ENCLOSURE 2

Joseph M. Farley Nuclear Plant
Annual Radioactive Effluent Release Report for 2006

SOUTHERN NUCLEAR OPERATING COMPANY
FARLEY NUCLEAR PLANT UNIT NO. ONE
LICENSE NO. NPF-2
AND
FARLEY NUCLEAR PLANT UNIT NO. TWO
LICENSE NO. NPF-8

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
CALENDAR YEAR 2006

FARLEY NUCLEAR PLANT
ANNUAL RADIOACTIVE EFFLUENT
RELEASE REPORT

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1.0 LIQUID EFFLUENTS

This section contains applicable ODCM limits for liquid effluents as well as the quantities of radioactive liquid effluents released during 2006. These quantities are summarized on a quarterly basis and include any unplanned releases. A tabulation of the total body and organ doses which were calculated in accordance with ODCM 2.4 are presented to show conformance with the limits of ODCM 2.1.3.

1.1 Regulatory Requirements

1.1.1 Concentration Limits

Technical Specifications 5.5.4.b and 5.5.4.c state that the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS (see ODCM Figure 10-1) shall be limited at all times to ten times the concentrations specified in 10CFR20, Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 1.0E-04 uCi/ml total activity.

1.1.2 Dose Limits

Technical Specifications 5.5.4.d and 5.5.4.e state that the dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each unit, to UNRESTRICTED AREAS (see ODCM Figure 10-1) shall be limited:

a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ, and

b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

1.2 Effluent Concentration Limit (ECL)

ECL values used in determining allowable liquid radwaste release rates and concentrations, for principal gamma emitters, I-131, tritium, Sr-89, Sr-90 and Fe-55, are taken from 10CFR Part 20, Appendix B, Table 2, Column 2. A tolerance factor of up to 10 is utilized to allow flexibility in establishing practical monitor setpoints which can accommodate effluent releases at concentrations higher than the ECL values stated in 10CFR20, Appendix B, Table 2, Column 2.

For dissolved or entrained noble gases in liquid radwaste, the ECL is 1.0E-04 uCi/ml total activity.

For gross alpha in liquid radwaste, the ECL is 2.0E-09 uCi/ml.

Furthermore, for all the above radionuclides, or categories of radioactivity, the overall ECL fraction is determined in accordance with 10CFR Part 20, Appendix B.

1.3 Measurements and Approximation of Total Radioactivity

The radionuclides listed below are considered when evaluating liquid effluents:

MN-54	CS-134
FE-59	CS-137
CO-58	CE-141
CO-60	CE-144
ZN-65	MO-99
SR-89	FE-55
SR-90	H-3
I-131	

1.3.1 Total Radioactivity Determination

Batch Releases: Representative pre-release grab samples are obtained and analyzed in accordance with ODCM Table 2-3. Isotopic analyses are performed using the computerized pulse height analysis system utilizing high resolution germanium detectors. Isotopic values thus obtained are used for release rate calculations as specified in the ODCM. Only those nuclides that are detected are used in the calculations. All Strontium and Iron-55 samples are sent offsite to the Georgia Power Environmental Laboratory for analysis. Gross beta and gross alpha determinations are made using 2 pi gas flow proportional counters. Tritium determinations are made using liquid scintillation techniques. Dissolved gases are determined employing grab sampling techniques and then counting on the pulse height analyzer.

The sample analyses results are used along with the ECL values to determine the ECL fraction for the planned release. The ECL fraction is then used, with the appropriate safety factors, and the expected dilution stream flow, to calculate the maximum permissible release rate and a liquid effluent monitor setpoint. The monitor setpoint is calculated to assure that the limits of the ODCM are not exceeded. A monitor reading in excess of the calculated setpoint will result in automatic termination of the liquid radwaste discharge.

Radionuclide concentrations, safety factors, dilution stream flow rate, and liquid effluent radiation monitor calibration factors are used by the computer to generate a pre-release printout. If the release is not permissible, appropriate warnings will be displayed on the computer screen and on the printout. If the release is permissible, it is approved by a Chemistry Technician. The release permit is transferred from the Chemistry Department to the Operations Department for release. When the release is completed, the actual release data are provided to the Chemistry

Department. These release data, including release rate and release duration, are input into the computer and a post-release printout is generated. This printout contains the actual release rates, radionuclide concentrations and quantities, dilution flow, and calculated doses to an individual.

Continuous Releases: Continuous releases are analogous to batch releases except that they are analyzed on a weekly composite basis in accordance with ODCM Table 2-3.

Typically achieved liquid effluent sample analyses minimum detectable concentrations are reported in Table 1-4.

1.3.2 Total Error Estimation

The maximum error associated with volume and flow measurements, based upon plant calibration practice is estimated to be + or - 10%. The average error associated with counting is estimated to be less than + or - 15%.

1.4 Liquid Effluent Release Data

Summaries of all radioactive liquid effluents released from Units 1 and 2 during 2006 are presented in accordance with Regulatory Guide 1.21 Tables 2A and 2B. Information required by Table 2A is found in this report in Tables 1-1A, 1-1B, and 1-1C; Table 2-B information is presented in Tables 1-2A, 1-2B, and 1-2C. Data is presented on a quarterly basis as required by Regulatory Guide 1.21 for all four quarters.

1.5 Radiological Impact Due to Liquid Releases

The total body and organ doses for Units 1 and 2 are provided in the following tables in order to show conformance with the limits of ODCM 2.1.3:

Unit 1 2006 Doses to a Member of the Public due to Liquid Releases: Table 1-3A

Unit 2 2006 Doses to a Member of the Public due to Liquid Releases: Table 1-3B

1.6 Liquid Effluents - Batch Releases

Batch release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2006 Liquid Effluents - Batch Release Summary: Table 1-5A

Unit 2 2006 Liquid Effluents - Batch Release Summary: Table 1-5B

1.7 Liquid Effluents - Abnormal Releases

There were no abnormal releases during 2006.

Abnormal release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2006 Liquid Effluents - Abnormal Release
Summary: Table 1-6A

Unit 2 2006 Liquid Effluents - Abnormal Release
Summary: Table 1-6B

TABLE 1-1A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	2.94E-02	5.30E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.86E-09	3.57E-09	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.82E+02	2.14E+01	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.15E-05	1.44E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	1.36E-02	3.97E-03	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.61E-10	2.68E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	5.46E-06	1.65E-05	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	2.30E+06	2.94E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	1.58E+10	1.48E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	1.28E-02	1.45E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.07E-10	9.66E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	6.79E+01	1.17E+02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	4.28E-06	7.79E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	5.02E-04	4.06E-06	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	3.17E-11	2.70E-13	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	4.42E-05	0.00E+00	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	5.30E+07	1.77E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	1.58E+10	1.50E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	2.93E-02	3.54E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.25E-09	2.07E-09	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.14E+02	2.33E+01	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	8.77E-06	1.36E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	8.46E-03	3.64E-03	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	6.51E-10	2.13E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	3.37E-06	2.40E-05	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	1.40E+06	1.89E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	1.30E+10	1.71E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	3.91E-02	1.03E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.30E-09	6.87E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.10E+02	1.67E+02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	6.46E-06	1.11E-05	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	3.05E-04	3.10E-04	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.79E-11	2.07E-11	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	1.28E-05	0.00E+00	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	1.73E+07	1.10E+06	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	1.70E+10	1.50E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1C
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	5.87E-02	8.84E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.04E-09	2.78E-09	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	2.96E+02	4.47E+01	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.03E-05	1.40E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	2.20E-02	7.62E-03	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	7.64E-10	2.39E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	8.83E-06	4.05E-05	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	3.70E+06	4.83E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	2.88E+10	3.18E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-1C
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE (NOT INCLUDING TRITIUM, GASES, ALPHA)	CURIES	5.18E-02	2.48E-02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	1.58E-09	8.26E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. TRITIUM				
1. TOTAL RELEASE	CURIES	1.78E+02	2.84E+02	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	5.42E-06	9.46E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. DISSOLVED AND ENTRAINED GASES				
1. TOTAL RELEASE	CURIES	8.07E-04	3.14E-04	1.80E+01
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ML	2.46E-11	1.05E-11	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
D. GROSS ALPHA RADIOACTIVITY				
1. TOTAL RELEASE	CURIES	5.69E-05	0.00E+00	1.80E+01
E. WASTE VOL RELEASED(PRE-DILUTION)	LITERS	7.03E+07	1.88E+07	1.00E+01
F. VOLUME OF DILUTION WATER USED	LITERS	3.28E+10	3.00E+10	1.00E+01

* Applicable limits are expressed in terms of dose. See Tables 1-3A and 1-3B of this report.

TABLE 1-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	1.82E+02	2.14E+01
FISSION & ACTIVATION PRODUCTS					
AG-108M	CURIES	0.00E+00	0.00E+00	0.00E+00	5.94E-05
AG-110M	CURIES	0.00E+00	0.00E+00	7.93E-05	3.62E-04
AS-76	CURIES	0.00E+00	0.00E+00	0.00E+00	1.18E-06
BE-7	CURIES	0.00E+00	0.00E+00	6.17E-06	0.00E+00
CE-144	CURIES	0.00E+00	0.00E+00	2.94E-06	0.00E+00
CO-58	CURIES	0.00E+00	0.00E+00	9.24E-04	5.38E-03
CO-60	CURIES	0.00E+00	0.00E+00	2.16E-03	2.94E-03
CR-51	CURIES	0.00E+00	0.00E+00	5.18E-04	2.33E-03
CS-134	CURIES	0.00E+00	0.00E+00	1.56E-06	1.16E-05
CS-137	CURIES	0.00E+00	0.00E+00	4.99E-05	5.14E-05
EU-154	CURIES	0.00E+00	0.00E+00	1.29E-06	0.00E+00
FE-55	CURIES	0.00E+00	0.00E+00	1.70E-03	4.60E-04
FE-59	CURIES	0.00E+00	0.00E+00	0.00E+00	2.31E-06
I-131	CURIES	0.00E+00	0.00E+00	2.44E-05	0.00E+00
I-132	CURIES	0.00E+00	0.00E+00	0.00E+00	5.28E-05
I-133	CURIES	0.00E+00	0.00E+00	2.61E-05	6.38E-06
MN-54	CURIES	0.00E+00	0.00E+00	1.96E-05	1.21E-04
NB-95	CURIES	0.00E+00	0.00E+00	4.80E-05	6.05E-04
NB-97	CURIES	0.00E+00	0.00E+00	2.35E-05	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	2.13E-05	1.68E-05
PR-144	CURIES	0.00E+00	0.00E+00	0.00E+00	2.84E-04
RH-105	CURIES	0.00E+00	0.00E+00	0.00E+00	9.60E-05
RU-103	CURIES	0.00E+00	0.00E+00	0.00E+00	2.24E-05
SB-124	CURIES	0.00E+00	0.00E+00	1.73E-06	3.87E-05
SB-125	CURIES	0.00E+00	0.00E+00	3.36E-04	6.12E-04
SN-113	CURIES	0.00E+00	0.00E+00	0.00E+00	4.09E-05

