

Exelon Generation Company, LLC www.exeloncorp.com
Byron Station
4450 North German Church Road
Byron, IL 61010-9794

April 30, 2009

10 CFR 50.36a

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United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Subject: 2008 Annual Radioactive Effluent Release Report (ARERR)

Enclosed is the Annual Radioactive Effluent Release Report for Byron Station. This report is being submitted in accordance with 10 CFR 50.36(a)(2), "Technical specifications on effluents from nuclear power reactors," and includes a summary of radiological liquid and gaseous effluents and solid waste released from the site from January 2008, through December 2008. No changes were made in 2008 to the Byron Station Offsite Dose Calculation Manual (ODCM) since Revision 5 was submitted with the 2007 Annual Radioactive Effluent Release Report on April 30, 2008. We are, therefore, not submitting a copy with this report.

If you have any questions regarding this information, please contact D. Gudger, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,



Daniel J. Enright
Site Vice President
Byron Nuclear Generating Station

DJE/JC/TH/cy

Attachment

BYRON NUCLEAR POWER STATION
ANNUAL RADIOLOGICAL EFFLUENT RELEASE REPORT (ARERR)
2008

**BYRON NUCLEAR POWER STATION
UNIT 1/2 DOCKET NUMBER STN-50-454/455
RADIOACTIVE EFFLUENT RELEASE REPORT
January 2008 - December 2008
Supplemental Information**

1. Regulatory Limits

a. Fission and activation gases:

Tech Spec Whole Body = 500 mrem/year
Skin = 3000 mrem/year

10CFR50 Gamma = 5 mrad/quarter; 10 mrad/year
Beta = 10 mrad/quarter; 20 mrad/year

b. Iodine: (summed with particulate, see below)

c. Particulates with half-lives > 8 days:

Tech Spec Organ = 1500 mrem/year
10CFR50 Organ = 7.5 mrem/quarter; 15 mrem/year

d. Liquid Effluents:

10CFR50 Whole Body = 1.5 mrem/quarter; 3 mrem year
Organ = 5 mrem/quarter; 10 mrem/year

e. Total Effective Dose Equivalent:

10CFR20 TEDE = 100 mrem/year

2. Maximum Permissible Concentration

- a. Fission and Activation Gases: 10CFR20 Appendix B Table 2
- b. Iodine: 10CFR20 Appendix B Table 2
- c. Particulates: 10CFR20 Appendix B Table 2
- d. Liquid Effluents: 10 X 10CFR20 Appendix B Table 2

3. Average Energy: This item is not applicable. Release rates are calculated using an isotopic mix rather than average energy.

4. Measurements and Approximations of Total Radioactivity

- a. Fission and Activation Gases: Prior to release, the isotopic content is determined. Released activity is calculated using volume of release, which is determined by the change in tank or containment pressure. Additional methods of calculation utilize historical data and assign an isotopic mix, which is representative of normal vent stack isotopics.
- b. Particulate, Tritium and Iodine sampling media for the plant vent stacks are collected and isotopically analyzed weekly for the plant vent stacks.

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- c. Liquid effluents: Isotopic analysis is performed on each batch release prior to its release. Total release activity is calculated using volume of release. Total tritium activity released is calculated from the highest of a monthly circulating water blowdown composite activity or a sum of the input composite activities.
- d. Analysis results that are less than the lower limit of detection (<LLD) are reported in units of uCi/ml unless otherwise noted. All LLD values are listed in Attachment A.

5. Batch Releases:

a. Liquid:

- 1. Number of batch releases = 96
- 2. Total time period for batch releases = 15,560 minutes
- 3. Maximum time period for a batch release = 543 minutes
- 4. Average time period for a batch release = 162 minutes
- 5. Minimum time period for a batch release = 53 minutes
- 6. Average stream flow during periods of release of effluent into a flowing stream = 379 m³/sec, based on information from the U.S. Geological Survey Byron Gauging Station.

b. Gaseous:

- 1. Number of batch releases = 269
- 2. Total time period for batch releases = 41,914 minutes
- 3. Maximum time period for a batch release = 2,693 minutes
- 4. Average time period for batch releases = 156 minutes
- 5. Minimum time period for a batch release = 8 minutes

6. Abnormal Releases:

- a. Liquid - None
- b. Gaseous – None

7. 2008 Radiological Groundwater Protection Program (RGPP) Results Summary:

In 2008, the 22 Radiological Groundwater Protection Program (RGPP) monitoring wells were sampled in May/June and September/October for tritium. Of the twenty-two wells sampled in May/June 2008, three contained levels of tritium above the lower limit of detection (LLD) of 200 pCi/L. They were: AR-4 (2150 pCi/L), AR-7 (207 pCi/L), and AR-11 (1220 pCi/L). Well AR-4 has shown an overall decrease in tritium concentration since first sampled in 2006. Well AR-11 has shown a decrease in tritium since 2007. Well AR-7 was resampled on 6/30/08, with results being <LLD. The suspected cause of the initial Well AR-7 result was rainwater intrusion into the well borehole that has since been corrected. Wells AR-2 and AR-3 tritium concentrations decreased below the LLD value for the first time since sampling began in 2006. Of the twenty-two wells sampled in September/October 2008, two contained levels of tritium above the LLD of 200 pCi/L. They were: AR-4 (1910 pCi/L) and AR-11 (1280 pCi/L).

These results were relatively unchanged from the previous results. The dose consequence from tritium present in these sample wells is negligible. The Fall 2008 sampling included analyses for gamma emitters and hard-to-detect beta emitter SR-90, in which none of the 22 monitoring wells tested positive.

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SOLID RADIOACTIVE WASTE FOR BURIAL 1ST QUARTER 2008

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m ³) PER SHIPMENT	CURIES* PER SHIPMENT
1/7/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOXES (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	6.80E+01	1.81E-01
1/15/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Clive, UT	4.67E+00	1.20E+01
1/22/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Clive, UT	4.64E+00	9.49E+00
2/26/08	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, 7, UN2916, CLASS C, TYPE B(U) PACKAGE, CASK, NONE	EXCLUSIVE-USE	Barnwell, SC	2.55E+00	6.22E+02
3/6/08	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX, NONE	EXCLUSIVE-USE	Kingston, TN	1.30E+01	2.49E-01
3/11/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS C, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Barnwell, SC	1.01E+00	2.99E+01
3/31/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), 7, UN2912, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOXES (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	6.46E+01	1.68E-02
Quarterly Totals		Number of Shipments:	7	1.58E+02	6.74E+02
* Calculated using measured ratios				CUBIC M	CURIES

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SOLID RADIOACTIVE WASTE FOR BURIAL 2ND QUARTER 2008

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m ³) PER SHIPMENT	CURIES* PER SHIPMENT
5/16/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), 7, UN2912, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX, NONE	EXCLUSIVE-USE	Oak Ridge, TN	1.00E+01	5.01E-03
5/20/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Clive, UT	4.59E+00	1.27E+01
Quarterly Totals		Number of Shipments:	2	1.46E+01	1.27E+01
* Calculated using measured ratios				CUBIC M	CURIES

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SOLID RADIOACTIVE WASTE FOR BURIAL 3RD QUARTER 2008

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME (m ³) PER SHIPMENT	CURIES* PER SHIPMENT
7/14/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), 7, UN2912, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX, NONE	EXCLUSIVE-USE	Oak Ridge, TN	3.40E+01	7.12E-03
9/9/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX, NONE	EXCLUSIVE-USE	Oak Ridge, TN	3.57E+01	2.24E+00
9/12/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Clive, UT	4.67E+00	1.29E+01
9/18/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), 7, UN3321, CLASS A, GENERAL DESIGN PACKAGE (GDP), CASK, NONE	EXCLUSIVE-USE	Clive, UT	4.89E+00	1.32E+01
Quarterly Totals		Number of Shipments:	4	7.93E+01	2.83E+01
* Calculated using measured ratios				CUBIC M	CURIES

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SOLID RADIOACTIVE WASTE FOR BURIAL 4TH QUARTER 2008

DATE	DISPOSITION OF MATERIAL (DESCRIPTION, CLASS, TYPE AND SOLIDIFYING AGENT)	MODE OF TRANSPORT	DESTINATION	VOLUME(m ³) PER SHIPMENT	CURIES* PER SHIPMENT
10/08/08	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE LIMITED QUANTITY OF MATERIAL, 7, UN2910, CLASS A, GENERAL DESIGN PACKAGE (GDP), 20' METAL BOX, NONE	EXCLUSIVE-USE	Kingston, TN	1.29E+01	1.37E-04
10/23/08	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), 7, UN2912, CLASS A, GENERAL DESIGN PACKAGE, 20' METAL BOXES (2), NONE	EXCLUSIVE-USE	Oak Ridge, TN	7.22E+01	2.60E-02
Quarterly Totals		Number of Shipments:	2	8.51E+01	2.61E-02
* Calculated using measured ratios				CUBIC M	CURIES

SOLID RADIOACTIVE WASTE FOR BURIAL
Estimated Solid Waste Composition
2008

Resins, Filters, Evap Bottoms			
2008 1st Quarter			
Volume (m3)	1.76E+01		
Class	A		
Nuclide	% Adund	Curies	uCi/ml
H-3	18.687	2.28E+00	1.30E-01
C-14	0.224	2.73E-02	1.55E-03
CR-51	0.086	1.04E-02	5.91E-04
MN-54	1.374	1.68E-01	9.55E-03
FE-55	6.888	8.41E-01	4.78E-02
FE-59	0.024	2.90E-03	1.65E-04
CO-57	0.459	5.61E-02	3.19E-03
CO-58	50.912	6.22E+00	3.53E-01
CO-60	6.005	7.33E-01	4.16E-02
NI-59	0.348	4.25E-02	2.41E-03
NI-63	8.211	1.00E+00	5.68E-02
ZN-65	0.139	1.69E-02	9.60E-04
SR-90	0.022	2.69E-03	1.53E-04
ZR-95	0.028	3.42E-03	1.94E-04
NB-95	0.040	4.88E-03	2.77E-04
TC-99	0.005	5.85E-04	3.32E-05
RU-103	0.000	2.72E-05	1.55E-06
AG-110M	0.001	1.38E-04	7.84E-06
SB-124	0.020	2.45E-03	1.39E-04
SB-125	3.110	3.80E-01	2.16E-02
TE-123M	0.001	1.23E-04	6.99E-06
TE-125M	0.252	3.08E-02	1.75E-03
I-129	0.000	1.13E-05	6.42E-07
CS-134	0.409	4.99E-02	2.84E-03
CS-137	0.810	9.89E-02	5.62E-03
CE-144	1.887	2.30E-01	1.31E-02
PU-238	0.000	1.38E-05	7.84E-07
PU-239	0.000	6.06E-06	3.44E-07
PU-241	0.057	6.95E-03	3.95E-04
AM-241	0.000	3.76E-06	2.14E-07
CM-242	0.000	5.94E-06	3.38E-07
CM-243	0.000	8.43E-06	4.79E-07

Dry Active Waste			
2008 1st Quarter			
Volume (m3)	1.37E+02		
Class	A		
Nuclide	% Adund	Curies	uCi/ml
H-3	19.892	1.93E+00	1.41E-02
C-14	0.663	6.42E-02	4.69E-04
CR-51	0.026	2.47E-03	1.80E-05
MN-54	1.496	1.45E-01	1.06E-03
FE-55	16.247	1.57E+00	1.15E-02
FE-59	0.013	1.29E-03	9.42E-06
CO-57	1.871	1.81E-01	1.32E-03
CO-58	33.068	3.20E+00	2.34E-02
CO-60	13.453	1.30E+00	9.49E-03
NI-59	0.577	5.59E-02	4.08E-04
NI-63	12.080	1.17E+00	8.54E-03
SR-90	0.024	2.34E-03	1.71E-05
ZR-95	0.095	9.17E-03	6.69E-05
NB-95	0.192	1.86E-02	1.36E-04
TC-99	0.073	7.03E-03	5.13E-05
SN-113	0.006	6.14E-04	4.48E-06
SB-124	0.000	2.00E-06	1.46E-08
SB-125	0.050	4.83E-03	3.53E-05
TE-123M	0.003	3.39E-04	2.47E-06
I-129	0.000	2.28E-05	1.66E-07
CS-134	0.007	6.39E-04	4.66E-06
CS-137	0.028	2.70E-03	1.97E-05
CE-144	0.032	3.07E-03	2.24E-05
PU-238	0.001	7.95E-05	5.80E-07
PU-239	0.000	3.49E-05	2.55E-07
PU-241	0.101	9.82E-03	7.17E-05
AM-241	0.000	2.17E-05	1.58E-07
CM-242	0.000	3.92E-05	2.86E-07
CM-243	0.000	4.33E-05	3.16E-07

Irradiated Components			
2008 - No Shipments			
Volume (m3)	0.00E+00		
Class	N/A		
Nuclide	% Abund	Curies	uCi/ml
H-3			
C-14			
CR-51			
MN-54			
FE-55			
FE-59			
CO-57			
CO-58			
CO-60			
NI-59			
NI-63			
ZN-65			
SR-90			
ZR-95			
NB-95			
TC-99			
SN-113			
SB-124			
SB-125			
TE-123M			
I-129			
CS-134			
CS-137			
CE-144			
PU-238			
PU-239			
PU-241			
AM-241			
CM-242			
CM-243			

Other Waste (Oil)			
2008 2nd Quarter			
Volume (m3)	1.00E+01		
Class	A		
Nuclide	% Abund	Curies	uCi/ml
H-3	99.954	5.01E-03	5.01E-04
C-14	0.000	1.90E-10	1.90E-11
FE-55	0.002	1.16E-07	1.16E-08
CO-60	0.002	8.08E-08	8.08E-09
NI-59	0.000	2.31E-10	2.31E-11
NI-63	0.001	4.43E-08	4.43E-09
SR-90	0.000	3.29E-10	3.29E-11
TC-99	0.000	3.55E-10	3.55E-11
I-129	0.000	1.21E-12	1.21E-13
CS-137	0.001	6.10E-08	6.10E-09
CE-144	0.010	4.88E-07	4.88E-08
PU-238	0.000	1.88E-10	1.88E-11
PU-239	0.000	8.34E-11	8.34E-12
PU-241	0.000	1.63E-09	1.63E-10
AM-241	0.030	1.50E-06	1.50E-07
CM-242	0.000	1.15E-10	1.15E-11
CM-243	0.000	2.27E-10	2.27E-11

Process Control Program (PCP) for Radioactive Wastes

RW-AA-100, Process Control Program (PCP) for Radioactive Waste was revised twice in 2008.

