = "O"
    End Select
    strY = ""
    strX = ""
    ActiveSheet.Shapes.AddChart.Select
    ActiveChart.ChartType = xlColumnClustered
    ActiveChart.PlotArea.Select
    For intI = 3 To 675 Step 3
        If intI = 3 Then
            strY = strY & "="
            strX = strX & "="
        End If

        strCompare = strAlpha & intI
        If IsNumeric(Range(strCompare).Value) Then
            If Range(strCompare).Value > 10# Then
                strY = strY & "'log'!$" & strAlpha & "$" & intI
                strX = strX & "'log'!$B$" & intI

                If intI <> 675 Then
                    strY = strY & ","
                    strX = strX & ","
```

```
                End If
            End If
        End If
    Next

    If Right(strY, 1) = "," Then
        strY = Left(strY, Len(strY) - 1)
        strX = Left(strX, Len(strX) - 1)
    End If


    ActiveChart.SeriesCollection.NewSeries
    ActiveChart.SeriesCollection(1).Values = strY
    ActiveChart.SeriesCollection(1).XValues = strX
Next
End Sub
```

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