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION & ACTIVATION PRODUCTS					
SN-117M	CURIES	0.00E+00	0.00E+00	2.84E-04	2.07E-04
SR-90	CURIES	0.00E+00	0.00E+00	6.28E-06	8.99E-06
TC-104	CURIES	0.00E+00	0.00E+00	9.97E-07	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	1.71E-05	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	2.22E-02	3.33E-02
TE-129	CURIES	0.00E+00	0.00E+00	1.41E-05	6.75E-04
TE-129M	CURIES	0.00E+00	0.00E+00	0.00E+00	8.21E-04
TE-132	CURIES	0.00E+00	0.00E+00	0.00E+00	3.33E-05
TE-133M	CURIES	0.00E+00	0.00E+00	0.00E+00	2.16E-06
TE-134	CURIES	0.00E+00	0.00E+00	0.00E+00	3.39E-06
Y-88	CURIES	0.00E+00	0.00E+00	1.18E-06	0.00E+00
Y-91M	CURIES	0.00E+00	0.00E+00	2.22E-06	0.00E+00
ZN-65	CURIES	0.00E+00	0.00E+00	9.82E-04	4.18E-03
ZR-95	CURIES	0.00E+00	0.00E+00	9.05E-06	2.52E-04
TOTALS	CURIES	0.00E+00	0.00E+00	2.94E-02	5.30E-02
DISSOLVED AND ENTRAINED GASES					
AR-41	CURIES	0.00E+00	0.00E+00	3.68E-05	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	9.96E-03	3.34E-03
XE-133M	CURIES	0.00E+00	0.00E+00	2.89E-03	2.56E-05
XE-135	CURIES	0.00E+00	0.00E+00	1.51E-05	8.34E-05
XE-138	CURIES	0.00E+00	0.00E+00	6.59E-04	5.26E-04
TOTALS	CURIES	0.00E+00	0.00E+00	1.36E-02	3.97E-03
G-ALPHA	CURIES	0.00E+00	1.65E-05	5.46E-06	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	0.00E+00	0.00E+00	6.79E+01	1.17E+02
FISSION & ACTIVATION PRODUCTS					
AG-110M	CURIES	0.00E+00	0.00E+00	3.88E-06	2.77E-06
BA-141	CURIES	0.00E+00	0.00E+00	0.00E+00	1.55E-06
CO-58	CURIES	0.00E+00	0.00E+00	2.48E-04	1.36E-04
CO-60	CURIES	0.00E+00	0.00E+00	4.06E-04	4.13E-04
CR-51	CURIES	0.00E+00	0.00E+00	4.42E-06	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	6.47E-05	3.32E-05
FE-55	CURIES	3.71E-03	3.77E-05	4.21E-04	2.89E-04
I-133	CURIES	0.00E+00	0.00E+00	5.67E-07	2.61E-07
LA-142	CURIES	0.00E+00	0.00E+00	1.80E-06	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	6.59E-06	0.00E+00
NB-95	CURIES	0.00E+00	0.00E+00	4.37E-05	2.76E-06
ND-149	CURIES	0.00E+00	0.00E+00	2.69E-06	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	2.21E-06	4.71E-06
RH-105	CURIES	0.00E+00	0.00E+00	2.33E-06	0.00E+00
SB-125	CURIES	0.00E+00	0.00E+00	7.03E-05	1.13E-04
SN-117M	CURIES	0.00E+00	0.00E+00	1.71E-05	1.22E-05
SR-85	CURIES	0.00E+00	0.00E+00	5.34E-07	0.00E+00
SR-89	CURIES	7.49E-04	7.61E-06	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	6.73E-06	3.97E-06
TA-182	CURIES	0.00E+00	0.00E+00	1.24E-06	0.00E+00
TC-101	CURIES	0.00E+00	0.00E+00	5.60E-07	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	4.71E-07	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION & ACTIVATION PRODUCTS					
TE-125M	CURIES	0.00E+00	0.00E+00	6.36E-03	1.32E-02
TE-127	CURIES	0.00E+00	0.00E+00	0.00E+00	3.83E-05
ZN-65	CURIES	0.00E+00	0.00E+00	6.20E-04	2.29E-04
ZR-95	CURIES	0.00E+00	0.00E+00	1.57E-05	0.00E+00
TOTALS	CURIES	4.46E-03	4.53E-05	8.30E-03	1.45E-02
DISSOLVED AND ENTRAINED GASES					
AR-41	CURIES	0.00E+00	0.00E+00	2.46E-06	0.00E+00
KR-85	CURIES	0.00E+00	0.00E+00	1.18E-04	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	3.80E-04	4.06E-06
XE-135	CURIES	0.00E+00	0.00E+00	4.81E-07	0.00E+00
TOTALS	CURIES	0.00E+00	0.00E+00	5.02E-04	4.06E-06
G-ALPHA	CURIES	3.79E-05	0.00E+00	6.26E-06	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	1.14E+02	2.33E+01
FISSION & ACTIVATION PRODUCTS					
AG-108M	CURIES	0.00E+00	0.00E+00	0.00E+00	3.04E-05
AG-110M	CURIES	0.00E+00	0.00E+00	5.06E-05	2.07E-04
CE-146	CURIES	0.00E+00	0.00E+00	4.75E-06	0.00E+00
CO-57	CURIES	0.00E+00	0.00E+00	6.06E-07	0.00E+00
CO-58	CURIES	0.00E+00	0.00E+00	8.23E-04	2.19E-03
CO-60	CURIES	0.00E+00	0.00E+00	1.11E-03	1.76E-03
CR-51	CURIES	0.00E+00	0.00E+00	9.08E-04	1.38E-03
CS-137	CURIES	0.00E+00	0.00E+00	1.82E-05	1.17E-05
CS-138	CURIES	0.00E+00	0.00E+00	5.83E-06	5.83E-06
FE-55	CURIES	0.00E+00	0.00E+00	9.73E-04	4.55E-04
I-132	CURIES	0.00E+00	0.00E+00	0.00E+00	2.17E-05
MN-54	CURIES	0.00E+00	0.00E+00	1.61E-05	2.01E-05
NB-95	CURIES	0.00E+00	0.00E+00	1.50E-04	2.73E-04
NB-97	CURIES	0.00E+00	0.00E+00	1.10E-05	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	3.61E-05	1.55E-05
RH-105	CURIES	0.00E+00	0.00E+00	1.55E-05	6.02E-05
RU-103	CURIES	0.00E+00	0.00E+00	0.00E+00	9.44E-06

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION & ACTIVATION PRODUCTS					
SB-124	CURIES	0.00E+00	0.00E+00	7.81E-06	3.41E-06
SB-125	CURIES	0.00E+00	0.00E+00	2.04E-04	2.57E-04
SN-113	CURIES	0.00E+00	0.00E+00	4.32E-06	1.83E-05
SN-117M	CURIES	0.00E+00	0.00E+00	3.10E-04	1.45E-04
SR-92	CURIES	0.00E+00	0.00E+00	0.00E+00	2.03E-05
TC-99M	CURIES	0.00E+00	0.00E+00	1.33E-06	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	2.36E-02	2.62E-02
TE-129	CURIES	0.00E+00	0.00E+00	0.00E+00	3.38E-04
TE-129M	CURIES	0.00E+00	0.00E+00	0.00E+00	4.25E-04
TE-132	CURIES	0.00E+00	0.00E+00	0.00E+00	2.47E-05
TE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	3.01E-06
TE-134	CURIES	0.00E+00	0.00E+00	3.71E-06	0.00E+00
ZN-65	CURIES	0.00E+00	0.00E+00	9.65E-04	1.41E-03
ZR-95	CURIES	0.00E+00	0.00E+00	7.53E-05	1.28E-04
TOTALS	CURIES	0.00E+00	0.00E+00	2.93E-02	3.54E-02
DISSOLVED AND ENTRAINED GASES					
XE-133	CURIES	0.00E+00	0.00E+00	8.31E-03	3.59E-03
XE-133M	CURIES	0.00E+00	0.00E+00	1.22E-04	4.41E-06
XE-135	CURIES	0.00E+00	0.00E+00	5.38E-06	4.85E-05
XE-138	CURIES	0.00E+00	0.00E+00	2.04E-05	0.00E+00
TOTALS	CURIES	0.00E+00	0.00E+00	8.46E-03	3.64E-03
G-ALPHA	CURIES	0.00E+00	2.40E-05	3.37E-06	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	0.00E+00	0.00E+00	1.10E+02	1.67E+02
FISSION & ACTIVATION PRODUCTS					
AG-110M	CURIES	0.00E+00	0.00E+00	1.53E-05	3.98E-06
AS-76	CURIES	0.00E+00	0.00E+00	3.28E-06	0.00E+00
BE-7	CURIES	0.00E+00	0.00E+00	1.26E-05	0.00E+00
CD-109	CURIES	0.00E+00	0.00E+00	4.69E-05	0.00E+00
CO-57	CURIES	0.00E+00	0.00E+00	1.26E-05	0.00E+00
CO-58	CURIES	0.00E+00	0.00E+00	1.68E-04	3.92E-05
CO-60	CURIES	0.00E+00	0.00E+00	9.66E-03	1.67E-03
CR-51	CURIES	0.00E+00	0.00E+00	3.25E-05	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	9.14E-04	1.14E-04
CS-138	CURIES	0.00E+00	0.00E+00	0.00E+00	2.48E-06
FE-55	CURIES	0.00E+00	0.00E+00	1.14E-03	2.61E-04
NB-95	CURIES	0.00E+00	0.00E+00	8.49E-06	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	9.76E-06	2.92E-06
RH-105	CURIES	0.00E+00	0.00E+00	4.95E-06	0.00E+00
SB-125	CURIES	0.00E+00	0.00E+00	6.61E-04	1.06E-04
SN-117M	CURIES	0.00E+00	0.00E+00	5.40E-05	7.75E-06
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	5.34E-06
TE-125M	CURIES	0.00E+00	0.00E+00	2.57E-02	8.02E-03
TE-129M	CURIES	0.00E+00	0.00E+00	2.43E-05	0.00E+00
TE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	2.73E-06
TE-134	CURIES	0.00E+00	0.00E+00	2.45E-06	0.00E+00
Y-91M	CURIES	0.00E+00	0.00E+00	0.00E+00	1.19E-06
ZN-65	CURIES	0.00E+00	0.00E+00	6.10E-04	8.93E-05
TOTALS	CURIES	0.00E+00	0.00E+00	3.91E-02	1.03E-02