The first change was from Rev 5 to Rev 6. The following changes were made:

Step 2.6 was revised to clarify the definition of High Integrity Container (HIC). This was done because the Clive, UT burial site does not require a certificate of compliance.

Step 4.2.10 was revised to separate the requirements for the Barnwell, SC and Clive, UT burial sites. This was done because the Clive burial site does not require a certificate of compliance.

The second change was from Rev 6 to Rev 7. All the changes were editorial/format changes only.

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Error Analysis

The following is an estimate of the errors associated with effluent monitoring and analysis. The estimate is calculated using the square root of the sum of the squares methodology.

1. Gaseous Effluents

Qme=3.33%
RM=N/A
ECe=5%
Stdcse/Smpcse=5%
qme=N/A

Total error = 7.8%

2. Liquid Effluents

Qme=3.33%
RM=N/A
ECe=N/A
Stdcse/Smpcse=5%
qme=2.22%

Total error = 6.4%

3. Waste Resin

Qme=10.0%
RM=N/A
ECe=5%
Stdcse/Smpcse=5%
qme=1.0%

Total error = 12.3%

4. DAW, Mechanical Filters, and Contaminated Metal

Qme=10.0%
RM=N/A
ECe=N/A
Stdcse/Smpcse=5%
qme=N/A

Instrument calibration error = 10%
Total error = 11.2%

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Miscellaneous Information

- A. Meteorological and environmental impact information is reported in the Station Annual Radiological Environmental Operating Report as required by Technical Specification 5.6.2.
- B. No limits were exceeded in liquid hold up tanks as stated in Technical Specification 5.5.12 or in waste gas decay tanks as stated in Technical Specification 5.5.12.
- C. There were no irradiated fuel shipments during this reporting period.
- D. There were no REMP sample results that exceeded any technical specification limits or analytical results investigation levels during this reporting period.
- E. There were no elevated releases during this reporting period. All releases are considered vent or ground level releases.
- F. There were no plant effluent radiation release monitors that exceeded LCOAR time limits.
- G. On 3/18/08, the station's treated waste totalizer, an ODCM-monitored discharge, was found out of tolerance low and documented in IR#751338. The totalizer was repaired on 3/21/08.
- H. Attached are Offsite Dose Calculations for January through December of 2008.
- I. There were no changes made to the ODCM during this reporting period.

Attachment A, 2008 Radioactive Effluent Release Report
2008 Lower Limits of Detection (LLD's)

Nuclide	Gaseous LLD (Ci/ml)	Nuclide	Liquid LLD (Ci/ml)
H3	5.86E-14	H3	2.35E-12
Ar41	5.94E-13	Na24	5.46E-14
Cr51	3.57E-18	Cr51	2.45E-13
Mn54	5.32E-19	Mn54	4.08E-14
Co58	7.50E-19	Fe55	5.94E-13
Fe59	1.95E-18	Co57	2.69E-14
Co60	1.56E-18	Co58	3.09E-14
Zn65	1.42E-18	Fe59	4.30E-14
Br82	8.51E-19	Co60	7.90E-14
Kr85m	1.94E-13	Zn65	1.09E-13
Kr87	5.57E-13	Sr85	4.44E-14
Kr88	6.76E-13	Sr89	4.86E-14
Sr89	4.30E-20	Sr-90	7.22E-15
Sr-90	1.91E-21	Sr92	8.45E-14
Mo99	2.76E-19	Nb95	6.42E-14
I131	8.77E-19	Zr95	9.10E-14
Xe131m	9.90E-12	Mo99	2.58E-14
I133	8.09E-19	Ag110m	3.60E-14
Xe133	7.78E-13	Sb122	5.97E-14
Xe133m	1.77E-12	Te123m	2.95E-14
Cs134	8.34E-19	Sb124	1.38E-13
I135	4.28E-18	Sb125	1.07E-13
Xe135	1.63E-13	Te125m	1.01E-11
Cs137	7.77E-19	Sb126	4.34E-14
Xe138	8.86E-13	I131	4.15E-14
Ba140	1.66E-18	I132	4.44E-14
La140	4.08E-19	Te132	3.03E-14
Ce141	5.62E-19	I133	4.80E-14
Ce144	2.38E-18	Xe133	1.21E-13
Gross Alpha	1.75E-19	Cs134	3.61E-14
		Xe135	3.18E-14
		Cs137	6.77E-14
		Ba140	1.25E-13
		La140	6.52E-14
		Ce141	3.95E-14
		Ce144	1.85E-13
		Gross Alpha	7.72E-14

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1A
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	5.47E-01	2.65E-01	2.23E+00	5.88E-01	3.63E+00
2. Avg. Release Rate	uCi/sec	6.96E-02	3.37E-02	2.81E-01	7.40E-02	1.15E-02
Iodine-131						
1. Total Release	Ci	1.72E-05	4.24E-06	0.00E+00	0.00E+00	2.15E-05
2. Avg. Release Rate	uCi/sec	2.19E-06	5.39E-07	0.00E+00	0.00E+00	6.80E-07
Particulates Half Life >= 8 days						
1. Total Release	Ci	0.00E+00	1.33E-06	0.00E+00	1.07E-06	2.40E-06
2. Avg. Release Rate	uCi/sec	0.00E+00	1.69E-07	0.00E+00	1.35E-07	7.59E-08
Tritium						
1. Total Release	Ci	1.14E+01	7.11E+00	6.44E+00	3.69E+00	2.87E+01
2. Avg. Release Rate	uCi/sec	1.46E+00	9.04E-01	8.10E-01	4.64E-01	9.07E-01

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1C
 GASEOUS EFFLUENTS - GROUND RELEASES - CONTINUOUS MODE
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
KR-88	Ci	0.00E+00	0.00E+00	2.18E+01	0.00E+00	2.18E+01
XE-133	Ci	1.99E-01	2.12E-01	3.23E-07	5.25E-01	9.36E-01
Totals for Period...	Ci	1.99E-01	2.12E-01	2.18E+01	5.25E-01	2.27E+01
Iodines						
I-131	Ci	1.72E-05	4.24E-06	0.00E+00	0.00E+00	2.15E-05
I-132	Ci	1.03E-04	3.25E-06	0.00E+00	0.00E+00	1.07E-04
I-133	Ci	9.78E-05	0.00E+00	0.00E+00	0.00E+00	9.78E-05
Totals for Period...	Ci	2.18E-04	7.49E-06	0.00E+00	0.00E+00	2.26E-04
Particulates Half Life >= 8 days						
CO-58	Ci	0.00E+00	1.33E-06	0.00E+00	1.07E-06	2.40E-06
Totals for Period...	Ci	0.00E+00	1.33E-06	0.00E+00	1.07E-06	2.40E-06
Tritium						
H-3	Ci	1.14E+01	7.11E+00	6.44E+00	3.69E+00	2.87E+01
Totals for Period...	Ci	1.14E+01	7.11E+00	6.44E+00	3.69E+00	2.87E+01

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1C
 GASEOUS EFFLUENTS - GROUND RELEASES - BATCH MODE
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AR-41	Ci	3.21E-03	3.97E-03	3.58E-03	4.11E-05	1.08E-02
KR-85M	Ci	5.58E-06	0.00E+00	0.00E+00	2.48E-05	3.03E-05
XE-131M	Ci	2.07E-02	2.81E-04	0.00E+00	0.00E+00	2.09E-02
XE-133	Ci	3.23E-01	4.88E-02	4.85E-02	6.13E-02	4.82E-01
XE-133M	Ci	3.82E-04	0.00E+00	0.00E+00	1.49E-04	5.31E-04
XE-135	Ci	1.10E-03	1.89E-05	3.28E-04	1.07E-03	2.52E-03
XE-138	Ci	0.00E+00	2.73E-05	0.00E+00	0.00E+00	2.73E-05
Totals for Period...	Ci	3.48E-01	5.31E-02	5.24E-02	6.26E-02	5.17E-01
Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Tritium						
H-3	Ci	9.37E-02	1.08E-01	9.36E-02	2.08E-01	5.04E-01
Totals for Period...	Ci	9.37E-02	1.08E-01	9.36E-02	2.08E-01	5.04E-01

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1A
 GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES
 Reg Guide 1.21 - Unit 2

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	2.30E-01	2.25E-01	8.80E-04	7.41E+00	7.87E+00
2. Avg. Release Rate	uCi/sec	2.93E-02	2.86E-02	1.11E-04	9.32E-01	2.49E-01
Iodine-131						
1. Total Release	Ci	2.36E-05	7.36E-05	0.00E+00	2.17E-06	9.93E-05
2. Avg. Release Rate	uCi/sec	3.00E-06	9.35E-06	0.00E+00	2.73E-07	3.14E-06
Particulates Half Life >= 8 days						
1. Total Release	Ci	0.00E+00	1.91E-06	0.00E+00	3.04E-06	4.95E-06
2. Avg. Release Rate	uCi/sec	0.00E+00	2.43E-07	0.00E+00	3.82E-07	1.56E-07
Tritium						
1. Total Release	Ci	1.19E+01	1.60E+01	1.45E+01	1.14E+01	5.38E+01
2. Avg. Release Rate	uCi/sec	1.52E+00	2.03E+00	1.83E+00	1.43E+00	1.70E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1C
 GASEOUS EFFLUENTS - GROUND RELEASES - CONTINUOUS MODE
 Reg Guide 1.21 - Unit 2

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
KR-85M	Ci	0.00E+00	0.00E+00	0.00E+00	5.78E+00	5.78E+00
XE-133	Ci	1.99E-01	2.12E-01	0.00E+00	1.62E+00	2.03E+00
XE-135	Ci	1.67E-05	0.00E+00	0.00E+00	0.00E+00	1.67E-05
Totals for Period...	Ci	1.99E-01	2.12E-01	0.00E+00	7.40E+00	7.81E+00
Iodines						
I-131	Ci	2.36E-05	7.36E-05	0.00E+00	2.17E-06	9.93E-05
I-132	Ci	1.10E-03	8.24E-05	0.00E+00	2.40E-04	1.43E-03
I-133	Ci	3.58E-05	0.00E+00	0.00E+00	0.00E+00	3.58E-05
Totals for Period...	Ci	1.16E-03	1.56E-04	0.00E+00	2.42E-04	1.57E-03
Particulates Half Life >= 8 days						
CO-58	Ci	0.00E+00	1.91E-06	0.00E+00	1.97E-06	3.88E-06
HG-203	Ci	0.00E+00	0.00E+00	0.00E+00	1.07E-06	1.07E-06
Totals for Period...	Ci	0.00E+00	1.91E-06	0.00E+00	3.04E-06	4.95E-06
Tritium						
H-3	Ci	1.19E+01	1.60E+01	1.45E+01	1.14E+01	5.38E+01
Totals for Period...	Ci	1.19E+01	1.60E+01	1.45E+01	1.14E+01	5.38E+01

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 1C
 GASEOUS EFFLUENTS - GROUND RELEASES - BATCH MODE
 Reg Guide 1.21 - Unit 2

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
KR-85M	Ci	5.58E-06	0.00E+00	0.00E+00	2.48E-05	3.03E-05
XE-131M	Ci	5.11E-05	2.81E-04	0.00E+00	0.00E+00	3.32E-04
XE-133M	Ci	3.82E-04	0.00E+00	0.00E+00	1.49E-04	5.31E-04
XE-133	Ci	2.92E-02	1.27E-02	8.80E-04	1.01E-02	5.28E-02
XE-135	Ci	1.01E-03	1.89E-05	0.00E+00	1.07E-03	2.10E-03
AR-41	Ci	0.00E+00	3.75E-05	0.00E+00	4.11E-05	7.86E-05
XE-138	Ci	0.00E+00	2.73E-05	0.00E+00	0.00E+00	2.73E-05
Totals for Period...	Ci	3.07E-02	1.30E-02	8.80E-04	1.14E-02	5.59E-02
Iodines						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Particulates Half Life >= 8 days						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Tritium						
H-3	Ci	6.28E-02	6.15E-02	5.19E-02	2.72E-01	4.48E-01
Totals for Period...	Ci	6.28E-02	6.15E-02	5.19E-02	2.72E-01	4.48E-01

