Wolf Creek Nuclear Operating Corporation

Wolf Creek Generating Station

Docket No: **50-482**
Facility Operating License No: **NPF-42**

Annual Radioactive Effluent Release Report

Report No. 30

Reporting Period: January 1, 2006 - December 31, 2006

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Attachment II - WCGS Procedure AP 07B-004, Revision 13, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)"
Attachment III - WCGS Procedure AP 31A-100, Revision 6, "Solid Radwaste Process Control Program"

EXECUTIVE SUMMARY

This Annual Radioactive Effluent Release Report (Report # **30**) documents the quantities of liquid and gaseous effluents and solid waste released by Wolf Creek Generating Station (WCGS) from January 1, 2006 through December 31, 2006. The format and content of this report are in accordance with Regulatory Guide 1.21, Revision 1, "Measuring, Evaluation, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants." Sections I, II, III, and IV of this report provide information required by NRC Regulatory Guide 1.21 and Section 7.2 of AP 07B-003, "Offsite Dose Calculation Manual" (ODCM).

Section I --- Section I contains, in detail, the quantities of radioactive liquid and gaseous effluents and cumulative dose summaries for 2006, tabulated for each quarter and for yearly totals. Specific ODCM effluent limits and dose limits are also listed in Section I, along with the percentage of the effluent limits actually released and the percentages of the dose limit actually received. No effluent or dose limits were exceeded during 2006.

An elevated release pathway does not exist at WCGS. All airborne releases are considered to be ground level releases. The gaseous pathway dose determination is met by the WCGS ODCM methodology of assigning all gaseous pathways to a hypothetical individual residing at the highest annual X/Q and D/Q location, as specified in the ODCM. This results in a conservative estimate of dose to a member of the public, rather than determining each pathway dose for each release condition. A conservative error of thirty percent has been estimated in the effluent data. As stated above, no ODCM dose limits were exceeded in 2006.

Section II --- Section II includes supplemental information on continuous and batch releases, calculated doses, and solid waste disposal. There were 68 gaseous batch releases in 2006 versus 72 in 2005. There were 50 liquid batch releases in 2006 versus 62 in 2005. WCGS released 0.010 curies in liquid releases during 2006 versus 0.014 curies in 2005, excluding gas and tritium. Continuous release pathways remained the same as previous years and all continuous releases were monitored.

The report contains information on the following Condition Report (CR):

CR 2006-0398 – While purging the Volume Control Tank (VCT) to Gas Decay Tank (GDT) #2, an attempt was made to remove water in a %Oxygen meter by opening HA-V0706. Opening the valve during the VCT purge process released radioactive gas, which resulted in an unplanned, monitored release.

Section III --- Section III documents WCGS meteorological data for wind speed, wind direction, and atmospheric stability.

Section IV --- Section IV documents unplanned and abnormal releases, changes to radwaste treatment systems, land use census, monitoring instruments, radwaste shipments, and storage tank quantities. There was one unplanned, monitored release in 2006.

No changes to events occurred on the land use census, monitoring instruments, radwaste shipments, and storage units.

ATTACHMENTS

Attachment I – AP 07B-003, revision 6, "Offsite Dose Calculation Manual"
Attachment II – AP 07B-004, revision 13, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)"
Attachment III – AP 31A-100, revision 6, "Solid Radwaste Process Control Program"

SECTION I

REPORT OF 2006 RADIOACTIVE EFFLUENTS: LIQUID

		Unit	Quarter 1	Quarter 2
A.	Fission and Activation Products			
1.	Total Release (not including tritium, gases, alpha)	Ci	3.03E-04	5.44E-04
2.	Average Diluted Concentration During Period	µCi/ml	3.99E-12	2.55E-12
3.	Percent of Applicable Limit (1)	%	6.05E-03	1.09E-02
B.	Tritium			
1.	Total Release	Ci	1.99E+02	5.53E+02
2.	Average Diluted Concentration During Period	µCi/ml	2.62E-06	2.59E-06
3.	Percent of Applicable Limit (2) (ECL)	%	2.62E-01	2.59E-01
C.	Dissolved and Entrained Gases			
1.	Total Release	Ci	2.85E-04	1.86E-03
2.	Average Diluted Concentration During Period	µCi/ml	3.76E-12	8.70E-12
3.	Percent of Applicable Limit (3)	%	1.88E-06	4.35E-06
D.	Gross Alpha Radioactivity			
1.	Total Release	Ci	5.68E-14	0.00E+00
E.	Volume of Waste Released (prior to dilution)	Liters	8.46E+07	1.21E+08
F.	Volume of Dilution Water Used	Liters	7.58E+10	2.13E+11