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
DISSOLVED AND ENTRAINED GASES					
AR-41	CURIES	0.00E+00	0.00E+00	0.00E+00	2.01E-06
KR-87	CURIES	0.00E+00	0.00E+00	1.30E-06	0.00E+00
XE-131M	CURIES	0.00E+00	0.00E+00	1.30E-05	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	2.90E-04	5.55E-06
XE-135	CURIES	0.00E+00	0.00E+00	6.06E-07	5.20E-07
XE-138	CURIES	0.00E+00	0.00E+00	0.00E+00	3.02E-04
TOTALS	CURIES	0.00E+00	0.00E+00	3.05E-04	3.10E-04
G-ALPHA	CURIES	3.84E-06	0.00E+00	8.93E-06	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
H-3	CURIES	0.00E+00	0.00E+00	2.96E+02	4.47E+01
FISSION & ACTIVATION PRODUCTS					
AG-108M	CURIES	0.00E+00	0.00E+00	0.00E+00	8.97E-05
AG-110M	CURIES	0.00E+00	0.00E+00	1.30E-04	5.70E-04
AS-76	CURIES	0.00E+00	0.00E+00	0.00E+00	1.18E-06
BE-7	CURIES	0.00E+00	0.00E+00	6.17E-06	0.00E+00
CE-144	CURIES	0.00E+00	0.00E+00	2.94E-06	0.00E+00
CE-146	CURIES	0.00E+00	0.00E+00	4.75E-06	0.00E+00
CO-57	CURIES	0.00E+00	0.00E+00	6.06E-07	0.00E+00
CO-58	CURIES	0.00E+00	0.00E+00	1.75E-03	7.58E-03
CO-60	CURIES	0.00E+00	0.00E+00	3.27E-03	4.70E-03
CR-51	CURIES	0.00E+00	0.00E+00	1.43E-03	3.71E-03
CS-134	CURIES	0.00E+00	0.00E+00	1.56E-06	1.16E-05
CS-137	CURIES	0.00E+00	0.00E+00	6.82E-05	6.31E-05
CS-138	CURIES	0.00E+00	0.00E+00	5.83E-06	5.83E-06
EU-154	CURIES	0.00E+00	0.00E+00	1.29E-06	0.00E+00
FE-55	CURIES	0.00E+00	0.00E+00	2.67E-03	9.15E-04
FE-59	CURIES	0.00E+00	0.00E+00	0.00E+00	2.31E-06
I-131	CURIES	0.00E+00	0.00E+00	2.44E-05	0.00E+00
I-132	CURIES	0.00E+00	0.00E+00	0.00E+00	7.45E-05
I-133	CURIES	0.00E+00	0.00E+00	2.61E-05	6.38E-06
MN-54	CURIES	0.00E+00	0.00E+00	3.56E-05	1.42E-04
NB-95	CURIES	0.00E+00	0.00E+00	1.98E-04	8.77E-04
NB-97	CURIES	0.00E+00	0.00E+00	3.45E-05	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	5.74E-05	3.23E-05
PR-144	CURIES	0.00E+00	0.00E+00	0.00E+00	2.84E-04
RH-105	CURIES	0.00E+00	0.00E+00	1.55E-05	1.56E-04
RU-103	CURIES	0.00E+00	0.00E+00	0.00E+00	3.19E-05
SB-124	CURIES	0.00E+00	0.00E+00	9.54E-06	4.21E-05
SB-125	CURIES	0.00E+00	0.00E+00	5.40E-04	8.69E-04
SN-113	CURIES	0.00E+00	0.00E+00	4.32E-06	5.92E-05

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION & ACTIVATION PRODUCTS					
SN-117M	CURIES	0.00E+00	0.00E+00	5.95E-04	3.52E-04
SR-90	CURIES	0.00E+00	0.00E+00	6.28E-06	8.99E-06
SR-92	CURIES	0.00E+00	0.00E+00	0.00E+00	2.03E-05
TC-104	CURIES	0.00E+00	0.00E+00	9.97E-07	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	1.85E-05	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	4.57E-02	5.95E-02
TE-129	CURIES	0.00E+00	0.00E+00	1.41E-05	1.01E-03
TE-129M	CURIES	0.00E+00	0.00E+00	0.00E+00	1.25E-03
TE-132	CURIES	0.00E+00	0.00E+00	0.00E+00	5.80E-05
TE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	3.01E-06
TE-133M	CURIES	0.00E+00	0.00E+00	0.00E+00	2.16E-06
TE-134	CURIES	0.00E+00	0.00E+00	3.71E-06	3.39E-06
Y-88	CURIES	0.00E+00	0.00E+00	1.18E-06	0.00E+00
Y-91M	CURIES	0.00E+00	0.00E+00	2.22E-06	0.00E+00
ZN-65	CURIES	0.00E+00	0.00E+00	1.95E-03	5.59E-03
ZR-95	CURIES	0.00E+00	0.00E+00	8.43E-05	3.80E-04
TOTALS	CURIES	0.00E+00	0.00E+00	5.87E-02	8.84E-02
DISSOLVED AND ENTRAINED GASES					
AR-41	CURIES	0.00E+00	0.00E+00	3.68E-05	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	1.83E-02	6.93E-03
XE-133M	CURIES	0.00E+00	0.00E+00	3.02E-03	3.01E-05
XE-135	CURIES	0.00E+00	0.00E+00	2.05E-05	1.32E-04
XE-138	CURIES	0.00E+00	0.00E+00	6.79E-04	5.26E-04
TOTALS	CURIES	0.00E+00	0.00E+00	2.20E-02	7.62E-03
G-ALPHA	CURIES	0.00E+00	4.05E-05	8.83E-06	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
H-3	CURIES	0.00E+00	0.00E+00	1.78E+02	2.84E+02
FISSION & ACTIVATION PRODUCTS					
AG-110M	CURIES	0.00E+00	0.00E+00	1.92E-05	6.75E-06
AS-76	CURIES	0.00E+00	0.00E+00	3.28E-06	0.00E+00
BA-141	CURIES	0.00E+00	0.00E+00	0.00E+00	1.55E-06
BE-7	CURIES	0.00E+00	0.00E+00	1.26E-05	0.00E+00
CD-109	CURIES	0.00E+00	0.00E+00	4.69E-05	0.00E+00
CO-57	CURIES	0.00E+00	0.00E+00	1.26E-05	0.00E+00
CO-58	CURIES	0.00E+00	0.00E+00	4.16E-04	1.75E-04
CO-60	CURIES	0.00E+00	0.00E+00	1.01E-02	2.08E-03
CR-51	CURIES	0.00E+00	0.00E+00	3.69E-05	0.00E+00
CS-137	CURIES	0.00E+00	0.00E+00	9.79E-04	1.47E-04
CS-138	CURIES	0.00E+00	0.00E+00	0.00E+00	2.48E-06
FE-55	CURIES	3.71E-03	3.77E-05	1.56E-03	5.50E-04
I-133	CURIES	0.00E+00	0.00E+00	5.67E-07	2.61E-07
LA-142	CURIES	0.00E+00	0.00E+00	1.80E-06	0.00E+00
MN-54	CURIES	0.00E+00	0.00E+00	6.59E-06	0.00E+00
NB-95	CURIES	0.00E+00	0.00E+00	5.22E-05	2.76E-06
ND-149	CURIES	0.00E+00	0.00E+00	2.69E-06	0.00E+00
NI-56	CURIES	0.00E+00	0.00E+00	1.20E-05	7.62E-06
RH-105	CURIES	0.00E+00	0.00E+00	7.28E-06	0.00E+00
SB-125	CURIES	0.00E+00	0.00E+00	7.32E-04	2.19E-04
SN-117M	CURIES	0.00E+00	0.00E+00	7.11E-05	1.99E-05
SR-85	CURIES	0.00E+00	0.00E+00	5.34E-07	0.00E+00
SR-89	CURIES	7.49E-04	7.61E-06	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	6.73E-06	9.31E-06
TA-182	CURIES	0.00E+00	0.00E+00	1.24E-06	0.00E+00
TC-101	CURIES	0.00E+00	0.00E+00	5.60E-07	0.00E+00
TC-99M	CURIES	0.00E+00	0.00E+00	4.71E-07	0.00E+00
TE-125M	CURIES	0.00E+00	0.00E+00	3.21E-02	2.12E-02
TE-127	CURIES	0.00E+00	0.00E+00	0.00E+00	3.83E-05
TE-129M	CURIES	0.00E+00	0.00E+00	2.43E-05	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDE	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION & ACTIVATION PRODUCTS					
TE-133	CURIES	0.00E+00	0.00E+00	0.00E+00	2.73E-06
TE-134	CURIES	0.00E+00	0.00E+00	2.45E-06	0.00E+00
Y-91M	CURIES	0.00E+00	0.00E+00	0.00E+00	1.19E-06
ZN-65	CURIES	0.00E+00	0.00E+00	1.23E-03	3.18E-04
ZR-95	CURIES	0.00E+00	0.00E+00	1.57E-05	0.00E+00
TOTALS	CURIES	4.46E-03	4.53E-05	4.74E-02	2.48E-02
DISSOLVED AND ENTRAINED GASES					
AR-41	CURIES	0.00E+00	0.00E+00	2.46E-06	2.01E-06
KR-85	CURIES	0.00E+00	0.00E+00	1.18E-04	0.00E+00
KR-87	CURIES	0.00E+00	0.00E+00	1.30E-06	0.00E+00
XE-131M	CURIES	0.00E+00	0.00E+00	1.30E-05	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	6.71E-04	9.61E-06
XE-135	CURIES	0.00E+00	0.00E+00	1.09E-06	5.20E-07
XE-138	CURIES	0.00E+00	0.00E+00	0.00E+00	3.02E-04
TOTALS	CURIES	0.00E+00	0.00E+00	8.07E-04	3.14E-04
G-ALPHA	CURIES	4.18E-05	0.00E+00	1.52E-05	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 1-4 for typically achieved minimum detectable concentrations.