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A
 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	2.21E-03	1.55E-03	2.12E-03	4.06E-03	9.35E-03
2. Avg. Diluted Conc.	uCi/ml	6.81E-10	4.52E-10	5.24E-10	1.25E-09	6.68E-10
Tritium						
1. Total Release	Ci	4.77E+02	1.98E+02	5.75E+02	2.50E+02	1.50E+03
2. Avg. Diluted Conc.	uCi/ml	1.47E-04	5.77E-05	1.42E-04	7.67E-05	1.07E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	8.45E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
2. Avg. Diluted Conc.	uCi/ml	2.61E-09	1.57E-10	6.75E-11	1.57E-10	6.99E-10
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	3.24E+09	3.43E+09	4.04E+09	3.26E+09	1.40E+10
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A - Rock River
 LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	2.20E-03	1.55E-03	2.12E-03	4.06E-03	9.35E-03
2. Avg. Diluted Conc.	uCi/ml	1.98E-06	2.10E-06	1.77E-06	4.27E-06	2.35E-06
Tritium						
1. Total Release	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
2. Avg. Diluted Conc.	uCi/ml	3.25E-01	1.97E-01	4.24E-01	2.13E-01	3.04E-01
Dissolved and Entrained Gases						
1. Total Release	Ci	8.45E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
2. Avg. Diluted Conc.	uCi/ml	7.58E-06	7.31E-07	2.29E-07	5.38E-07	2.44E-06
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	1.11E+06	7.40E+05	1.20E+06	9.50E+05	4.00E+06
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A - Circulating Water Blowdown
 LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium						
1. Total Release	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02
2. Avg. Diluted Conc.	uCi/ml	3.54E-05	1.53E-05	1.70E-05	1.46E-05	2.03E-05
Dissolved and Entrained Gases						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	3.24E+09	3.43E+09	4.04E+09	3.26E+09	1.40E+10
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2B
 LIQUID EFFLUENTS - CONTINUOUS MODE
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
** No Nuclide Activities **						
Tritium						
H-3	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02
Totals for Period...	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02
Dissolved and Entrained Gases						
** No Nuclide Activities **						
Gross Alpha Radioactivity						
** No Nuclide Activities **						

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2B
 LIQUID EFFLUENTS - BATCH MODE
 Reg Guide 1.21 - Unit 1 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AG-110M	Ci	2.43E-06	0.00E+00	1.63E-06	6.00E-06	1.01E-05
CO-57	Ci	4.95E-06	0.00E+00	1.81E-06	1.21E-05	1.89E-05
CO-58	Ci	1.06E-03	1.35E-03	8.30E-04	3.35E-03	6.60E-03
CO-60	Ci	5.00E-04	8.30E-05	6.30E-04	3.82E-04	1.60E-03
CS-134	Ci	0.00E+00	6.45E-06	0.00E+00	0.00E+00	6.45E-06
FE-59	Ci	0.00E+00	1.02E-05	0.00E+00	1.01E-05	2.03E-05
I-131	Ci	2.74E-05	2.42E-06	0.00E+00	0.00E+00	2.98E-05
I-133	Ci	4.12E-05	0.00E+00	0.00E+00	0.00E+00	4.12E-05
MN-54	Ci	2.62E-05	0.00E+00	3.82E-05	7.50E-05	1.40E-04
NB-95	Ci	0.00E+00	2.97E-06	0.00E+00	0.00E+00	2.97E-06
SB-125	Ci	3.24E-05	5.00E-05	8.90E-05	3.09E-05	2.02E-04
SR-85	Ci	0.00E+00	2.07E-06	0.00E+00	2.18E-06	4.24E-06
TE-123M	Ci	0.00E+00	3.89E-06	1.40E-05	0.00E+00	1.79E-05
TE-125M	Ci	5.10E-04	0.00E+00	1.95E-04	0.00E+00	7.05E-04
Totals for Period...	Ci	2.20E-03	1.51E-03	1.80E-03	3.87E-03	9.40E-01
Tritium						
H-3	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
Totals for Period...	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
Dissolved and Entrained Gases						
KR-85	Ci	0.00E+00	4.71E-04	0.00E+00	4.98E-04	9.70E-04
KR-87	Ci	6.50E-06	0.00E+00	0.00E+00	0.00E+00	6.50E-06
XE-133	Ci	7.65E-03	6.85E-05	2.73E-04	1.36E-05	8.05E-03
XE-133M	Ci	1.36E-04	0.00E+00	0.00E+00	0.00E+00	1.36E-04
XE-135	Ci	6.10E-04	0.00E+00	0.00E+00	0.00E+00	6.10E-04
Totals for Period...	Ci	8.40E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A
 LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES
 Reg Guide 1.21 - Unit 2 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	2.21E-03	1.55E-03	2.12E-03	4.06E-03	9.35E-03
2. Avg. Diluted Conc.	uCi/ml	6.81E-10	4.52E-10	5.24E-10	1.25E-09	6.68E-10
Tritium						
1. Total Release	Ci	4.77E+02	1.98E+02	5.75E+02	2.50E+02	1.50E+03
2. Avg. Diluted Conc.	uCi/ml	1.47E-04	5.77E-05	1.42E-04	7.67E-05	1.07E-04
Dissolved and Entrained Gases						
1. Total Release	Ci	8.45E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
2. Avg. Diluted Conc.	uCi/ml	2.61E-09	1.57E-10	6.75E-11	1.57E-10	6.99E-10
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	3.24E+09	3.43E+09	4.04E+09	3.26E+09	1.40E+10
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A - Rock River
 LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
 Reg Guide 1.21 - Unit 2 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	2.20E-03	1.55E-03	2.12E-03	4.06E-03	9.35E-03
2. Avg. Diluted Conc.	uCi/ml	1.98E-06	2.10E-06	1.77E-06	4.27E-06	2.35E-06
Tritium						
1. Total Release	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
2. Avg. Diluted Conc.	uCi/ml	3.25E-01	1.97E-01	4.24E-01	2.13E-01	3.04E-01
Dissolved and Entrained Gases						
1. Total Release	Ci	8.45E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
2. Avg. Diluted Conc.	uCi/ml	7.58E-06	7.31E-07	2.29E-07	5.38E-07	2.44E-06
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	1.11E+06	7.40E+05	1.20E+06	9.50E+05	4.00E+06
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2A - Circulating Water Blowdown
 LIQUID EFFLUENTS - SUMMATION BY RELEASE POINT
 Reg Guide 1.21 - Unit 2 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Tritium						
1. Total Release	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02
2. Avg. Diluted Conc.	uCi/ml	3.54E-05	1.53E-05	1.70E-05	1.46E-05	2.03E-05
Dissolved and Entrained Gases						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2. Avg. Diluted Conc.	uCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Gross Alpha Radioactivity						
1. Total Release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Volume of liquid waste	liters	3.24E+09	3.43E+09	4.04E+09	3.26E+09	1.40E+10
Volume of dil. water	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EFFLUENT AND WASTE DISPOSAL REPORT
 TABLE 2B
 LIQUID EFFLUENTS - CONTINUOUS MODE
 Reg Guide 1.21 - Unit 2 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR

Fission and Activation Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Tritium						
H-3	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02

Totals for Period...	Ci	1.15E+02	5.25E+01	6.90E+01	4.75E+01	2.84E+02

Dissolved and Entrained Gases						
** No Nuclide Activities **		.....	.....	.....	.....	.....
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

EFFLUENT AND WASTE DISPOSAL REPORT

TABLE 2B

LIQUID EFFLUENTS - BATCH MODE

Reg Guide 1.21 - Unit 2 2008

REPORT FOR 2008	Units	QTR 1	QTR 2	QTR 3	QTR 4	YEAR
Fission and Activation Gases						
AG-110M	Ci	2.43E-06	0.00E+00	1.63E-06	6.00E-06	1.01E-05
CO-57	Ci	4.95E-06	0.00E+00	1.81E-06	1.21E-05	1.89E-05
CO-58	Ci	1.06E-03	1.35E-03	8.30E-04	3.35E-03	6.60E-03
CO-60	Ci	5.00E-04	8.30E-05	6.30E-04	3.82E-04	1.60E-03
CS-134	Ci	0.00E+00	6.45E-06	0.00E+00	0.00E+00	6.45E-06
FE-59	Ci	0.00E+00	1.02E-05	0.00E+00	1.01E-05	2.03E-05
I-131	Ci	2.74E-05	2.42E-06	0.00E+00	0.00E+00	2.98E-05
I-133	Ci	4.12E-05	0.00E+00	0.00E+00	0.00E+00	4.12E-05
MN-54	Ci	2.62E-05	0.00E+00	3.82E-05	7.50E-05	1.40E-04
NB-95	Ci	0.00E+00	2.97E-06	0.00E+00	0.00E+00	2.97E-06
SB-125	Ci	3.24E-05	5.00E-05	8.90E-05	3.09E-05	2.02E-04
SR-85	Ci	0.00E+00	2.07E-06	0.00E+00	2.18E-06	4.24E-06
TE-123M	Ci	0.00E+00	3.89E-06	1.40E-05	0.00E+00	1.79E-05
TE-125M	Ci	5.10E-04	0.00E+00	1.95E-04	0.00E+00	7.05E-04
Totals for Period...	Ci	2.20E-03	1.51E-03	1.80E-03	3.87E-03	9.40E-01
Tritium						
H-3	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
Totals for Period...	Ci	3.62E+02	1.45E+02	5.05E+02	2.03E+02	1.22E+03
Dissolved and Entrained Gases						
KR-85	Ci	0.00E+00	4.71E-04	0.00E+00	4.98E-04	9.70E-04
KR-87	Ci	6.50E-06	0.00E+00	0.00E+00	0.00E+00	6.50E-06
XE-133	Ci	7.65E-03	6.85E-05	2.73E-04	1.36E-05	8.05E-03
XE-133M	Ci	1.36E-04	0.00E+00	0.00E+00	0.00E+00	1.36E-04
XE-135	Ci	6.10E-04	0.00E+00	0.00E+00	0.00E+00	6.10E-04
Totals for Period...	Ci	8.40E-03	5.40E-04	2.73E-04	5.10E-04	9.75E-03
Gross Alpha Radioactivity						
** No Nuclide Activities **		.....	.....	.....	.....	.....

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 1

=== RELEASE DATA =====
 Total Release Duration (minutes)..... 5.614E+05
 Total Release Volume (cf)..... 6.203E+10
 Average Release Flowrate (cfm)..... 1.105E+05

 Average Period Flowrate (cfm)..... 1.177E+05

=== NUCLIDE DATA =====

Nuclide	uCi	Average uCi/cc	EC Ratio	EC
AR-41	1.08E+04	6.14E-12	6.14E-04	1.00E-08
KR-85M	3.03E+01	1.73E-14	1.73E-07	1.00E-07
KR-88	2.18E+07	1.24E-08	1.38E+00	9.00E-09
XE-131M	2.09E+04	1.19E-11	5.95E-06	2.00E-06
XE-133M	5.31E+02	3.02E-13	5.04E-07	6.00E-07
XE-133	1.42E+06	8.07E-10	1.61E-03	5.00E-07
XE-135	2.52E+03	1.43E-12	2.05E-05	7.00E-08
XE-138	2.73E+01	1.56E-14	7.78E-07	2.00E-08
F&AG	2.33E+07	1.33E-08	1.38E+00	
I-131	2.15E+01	1.22E-14	6.11E-05	2.00E-10
I-132	1.07E+02	6.07E-14	3.04E-06	2.00E-08
I-133	9.78E+01	5.57E-14	5.57E-05	1.00E-09
Iodine	2.26E+02	1.29E-13	1.20E-04	
H-3	2.87E+07	1.63E-08	1.63E-01	1.00E-07
H-3	2.87E+07	1.63E-08	1.63E-01	
CO-58	2.40E+00	1.37E-15	1.37E-06	1.00E-09
P>=8	2.40E+00	1.37E-15	1.37E-06	
Total	5.20E+07	2.96E-08	1.55E+00	

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 1

=== MAXIMUM I&P DOSE FOR PERIOD =====

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	INFANT	THYROID	8.02E-03	31-day Quarter Annual	2.25E-01 5.63E+00 1.13E+01	3.57E+00 1.43E-01 7.13E-02
T.Spec	Any Organ	INFANT	THYROID	8.02E-03	31-day Quarter Annual	3.00E-01 7.50E+00 1.50E+01	2.67E+00 1.07E-01 5.35E-02

Receptor.....: 5 Composite Crit. Receptor - IP
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Critical Pathway.....: 3 Grs/Goat/Milk (GMILK)
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	2.30E+01
CO-58	1.36E-03
I-131	7.39E+01
I-132	3.41E-03
I-133	3.14E+00