NOTES:

1) The applicable limit for the WCGS is 5 Curies per year. (Reference 10 CFR 50, Appendix I, "Guides On Design Objectives For Light-Water Cooled Nuclear Power Reactors," Paragraph A.2.) The value is derived by dividing the total release Curies by 5 Curies and then multiplying the result by 100.

2) This value is derived by the following formula:

$$\%\ \text{of Applicable Limit} = \frac{(\text{Average Diluted Concentration})\,(100)}{(\text{MPC or ECL, Appendix B, Table 2 10CFR20})}$$

3) This value is derived by the following formula:

$$\%\ \text{of Applicable Limit} = \frac{(\text{Average Diluted Concentration})\,(100)}{(\text{2E - 04 from ODCM Section 2.1})}$$

REPORT OF 2006 RADIOACTIVE EFFLUENTS: LIQUID

		Unit	Quarter 3	Quarter 4
A.	Fission and Activation Products			
1.	Total Release (not including tritium, gases, alpha	Ci	4.92E-04	8.64E-03
2.	Average Diluted Concentration During Period	µCi/ml	1.83E-12	4.44E-11
3.	Percent of Applicable Limit (1)	%	9.84E-03	1.73E-01
B.	Tritium			
1.	Total Release	Ci	4.42E+02	1.88E+02
2.	Average Diluted Concentration During Period	µCi/ml	1.64E-06	9.65E-07
3.	Percent of Applicable Limit (2) (ECL)	%	1.64E-01	9.65E-02
C.	Dissolved and Entrained Gases			
1.	Total Release	Ci	6.68E-03	9.73E-03
2.	Average Diluted Concentration During Period	µCi/ml	2.48E-11	5.00E-11
3.	Percent of Applicable Limit (3)	%	1.24E-05	2.50E-05
D.	Gross Alpha Radioactivity			
1.	Total Release	Ci	1.04E-05	1.62E-05
E.	Volume of Waste Released (prior to dilution)	liters	8.62E+07	8.41E+07
F.	Volume of Dilution Water Used	liters	2.69E+11	1.94E+11

NOTES:

1) The applicable limit for the WCGS is 5 Curies per year. (Reference 10 CFR 50, Appendix I, "Guides On Design Objectives For Light-Water Cooled Nuclear Power Reactors," Paragraph A.2.) The value is derived by dividing the total release Curies by 5 Curies and then multiplying the result by 100.

2) This value is derived by the following formula:

$$\%\ \text{of Applicable Limit} = \frac{(\text{Average Diluted Concentration})\,(100)}{(\text{MPC or ECL, Appendix B, Table 2, 10CFR20})}$$

3) This value is derived by the following formula:

$$\%\ \text{of Applicable Limit} = \frac{(\text{Average Diluted Concentration})\,(100)}{(\text{2E - 04 from ODCM Section 2.1})}$$