TABLE 1-3A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Units	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Bone	5.0	mrem	8.90E-03	1.78E-01	1.31E-02	2.62E-01
Liver	5.0	mrem	4.83E-03	9.65E-02	5.36E-03	1.07E-01
TBody	1.5	mrem	2.73E-03	1.82E-01	2.31E-03	1.54E-01
Thyroid	5.0	mrem	3.93E-03	7.86E-02	4.00E-03	8.00E-02
Kidney	5.0	mrem	3.54E-02	7.09E-01	5.20E-02	1.04E+00
Lung	5.0	mrem	3.27E-03	6.54E-02	2.79E-03	5.57E-02
GILLI	5.0	mrem	3.57E-02	7.15E-01	5.41E-02	1.08E+00

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	10.0	mrem	2.20E-02	2.20E-01
Liver	10.0	mrem	1.02E-02	1.02E-01
TBody	3.0	mrem	5.04E-03	1.68E-01
Thyroid	10.0	mrem	7.93E-03	7.93E-02
Kidney	10.0	mrem	8.74E-02	8.74E-01
Lung	10.0	mrem	6.06E-03	6.06E-02
GILLI	10.0	mrem	8.98E-02	8.98E-01

TABLE 1-3A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Units	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Bone	5.0	mrem	4.08E-03	8.16E-02	5.46E-03	1.09E-01
Liver	5.0	mrem	2.19E-03	4.38E-02	2.92E-03	5.84E-02
TBody	1.5	mrem	1.15E-03	7.67E-02	1.68E-03	1.12E-01
Thyroid	5.0	mrem	1.27E-03	2.54E-02	2.47E-03	4.93E-02
Kidney	5.0	mrem	1.08E-02	2.16E-01	2.23E-02	4.47E-01
Lung	5.0	mrem	1.21E-03	2.42E-02	1.49E-03	2.99E-02
GILLI	5.0	mrem	1.12E-02	2.23E-01	2.21E-02	4.43E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	10.0	mrem	3.15E-02	3.15E-01
Liver	10.0	mrem	1.53E-02	1.53E-01
TBody	3.0	mrem	7.87E-03	2.62E-01
Thyroid	10.0	mrem	1.17E-02	1.17E-01
Kidney	10.0	mrem	1.21E-01	1.21E+00
Lung	10.0	mrem	8.76E-03	8.76E-02
GILLI	10.0	mrem	1.23E-01	1.23E+00

TABLE 1-3B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Units	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Bone	5.0	mrem	9.94E-03	1.99E-01	9.58E-03	1.92E-01
Liver	5.0	mrem	4.77E-03	9.54E-02	3.83E-03	7.65E-02
TBody	1.5	mrem	2.41E-03	1.61E-01	1.60E-03	1.07E-01
Thyroid	5.0	mrem	3.86E-03	7.71E-02	3.01E-03	6.03E-02
Kidney	5.0	mrem	4.03E-02	8.06E-01	3.87E-02	7.73E-01
Lung	5.0	mrem	2.21E-03	4.41E-02	1.32E-03	2.64E-02
GILLI	5.0	mrem	4.02E-02	8.04E-01	3.95E-02	7.91E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	10.0	mrem	1.95E-02	1.95E-01
Liver	10.0	mrem	8.60E-03	8.60E-02
TBody	3.0	mrem	4.01E-03	1.34E-01
Thyroid	10.0	mrem	6.87E-03	6.87E-02
Kidney	10.0	mrem	7.90E-02	7.90E-01
Lung	10.0	mrem	3.53E-03	3.53E-02
GILLI	10.0	mrem	7.98E-02	7.98E-01

TABLE 1-3B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO LIQUID RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Units	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Bone	5.0	mrem	1.09E-02	2.19E-01	3.02E-03	6.04E-02
Liver	5.0	mrem	6.06E-03	1.21E-01	2.36E-03	4.72E-02
TBody	1.5	mrem	3.41E-03	2.27E-01	1.69E-03	1.13E-01
Thyroid	5.0	mrem	3.70E-03	7.41E-02	1.96E-03	3.91E-02
Kidney	5.0	mrem	4.06E-02	8.12E-01	1.24E-02	2.48E-01
Lung	5.0	mrem	4.29E-03	8.58E-02	1.66E-03	3.33E-02
GILLI	5.0	mrem	4.25E-02	8.50E-01	1.27E-02	2.53E-01

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	10.0	mrem	3.35E-02	3.35E-01
Liver	10.0	mrem	1.70E-02	1.70E-01
TBody	3.0	mrem	9.11E-03	3.04E-01
Thyroid	10.0	mrem	1.25E-02	1.25E-01
Kidney	10.0	mrem	1.32E-01	1.32E+00
Lung	10.0	mrem	9.48E-03	9.48E-02
GILLI	10.0	mrem	1.35E-01	1.35E+00

TABLE 1-4
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
MINIMUM DETECTABLE CONCENTRATION - LIQUID SAMPLE ANALYSES

The values in this table represent a priori Minimum Detectable Concentrations (MDC) that are typically achieved in laboratory analyses of liquid radwaste samples.

Nuclide	MDC(uCi/ML)
MN-54	3.14E-08
CO-58	4.92E-08
FE-59	7.19E-08
CO-60	4.77E-08
ZN-65	8.11E-08
MO-99	1.29E-07
I-131	2.53E-08
CS-134	3.51E-08
CS-137	4.28E-08
CE-141	5.41E-08
CE-144	1.95E-07

TABLE 1-5A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Batch Release Summary
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

LIQUID RELEASES			
NUMBER OF BATCH RELEASES	:	251	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	25036.67	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	136.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	99.75	MINUTES
MINIMUM TIME PERIOD FOR A BATCH RELEASE	:	66.00	MINUTES
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	8.43E+03	CFS *

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

TABLE 1-5A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Batch Release Summary
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

LIQUID RELEASES			
NUMBER OF BATCH RELEASES	:	105	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	11564.55	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	130.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	110.14	MINUTES
MINIMUM TIME PERIOD FOR A BATCH RELEASE	:	90.00	MINUTES
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	3.18E+03	CFS *

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

TABLE 1-5B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Batch Release Summary
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

LIQUID RELEASES			
NUMBER OF BATCH RELEASES	:	182	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	18692.33	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	275.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	102.71	MINUTES
MINIMUM TIME PERIOD FOR A BATCH RELEASE	:	3.00	MINUTES
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	8.43E+03	CFS *

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

TABLE 1-5B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Batch Release Summary
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

LIQUID RELEASES			
NUMBER OF BATCH RELEASES	:	167	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	17698.00	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	145.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	105.98	MINUTES
MINIMUM TIME PERIOD FOR A BATCH RELEASE	:	1.00	MINUTES
AVERAGE STREAM FLOW DURING PERIODS OF RELEASE OF LIQUID EFFLUENT INTO A FLOWING STREAM	:	3.18E+03	CFS *

* Average River Flow Rate, taken at Walter F. George Lock and Dam, located 30.7 miles above Farley Nuclear Plant.

TABLE 1-6A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Abnormal Release Summary
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

LIQUID RELEASES

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 1-6A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Abnormal Release Summary
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

LIQUID RELEASES

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 1-6B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Abnormal Release Summary
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

LIQUID RELEASES

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 1-6B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Liquid Effluents - Abnormal Release Summary
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

LIQUID RELEASES

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

2.0 GASEOUS EFFLUENTS

This section contains applicable ODCM limits for gaseous effluents as well as the quantities of radioactive gaseous effluents released during 2006. These quantities are summarized on a quarterly basis and include any unplanned releases. Tabulations are provided of the offsite air doses calculated in accordance with ODCM 3.4.2 to show conformance with the limits of ODCM 3.1.3, and the offsite organ doses to a member of the public calculated in accordance with ODCM 3.4.3 to show conformance with ODCM 3.1.4.

2.1 Regulatory Requirements

The requirements presented in this section are for Unit 1 and Unit 2.

2.1.1 Dose Rate Limits

The dose rates due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrem/yr. to the whole body and less than or equal to 3000 mrem/yr. to the skin, and

b. For Iodine-131, Iodine-133,tritium and for all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrem/yr. to any organ.

2.1.2 Air Doses Due to Noble Gases in Gaseous Releases

Technical Specifications 5.5.4.e and 5.5.4.h state that the air dose due to noble gases released in gaseous effluents, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see ODCM Figure 10-1) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation, and

b. During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

2.1.3 Doses to a Member of the Public

Technical Specifications 5.5.4.e and 5.5.4.i state that the dose to a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, to areas at and beyond the SITE BOUNDARY (see ODCM Figure 10-1) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 7.5 mrem to any organ, and

b. During any calendar year: Less than or equal to 15 mrem to any organ.

2.2 Measurements and Approximation of Total Radioactivity

The following noble gases are considered in evaluating gaseous effluents:

KR-87	XE-133
KR-88	XE-135
XE-133M	XE-138

The following radioiodines and radioactive materials in particulate form are specifically considered in evaluating gaseous effluents:

MN-54	MO-99
FE-59	I-131
CO-58	CS-134
CO-60	CS-137
ZN-65	CE-141
SR-89	CE-144
SR-90	H-3

2.2.1 Sample collection and Analysis

Periodic grab samples from plant effluent streams are analyzed by a computerized pulse height analyzer system utilizing high resolution germanium detectors. Samples are obtained and analyzed in accordance with ODCM Table 3-3. Isotopic values thus obtained are used for release rate calculations as specified in ODCM 3.4.2 and ODCM 3.4.3. Only those nuclides which are detected are used in calculations. For radioiodines and particulates, in addition to the nuclides listed above other nuclides with half-lives greater than 8 days which are identified are also considered.

Continuous Releases: Continuous sampling is performed on the continuous release points (i.e. the Plant Vent Stack, Containment Purge when in continuous mode, and the Turbine Building Vent). Particulate material is collected by filtration. Periodically these filters are removed and analyzed on the pulse height analyzer to identify and quantify radioactive materials collected on the filters.

Particulate filters are then analyzed for gross alpha and strontium as required. All gross alpha, Sr-89 and SR-90 samples are sent offsite to the Georgia Power Environmental Laboratory for analysis.

Batch Releases: The processing of batch type releases (from Containment when in batch mode, or Waste Gas Decay Tanks) is analogous to continuous releases, except that the release is not commenced until samples have been obtained and analyzed. Containment Purge batch releases were commenced at FNP in 2006 in order to take advantage of additional decay time for short lived radionuclides.

Typically achieved minimum detectable concentrations for gaseous effluent sample analyses are reported in Table 2-6.

2.2.2 Total Quantities of Radioactivity, Dose Rates, and Cumulative Doses

The methods for determining release quantities of radioactivity, dose rates, and cumulative doses follow:

2.2.2.1 Fission and Activation Gases

The released radioactivity is determined using sample analyses results collected as described in section 2.2.1 and the average release flow rates over the period represented by the collected sample.

Dose rates due to noble gases, radioiodines, tritium, and particulates are calculated (with computer assistance). The calculated dose rates are compared to the dose rate limits specified in ODCM 3.1.2 for noble gases, radioiodine, tritium, and particulates. Dose rate calculation methodology is presented in the ODCM.

Beta and gamma air doses due to noble gases are calculated for the location in the unrestricted area with the potential for the highest exposure due to gaseous releases. Air doses are calculated for each release period and cumulative totals are kept for each unit for the calendar quarter and year. Cumulative air doses are compared to the dose limits specified in ODCM 3.1.3. The current percent of the ODCM limits are shown on the printout for each release period. Air dose calculation methodology is presented in the ODCM.