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 1

=== PERIOD ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ===								
Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	0.00E+00	1.97E-07
AINHL	2.15E-08	2.94E-04	3.01E-04	2.94E-04	2.94E-04	2.94E-04	0.00E+00	2.94E-04
AVEG	2.31E-07	5.27E-04	6.30E-04	5.28E-04	5.27E-04	5.27E-04	0.00E+00	5.27E-04
AGMILK	9.63E-07	3.64E-04	8.03E-04	3.65E-04	3.63E-04	3.63E-04	0.00E+00	3.64E-04
ACMEAT	2.75E-08	7.58E-05	8.86E-05	7.58E-05	7.58E-05	7.59E-05	0.00E+00	7.58E-05
ACMILK	8.02E-07	1.79E-04	5.45E-04	1.80E-04	1.78E-04	1.78E-04	0.00E+00	1.79E-04
TGPD	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	0.00E+00	1.97E-07
TINHL	3.02E-08	2.96E-04	3.05E-04	2.96E-04	2.96E-04	2.96E-04	0.00E+00	2.96E-04
TVEG	2.19E-07	6.03E-04	6.89E-04	6.04E-04	6.03E-04	6.03E-04	0.00E+00	6.03E-04
TGMILK	1.75E-06	4.75E-04	1.17E-03	4.76E-04	4.72E-04	4.73E-04	0.00E+00	4.74E-04
TCMEAT	2.28E-08	4.52E-05	5.45E-05	4.52E-05	4.51E-05	4.52E-05	0.00E+00	4.52E-05
TCMILK	1.46E-06	2.34E-04	8.12E-04	2.35E-04	2.32E-04	2.32E-04	0.00E+00	2.33E-04
CGPD	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	0.00E+00	1.97E-07
CINHL	4.10E-08	2.62E-04	2.72E-04	2.62E-04	2.62E-04	2.62E-04	0.00E+00	2.62E-04
CVEG	4.07E-07	9.37E-04	1.07E-03	9.37E-04	9.36E-04	9.36E-04	0.00E+00	9.37E-04
CGMILK	4.24E-06	7.53E-04	2.13E-03	7.55E-04	7.48E-04	7.49E-04	0.00E+00	7.51E-04
CCMEAT	4.23E-08	5.48E-05	6.88E-05	5.48E-05	5.47E-05	5.47E-05	0.00E+00	5.47E-05
CCMILK	3.53E-06	3.70E-04	1.52E-03	3.73E-04	3.67E-04	3.67E-04	0.00E+00	3.69E-04
IGPD	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	1.97E-07	0.00E+00	1.97E-07
IINHL	3.26E-08	1.51E-04	1.60E-04	1.51E-04	1.51E-04	1.51E-04	0.00E+00	1.51E-04
IGMILK	8.86E-06	1.15E-03	4.50E-03	1.15E-03	1.14E-03	1.14E-03	0.00E+00	1.14E-03
ICMILK	7.38E-06	5.65E-04	3.36E-03	5.67E-04	5.56E-04	5.57E-04	0.00E+00	5.60E-04
----- TOTALS -----								
ADULT	2.24E-06	1.44E-03	2.37E-03	1.44E-03	1.44E-03	1.44E-03	0.00E+00	1.44E-03
TEEN	3.67E-06	1.65E-03	3.03E-03	1.66E-03	1.65E-03	1.65E-03	0.00E+00	1.65E-03
CHILD	8.46E-06	2.38E-03	5.06E-03	2.38E-03	2.37E-03	2.37E-03	0.00E+00	2.37E-03
INFANT	1.65E-05	1.86E-03	8.02E-03	1.87E-03	1.84E-03	1.84E-03	0.00E+00	1.85E-03

=== AGE GROUP / PATHWAY DESCRIPTIONS ===		
Abbreviation	Age Group	Pathway
AGPD	ADULT	Ground Plane Deposition (GPD)
AINHL	ADULT	Inhalation (INHL)
AVEG	ADULT	Vegetation (VEG)
AGMILK	ADULT	Grs/Goat/Milk (GMILK)
ACMEAT	ADULT	Grs/Cow/Meat (CMEAT)
ACMILK	ADULT	Grs/Cow/Milk (CMILK)
TGPD	TEEN	Ground Plane Deposition (GPD)
TINHL	TEEN	Inhalation (INHL)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
 (Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 1

=== AGE GROUP / PATHWAY DESCRIPTIONS =====		
Abbreviation	Age Group	Pathway

TVEG	TEEN	Vegetation (VEG)
TGMILK	TEEN	Grs/Goat/Milk (GMILK)
TCMEAT	TEEN	Grs/Cow/Meat (CMEAT)
TCMILK	TEEN	Grs/Cow/Milk (CMILK)
CGPD	CHILD	Ground Plane Deposition (GPD)
CINHL	CHILD	Inhalation (INHL)
CVEG	CHILD	Vegetation (VEG)
CGMILK	CHILD	Grs/Goat/Milk (GMILK)
CCMEAT	CHILD	Grs/Cow/Meat (CMEAT)
CCMILK	CHILD	Grs/Cow/Milk (CMILK)
IGPD	INFANT	Ground Plane Deposition (GPD)
IINHL	INFANT	Inhalation (INHL)
IGMILK	INFANT	Grs/Goat/Milk (GMILK)
ICMILK	INFANT	Grs/Cow/Milk (CMILK)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 1

=== MAXIMUM NG DOSE FOR PERIOD =====

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
Admin	Gamma	1.93E-02	31-day	1.50E-01	1.29E+01
			Quarter	3.75E+00	5.14E-01
			Annual	7.50E+00	2.57E-01
Admin	Beta	9.34E-04	31-day	3.00E-01	3.11E-01
			Quarter	7.50E+00	1.25E-02
			Annual	1.50E+01	6.23E-03
T.Spec	Gamma	1.93E-02	31-day	2.00E-01	9.64E+00
			Quarter	5.00E+00	3.86E-01
			Annual	1.00E+01	1.93E-01

Receptor.....: 4 Composite Crit. Receptor - NG
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	3.02E-02
KR-85M	1.12E-05
KR-88	9.98E+01
XE-131M	9.81E-04
XE-133M	5.22E-05
XE-133	1.51E-01
XE-135	1.46E-03
XE-138	7.57E-05

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
T.Spec	Beta	9.34E-04	31-day	4.00E-01	2.33E-01
			Quarter	1.00E+01	9.34E-03
			Annual	2.00E+01	4.67E-03

Receptor.....: 4 Composite Crit. Receptor - NG
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	5.40E-02

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 1

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
-----	-----
KR-85M	9.12E-05
KR-88	9.76E+01
XE-131M	3.54E-02
XE-133M	1.20E-03
XE-133	2.27E+00
XE-135	9.46E-03
XE-138	1.98E-04

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 2

=== RELEASE DATA =====
 Total Release Duration (minutes)..... 5.619E+05
 Total Release Volume (cf)..... 7.809E+10
 Average Release Flowrate (cfm)..... 1.390E+05
 Average Period Flowrate (cfm)..... 1.482E+05

=== NUCLIDE DATA =====

Nuclide	uCi	Average uCi/cc	EC Ratio	EC
AR-41	7.86E+01	3.56E-14	3.56E-06	1.00E-08
KR-85M	5.78E+06	2.62E-09	2.62E-02	1.00E-07
XE-131M	3.32E+02	1.50E-13	7.50E-08	2.00E-06
XE-133M	5.31E+02	2.40E-13	4.00E-07	6.00E-07
XE-133	2.08E+06	9.41E-10	1.88E-03	5.00E-07
XE-135	2.12E+03	9.57E-13	1.37E-05	7.00E-08
XE-138	2.73E+01	1.24E-14	6.18E-07	2.00E-08
F&AG	7.87E+06	3.56E-09	2.81E-02	
I-131	9.93E+01	4.49E-14	2.25E-04	2.00E-10
I-132	1.43E+03	6.45E-13	3.23E-05	2.00E-08
I-133	3.58E+01	1.62E-14	1.62E-05	1.00E-09
Iodine	1.56E+03	7.06E-13	2.73E-04	
H-3	5.38E+07	2.43E-08	2.43E-01	1.00E-07
H-3	5.38E+07	2.43E-08	2.43E-01	
HG-203	1.07E+00	4.84E-16	4.84E-07	1.00E-09
CO-58	3.88E+00	1.75E-15	1.75E-06	1.00E-09
P>=8	4.95E+00	2.24E-15	2.24E-06	
Total	6.16E+07	2.79E-08	2.71E-01	

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 2

=== MAXIMUM I&P DOSE FOR PERIOD =====

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	INFANT	THYROID	3.10E-02	31-day Quarter Annual	2.25E-01 5.63E+00 1.13E+01	1.38E+01 5.51E-01 2.76E-01
T.Spec	Any Organ	INFANT	THYROID	3.10E-02	31-day Quarter Annual	3.00E-01 7.50E+00 1.50E+01	1.03E+01 4.13E-01 2.07E-01

Receptor.....: 5 Composite Crit. Receptor - IP
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Critical Pathway.....: 3 Grs/Goat/Milk (GMILK)
 Major Contributors.....: 0.0 % or greater to total
 Nuclide Percentage

Nuclide	Percentage
H-3	1.11E+01
CO-58	5.67E-04
I-131	8.85E+01
I-132	1.18E-02
I-133	2.97E-01

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 2

=== PERIOD ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ===								
Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
AGPD	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	0.00E+00	6.02E-07
AINHL	6.37E-08	5.51E-04	5.71E-04	5.51E-04	5.51E-04	5.51E-04	0.00E+00	5.51E-04
AVEG	9.65E-07	9.89E-04	1.44E-03	9.90E-04	9.88E-04	9.89E-04	0.00E+00	9.89E-04
AGMILK	4.23E-06	6.86E-04	2.66E-03	6.91E-04	6.80E-04	6.82E-04	0.00E+00	6.84E-04
ACMEAT	1.27E-07	1.42E-04	2.02E-04	1.42E-04	1.42E-04	1.42E-04	0.00E+00	1.42E-04
ACMILK	3.52E-06	3.39E-04	1.98E-03	3.42E-04	3.34E-04	3.35E-04	0.00E+00	3.36E-04
TGPD	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	0.00E+00	6.02E-07
TINHL	8.88E-08	5.56E-04	5.81E-04	5.56E-04	5.56E-04	5.56E-04	0.00E+00	5.56E-04
TVEG	9.18E-07	1.13E-03	1.50E-03	1.13E-03	1.13E-03	1.13E-03	0.00E+00	1.13E-03
TGMILK	7.67E-06	8.96E-04	4.01E-03	9.04E-04	8.85E-04	8.87E-04	0.00E+00	8.91E-04
TCMEAT	1.06E-07	8.48E-05	1.28E-04	8.49E-05	8.46E-05	8.47E-05	0.00E+00	8.47E-05
TCMILK	6.39E-06	4.43E-04	3.04E-03	4.49E-04	4.34E-04	4.36E-04	0.00E+00	4.39E-04
CGPD	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	0.00E+00	6.02E-07
CINHL	1.20E-07	4.91E-04	5.19E-04	4.91E-04	4.91E-04	4.91E-04	0.00E+00	4.91E-04
CVEG	1.71E-06	1.76E-03	2.32E-03	1.76E-03	1.76E-03	1.76E-03	0.00E+00	1.76E-03
CGMILK	1.86E-05	1.42E-03	7.58E-03	1.43E-03	1.40E-03	1.40E-03	0.00E+00	1.41E-03
CCMEAT	1.96E-07	1.03E-04	1.68E-04	1.03E-04	1.03E-04	1.03E-04	0.00E+00	1.03E-04
CCMILK	1.55E-05	7.03E-04	5.84E-03	7.13E-04	6.88E-04	6.89E-04	0.00E+00	6.97E-04
IGPD	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	6.02E-07	0.00E+00	6.02E-07
IINHL	9.49E-08	2.82E-04	3.08E-04	2.82E-04	2.82E-04	2.82E-04	0.00E+00	2.82E-04
IGMILK	3.88E-05	2.17E-03	1.71E-02	2.18E-03	2.13E-03	2.13E-03	0.00E+00	2.15E-03
ICMILK	3.24E-05	1.08E-03	1.36E-02	1.09E-03	1.04E-03	1.04E-03	0.00E+00	1.06E-03
----- TOTALS -----								
ADULT	9.50E-06	2.71E-03	6.85E-03	2.72E-03	2.70E-03	2.70E-03	0.00E+00	2.70E-03
TEEN	1.58E-05	3.11E-03	9.26E-03	3.13E-03	3.09E-03	3.10E-03	0.00E+00	3.10E-03
CHILD	3.67E-05	4.48E-03	1.64E-02	4.50E-03	4.44E-03	4.44E-03	0.00E+00	4.46E-03
INFANT	7.19E-05	3.54E-03	3.10E-02	3.55E-03	3.45E-03	3.46E-03	0.00E+00	3.49E-03

=== AGE GROUP / PATHWAY DESCRIPTIONS ===		
Abbreviation	Age Group	Pathway
AGPD	ADULT	Ground Plane Deposition (GPD)
AINHL	ADULT	Inhalation (INHL)
AVEG	ADULT	Vegetation (VEG)
AGMILK	ADULT	Grs/Goat/Milk (GMILK)
ACMEAT	ADULT	Grs/Cow/Meat (CMEAT)
ACMILK	ADULT	Grs/Cow/Milk (CMILK)
TGPD	TEEN	Ground Plane Deposition (GPD)
TINHL	TEEN	Inhalation (INHL)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
 (Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 2

=== AGE GROUP / PATHWAY DESCRIPTIONS =====		
Abbreviation	Age Group	Pathway
-----	-----	-----
TVEG	TEEN	Vegetation (VEG)
TGMILK	TEEN	Grs/Goat/Milk (GMILK)
TCMEAT	TEEN	Grs/Cow/Meat (CMEAT)
TCMILK	TEEN	Grs/Cow/Milk (CMILK)
CGPD	CHILD	Ground Plane Deposition (GPD)
CINHL	CHILD	Inhalation (INHL)
CVEG	CHILD	Vegetation (VEG)
CGMILK	CHILD	Grs/Goat/Milk (GMILK)
CCMEAT	CHILD	Grs/Cow/Meat (CMEAT)
CCMILK	CHILD	Grs/Cow/Milk (CMILK)
IGPD	INFANT	Ground Plane Deposition (GPD)
IINHL	INFANT	Inhalation (INHL)
IGMILK	INFANT	Grs/Goat/Milk (GMILK)
ICMILK	INFANT	Grs/Cow/Milk (CMILK)

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
 Period Start Date....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (min): 5.270E+05
 Coefficient Type.....: Historical
 Unit.....: 2

=== MAXIMUM NG DOSE FOR PERIOD =====

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
Admin	Gamma	4.56E-04	31-day	1.50E-01	3.04E-01
			Quarter	3.75E+00	1.21E-02
			Annual	7.50E+00	6.07E-03
Admin	Beta	1.94E-04	31-day	3.00E-01	6.46E-02
			Quarter	7.50E+00	2.58E-03
			Annual	1.50E+01	1.29E-03
T.Spec	Gamma	4.56E-04	31-day	2.00E-01	2.28E-01
			Quarter	5.00E+00	9.11E-03
			Annual	1.00E+01	4.56E-03

Receptor.....: 4 Composite Crit. Receptor - NG
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	9.31E-03
KR-85M	9.06E+01
XE-131M	6.59E-04
XE-133M	2.21E-03
XE-133	9.35E+00
XE-135	5.17E-02
XE-138	3.20E-03

Limit Type	Dose Type	Dose (mrad)	Limit Period	Limit (mrad)	Percent of Limit
T.Spec	Beta	1.94E-04	31-day	4.00E-01	4.84E-02
			Quarter	1.00E+01	1.94E-03
			Annual	2.00E+01	9.68E-04

Receptor.....: 4 Composite Crit. Receptor - NG
 Distance (meters).....: 0.0
 Compass Point.....: 0.0
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
AR-41	1.90E-03
KR-85M	8.39E+01

GASEOUS RELEASE AND DOSE SUMMARY REPORT - BY UNIT
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Release Types
Period Start Date....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (min): 5.270E+05
Coefficient Type.....: Historical
Unit.....: 2

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
-----	-----
XE-131M	2.71E-03
XE-133M	5.78E-03
XE-133	1.61E+01
XE-135	3.83E-02
XE-138	9.55E-04

LIQUID RELEASE AND DOSE SUMMARY REPORT
----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (mins): 5.270E+05
Unit.....: 1

=== MULTIPLE RELEASE POINT MESSAGE =====
Undiluted and Diluted Flowrate(s) and Concentration(s) cannot be combined.

=== RELEASE DATA =====
Total Release Duration (minutes)..... 5.426E+05
Total Undiluted Volume Released (gallons)..... NA
Average Undiluted Flowrate (gpm)..... NA

Total Dilution Volume (gallons)..... NA
Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA =====

Nuclide	uCi
-----	-----
CO-57	1.88E+01
SB-125	2.02E+02
TE-123M	1.78E+01
MN-54	1.39E+02
FE-59	2.03E+01
CO-58	6.58E+03
CO-60	1.60E+03
NB-95	2.97E+00
AG-110M	1.01E+01
TE-125M	7.04E+02
I-131	2.97E+01
I-133	4.11E+01
CS-134	6.44E+00
-----	-----
Gamma	9.37E+03
KR-85	9.69E+02
KR-87	6.49E+00
XE-133M	1.36E+02
XE-133	8.03E+03
XE-135	6.12E+02
-----	-----
D&EG	9.75E+03
SR-85	4.24E+00
H-3	1.50E+09
-----	-----
Beta	1.50E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (mins): 5.270E+05

=== NUCLIDE DATA =====

Nuclide	uCi
-----	-----
-----	-----
Total	1.50E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 1
 Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) =====

Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	7.06E-07	2.04E-02	2.04E-02	2.04E-02	2.04E-02	2.04E-02	0.00E+00	2.04E-02
AFWFSp	1.24E-03	5.50E-02	5.38E-02	5.57E-02	5.29E-02	6.38E-02	0.00E+00	5.48E-02
TPWtr	6.97E-07	1.44E-02	1.44E-02	1.43E-02	1.43E-02	1.44E-02	0.00E+00	1.44E-02
TFWFSp	1.31E-03	4.28E-02	4.15E-02	4.11E-02	4.07E-02	4.84E-02	0.00E+00	4.21E-02
CPWtr	2.05E-06	2.76E-02	2.76E-02	2.76E-02	2.76E-02	2.76E-02	0.00E+00	2.76E-02
CFWFSp	1.64E-03	3.55E-02	3.47E-02	3.40E-02	3.37E-02	3.64E-02	0.00E+00	3.48E-02
IPWtr	2.63E-06	2.71E-02	2.71E-02	2.71E-02	2.71E-02	2.71E-02	0.00E+00	2.71E-02

----- TOTALS -----

ADULT	1.25E-03	7.54E-02	7.42E-02	7.61E-02	7.33E-02	8.42E-02	0.00E+00	7.52E-02
TEEN	1.31E-03	5.72E-02	5.59E-02	5.54E-02	5.50E-02	6.28E-02	0.00E+00	5.65E-02
CHILD	1.64E-03	6.31E-02	6.23E-02	6.16E-02	6.13E-02	6.40E-02	0.00E+00	6.23E-02
INFANT	2.63E-06	2.71E-02	2.71E-02	2.71E-02	2.71E-02	2.71E-02	0.00E+00	2.71E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS =====

Abbreviation	Age Group	Pathway
APWtr	ADULT	Potable Water (PWtr)
AFWFSp	ADULT	Fresh Water Fish - Sport (FFSP)
TPWtr	TEEN	Potable Water (PWtr)
TFWFSp	TEEN	Fresh Water Fish - Sport (FFSP)
CPWtr	CHILD	Potable Water (PWtr)
CFWFSp	CHILD	Fresh Water Fish - Sport (FFSP)
IPWtr	INFANT	Potable Water (PWtr)

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 1
 Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) =====								
Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB

ADULT								
H-3	0.00E+00	7.31E-02	7.31E-02	7.31E-02	7.31E-02	7.31E-02	0.00E+00	7.31E-02
MN-54	0.00E+00	2.02E-04	0.00E+00	6.02E-05	0.00E+00	6.20E-04	0.00E+00	3.86E-05
FE-59	7.02E-06	1.65E-05	0.00E+00	0.00E+00	4.61E-06	5.50E-05	0.00E+00	6.32E-06
CO-58	0.00E+00	1.96E-04	0.00E+00	0.00E+00	0.00E+00	3.97E-03	0.00E+00	4.39E-04
CO-60	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	2.57E-03	0.00E+00	3.01E-04
NB-95	4.40E-07	2.45E-07	0.00E+00	2.42E-07	0.00E+00	1.49E-03	0.00E+00	1.32E-07
AG-110M	3.38E-09	3.13E-09	0.00E+00	6.15E-09	0.00E+00	1.28E-06	0.00E+00	1.86E-09
TE-125M	6.00E-04	2.17E-04	1.80E-04	2.44E-03	0.00E+00	2.40E-03	0.00E+00	8.03E-05
I-131	1.51E-06	2.16E-06	7.07E-04	3.70E-06	0.00E+00	5.69E-07	0.00E+00	1.24E-06
I-133	7.11E-07	1.24E-06	1.82E-04	2.16E-06	0.00E+00	1.11E-06	0.00E+00	3.77E-07
CS-134	6.36E-04	1.51E-03	0.00E+00	4.90E-04	1.63E-04	2.65E-05	0.00E+00	1.24E-03
TEEN								
H-3	0.00E+00	5.49E-02	5.49E-02	5.49E-02	5.49E-02	5.49E-02	0.00E+00	5.49E-02
MN-54	0.00E+00	1.99E-04	0.00E+00	5.94E-05	0.00E+00	4.08E-04	0.00E+00	3.95E-05
FE-59	7.23E-06	1.69E-05	0.00E+00	0.00E+00	5.32E-06	3.99E-05	0.00E+00	6.52E-06
CO-58	0.00E+00	1.95E-04	0.00E+00	0.00E+00	0.00E+00	2.68E-03	0.00E+00	4.49E-04
CO-60	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	1.78E-03	0.00E+00	3.08E-04
NB-95	4.43E-07	2.46E-07	0.00E+00	2.38E-07	0.00E+00	1.05E-03	0.00E+00	1.35E-07
AG-110M	3.26E-09	3.09E-09	0.00E+00	5.89E-09	0.00E+00	8.68E-07	0.00E+00	1.88E-09
TE-125M	6.53E-04	2.35E-04	1.82E-04	0.00E+00	0.00E+00	1.93E-03	0.00E+00	8.73E-05
I-131	1.61E-06	2.26E-06	6.59E-04	3.89E-06	0.00E+00	4.46E-07	0.00E+00	1.21E-06
I-133	7.66E-07	1.30E-06	1.81E-04	2.28E-06	0.00E+00	9.83E-07	0.00E+00	3.96E-07
CS-134	6.52E-04	1.53E-03	0.00E+00	4.88E-04	1.86E-04	1.91E-05	0.00E+00	7.12E-04
CHILD								
H-3	0.00E+00	6.11E-02	6.11E-02	6.11E-02	6.11E-02	6.11E-02	0.00E+00	6.11E-02
MN-54	0.00E+00	1.56E-04	0.00E+00	4.37E-05	0.00E+00	1.31E-04	0.00E+00	4.15E-05
FE-59	8.80E-06	1.42E-05	0.00E+00	0.00E+00	4.13E-06	1.48E-05	0.00E+00	7.09E-06
CO-58	0.00E+00	1.57E-04	0.00E+00	0.00E+00	0.00E+00	9.14E-04	0.00E+00	4.80E-04
CO-60	0.00E+00	1.12E-04	0.00E+00	0.00E+00	0.00E+00	6.19E-04	0.00E+00	3.30E-04
NB-95	5.23E-07	2.04E-07	0.00E+00	1.91E-07	0.00E+00	3.77E-04	0.00E+00	1.46E-07
AG-110M	4.30E-09	2.90E-09	0.00E+00	5.40E-09	0.00E+00	3.45E-07	0.00E+00	2.32E-09
TE-125M	8.39E-04	2.27E-04	2.36E-04	0.00E+00	0.00E+00	8.10E-04	0.00E+00	1.12E-04
I-131	2.10E-06	2.11E-06	6.98E-04	3.47E-06	0.00E+00	1.88E-07	0.00E+00	1.20E-06
I-133	9.99E-07	1.24E-06	2.30E-04	2.06E-06	0.00E+00	4.98E-07	0.00E+00	4.68E-07
CS-134	7.86E-04	1.29E-03	0.00E+00	4.00E-04	1.43E-04	6.96E-06	0.00E+00	2.72E-04

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) =====

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
INFANT								
H-3	0.00E+00	2.70E-02	2.70E-02	2.70E-02	2.70E-02	2.70E-02	0.00E+00	2.70E-02
MN-54	0.00E+00	3.46E-07	0.00E+00	7.67E-08	0.00E+00	1.27E-07	0.00E+00	7.84E-08
FE-59	7.80E-08	1.36E-07	0.00E+00	0.00E+00	4.03E-08	6.51E-08	0.00E+00	5.37E-08
CO-58	0.00E+00	2.95E-06	0.00E+00	0.00E+00	0.00E+00	7.36E-06	0.00E+00	7.37E-06
CO-60	0.00E+00	2.15E-06	0.00E+00	0.00E+00	0.00E+00	5.12E-06	0.00E+00	5.08E-06
NB-95	1.56E-11	6.41E-12	0.00E+00	4.60E-12	0.00E+00	5.41E-09	0.00E+00	3.71E-12
AG-110M	1.25E-09	9.12E-10	0.00E+00	1.30E-09	0.00E+00	4.73E-08	0.00E+00	6.03E-10
TE-125M	2.05E-06	6.84E-07	6.89E-07	0.00E+00	0.00E+00	9.75E-07	0.00E+00	2.77E-07
I-131	1.33E-07	1.57E-07	5.16E-05	1.83E-07	0.00E+00	5.60E-09	0.00E+00	6.90E-08
I-133	6.41E-08	9.34E-08	1.70E-05	1.10E-07	0.00E+00	1.58E-08	0.00E+00	2.73E-08
CS-134	3.03E-07	5.65E-07	0.00E+00	1.45E-07	5.96E-08	1.53E-09	0.00E+00	5.70E-08

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 1
 Receptor.....: 0 Liquid Receptor

=== MAXIMUM DOSE FOR PERIOD =====

Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	ADULT	GILLI	8.42E-02	31-day	1.50E-01	5.62E+01
					Quarter	3.75E+00	2.25E+00
					Annual	7.50E+00	1.12E+00
Admin	Tot Body	ADULT	TBODY	7.52E-02	31-day	4.50E-02	1.67E+02
					Quarter	1.13E+00	6.69E+00
					Annual	2.25E+00	3.34E+00
T.Spec	Any Organ	ADULT	GILLI	8.42E-02	31-day	2.00E-01	4.21E+01
					Quarter	5.00E+00	1.68E+00
					Annual	1.00E+01	8.42E-01

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	8.68E+01
MN-54	7.36E-01
FE-59	6.53E-02
CO-58	4.71E+00
CO-60	3.05E+00
NB-95	1.76E+00
AG-110M	1.52E-03
TE-125M	2.84E+00
I-131	6.75E-04
I-133	1.32E-03
CS-134	3.14E-02

T.Spec	Tot Body	ADULT	TBODY	7.52E-02	31-day	6.00E-02	1.25E+02
					Quarter	1.50E+00	5.01E+00
					Annual	3.00E+00	2.51E+00

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.72E+01
MN-54	5.14E-02

LIQUID RELEASE AND DOSE SUMMARY REPORT
----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (mins): 5.270E+05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
-----	-----
FE-59	8.41E-03
CO-58	5.84E-01
CO-60	4.00E-01
NB-95	1.75E-04
AG-110M	2.47E-06
TE-125M	1.07E-01
I-131	1.64E-03
I-133	5.02E-04
CS-134	1.64E+00

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 2

=== MULTIPLE RELEASE POINT MESSAGE =====
 Undiluted and Diluted Flowrate(s) and Concentration(s) cannot be combined.