2.2.2.2 Radioiodine, Tritium, and Particulate Releases

Released quantities of radioiodines are determined using the weekly samples and release flow rates for the applicable release points. Radioiodine concentrations are determined by gamma spectroscopy.

Release quantities of particulates are determined using the weekly (filter) samples and release flow rates for the applicable release points. Gamma spectroscopy is used to quantify the concentrations of principal gamma emitters.

After each quarter, the particulate filters from each applicable vent (plant vent stack and containment purge) are combined, fused, and a strontium separation is performed. Since sample flows and vent flows are almost constant over each quarterly period the filters from each vent can be dissolved together. Decay corrections are performed back to the middle of the quarterly collection period. If Sr-89 or Sr-90 is not detected, MDC's are calculated. Strontium concentrations are input into the composite file of the computer and used for release dose rate and individual dose calculations.

Tritium samples are obtained monthly from the Plant Vent Stack, the Containment Purge when in batch mode, and the Turbine Building Vent (and weekly for Containment Purge when in continuous mode) by passing the sample stream through a cold trap or by using the bubble method. The grams of water vapor/cubic meter is measured upstream of the cold trap in order to alleviate the difficulties in determining water vapor collection efficiencies. The tritium samples are analyzed onsite and the results furnished in uCi/ml of water. The tritium concentration in water is converted to the tritium concentration in air and this value is input into the composite file of the computer and used in release, dose rate,and individual dose calculations.

Dose rates due to radioiodine, tritium and particulates are calculated for a hypothetical child exposed to the inhalation pathway at the location in the unrestricted area where the potential dose rate is expected to be the highest. Dose rates are calculated, for each release point for each release period, and the dose rates from each release point is compared to the dose rate limits specified in ODCM 3.1.2, allocated for each release point as described in ODCM 3.3.2.

Doses to a Member of the Public (individual doses) due to radioiodine, tritium and particulates are calculated for the controlling receptor, which is described in the ODCM. Individual doses are calculated for each release period, and cumulative totals are kept for each unit, for the current calendar quarter and year. Cumulative individual doses are compared to the dose limits specified in ODCM 3.1.4. The current percent of ODCM limits are shown on the printout for each release period.

2.2.2.3 Gross Alpha Release

The gross alpha release is computed each month by counting the particulate filters, for each week for gross alpha activity in a proportional counter. The highest concentration calculated for any of these weeks is used for the monthly value. This value is input into the composite file of the computer and used for release calculations.

2.2.3 Total Error Estimation

The maximum errors associated with monitor readings, sample flow, vent flow, sample collection, monitor calibration and laboratory procedure are collectively estimated to be:

Fission and Activation Gases	Iodine	Particulates	Tritium
75%	60%	50%	45%

The average error associated with counting is estimated to be:

Fission and Activation Gases	Iodine	Particulates	Tritium
19%	28%	20%	8%

2.3 Gaseous Effluent Release Data

Regulatory Guide 1.21 Tables 1A, 1B and 1C are found in this report as Tables 2-1A, 2-1B, 2-1C, 2-2A, 2-2B, 2-2C, 2-3A, 2-3B, and 2-3C. Data are presented on a quarterly basis as required by Regulatory Guide 1.21.

To complete Tables 2-1A and 2-1B, the total release for each of the four categories (fission and activation gases, radioiodines, particulates and tritium) was divided by the number of seconds in the quarter to obtain a release rate in uCi/second for each category. However, the percent of the ODCM limits are not applicable because FNP has no curie limit for gaseous releases. Applicable limits are expressed in terms of dose. Noble gases are limited as specified in ODCM 3.1.2. The other three categories (tritium, radioiodines, and particulates) are limited as a group as specified in ODCM 3.1.2.

Dose rates due to noble gas releases and due to radioiodines, tritium and particulate releases were calculated as part of the pre-release and post-release permits. No limits were exceeded for this reporting period.

Gross alpha radioactivity is reported in Tables 2-1A, 2-1B and 2-1C as curies released in each quarter.

Limits for cumulative beta and gamma air doses due to noble gases are presented in Tables 2-4A and 2-4B along with the percent of ODCM limits.

Limits for cumulative doses to an individual due to radioiodines, tritium and particulates are specified in ODCM 3.1.4. Cumulative individual doses are presented in Tables 2-5A and 2-5B along with percent of ODCM limits.

2.4 Radiological Impact Due to Gaseous Releases

The air doses due to noble gases and doses to a Member of the Public due to radioiodines, tritium and particulates in gaseous effluents for Units 1 and 2 are provided in the following tables in order to show conformance with the limits of ODCM 3.1.3 and ODCM 3.1.4:

Unit 1 2006 Air Doses Due to Noble Gases in Gaseous Releases: Table 2-4A

Unit 2 2006 Air Doses Due to Noble Gases in Gaseous Releases: Table 2-4B

Unit 1 2006 Doses to a Member of the Public Due to Radioiodines, Tritium, and Particulates in Gaseous Releases: Table 2-5A

Unit 2 2006 Doses to a Member of the Public Due to Radioiodines, Tritium, and Particulates in Gaseous Releases: Table 2-5B

2.5 Gaseous Effluents - Batch Releases

Batch release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2006 Gaseous Effluents - Batch Release Summary: Table 2-7A

Unit 2 2006 Gaseous Effluents - Batch Release Summary: Table 2-7B

2.6 Gaseous Effluents - Abnormal Releases

There were no abnormal releases on Unit 1 or Unit 2 during 2006.

Abnormal release information for Units 1 and 2 is summarized in the following tables:

Unit 1 2006 Gaseous Effluents - Abnormal Release Summary: Table 2-8A
Unit 2 2006 Gaseous Effluents - Abnormal Release Summary: Table 2-8B

TABLE 2-1A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	9.04E+00	3.87E+00	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.16E+00	4.92E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	0.00E+00	9.11E-05	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	1.16E-05	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	7.42E-08	4.90E-06	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	9.54E-09	6.23E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	2.91E+00	3.37E+00	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	3.75E-01	4.28E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	5.28E+00	3.36E-01	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.64E-01	4.23E-02	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	4.14E-05	7.14E-05	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.21E-06	8.98E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	0.00E+00	8.64E-07	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	1.09E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.63E-01	7.73E-01	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	2.05E-02	9.72E-02	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	5.32E+00	2.95E-01	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	6.84E-01	3.75E-02	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	0.00E+00	0.00E+00	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	3.64E-08	7.09E-09	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	4.68E-09	9.01E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	1.50E+00	1.73E+00	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.93E-01	2.20E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	4.58E-01	8.91E-01	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.76E-02	1.12E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	0.00E+00	0.00E+00	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	0.00E+00	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	4.24E-08	3.19E-09	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.33E-09	4.02E-10	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	1.81E-07	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	6.86E-01	1.24E+00	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	8.62E-02	1.56E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1C
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

TYPE OF EFFLUENT	UNITS	QUARTER 1	QUARTER 2	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	1.44E+01	4.16E+00	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.85E+00	5.29E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	0.00E+00	9.11E-05	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	0.00E+00	1.16E-05	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	1.11E-07	4.91E-06	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.42E-08	6.24E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	0.00E+00	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	4.42E+00	5.09E+00	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.68E-01	6.48E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-1C
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Summation of All Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

TYPE OF EFFLUENT	UNITS	QUARTER 3	QUARTER 4	EST. TOT ERROR %
A. FISSION & ACTIVATION PRODUCTS				
1. TOTAL RELEASE	CURIES	5.74E+00	1.23E+00	7.74E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	7.22E-01	1.54E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
B. RADIOIODINES				
1. TOTAL IODINE-131	CURIES	4.14E-05	7.14E-05	6.62E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.21E-06	8.98E-06	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
C. PARTICULATES				
1. PARTICULATES(HALF-LIVES>8 DAYS)	CURIES	4.24E-08	8.75E-07	5.39E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	5.33E-09	1.10E-07	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	
4. GROSS ALPHA RADIOACTIVITY	CURIES	1.81E-07	0.00E+00	
D. TRITIUM				
1. TOTAL RELEASE	CURIES	8.48E-01	2.01E+00	4.57E+01
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/Sec	1.07E-01	2.53E-01	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	

* Applicable limits are expressed in terms of dose. See Tables 2-4A, 2-4B, 2-5A, and 2-5B of this report.

TABLE 2-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
AR-41	CURIES	9.04E+00	3.87E+00	1.79E-04	0.00E+00
KR-85M	CURIES	0.00E+00	0.00E+00	1.62E-05	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	5.32E-04	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	5.06E-03	2.17E-03
TOTAL FOR PERIOD	CURIES	9.04E+00	3.87E+00	5.79E-03	2.17E-03
IODINES					
I-133	CURIES	0.00E+00	8.38E-05	0.00E+00	0.00E+00
I-131	CURIES	0.00E+00	9.11E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	0.00E+00	1.75E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-60	CURIES	6.56E-08	4.89E-06	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	6.56E-08	4.89E-06	0.00E+00	0.00E+00
H-3	CURIES	2.91E+00	3.37E+00	0.00E+00	0.00E+00
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-2A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CURIES	2.11E+00	0.00E+00	5.16E-01	3.26E-01
KR-85M	CURIES	1.13E-02	0.00E+00	0.00E+00	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	4.22E-04	0.00E+00
XE-133	CURIES	2.63E+00	0.00E+00	1.37E-02	9.59E-03
TOTAL FOR PERIOD	CURIES	4.75E+00	0.00E+00	5.30E-01	3.36E-01
IODINES					
I-133	CURIES	3.93E-04	8.61E-04	0.00E+00	0.00E+00
I-131	CURIES	4.14E-05	7.14E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.35E-04	9.32E-04	0.00E+00	0.00E+00
PARTICULATES					
EU-155	CURIES	0.00E+00	8.64E-07	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	0.00E+00	8.64E-07	0.00E+00	0.00E+00
H-3	CURIES	8.28E-02	6.44E-01	7.97E-02	1.29E-01
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
AR-41	CURIES	5.32E+00	0.00E+00	0.00E+00	2.95E-01
XE-133	CURIES	0.00E+00	0.00E+00	2.35E-04	0.00E+00
TOTAL FOR PERIOD	CURIES	5.32E+00	0.00E+00	2.35E-04	2.95E-01
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SR-90	CURIES	3.64E-08	2.22E-16	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	3.64E-08	2.22E-16	0.00E+00	0.00E+00
H-3	CURIES	1.50E+00	1.72E+00	0.00E+00	3.40E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-2B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CURIES	1.49E-01	5.57E-01	3.09E-01	3.21E-01
KR-85M	CURIES	0.00E+00	0.00E+00	0.00E+00	1.97E-04
XE-133	CURIES	0.00E+00	0.00E+00	1.64E-05	3.29E-03
XE-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	9.86E-03
TOTAL FOR PERIOD	CURIES	1.49E-01	5.57E-01	3.09E-01	3.34E-01
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	4.24E-08	3.19E-09	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.24E-08	3.19E-09	0.00E+00	0.00E+00
H-3	CURIES	6.80E-01	1.24E+00	6.02E-03	4.51E-04
G-ALPHA	CURIES	1.81E-07	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
AR-41	CURIES	1.44E+01	3.87E+00	1.79E-04	2.95E-01
KR-85M	CURIES	0.00E+00	0.00E+00	1.62E-05	0.00E+00
XE-135	CURIES	0.00E+00	0.00E+00	5.32E-04	0.00E+00
XE-133	CURIES	0.00E+00	0.00E+00	5.29E-03	2.17E-03
TOTAL FOR PERIOD	CURIES	1.44E+01	3.87E+00	6.02E-03	2.97E-01
IODINES					
I-133	CURIES	0.00E+00	8.38E-05	0.00E+00	0.00E+00
I-131	CURIES	0.00E+00	9.11E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	0.00E+00	1.75E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CO-60	CURIES	6.56E-08	4.89E-06	0.00E+00	0.00E+00
SR-90	CURIES	3.64E-08	2.22E-16	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	1.02E-07	4.89E-06	0.00E+00	0.00E+00
H-3	CURIES	4.42E+00	5.09E+00	0.00E+00	3.40E-03
G-ALPHA	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-2C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Mixed-Mode Level Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
AR-41	CURIES	2.26E+00	5.57E-01	8.25E-01	6.47E-01
KR-85M	CURIES	1.13E-02	0.00E+00	0.00E+00	1.97E-04
XE-135	CURIES	0.00E+00	0.00E+00	4.22E-04	0.00E+00
XE-133	CURIES	2.63E+00	0.00E+00	1.37E-02	1.29E-02
XE-131M	CURIES	0.00E+00	0.00E+00	0.00E+00	9.86E-03
TOTAL FOR PERIOD	CURIES	4.90E+00	5.57E-01	8.39E-01	6.70E-01
IODINES					
I-133	CURIES	3.93E-04	8.61E-04	0.00E+00	0.00E+00
I-131	CURIES	4.14E-05	7.14E-05	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.35E-04	9.32E-04	0.00E+00	0.00E+00
PARTICULATES					
SR-89	CURIES	4.24E-08	3.19E-09	0.00E+00	0.00E+00
EU-155	CURIES	0.00E+00	8.64E-07	0.00E+00	0.00E+00
SR-90	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	4.24E-08	8.67E-07	0.00E+00	0.00E+00
H-3	CURIES	7.62E-01	1.88E+00	8.58E-02	1.29E-01
G-ALPHA	CURIES	1.81E-07	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
CO-60	CURIES	8.55E-09	6.41E-09	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	8.55E-09	6.41E-09	0.00E+00	0.00E+00
H-3	CURIES	2.68E-05	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3A*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3B*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: Site
Starting : 1-Jan-2006 Ending : 30-Jun-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 1	QUARTER 2	QUARTER 1	QUARTER 2
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
CO-60	CURIES	8.55E-09	6.41E-09	0.00E+00	0.00E+00
TOTAL FOR PERIOD	CURIES	8.55E-09	6.41E-09	0.00E+00	0.00E+00
H-3	CURIES	2.68E-05	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-3C*
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents-Ground Level Releases
Unit: Site
Starting : 1-Jul-2006 Ending : 31-Dec-2006

		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	QUARTER 3	QUARTER 4	QUARTER 3	QUARTER 4
FISSION GASES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IODINES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PARTICULATES					
TOTAL FOR PERIOD	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-3	CURIES	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Zeroes in this table indicate that no radioactivity was present at detectable levels. See Table 2-6 for typically achieved minimum detectable concentrations.

TABLE 2-4A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO NOBLE GASES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Type of Radiation	ODCM Limit	Units	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Gamma	5.0	mrad	2.88E-03	5.75E-02	1.23E-03	2.46E-02
Beta	10.0	mrad	1.02E-03	1.02E-02	4.34E-04	4.34E-03

Cumulative Doses per Year

Type of Radiation	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Gamma	10.0	mrad	4.11E-03	4.11E-02
Beta	20.0	mrad	1.45E-03	7.25E-03

TABLE 2-4A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO NOBLE GASES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Type of Radiation	ODCM Limit	Units	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Gamma	5.0	mrad	8.69E-04	1.74E-02	1.04E-04	2.08E-03
Beta	10.0	mrad	3.91E-04	3.91E-03	3.70E-05	3.70E-04

Cumulative Doses per Year

Type of Radiation	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Gamma	10.0	mrad	5.08E-03	5.08E-02
Beta	20.0	mrad	1.88E-03	9.39E-03

TABLE 2-4B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO NOBLE GASES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Type of Radi-ation	ODCM Limit	Units	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Gamma	5.0	mrad	1.69E-03	3.39E-02	9.40E-05	1.88E-03
Beta	10.0	mrad	5.98E-04	5.98E-03	3.31E-05	3.31E-04

Cumulative Doses per Year

Type of Radi-ation	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Gamma	10.0	mrad	1.79E-03	1.79E-02
Beta	20.0	mrad	6.31E-04	3.15E-03

TABLE 2-4B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
AIR DOSES DUE TO NOBLE GASES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Type of Radiation	ODCM Limit	Units	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Gamma	5.0	mrad	1.46E-04	2.92E-03	2.80E-04	5.59E-03
Beta	10.0	mrad	5.14E-05	5.14E-04	9.91E-05	9.91E-04

Cumulative Doses per Year

Type of Radiation	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Gamma	10.0	mrad	2.21E-03	2.21E-02
Beta	20.0	mrad	7.81E-04	3.91E-03

TABLE 2-5A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM, AND PARTICULATES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Unit	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Bone	7.5	mrem	6.23E-07	8.31E-06	4.08E-05	5.44E-04
Liver	7.5	mrem	3.98E-04	5.31E-03	5.01E-04	6.69E-03
TBody	7.5	mrem	3.98E-04	5.31E-03	5.01E-04	6.67E-03
Thyroid	7.5	mrem	3.98E-04	5.31E-03	2.17E-03	2.90E-02
Kidney	7.5	mrem	3.98E-04	5.31E-03	5.04E-04	6.72E-03
Lung	7.5	mrem	3.98E-04	5.31E-03	4.96E-04	6.62E-03
GILLI	7.5	mrem	3.98E-04	5.31E-03	5.00E-04	6.67E-03

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	15.0	mrem	4.14E-05	2.76E-04
Liver	15.0	mrem	9.00E-04	6.00E-03
TBody	15.0	mrem	8.99E-04	5.99E-03
Thyroid	15.0	mrem	2.57E-03	1.71E-02
Kidney	15.0	mrem	9.02E-04	6.02E-03
Lung	15.0	mrem	8.95E-04	5.97E-03
GILLI	15.0	mrem	8.99E-04	5.99E-03

TABLE 2-5A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM, AND PARTICULATES IN GASEOUS RELEASES
Unit: 1
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Unit	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Bone	7.5	mrem	3.44E-06	4.58E-05	6.36E-06	8.48E-05
Liver	7.5	mrem	2.58E-05	3.44E-04	1.12E-04	1.50E-03
TBody	7.5	mrem	2.43E-05	3.24E-04	1.09E-04	1.46E-03
Thyroid	7.5	mrem	9.16E-04	1.22E-02	1.71E-03	2.28E-02
Kidney	7.5	mrem	2.78E-05	3.70E-04	1.16E-04	1.54E-03
Lung	7.5	mrem	2.28E-05	3.03E-04	1.07E-04	1.42E-03
GILLI	7.5	mrem	2.32E-05	3.10E-04	1.08E-04	1.43E-03

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	15.0	mrem	5.12E-05	3.42E-04
Liver	15.0	mrem	1.04E-03	6.92E-03
TBody	15.0	mrem	1.03E-03	6.89E-03
Thyroid	15.0	mrem	5.20E-03	3.46E-02
Kidney	15.0	mrem	1.05E-03	6.97E-03
Lung	15.0	mrem	1.02E-03	6.83E-03
GILLI	15.0	mrem	1.03E-03	6.86E-03

TABLE 2-5B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM, AND PARTICULATES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jan-2006 Ending: 30-Jun-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Unit	Quarter 1	% of ODCM Limit	Quarter 2	% of ODCM Limit
Bone	7.5	mrem	1.53E-05	2.03E-04	1.90E-12	2.53E-11
Liver	7.5	mrem	2.05E-04	2.74E-03	2.36E-04	3.14E-03
TBody	7.5	mrem	2.09E-04	2.79E-03	2.36E-04	3.14E-03
Thyroid	7.5	mrem	2.05E-04	2.74E-03	2.36E-04	3.14E-03
Kidney	7.5	mrem	2.05E-04	2.74E-03	2.36E-04	3.14E-03
Lung	7.5	mrem	2.05E-04	2.74E-03	2.36E-04	3.14E-03
GILLI	7.5	mrem	2.06E-04	2.74E-03	2.36E-04	3.14E-03

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	15.0	mrem	1.53E-05	1.02E-04
Liver	15.0	mrem	4.41E-04	2.94E-03
TBody	15.0	mrem	4.45E-04	2.97E-03
Thyroid	15.0	mrem	4.41E-04	2.94E-03
Kidney	15.0	mrem	4.41E-04	2.94E-03
Lung	15.0	mrem	4.41E-04	2.94E-03
GILLI	15.0	mrem	4.41E-04	2.94E-03

TABLE 2-5B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSES TO A MEMBER OF THE PUBLIC DUE TO RADIOIODINES, TRITIUM, AND PARTICULATES IN GASEOUS RELEASES
Unit: 2
Starting: 01-Jul-2006 Ending: 31-Dec-2006

Cumulative Doses per Quarter

Organ	ODCM Limit	Unit	Quarter 3	% of ODCM Limit	Quarter 4	% of ODCM Limit
Bone	7.5	mrem	8.23E-07	1.10E-05	3.88E-08	5.18E-07
Liver	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03
TBody	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03
Thyroid	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03
Kidney	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03
Lung	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03
GILLI	7.5	mrem	9.36E-05	1.25E-03	1.69E-04	2.25E-03

Cumulative Doses per Year

Organ	ODCM Limit	Units	Year to Ending Date	% of ODCM Limit
Bone	15.0	mrem	1.61E-05	1.07E-04
Liver	15.0	mrem	7.04E-04	4.69E-03
TBody	15.0	mrem	7.08E-04	4.72E-03
Thyroid	15.0	mrem	7.04E-04	4.69E-03
Kidney	15.0	mrem	7.04E-04	4.69E-03
Lung	15.0	mrem	7.04E-04	4.69E-03
GILLI	15.0	mrem	7.04E-04	4.69E-03

TABLE 2-6
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
MINIMUM DETECTABLE CONCENTRATIONS - GASEOUS EFFLUENT ANALYSES

The values in this table represent a priori Minimum Detectable Concentrations (MDC) that are typically achieved in laboratory analyses of gaseous radwaste samples.