=== RELEASE DATA =====
 Total Release Duration (minutes)..... 5.426E+05
 Total Undiluted Volume Released (gallons)..... NA
 Average Undiluted Flowrate (gpm)..... NA

 Total Dilution Volume (gallons)..... NA
 Average Dilution Flowrate (gpm)..... NA

=== NUCLIDE DATA =====
 Nuclide uCi

 CO-57 1.88E+01
 SB-125 2.02E+02
 TE-123M 1.78E+01
 MN-54 1.39E+02
 FE-59 2.03E+01
 CO-58 6.58E+03
 CO-60 1.60E+03
 NB-95 2.97E+00
 AG-110M 1.01E+01
 TE-125M 7.04E+02
 I-131 2.97E+01
 I-133 4.11E+01
 CS-134 6.44E+00

 Gamma 9.37E+03

 KR-85 9.69E+02
 KR-87 6.49E+00
 XE-133M 1.36E+02
 XE-133 8.03E+03
 XE-135 6.12E+02

 D&EG 9.75E+03

 SR-85 4.24E+00
 H-3 1.50E+09

 Beta 1.50E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (mins): 5.270E+05

=== NUCLIDE DATA =====

Nuclide	uCi
-----	-----
-----	-----
Total	1.50E+09

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 2
 Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND PATHWAY (mrem) ===								
Age/Path	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
APWtr	7.06E-07	2.04E-02	2.04E-02	2.04E-02	2.04E-02	2.04E-02	0.00E+00	2.04E-02
AFWFSp	1.24E-03	5.50E-02	5.38E-02	5.57E-02	5.29E-02	6.38E-02	0.00E+00	5.48E-02
TPWtr	6.97E-07	1.44E-02	1.44E-02	1.43E-02	1.43E-02	1.44E-02	0.00E+00	1.44E-02
TFWFSp	1.31E-03	4.28E-02	4.15E-02	4.11E-02	4.07E-02	4.84E-02	0.00E+00	4.21E-02
CPWtr	2.05E-06	2.76E-02	2.76E-02	2.76E-02	2.76E-02	2.76E-02	0.00E+00	2.76E-02
CFWFSp	1.64E-03	3.55E-02	3.47E-02	3.40E-02	3.37E-02	3.64E-02	0.00E+00	3.48E-02
IPWtr	2.63E-06	2.71E-02	2.71E-02	2.71E-02	2.71E-02	2.71E-02	0.00E+00	2.71E-02
----- TOTALS -----								
ADULT	1.25E-03	7.54E-02	7.42E-02	7.61E-02	7.33E-02	8.42E-02	0.00E+00	7.52E-02
TEEN	1.31E-03	5.72E-02	5.59E-02	5.54E-02	5.50E-02	6.28E-02	0.00E+00	5.65E-02
CHILD	1.64E-03	6.31E-02	6.23E-02	6.16E-02	6.13E-02	6.40E-02	0.00E+00	6.23E-02
INFANT	2.63E-06	2.71E-02	2.71E-02	2.71E-02	2.71E-02	2.71E-02	0.00E+00	2.71E-02

=== AGE GROUP / PATHWAY DESCRIPTIONS ===		
Abbreviation	Age Group	Pathway
APWtr	ADULT	Potable Water (PWtr)
AFWFSp	ADULT	Fresh Water Fish - Sport (FFSP)
TPWtr	TEEN	Potable Water (PWtr)
TFWFSp	TEEN	Fresh Water Fish - Sport (FFSP)
CPWtr	CHILD	Potable Water (PWtr)
CFWFSp	CHILD	Fresh Water Fish - Sport (FFSP)
IPWtr	INFANT	Potable Water (PWtr)

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 2
 Receptor.....: 0 Liquid Receptor

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) =====

Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
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ADULT

H-3	0.00E+00	7.31E-02	7.31E-02	7.31E-02	7.31E-02	7.31E-02	0.00E+00	7.31E-02
MN-54	0.00E+00	2.02E-04	0.00E+00	6.02E-05	0.00E+00	6.20E-04	0.00E+00	3.86E-05
FE-59	7.02E-06	1.65E-05	0.00E+00	0.00E+00	4.61E-06	5.50E-05	0.00E+00	6.32E-06
CO-58	0.00E+00	1.96E-04	0.00E+00	0.00E+00	0.00E+00	3.97E-03	0.00E+00	4.39E-04
CO-60	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	2.57E-03	0.00E+00	3.01E-04
NB-95	4.40E-07	2.45E-07	0.00E+00	2.42E-07	0.00E+00	1.49E-03	0.00E+00	1.32E-07
AG-110M	3.38E-09	3.13E-09	0.00E+00	6.15E-09	0.00E+00	1.28E-06	0.00E+00	1.86E-09
TE-125M	6.00E-04	2.17E-04	1.80E-04	2.44E-03	0.00E+00	2.40E-03	0.00E+00	8.03E-05
I-131	1.51E-06	2.16E-06	7.07E-04	3.70E-06	0.00E+00	5.69E-07	0.00E+00	1.24E-06
I-133	7.11E-07	1.24E-06	1.82E-04	2.16E-06	0.00E+00	1.11E-06	0.00E+00	3.77E-07
CS-134	6.36E-04	1.51E-03	0.00E+00	4.90E-04	1.63E-04	2.65E-05	0.00E+00	1.24E-03

TEEN

H-3	0.00E+00	5.49E-02	5.49E-02	5.49E-02	5.49E-02	5.49E-02	0.00E+00	5.49E-02
MN-54	0.00E+00	1.99E-04	0.00E+00	5.94E-05	0.00E+00	4.08E-04	0.00E+00	3.95E-05
FE-59	7.23E-06	1.69E-05	0.00E+00	0.00E+00	5.32E-06	3.99E-05	0.00E+00	6.52E-06
CO-58	0.00E+00	1.95E-04	0.00E+00	0.00E+00	0.00E+00	2.68E-03	0.00E+00	4.49E-04
CO-60	0.00E+00	1.37E-04	0.00E+00	0.00E+00	0.00E+00	1.78E-03	0.00E+00	3.08E-04
NB-95	4.43E-07	2.46E-07	0.00E+00	2.38E-07	0.00E+00	1.05E-03	0.00E+00	1.35E-07
AG-110M	3.26E-09	3.09E-09	0.00E+00	5.89E-09	0.00E+00	8.68E-07	0.00E+00	1.88E-09
TE-125M	6.53E-04	2.35E-04	1.82E-04	0.00E+00	0.00E+00	1.93E-03	0.00E+00	8.73E-05
I-131	1.61E-06	2.26E-06	6.59E-04	3.89E-06	0.00E+00	4.46E-07	0.00E+00	1.21E-06
I-133	7.66E-07	1.30E-06	1.81E-04	2.28E-06	0.00E+00	9.83E-07	0.00E+00	3.96E-07
CS-134	6.52E-04	1.53E-03	0.00E+00	4.88E-04	1.86E-04	1.91E-05	0.00E+00	7.12E-04

CHILD

H-3	0.00E+00	6.11E-02	6.11E-02	6.11E-02	6.11E-02	6.11E-02	0.00E+00	6.11E-02
MN-54	0.00E+00	1.56E-04	0.00E+00	4.37E-05	0.00E+00	1.31E-04	0.00E+00	4.15E-05
FE-59	8.80E-06	1.42E-05	0.00E+00	0.00E+00	4.13E-06	1.48E-05	0.00E+00	7.09E-06
CO-58	0.00E+00	1.57E-04	0.00E+00	0.00E+00	0.00E+00	9.14E-04	0.00E+00	4.80E-04
CO-60	0.00E+00	1.12E-04	0.00E+00	0.00E+00	0.00E+00	6.19E-04	0.00E+00	3.30E-04
NB-95	5.23E-07	2.04E-07	0.00E+00	1.91E-07	0.00E+00	3.77E-04	0.00E+00	1.46E-07
AG-110M	4.30E-09	2.90E-09	0.00E+00	5.40E-09	0.00E+00	3.45E-07	0.00E+00	2.32E-09
TE-125M	8.39E-04	2.27E-04	2.36E-04	0.00E+00	0.00E+00	8.10E-04	0.00E+00	1.12E-04
I-131	2.10E-06	2.11E-06	6.98E-04	3.47E-06	0.00E+00	1.88E-07	0.00E+00	1.20E-06
I-133	9.99E-07	1.24E-06	2.30E-04	2.06E-06	0.00E+00	4.98E-07	0.00E+00	4.68E-07
CS-134	7.86E-04	1.29E-03	0.00E+00	4.00E-04	1.43E-04	6.96E-06	0.00E+00	2.72E-04

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05

=== PERMIT ORGAN DOSE BY AGE GROUP AND NUCLIDE (mrem) ===								
Agegroup	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
INFANT								
H-3	0.00E+00	2.70E-02	2.70E-02	2.70E-02	2.70E-02	2.70E-02	0.00E+00	2.70E-02
MN-54	0.00E+00	3.46E-07	0.00E+00	7.67E-08	0.00E+00	1.27E-07	0.00E+00	7.84E-08
FE-59	7.80E-08	1.36E-07	0.00E+00	0.00E+00	4.03E-08	6.51E-08	0.00E+00	5.37E-08
CO-58	0.00E+00	2.95E-06	0.00E+00	0.00E+00	0.00E+00	7.36E-06	0.00E+00	7.37E-06
CO-60	0.00E+00	2.15E-06	0.00E+00	0.00E+00	0.00E+00	5.12E-06	0.00E+00	5.08E-06
NB-95	1.56E-11	6.41E-12	0.00E+00	4.60E-12	0.00E+00	5.41E-09	0.00E+00	3.71E-12
AG-110M	1.25E-09	9.12E-10	0.00E+00	1.30E-09	0.00E+00	4.73E-08	0.00E+00	6.03E-10
TE-125M	2.05E-06	6.84E-07	6.89E-07	0.00E+00	0.00E+00	9.75E-07	0.00E+00	2.77E-07
I-131	1.33E-07	1.57E-07	5.16E-05	1.83E-07	0.00E+00	5.60E-09	0.00E+00	6.90E-08
I-133	6.41E-08	9.34E-08	1.70E-05	1.10E-07	0.00E+00	1.58E-08	0.00E+00	2.73E-08
CS-134	3.03E-07	5.65E-07	0.00E+00	1.45E-07	5.96E-08	1.53E-09	0.00E+00	5.70E-08

LIQUID RELEASE AND DOSE SUMMARY REPORT
 ----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
 Period Start Date.....: 01/01/2008 00:00
 Period End Date.....: 01/01/2009 00:00
 Period Duration (mins): 5.270E+05
 Unit.....: 2
 Receptor.....: 0 Liquid Receptor

=== MAXIMUM DOSE FOR PERIOD =====							
Limit Type	Organ Type	Age Group	Organ	Dose (mrem)	Limit Period	Limit (mrem)	Percent of Limit
Admin	Any Organ	ADULT	GILLI	8.42E-02	31-day	1.50E-01	5.62E+01
					Quarter	3.75E+00	2.25E+00
					Annual	7.50E+00	1.12E+00
Admin	Tot Body	ADULT	TBODY	7.52E-02	31-day	4.50E-02	1.67E+02
					Quarter	1.13E+00	6.69E+00
					Annual	2.25E+00	3.34E+00
T.Spec	Any Organ	ADULT	GILLI	8.42E-02	31-day	2.00E-01	4.21E+01
					Quarter	5.00E+00	1.68E+00
					Annual	1.00E+01	8.42E-01

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	8.68E+01
MN-54	7.36E-01
FE-59	6.53E-02
CO-58	4.71E+00
CO-60	3.05E+00
NB-95	1.76E+00
AG-110M	1.52E-03
TE-125M	2.84E+00
I-131	6.75E-04
I-133	1.32E-03
CS-134	3.14E-02

T.Spec	Tot Body	ADULT	TBODY	7.52E-02	31-day	6.00E-02	1.25E+02
					Quarter	1.50E+00	5.01E+00
					Annual	3.00E+00	2.51E+00

Critical Pathway.....: 1 Fresh Water Fish - Sport (FFSP)
 Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
H-3	9.72E+01
MN-54	5.14E-02

LIQUID RELEASE AND DOSE SUMMARY REPORT
----- (PERIOD BASIS - BY UNIT) -----

Release ID.....: 1 All Liquid Releases
Period Start Date.....: 01/01/2008 00:00
Period End Date.....: 01/01/2009 00:00
Period Duration (mins): 5.270E+05

Major Contributors.....: 0.0 % or greater to total

Nuclide	Percentage
FE-59	8.41E-03
CO-58	5.84E-01
CO-60	4.00E-01
NB-95	1.75E-04
AG-110M	2.47E-06
TE-125M	1.07E-01
I-131	1.64E-03
I-133	5.02E-04
CS-134	1.64E+00

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LIQUID DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 1 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	7.44E-04	3.76E-02	3.87E-02	4.01E-02	3.71E-02	4.27E-02	0.00E+00	3.75E-02
TEEN	8.10E-04	2.83E-02	2.94E-02	2.79E-02	2.78E-02	3.20E-02	0.00E+00	2.82E-02
CHILD	1.04E-03	3.14E-02	3.28E-02	3.10E-02	3.10E-02	3.26E-02	0.00E+00	3.15E-02
INFANT	2.85E-06	1.37E-02	1.38E-02	1.37E-02	1.37E-02	1.37E-02	0.00E+00	1.37E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 1 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - Admin. Any Organ	ADULT	GILLI	4.27E-02	3.75E+00	1.14E+00
Qtr 1 - Admin. Total Body	ADULT	TBODY	3.75E-02	1.13E+00	3.33E+00

Qtr 1 - T.Spc. Any Organ ADULT GILLI 4.27E-02 5.00E+00 8.54E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.68E+01
MN-54	4.65E-01
CO-58	2.55E+00
CO-60	3.22E+00
AG-110M	1.23E-03
TE-125M	6.93E+00
I-131	2.09E-03
I-133	4.44E-03

Qtr 1 - T.Spc. Total Body ADULT TBODY 3.75E-02 1.50E+00 2.50E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.89E+01
MN-54	3.30E-02
CO-58	3.21E-01
CO-60	4.31E-01
AG-110M	2.04E-06
TE-125M	2.65E-01
I-131	5.17E-03
I-133	1.72E-03