Nuclide	MDC(uCi/ML)
MN-54	3.21E-15
CO-58	1.53E-14
FE-59	7.96E-15
CO-60	1.95E-14
ZN-65	2.34E-14
MO-99	1.81E-13
CS-134	1.41E-14
CS-137	7.83E-15
CE-141	6.96E-15
CE-144	3.47E-14
KR-87	8.18E-07
KR-88	3.94E-08
XE-133	4.30E-08
XE-133M	4.82E-08
XE-135	1.78E-08
XE-138	1.99E-07
I-131	9.67E-15
I-133	1.80E-13

TABLE 2-7A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Batch Release Summary
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

GASEOUS RELEASES			
NUMBER OF BATCH RELEASES	:	20	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	7692.00	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	791.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	384.60	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	257.00	MINUTES

TABLE 2-7A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Batch Release Summary
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

GASEOUS RELEASES

NUMBER OF BATCH RELEASES	:	72	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	11943.00	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	645.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	165.88	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	26.00	MINUTES

TABLE 2-7B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Batch Release Summary
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

GASEOUS RELEASES			
NUMBER OF BATCH RELEASES	:	36	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	5162.00	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	477.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	143.39	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	72.00	MINUTES

TABLE 2-7B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Batch Release Summary
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

GASEOUS RELEASES			
NUMBER OF BATCH RELEASES	:	65	
TOTAL TIME PERIOD FOR BATCH RELEASES	:	8503.00	MINUTES
MAXIMUM TIME PERIOD FOR A BATCH RELEASE	:	493.00	MINUTES
AVERAGE TIME PERIOD FOR BATCH RELEASES	:	130.82	MINUTES
MINIMUM TIME FOR A BATCH RELEASE	:	19.00	MINUTES

TABLE 2-8A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Abnormal Release Summary
Unit: 1
Starting : 1-Jan-2006 Ending : 30-Jun-2006

GASEOUS RELEASES			
NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 2-8A
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Abnormal Release Summary
Unit: 1
Starting : 1-Jul-2006 Ending : 31-Dec-2006

GASEOUS RELEASES

NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 2-8B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Abnormal Release Summary
Unit: 2
Starting : 1-Jan-2006 Ending : 30-Jun-2006

GASEOUS RELEASES			
NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

TABLE 2-8B
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
Gaseous Effluents - Abnormal Release Summary
Unit: 2
Starting : 1-Jul-2006 Ending : 31-Dec-2006

GASEOUS RELEASES			
NUMBER OF RELEASES	:	0	
TOTAL TIME FOR ALL RELEASES	:	0.00	MINUTES
MAXIMUM TIME FOR A RELEASE	:	0.00	MINUTES
AVERAGE TIME FOR A RELEASE	:	0.00	MINUTES
MINIMUM TIME FOR A RELEASE	:	0.00	MINUTES
TOTAL ACTIVITY FOR ALL RELEASES	:	0.00E+00	CURIES

3.0 SOLID WASTE

3.1 Regulatory Requirements

3.1.1 Solid Radioactive Waste System

PCP B.3.1 states in part that the radwaste solidification system shall be operable and used for the solidification and packaging of radioactive wastes to ensure meeting the requirements of 10CFR Part 20 and 10CFR Part 71 prior to shipment of radioactive wastes from the site.

3.1.2 Reporting Requirements

PCP B.5.1.1 states in part that the Annual Radioactive Effluent Release Report, submitted in accordance with Technical Specification 5.6.3, shall include a summary of the quantities of solid radwaste released from the units as outlined in Regulatory Guide 1.21, with data summarized on a six-month basis following the format of Appendix B thereof.

3.2 Solid Waste Data

Regulatory Guide 1.21 Table 3 is found in this report as Table 3-1.

The error involved in determining the contents of solid radwaste shipments is estimated to be less than + or - 15%.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jan-2006 Ending: 30-Jun-2006

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL
(not irradiated fuel)

1. Type of Waste.	UNITS	6-Months
a. Spent resins, Filter sludges, evaporator bottoms, etc.	m^3	1.720E+00
	Ci*	1.110E+02
b. Dry compressible waste, contaminated equipment, etc.	m^3	3.340E+02
	Ci*	2.062E+01
c. Irradiated components, control rods, etc.	m^3	None
	Ci*	None
d. Other (describe)	m^3	None
	Ci*	None

2. Estimate of major nuclide composition (by type of waste).

a.	NI-63	59.0%
	CO-60	15.0%
	FE-55	10.0%
	NI-59	7.1%
	C-14	2.0%
	CO-58	1.4%
b.	CO-60	33.2%
	FE-55	24.2%
	ZN-65	19.2%
	CO-58	6.0%
	CR-51	4.3%
	ZR-95	3.0%
	NB-95	2.8%
	SB-125	1.4%
	MN-54	1.1%

* Measured and/or estimated by correlations in accordance with 10CFR61.55.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jan-2006 Ending: 30-Jun-2006

(continued)

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
15	Highway	Envirocare of Utah
6	Highway	Barnwell, SC
2	Waterway/Highway	Envirocare of Utah
50	Rail	Envirocare of Utah

4. Type of Containers (Shipped offsite for burial/processing)

	Container Description	Type of Container	Number of Containers	Container Volume (m^3)
a.	RADLOC 500	High Integrity Container	1	3.850E+00
	CNS 8-120	High Integrity Container	1	3.410E+00
b.	20' Sealand	General Design Package	18	2.945E+01
	Retired Rx Heads	General Design Package	2	1.448E+02

5. Solidification Agent

a. None

b. None

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jul-2006 Ending: 31-Dec-2006

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL
(not irradiated fuel)

1. Type of Waste.	UNITS	6-Months
a. Spent resins, Filter sludges, evaporator bottoms, etc.	m^3	1.033E+00
	Ci*	7.020E+00
b. Dry compressible waste, contaminated equipment, etc.	m^3	5.581E+01
	Ci*	1.435E+00
c. Irradiated components, control rods, etc.	m^3	3.251E+00
	Ci*	8.590E+02
d. Other (describe)	m^3	None
	Ci*	None

2. Estimate of major nuclide composition (by type of waste).

a.	CO-60	59.0%
	FE-55	15.0%
	C-14	10.0%
	NI-63	7.1%
	CO-58	2.0%
	CS-137	1.4%
	SB-125	1.4%
	MN-54	1.1%
	ZR-95	1.1%
b.	CO-58	23.8%
	H-3	20.0%
	ZN-65	14.0%
	NB-95	8.6%
	ZR-95	7.2%
	CO-60	7.2%
	CR-51	7.1%
	FE-55	5.3%
	C-14	1.1%
	NI-63	1.7%

* Measured and/or estimated by correlations in accordance with 10CFR61.55.

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jul-2006 Ending: 31-Dec-2006

(continued)

c. CO-60 34.4%
FE-55 25.0%
ZN-65 20.0%
CO-58 5.1%
CR-51 4.0%
ZR-95 2.8%
NI-63 2.7%
NB-95 2.4%
SB-125 1.5%
MN-54 1.2%

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
5	Highway	Envirocare of Utah
4	Highway	Barnwell, SC
23	Rail	Envirocare of Utah

4. Type of Containers (Shipped offsite for burial/processing)

	Container Description	Type of Container	Number of Containers	Container Volume (m^3)
a.	55 Gallon Drum	General Design Package	6	2.120E-01
	CNS 8-120	High Integrity Container	1	3.410E+00
b.	20' Sealand	General Design Package	14	2.945E+01
	55 Gallon Drum	General Design Package	8	2.120E-01
	3-55 Liner	USA/5805/B()	2	1.625E+00

TABLE 3-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
Starting: 01-Jul-2006 Ending: 31-Dec-2006

(continued)

5. Solidification Agent

a. None

b. None

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	N/A	N/A

4.0 DOSES TO MEMBERS OF THE PUBLIC INSIDE THE SITE BOUNDARY

4.1 Regulatory Requirements

Current FNP effluent controls as established by ODCM 6.1 do not require assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (ODCM Figure 10-1).

4.2 Demonstration of Compliance

However, this assessment has been performed for 2006 using the methods described in ODCM 6.2 and is included in this section as Table 4-1.

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	VISITOR LOCATION 1 (VIS.CENTER)
Distance (kilometers)	3.06E-01
Sector	WSW
Occupancy Factor	1.37E-03 (1.20E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	1.04E-04
Particulate X/Q (sec/m3)	1.04E-04
Particulate D/Q (m-2)	4.80E-07
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	8.80E-06
Particulate X/Q (sec/m3)	8.80E-06
Particulate D/Q (m-2)	6.20E-08
Elevated Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	4.97E-05	1.37E-05	6.35E-05	6.35E-05
Liver	mrem	5.17E-05	1.59E-05	6.76E-05	6.76E-05
TBody	mrem	5.17E-05	1.59E-05	6.76E-05	6.76E-05
Thyroid	mrem	5.17E-05	1.66E-05	6.83E-05	6.83E-05
Kidney	mrem	5.17E-05	1.59E-05	6.76E-05	6.76E-05
Lung	mrem	5.17E-05	1.60E-05	6.76E-05	6.76E-05
GI-LLI	mrem	5.17E-05	1.59E-05	6.76E-05	6.76E-05

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	VISITOR LOCATION 2 (SW POND)
Distance (kilometers)	9.66E-01
Sector	SSW
Occupancy Factor	7.53E-03 (6.60E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	4.74E-05
Particulate X/Q (sec/m3)	4.74E-05
Particulate D/Q (m-2)	1.31E-07
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	9.75E-07
Particulate X/Q (sec/m3)	9.75E-07
Particulate D/Q (m-2)	2.78E-08
Elevated Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	3.03E-05	8.90E-06	3.92E-05	3.92E-05
Liver	mrem	3.15E-05	1.02E-05	4.17E-05	4.17E-05
TBody	mrem	3.15E-05	1.02E-05	4.17E-05	4.17E-05
Thyroid	mrem	3.15E-05	1.07E-05	4.21E-05	4.21E-05
Kidney	mrem	3.15E-05	1.02E-05	4.17E-05	4.17E-05
Lung	mrem	3.15E-05	1.02E-05	4.17E-05	4.17E-05
GI-LLI	mrem	3.15E-05	1.02E-05	4.17E-05	4.17E-05

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jan-2006 Ending: 30-Jun-2006

Location Name	VISITOR LOCATION 3 (RW DISCH.)
Distance (kilometers)	1.64E+00
Sector	SE
Occupancy Factor	1.14E-02 (9.99E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:

Noble Gas X/Q (sec/m3)	1.63E-05
Particulate X/Q (sec/m3)	1.63E-05
Particulate D/Q (m-2)	4.55E-08