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

LIQUID DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 2 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	3.16E-03	4.11E-02	3.50E-02	3.68E-02	3.55E-02	4.48E-02	0.00E+00	4.02E-02
TEEN	3.17E-03	3.25E-02	2.63E-02	2.81E-02	2.69E-02	3.31E-02	0.00E+00	2.94E-02
CHILD	3.78E-03	3.45E-02	2.93E-02	3.07E-02	2.97E-02	3.15E-02	0.00E+00	3.07E-02
INFANT	1.19E-05	1.29E-02	1.29E-02	1.29E-02	1.29E-02	1.29E-02	0.00E+00	1.29E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 2 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	ADULT	GILLI	4.48E-02	3.75E+00	1.20E+00
Qtr 2 - Admin. Total Body	ADULT	TBODY	4.02E-02	1.13E+00	3.58E+00

Qtr 2 - T.Spc. Any Organ ADULT GILLI 4.48E-02 5.00E+00 8.96E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.76E+01
FE-55	3.13E-02
FE-59	2.47E-01
CO-58	7.28E+00
CO-60	1.20E+00
SR-89	1.40E-02
SR-90	2.87E-02
NB-95	1.33E+01
I-131	4.14E-04
CS-134	2.37E-01

Qtr 2 - T.Spc. Total Body ADULT TBODY 4.02E-02 1.50E+00 2.68E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.65E+01
FE-55	1.42E-02
FE-59	3.17E-02
CO-58	8.97E-01
CO-60	1.56E-01
SR-89	2.79E-03
SR-90	2.55E-02
NB-95	1.31E-03

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Nuclide

Percentage

I-131

1.00E-03

CS-134

1.24E+01

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LIQUID DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 3 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.42E-03	3.40E-02	3.38E-02	3.45E-02	3.38E-02	3.65E-02	0.00E+00	3.40E-02
TEEN	1.33E-03	2.56E-02	2.54E-02	2.53E-02	2.54E-02	2.73E-02	0.00E+00	2.56E-02
CHILD	1.54E-03	2.85E-02	2.83E-02	2.82E-02	2.82E-02	2.89E-02	0.00E+00	2.85E-02
INFANT	2.29E-05	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	0.00E+00	1.25E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 3 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 3 - Admin. Any Organ	ADULT	GILLI	3.65E-02	3.75E+00	9.72E-01
Qtr 3 - Admin. Total Body	ADULT	TBODY	3.40E-02	1.13E+00	3.02E+00

Qtr 3 - T.Spc. Any Organ ADULT GILLI 3.65E-02 5.00E+00 7.29E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.26E+01
MN-54	5.21E-01
FE-55	8.13E-02
CO-58	1.54E+00
CO-60	3.10E+00
SR-89	3.63E-02
SR-90	7.44E-02
AG-110M	6.32E-04
TE-125M	2.03E+00

Qtr 3 - T.Spc. Total Body ADULT TBODY 3.40E-02 1.50E+00 2.27E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.92E+01
MN-54	3.48E-02
FE-55	3.54E-02
CO-58	1.82E-01
CO-60	3.90E-01
SR-89	6.96E-03
SR-90	6.37E-02
AG-110M	9.85E-07
TE-125M	7.29E-02

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

LIQUID DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 4 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	2.07E-03	3.79E-02	3.70E-02	3.71E-02	3.71E-02	4.64E-02	0.00E+00	3.81E-02
TEEN	1.90E-03	2.86E-02	2.78E-02	2.79E-02	2.79E-02	3.41E-02	0.00E+00	2.89E-02
CHILD	2.14E-03	3.17E-02	3.10E-02	3.10E-02	3.10E-02	3.31E-02	0.00E+00	3.21E-02
INFANT	3.72E-05	1.37E-02	1.37E-02	1.37E-02	1.37E-02	1.37E-02	0.00E+00	1.37E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 4 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 4 - Admin. Any Organ	ADULT	GILLI	4.64E-02	3.75E+00	1.24E+00
Qtr 4 - Admin. Total Body	ADULT	TBODY	3.81E-02	1.13E+00	3.38E+00

Qtr 4 - T.Spc. Any Organ ADULT GILLI 4.64E-02 5.00E+00 9.27E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.99E+01
MN-54	2.21E+00
FE-55	1.06E-01
FE-59	1.81E-01
CO-58	1.34E+01
CO-60	4.07E+00
SR-89	4.76E-02
SR-90	9.77E-02
AG-110M	5.05E-03

Qtr 4 - T.Spc. Total Body ADULT TBODY 3.81E-02 1.50E+00 2.54E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.73E+01
MN-54	1.68E-01
FE-55	5.27E-02
FE-59	2.54E-02
CO-58	1.80E+00
CO-60	5.81E-01
SR-89	1.04E-02
SR-90	9.51E-02
AG-110M	8.95E-06

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LIQUID DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === ANNUAL 2008 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	2.48E-03	1.49E-01	1.47E-01	1.50E-01	1.45E-01	1.67E-01	0.00E+00	1.49E-01
TEEN	2.62E-03	1.13E-01	1.10E-01	1.10E-01	1.09E-01	1.24E-01	0.00E+00	1.12E-01
CHILD	3.26E-03	1.25E-01	1.23E-01	1.22E-01	1.21E-01	1.27E-01	0.00E+00	1.23E-01
INFANT	5.23E-06	5.35E-02	5.36E-02	5.35E-02	5.35E-02	5.35E-02	0.00E+00	5.35E-02

=== SITE DOSE LIMIT ANALYSIS === ANNUAL 2008 ===

Annual - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2008 - Admin. Any Organ	ADULT	GILLI	1.67E-01	7.50E+00	2.22E+00
2008 - Admin. Total Body	ADULT	TBODY	1.49E-01	2.25E+00	6.61E+00

2008 - T.Spc. Any Organ ADULT GILLI 1.67E-01 1.00E+01 1.67E+00
 Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.67E+01
MN-54	7.41E-01
FE-59	6.57E-02
CO-58	4.74E+00
CO-60	3.06E+00
NB-95	1.77E+00
AG-110M	1.52E-03
TE-125M	2.86E+00
I-131	6.79E-04
I-133	1.33E-03
CS-134	3.16E-02

2008 - T.Spc. Total Body ADULT TBODY 1.49E-01 3.00E+00 4.96E+00
 Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.72E+01
MN-54	5.17E-02
FE-59	8.46E-03
CO-58	5.88E-01
CO-60	4.03E-01
NB-95	1.76E-04
AG-110M	2.49E-06

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 1 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - Admin. Any Organ	INFANT	THYROID	1.31E-02	5.63E+00	2.33E-01
Qtr 1 - Admin. Total Body	CHILD	TBODY	1.94E-03	5.25E+00	3.69E-02

Qtr 1 - T.Spc. Any Organ INFANT THYROID 1.31E-02 7.50E+00 1.75E-01

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA
 Critical Pathway: Grs/Goat/Milk (GMILK)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.14E+01
I-131	8.59E+01
I-132	2.36E-02
I-133	2.62E+00

Qtr 1 - T.Spc. Total Body CHILD TBODY 1.94E-03 7.50E+00 2.58E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA
 Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.95E+01
I-131	4.39E-01
I-132	1.09E-02
I-133	1.87E-02

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 1 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 1 - Admin. Gamma	1.75E-05	3.75E+00	4.68E-04
Qtr 1 - Admin. Beta	1.18E-05	7.50E+00	1.57E-04

Qtr 1 - T.Spc. Gamma	1.75E-05	5.00E+00	3.51E-04
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Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide Percentage

AR-41	9.87E+00
KR-85M	4.54E-03
XE-135	1.35E+00
XE-133M	8.26E-02
XE-131M	1.07E+00
XE-133	8.76E+01

Qtr 1 - T.Spc. Beta	1.18E-05	1.00E+01	1.18E-04
---------------------	----------	----------	----------

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide Percentage

AR-41	1.27E+00
KR-85M	2.65E-03
XE-135	6.32E-01
XE-133M	1.37E-01
XE-131M	2.77E+00
XE-133	9.52E+01

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

 GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 2 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	INFANT	THYROID	2.30E-02	5.63E+00	4.08E-01
Qtr 2 - Admin. Total Body	CHILD	TBODY	1.92E-03	5.25E+00	3.66E-02

Qtr 2 - T.Spc. Any Organ INFANT THYROID 2.30E-02 7.50E+00 3.06E-01

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Grs/Goat/Milk (GMILK)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	6.45E+00
CO-58	6.39E-04
I-131	9.36E+01
I-132	9.56E-04

Qtr 2 - T.Spc. Total Body CHILD TBODY 1.92E-03 7.50E+00 2.56E-02

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.91E+01
CO-58	1.35E-02
I-131	8.45E-01
I-132	7.82E-04

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 GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 2 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 2 - Admin. Gamma	1.21E-05	3.75E+00	3.24E-04
Qtr 2 - Admin. Beta	7.47E-06	7.50E+00	9.96E-05

Qtr 2 - T.Spc. Gamma 1.21E-05 5.00E+00 2.43E-04

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	1.78E+01
XE-138	2.41E-01
XE-135	3.47E-02
XE-131M	4.18E-02
XE-133	8.19E+01

Qtr 2 - T.Spc. Beta 7.47E-06 1.00E+01 7.47E-05

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	2.50E+00
XE-138	4.95E-02
XE-135	1.77E-02
XE-131M	1.19E-01
XE-133	9.73E+01

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 GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 3 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
-----	-----	-----	-----
Qtr 3 - Admin. Gamma	1.92E-02	3.75E+00	5.13E-01
Qtr 3 - Admin. Beta	9.13E-04	7.50E+00	1.22E-02
Qtr 3 - T.Spc. Gamma	1.92E-02	5.00E+00	3.85E-01
Receptor: 4 Composite Crit. Receptor - NG			
Distance: 0.00 (meters)		Compass Point: NA	
Nuclide	Percentage		
-----	-----		
AR-41	1.00E-02		
XE-135	1.90E-04		
KR-88	1.00E+02		
XE-133	5.25E-03		

Qtr 3 - T.Spc. Beta	9.13E-04	1.00E+01	9.13E-03
Receptor: 4 Composite Crit. Receptor - NG			
Distance: 0.00 (meters)		Compass Point: NA	
Nuclide	Percentage		
-----	-----		
AR-41	1.83E-02		
XE-135	1.26E-03		
KR-88	9.99E+01		
XE-133	8.10E-02		

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008

Unit Range - From: 1 To: 1

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 4 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 4 - Admin. Gamma	4.58E-04	3.75E+00	1.22E-02
Qtr 4 - Admin. Beta	1.96E-04	7.50E+00	2.61E-03

Qtr 4 - T.Spc. Gamma 4.58E-04 5.00E+00 9.17E-03

Receptor: 4 Composite Crit. Receptor - NG
Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	9.68E-03
KR-85M	9.00E+01
XE-135	5.21E-02
XE-133M	1.23E-03
XE-133	9.89E+00

Qtr 4 - T.Spc. Beta 1.96E-04 1.00E+01 1.96E-03

Receptor: 4 Composite Crit. Receptor - NG
Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	1.97E-03
KR-85M	8.30E+01
XE-135	3.84E-02
XE-133M	3.22E-03
XE-133	1.69E+01

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 GASEOUS DOSE SUMMARY

Unit 1 2008

Report for: 2008
 Unit Range - From: 1 To: 1

=== I&P DOSE LIMIT ANALYSIS ===== ANNUAL 2008 =====

Annual - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2008 - Admin. Any Organ	INFANT	THYROID	3.90E-02	1.13E+01	3.47E-01
2008 - Admin. Total Body	CHILD	TBODY	6.83E-03	1.05E+01	6.51E-02

2008 - T.Spc. Any Organ INFANT THYROID 3.90E-02 1.50E+01 2.60E-01

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA
 Critical Pathway: Grs/Goat/Milk (GMILK)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.36E+01
CO-58	7.29E-04
I-131	8.55E+01
I-132	1.01E-02
I-133	8.81E-01

2008 - T.Spc. Total Body CHILD TBODY 6.83E-03 1.50E+01 4.56E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA
 Critical Pathway: Vegetation (VEG)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.96E+01
CO-58	7.34E-03
I-131	3.69E-01
I-132	3.93E-03
I-133	5.30E-03

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Unit 1 2008

Report for: 2008
Unit Range - From: 1 To: 1

=== MAXIMUM DOSE ANALYSIS ===== ANNUAL 2008 =====

Dose Type	Age Group	Organ	Dose (mrem)
Any Organ	ADULT	GILLI	1.71E-01
Liquid Receptor: 0	Liquid Receptor		
Gaseous Receptor: 5	Composite Crit. Receptor - IP		
Distance: 0.00 (meters)	Compass Point: NA		

Liquid Dose: 1.67E-01 % of Total: 9.75E+01
Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.67E+01
MN-54	7.41E-01
FE-59	6.57E-02
CO-58	4.74E+00
CO-60	3.06E+00
NB-95	1.77E+00
AG-110M	1.52E-03
TE-125M	2.86E+00
I-131	6.79E-04
I-133	1.33E-03
CS-134	3.16E-02

Gaseous Dose: 4.14E-03 % of Total: 2.42E+00
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.99E+01
CO-58	2.70E-02
I-131	1.04E-01
I-132	5.72E-03
I-133	7.74E-03

=== MAXIMUM DOSE ANALYSIS ===== ANNUAL 2008 =====

Dose Type	Age Group	Organ	Dose (mrem)
Total Body	ADULT	TBODY	1.53E-01
Liquid Receptor: 0	Liquid Receptor		
Gaseous Receptor: 5	Composite Crit. Receptor - IP		
Distance: 0.00 (meters)	Compass Point: NA		

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Liquid Dose: 1.49E-01 % of Total: 9.72E+01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.72E+01
MN-54	5.17E-02
FE-59	8.46E-03
CO-58	5.88E-01
CO-60	4.03E-01
NB-95	1.76E-04
AG-110M	2.49E-06
TE-125M	1.08E-01
I-131	1.65E-03
I-133	5.05E-04
CS-134	1.66E+00

Gaseous Dose: 4.14E-03 % of Total: 2.71E+00

Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.98E+01
CO-58	9.07E-03
I-131	2.19E-01
I-132	6.11E-03
I-133	3.31E-03

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

LIQUID DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 2 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	3.16E-03	4.11E-02	3.50E-02	3.68E-02	3.55E-02	4.48E-02	0.00E+00	4.02E-02
TEEN	3.17E-03	3.25E-02	2.63E-02	2.81E-02	2.69E-02	3.31E-02	0.00E+00	2.94E-02
CHILD	3.78E-03	3.45E-02	2.93E-02	3.07E-02	2.97E-02	3.15E-02	0.00E+00	3.07E-02
INFANT	1.19E-05	1.29E-02	1.29E-02	1.29E-02	1.29E-02	1.29E-02	0.00E+00	1.29E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 2 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	ADULT	GILLI	4.48E-02	3.75E+00	1.20E+00
Qtr 2 - Admin. Total Body	ADULT	TBODY	4.02E-02	1.13E+00	3.58E+00

Qtr 2 - T.Spc. Any Organ ADULT GILLI 4.48E-02 5.00E+00 8.96E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.76E+01
FE-55	3.13E-02
FE-59	2.47E-01
CO-58	7.28E+00
CO-60	1.20E+00
SR-89	1.40E-02
SR-90	2.87E-02
NB-95	1.33E+01
I-131	4.14E-04
CS-134	2.37E-01

Qtr 2 - T.Spc. Total Body ADULT TBODY 4.02E-02 1.50E+00 2.68E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.65E+01
FE-55	1.42E-02
FE-59	3.17E-02
CO-58	8.97E-01
CO-60	1.56E-01
SR-89	2.79E-03
SR-90	2.55E-02
NB-95	1.31E-03

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

LIQUID DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 3 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	1.42E-03	3.40E-02	3.38E-02	3.45E-02	3.38E-02	3.65E-02	0.00E+00	3.40E-02
TEEN	1.33E-03	2.56E-02	2.54E-02	2.53E-02	2.54E-02	2.73E-02	0.00E+00	2.56E-02
CHILD	1.54E-03	2.85E-02	2.83E-02	2.82E-02	2.82E-02	2.89E-02	0.00E+00	2.85E-02
INFANT	2.29E-05	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	0.00E+00	1.25E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 3 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 3 - Admin. Any Organ	ADULT	GILLI	3.65E-02	3.75E+00	9.72E-01
Qtr 3 - Admin. Total Body	ADULT	TBODY	3.40E-02	1.13E+00	3.02E+00

Qtr 3 - T.Spc. Any Organ ADULT GILLI 3.65E-02 5.00E+00 7.29E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.26E+01
MN-54	5.21E-01
FE-55	8.13E-02
CO-58	1.54E+00
CO-60	3.10E+00
SR-89	3.63E-02
SR-90	7.44E-02
AG-110M	6.32E-04
TE-125M	2.03E+00

Qtr 3 - T.Spc. Total Body ADULT TBODY 3.40E-02 1.50E+00 2.27E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.92E+01
MN-54	3.48E-02
FE-55	3.54E-02
CO-58	1.82E-01
CO-60	3.90E-01
SR-89	6.96E-03
SR-90	6.37E-02
AG-110M	9.85E-07
TE-125M	7.29E-02

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LIQUID DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

Liquid Receptor

=== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) === QUARTER 4 ===

Agegrp	Bone	Liver	Thyroid	Kidney	Lung	GI-LLI	Skin	TB
ADULT	2.07E-03	3.79E-02	3.70E-02	3.71E-02	3.71E-02	4.64E-02	0.00E+00	3.81E-02
TEEN	1.90E-03	2.86E-02	2.78E-02	2.79E-02	2.79E-02	3.41E-02	0.00E+00	2.89E-02
CHILD	2.14E-03	3.17E-02	3.10E-02	3.10E-02	3.10E-02	3.31E-02	0.00E+00	3.21E-02
INFANT	3.72E-05	1.37E-02	1.37E-02	1.37E-02	1.37E-02	1.37E-02	0.00E+00	1.37E-02

=== SITE DOSE LIMIT ANALYSIS === QUARTER 4 ===

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 4 - Admin. Any Organ	ADULT	GILLI	4.64E-02	3.75E+00	1.24E+00
Qtr 4 - Admin. Total Body	ADULT	TBODY	3.81E-02	1.13E+00	3.38E+00

Qtr 4 - T.Spc. Any Organ ADULT GILLI 4.64E-02 5.00E+00 9.27E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	7.99E+01
MN-54	2.21E+00
FE-55	1.06E-01
FE-59	1.81E-01
CO-58	1.34E+01
CO-60	4.07E+00
SR-89	4.76E-02
SR-90	9.77E-02
AG-110M	5.05E-03

Qtr 4 - T.Spc. Total Body ADULT TBODY 3.81E-02 1.50E+00 2.54E+00

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.73E+01
MN-54	1.68E-01
FE-55	5.27E-02
FE-59	2.54E-02
CO-58	1.80E+00
CO-60	5.81E-01
SR-89	1.04E-02
SR-90	9.51E-02
AG-110M	8.95E-06

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Nuclide	Percentage
TE-125M	1.08E-01
I-131	1.65E-03
I-133	5.05E-04
CS-134	1.66E+00

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GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008
 Unit Range - From: 2 To: 2

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 1 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 1 - Admin. Any Organ	INFANT	THYROID	1.31E-02	5.63E+00	2.33E-01
Qtr 1 - Admin. Total Body	CHILD	TBODY	1.94E-03	5.25E+00	3.69E-02

Qtr 1 - T.Spc. Any Organ INFANT THYROID 1.31E-02 7.50E+00 1.75E-01

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Grs/Goat/Milk (GMILK)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.14E+01
I-131	8.59E+01
I-132	2.36E-02
I-133	2.62E+00

Qtr 1 - T.Spc. Total Body CHILD TBODY 1.94E-03 7.50E+00 2.58E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.95E+01
I-131	4.39E-01
I-132	1.09E-02
I-133	1.87E-02

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GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 2 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 2 - Admin. Any Organ	INFANT	THYROID	2.30E-02	5.63E+00	4.08E-01
Qtr 2 - Admin. Total Body	CHILD	TBODY	1.92E-03	5.25E+00	3.66E-02

Qtr 2 - T.Spc. Any Organ INFANT THYROID 2.30E-02 7.50E+00 3.06E-01

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Grs/Goat/Milk (GMILK)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	6.45E+00
CO-58	6.39E-04
I-131	9.36E+01
I-132	9.56E-04

Qtr 2 - T.Spc. Total Body CHILD TBODY 1.92E-03 7.50E+00 2.56E-02

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.91E+01
CO-58	1.35E-02
I-131	8.45E-01
I-132	7.82E-04

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 GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008
 Unit Range - From: 2 To: 2

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 3 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 3 - Admin. Any Organ	CHILD	LIVER	1.73E-03	5.63E+00	3.08E-02
Qtr 3 - Admin. Total Body	CHILD	TBODY	1.73E-03	5.25E+00	3.30E-02

Qtr 3 - T.Spc. Any Organ CHILD LIVER 1.73E-03 7.50E+00 2.31E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

Qtr 3 - T.Spc. Total Body CHILD TBODY 1.73E-03 7.50E+00 2.31E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.00E+02

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 GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008
 Unit Range - From: 2 To: 2

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 3 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 3 - Admin. Gamma	1.92E-02	3.75E+00	5.13E-01
Qtr 3 - Admin. Beta	9.13E-04	7.50E+00	1.22E-02

Qtr 3 - T.Spc. Gamma 1.92E-02 5.00E+00 3.85E-01

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	1.00E-02
XE-135	1.90E-04
KR-88	1.00E+02
XE-133	5.25E-03

9.13E-04 1.00E+01 9.13E-03

Qtr 3 - T.Spc. Beta
 Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide	Percentage
AR-41	1.83E-02
XE-135	1.26E-03
KR-88	9.99E+01
XE-133	8.10E-02

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

=== I&P DOSE LIMIT ANALYSIS ===== QUARTER 4 =====

Quartr - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
Qtr 4 - Admin. Any Organ	INFANT	THYROID	1.57E-03	5.63E+00	2.79E-02
Qtr 4 - Admin. Total Body	CHILD	TBODY	1.24E-03	5.25E+00	2.37E-02

Qtr 4 - T.Spc. Any Organ INFANT THYROID 1.57E-03 7.50E+00 2.09E-02

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Grs/Goat/Milk (GMILK)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	6.17E+01
CO-58	8.79E-03
I-131	3.82E+01
I-132	3.92E-02

Qtr 4 - T.Spc. Total Body CHILD TBODY 1.24E-03 7.50E+00 1.66E-02

Receptor: 5 Composite Crit. Receptor - IP

Distance: 0.00 (meters) Compass Point: NA

Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.99E+01
CO-58	1.95E-02
I-131	3.64E-02
I-132	3.37E-03

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

=== NG DOSE LIMIT ANALYSIS ===== QUARTER 4 =====

Quartr - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
Qtr 4 - Admin. Gamma	4.58E-04	3.75E+00	1.22E-02
Qtr 4 - Admin. Beta	1.96E-04	7.50E+00	2.61E-03
Qtr 4 - T.Spc. Gamma	4.58E-04	5.00E+00	9.17E-03
Receptor: 4 Composite Crit. Receptor - NG			
Distance: 0.00 (meters)		Compass Point: NA	
Nuclide	Percentage		
-----	-----		
AR-41	9.68E-03		
KR-85M	9.00E+01		
XE-135	5.21E-02		
XE-133M	1.23E-03		
XE-133	9.89E+00		

Qtr 4 - T.Spc. Beta	1.96E-04	1.00E+01	1.96E-03
Receptor: 4 Composite Crit. Receptor - NG			
Distance: 0.00 (meters)		Compass Point: NA	
Nuclide	Percentage		
-----	-----		
AR-41	1.97E-03		
KR-85M	8.30E+01		
XE-135	3.84E-02		
XE-133M	3.22E-03		
XE-133	1.69E+01		

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

GASEOUS DOSE SUMMARY

Unit 2 2008

Report for: 2008

Unit Range - From: 2 To: 2

=== NG DOSE LIMIT ANALYSIS ===== ANNUAL 2008 =====

Annual - Limit	Dose (mrad)	Limit (mrad)	Max % of Limit
2008 - Admin. Gamma	1.97E-02	7.50E+00	2.63E-01
2008 - Admin. Beta	1.13E-03	1.50E+01	7.52E-03

2008 - T.Spc. Gamma 1.97E-02 1.00E+01 1.97E-01

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide Percentage

AR-41	2.97E-02
XE-138	1.48E-04
KR-85M	2.09E+00
XE-135	2.62E-03
XE-133M	1.02E-04
KR-88	9.75E+01
XE-131M	9.74E-04
XE-133	3.63E-01

2008 - T.Spc. Beta 1.13E-03 2.00E+01 5.64E-03

Receptor: 4 Composite Crit. Receptor - NG
 Distance: 0.00 (meters) Compass Point: NA

Nuclide Percentage

AR-41	4.51E-02
XE-138	3.28E-04
KR-85M	1.44E+01
XE-135	1.44E-02
XE-133M	1.99E-03
KR-88	8.09E+01
XE-131M	2.98E-02
XE-133	4.65E+00

40CFR190 URANIUM FUEL CYCLE DOSE REPORT

Unit 2 2008

Report for: 2008
Unit Range - From: 2 To: 2

=== MAXIMUM DOSE ANALYSIS ===== ANNUAL 2008 =====

Dose Type	Age Group	Organ	Dose (mrem)
Any Organ	ADULT	GILLI	1.71E-01
Liquid Receptor: 0	Liquid Receptor		
Gaseous Receptor: 5	Composite Crit. Receptor - IP		
Distance: 0.00 (meters)	Compass Point: NA		

Liquid Dose: 1.67E-01 % of Total: 9.75E+01
Critical Pathway: Fresh Water Fish - Sport (FFSP)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.67E+01
MN-54	7.41E-01
FE-59	6.57E-02
CO-58	4.74E+00
CO-60	3.06E+00
NB-95	1.77E+00
AG-110M	1.52E-03
TE-125M	2.86E+00
I-131	6.79E-04
I-133	1.33E-03
CS-134	3.16E-02

Gaseous Dose: 4.14E-03 % of Total: 2.42E+00
Critical Pathway: Vegetation (VEG)
Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	9.99E+01
CO-58	2.70E-02
I-131	1.04E-01
I-132	5.72E-03
I-133	7.74E-03

=== MAXIMUM DOSE ANALYSIS ===== ANNUAL 2008 =====

Dose Type	Age Group	Organ	Dose (mrem)
Total Body	ADULT	TBODY	1.53E-01
Liquid Receptor: 0	Liquid Receptor		
Gaseous Receptor: 5	Composite Crit. Receptor - IP		
Distance: 0.00 (meters)	Compass Point: NA		

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Liquid Dose: 1.49E-01 % of Total: 9.72E+01

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.72E+01
MN-54	5.17E-02
FE-59	8.46E-03
CO-58	5.88E-01
CO-60	4.03E-01
NB-95	1.76E-04
AG-110M	2.49E-06
TE-125M	1.08E-01
I-131	1.65E-03
I-133	5.05E-04
CS-134	1.66E+00

Gaseous Dose: 4.14E-03 % of Total: 2.71E+00

Critical Pathway: Vegetation (VEG)

Major Contributors (0% or greater to total)

Nuclide Percentage

H-3	9.98E+01
CO-58	9.07E-03
I-131	2.19E-01
I-132	6.11E-03
I-133	3.31E-03