Mixed Mode Releases:

Noble Gas X/Q (sec/m3)	7.05E-07
Particulate X/Q (sec/m3)	7.05E-07
Particulate D/Q (m-2)	1.39E-08

Elevated Releases:

Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 1	Quarter 2	Quarters 1 and 2	Year to Ending Date
Bone	mrem	3.32E-05	9.50E-06	4.27E-05	4.27E-05
Liver	mrem	3.44E-05	1.10E-05	4.54E-05	4.54E-05
TBody	mrem	3.44E-05	1.10E-05	4.54E-05	4.54E-05
Thyroid	mrem	3.44E-05	1.14E-05	4.59E-05	4.59E-05
Kidney	mrem	3.44E-05	1.10E-05	4.54E-05	4.54E-05
Lung	mrem	3.44E-05	1.10E-05	4.54E-05	4.54E-05
GI-LLI	mrem	3.44E-05	1.10E-05	4.54E-05	4.54E-05

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	VISITOR LOCATION 1 (VIS.CENTER)
Distance (kilometers)	3.06E-01
Sector	WSW
Occupancy Factor	1.37E-03 (1.20E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	1.04E-04
Particulate X/Q (sec/m3)	1.04E-04
Particulate D/Q (m-2)	4.80E-07
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	8.80E-06
Particulate X/Q (sec/m3)	8.80E-06
Particulate D/Q (m-2)	6.20E-08
Elevated Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	1.08E-05	3.42E-06	1.42E-05	7.77E-05
Liver	mrem	1.12E-05	4.25E-06	1.54E-05	8.30E-05
TBody	mrem	1.12E-05	4.24E-06	1.54E-05	8.30E-05
Thyroid	mrem	1.20E-05	5.91E-06	1.79E-05	8.62E-05
Kidney	mrem	1.12E-05	4.25E-06	1.54E-05	8.30E-05
Lung	mrem	1.12E-05	4.24E-06	1.54E-05	8.30E-05
GI-LLI	mrem	1.12E-05	4.24E-06	1.54E-05	8.30E-05

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	VISITOR LOCATION 2 (SW POND)
Distance (kilometers)	9.66E-01
Sector	SSW
Occupancy Factor	7.53E-03 (6.60E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	4.74E-05
Particulate X/Q (sec/m3)	4.74E-05
Particulate D/Q (m-2)	1.31E-07
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	9.75E-07
Particulate X/Q (sec/m3)	9.75E-07
Particulate D/Q (m-2)	2.78E-08
Elevated Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	6.60E-06	2.10E-06	8.70E-06	4.79E-05
Liver	mrem	6.81E-06	2.60E-06	9.41E-06	5.11E-05
TBody	mrem	6.81E-06	2.60E-06	9.41E-06	5.11E-05
Thyroid	mrem	7.34E-06	3.62E-06	1.10E-05	5.31E-05
Kidney	mrem	6.81E-06	2.60E-06	9.42E-06	5.11E-05
Lung	mrem	6.81E-06	2.60E-06	9.40E-06	5.11E-05
GI-LLI	mrem	6.81E-06	2.60E-06	9.41E-06	5.11E-05

TABLE 4-1
Joseph M. Farley Nuclear Plant
ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT - 2006
DOSE TO A MEMBER OF THE PUBLIC
DUE TO ACTIVITIES INSIDE THE SITE BOUNDARY
Unit: Site

Starting: 01-Jul-2006 Ending: 31-Dec-2006

Location Name	VISITOR LOCATION 3 (RW DISCH.)
Distance (kilometers)	1.64E+00
Sector	SE
Occupancy Factor	1.14E-02 (9.99E+01 hr/yr)
Age Group	CHILD

Ground Level Releases:	
Noble Gas X/Q (sec/m3)	1.63E-05
Particulate X/Q (sec/m3)	1.63E-05
Particulate D/Q (m-2)	4.55E-08
Mixed Mode Releases:	
Noble Gas X/Q (sec/m3)	7.05E-07
Particulate X/Q (sec/m3)	7.05E-07
Particulate D/Q (m-2)	1.39E-08
Elevated Releases:	
Noble Gas X/Q (sec/m3)	N/A
Particulate X/Q (sec/m3)	N/A
Particulate D/Q (m-2)	N/A

	Units	Quarter 3	Quarter 4	Quarters 3 and 4	Year to Ending Date
Bone	mrem	7.22E-06	2.29E-06	9.51E-06	5.22E-05
Liver	mrem	7.45E-06	2.84E-06	1.03E-05	5.57E-05
TBody	mrem	7.45E-06	2.84E-06	1.03E-05	5.57E-05
Thyroid	mrem	8.03E-06	3.95E-06	1.20E-05	5.79E-05
Kidney	mrem	7.45E-06	2.84E-06	1.03E-05	5.57E-05
Lung	mrem	7.45E-06	2.84E-06	1.03E-05	5.57E-05
GI-LLI	mrem	7.45E-06	2.84E-06	1.03E-05	5.57E-05

5.0 TOTAL DOSE FROM URANIUM FUEL CYCLE (40CFR190)

5.1 Regulatory Requirements

Technical Specification 5.5.4.j states that the dose or dose commitment to any MEMBER OF THE PUBLIC over a calendar year, due to releases of radioactivity and to radiation from uranium fuel cycle sources, shall be limited to less than or equal to 25 mrem to the total body or to any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem (as stated in ODCM 5.1).

With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of ODCM 2.1.3, 3.1.3, or 3.1.4, calculations shall be made according to ODCM 5.2 methods to determine whether the above (ODCM 5.1) limits have been exceeded (as stated in ODCM 5.1.2).

5.2 Demonstration of Compliance

Since none of the ODCM 2.1.3, 3.1.3, or 3.1.4 limits were exceeded during 2006, no calculations were required.

6.0 METEOROLOGICAL DATA

Meteorological data are retained onsite; these data are available to the NRC upon request. The meteorological data include annual as well as quarterly summaries of hourly measurements of wind speed, wind direction and atmospheric stability in the form of joint frequency distribution tables.

7.0 PROGRAM DEVIATIONS

7.1 Inoperable Liquid or Gaseous Effluent Monitoring Instrumentation

7.1.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the Annual Radioactive Effluent Release Report (the report) shall include deviations from the liquid and gaseous effluent monitoring instrumentation operability requirements included in Sections 2.1.1 and 3.1.1 of the ODCM. The report must also include an explanation as to why the inoperability was not corrected in a timely manner.

7.1.2 Description of Deviations

There were two deviations from liquid effluent monitoring instrumentation operability requirements during 2006. The Unit 1 service water dilution flow recorder was out of service from April 6, 2006 until July 6, 2006. Dilution flow was estimated based on pump flows while the recorder was out of service in accordance with plant procedures. The recorder was unable to be repaired and had to be replaced. Details of this deviation are documented in condition report 2006104715. The Unit 2 service

water dilution flow recorder was out of service from June 23, 2006 until October 25, 2006. Dilution flow was estimated based on pump flows while the recorder was out of service in accordance with plant procedures. The recorder was unable to be repaired and had to be replaced. Details of this deviation are documented in condition report 2006106092.

7.2 Effluent Sample Analysis Exceeding Minimum Detectable Concentration (MDC)

7.2.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include deviations from the MDC requirements included in ODCM Tables 2-3 and 3-3.

7.2.2 Description of Deviations

There were no deviations during 2006.

7.3 Incorrect Compositing of Liquid or Gaseous Effluent Samples

7.3.1 Regulatory Requirements

ODCM 7.2.2.6 states in part that the report shall include deviations from composite sampling requirements included in ODCM Tables 2-3 and 3-3.

7.3.2 Description of Deviations

There were two deviations from liquid effluent sampling requirements during 2006. Unit 2 had a deviation on September 18, 2006, when the auto-sampler for Turbine Building Sump 2A failed to collect a sample for the day. Details of this event are documented in condition report 2006108616. Unit 2 also had a deviation on September 22, 2006, when the auto-sampler for Turbine Building Sump 2B failed to collect a sample for the day. Details of this event are documented in condition report 2006108753.

8.0 CHANGES TO THE PLANT FARLEY ODCM

8.1 Regulatory Requirements

Pursuant to Technical Specification 5.5.1.c and ODCM 7.2.2.5, licensee initiated changes to the ODCM shall be submitted to the Nuclear Regulatory Commission as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period in which any changes were made. Included are changes to the radiological environmental monitoring program sampling locations or dose calculation locations or pathways, including any changes made pursuant to ODCM 4.1.2.2.2 (land use census).

8.2 Description of Changes

There was one revision to the ODCM during 2006. Guidance concerning Containment Purge batch sampling was added, and dose factors for Antimony-126 were added. This revision accompanies this report.

9.0 MAJOR CHANGES TO LIQUID, GASEOUS, OR SOLID RADWASTE TREATMENT SYSTEMS

9.1 Regulatory Requirements

ODCM 7.2.2.7 states in part that, as required by ODCM 2.1.5 and 3.1.6, licensee initiated MAJOR CHANGES TO RADIOACTIVE WASTE TREATMENT SYSTEMS (liquid and gaseous) shall be reported to the Nuclear Regulatory Commission in the Annual Radioactive Effluents Release Report covering the period in which the change was reviewed and accepted for implementation.

Process Control Program (PCP) B.5.1.2 states that licensee initiated major changes to the solid radioactive waste treatment system shall be reported to the Nuclear Regulatory Commission in the Annual Radioactive Effluent Release Report for the period in which the change was implemented. The discussion of each change shall include the information specified in PCP B.4.1.

9.2 Description of Major Changes

Although there were no major system changes to the gaseous rad waste system during 2006 there was a change to the methodology for releasing containment atmosphere within the methods allowed by the ODCM. Unit-1 changed from "continuous release" to a "batch release" in July 2006. Unit-2 changed from a "continuous release" to a "batch release" in April 2006(CR2006102871). These changes were made in an effort to reduce off site Curies released from noble gases. In a further effort to improve the process for containment atmosphere releases, the FNP Operations, chemistry, and Engineering groups implemented a "modified continuous release" for Unit-1 in November 2006(CR2007100626).

In February 2007, a question concerning possible non-representative sample was brought up by the engineering group based upon the release alignment pathway for containment atmosphere (CR2007102133). Unit-1 was immediately placed on "batch release" until the question could be resolved. A change to operating procedures for the release alignment pathway eliminated the representative sample concern and Unit-1 returned to a "modified continuous release" in April 2007. Further evaluations indicate Unit 1 was actually getting a representative sample during releases using the original release alignment pathway for the "modified continuous release" method. Therefore the releases performed during this alignment will be reported in this report as was recorded in the gaseous effluent database at the actual time of the release. The methodology will be considered for Unit 2 application to allow Unit 2 to go from a "batch release" to a "modified continuous release".