2006 LIQUID EFFLUENTS

Nuclides Released	Unit	Continuous Mode Quarter 1	Continuous Mode Quarter 2	Batch Mode Quarter 1	Batch Mode Quarter 2
H-3	Ci	1.34E+00	1.21E+00	1.97E+02	5.52E+02
Cr-51	Ci	N/A	N/A	N/A	N/A
Mn-54	Ci	<4.21E-02	<6.04E-02	2.49E-06	8.57E-07
Fe-55	Ci	<8.42E-02	<1.21E-01	<3.34E-04	<6.19E-04
Fe-59	Ci	<4.21E-02	<6.04E-02	2.17E-06	<3.09E-04
Co-57	Ci	N/A	N/A	N/A	N/A
Co-58	Ci	<4.21E-02	<6.04E-02	2.20E-05	8.92E-05
Co-60	Ci	<4.21E-02	<6.04E-02	2.66E-05	4.37E-05
Zn-65	Ci	<4.21E-02	<6.04E-02	<1.67E-04	<3.09E-04
Sr-89	Ci	<4.21E-03	<6.04E-03	<1.67E-05	<3.09E-05
Sr-90	Ci	<4.21E-03	<6.04E-03	<1.67E-05	<3.09E-05
Sr-91	Ci	N/A	N/A	N/A	2.42E-06
Mo-99	Ci	<4.21E-02	<6.04E-02	<1.67E-04	<3.09E-04
Sb-124	Ci	N/A	N/A	N/A	N/A
Sb-125	Ci	N/A	N/A	2.32E-04	3.88E-04
I-131	Ci	<8.42E-02	<1.21E-01	<3.34E-04	<6.19E-04
I-133	Ci	N/A	N/A	N/A	N/A
Cs-134	Ci	<4.21E-02	<6.04E-02	<1.67E-04	<3.09E-04
Cs-136	Ci	N/A	N/A	1.18E-06	N/A
Cs-137	Ci	<4.21E-02	<6.04E-02	1.62E-05	1.92E-05
Ce-141	Ci	<4.21E-02	<6.04E-02	<1.67E-04	<3.09E-04
Ce-144	Ci	<4.21E-02	<6.04E-02	<1.67E-04	<3.09E-04
Na-24	Ci	N/A	N/A	N/A	N/A
Rb-88	Ci	N/A	N/A	N/A	N/A
Nb-95	Ci	N/A	N/A	N/A	6.47E-07
Tc-99M	Ci	N/A	N/A	N/A	N/A
Sb-122	Ci	N/A	N/A	N/A	N/A
Sb-126	Ci	N/A	N/A	N/A	N/A
I-135	Ci	N/A	N/A	N/A	N/A
Gross Alpha	Ci	<8.42E-03	<1.21E-02	5.68E-14	<6.19E-04
Ar-41	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Kr-85M	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Kr-85	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Kr-87	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Kr-88	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Xe-131M	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Xe-133M	Ci	<8.42E-01	<1.21E+00	<3.34E-03	7.90E-06
Xe-133	Ci	<8.42E-01	<1.21E+00	2.85E-04	1.85E-03
Xe-135M	Ci	<8.42E-01	<1.21E+00	<3.34E-03	<6.19E-03
Xe-135	Ci	<8.42E-01	<1.21E+00	<3.34E-03	8.87E-07

NOTE

"Less than" values are calculated using the Lower Limit of Detection (LLD) values listed in Table 2-1 of the ODCM multiplied by the volume of waste discharged during the respective quarter. The "less than" values are not included in the summation for the total release values.

2006 LIQUID EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter 3	Quarter 4	Quarter 3	Quarter 4
H-3	Ci	1.55E+00	1.12E+00	4.40E+02	1.87E+02
Cr-51	Ci	N/A	N/A	N/A	N/A
Mn-54	Ci	<4.28E-02	<4.16E-02	2.51E-06	1.30E-05
Fe-55	Ci	<8.56E-02	<8.31E-02	<6.43E-04	<9.97E-04
Fe-59	Ci	<4.28E-02	<4.16E-02	1.94E-06	6.57E-06
Co-57	Ci	N/A	N/A	N/A	1.09E-05
Co-58	Ci	<4.28E-02	<4.16E-02	5.58E-05	7.47E-03
Co-60	Ci	<4.28E-02	<4.16E-02	6.35E-05	1.86E-04
Zn-65	Ci	<4.28E-02	<4.16E-02	<3.21E-04	<4.99E-04
Rb-88	Ci	N/A	N/A	N/A	7.34E-05
Sr-89	Ci	<4.28E-03	<4.16E-03	<3.21E-05	<4.99E-05
Sr-90	Ci	<4.28E-03	<4.16E-03	<3.21E-05	<4.99E-05
Mo-99	Ci	<4.28E-02	<4.16E-02	<3.21E-04	<4.99E-04
Sn-117M	Ci	N/A	N/A	N/A	4.61E-06
Sb-124	Ci	N/A	N/A	N/A	3.21E-06
Sb-125	Ci	N/A	N/A	3.46E-04	8.35E-04
I-131	Ci	<8.56E-02	<8.31E-02	<6.43E-04	<9.97E-04
I-135	Ci	N/A	N/A	N/A	N/A
Cs-134	Ci	<4.28E-02	<4.16E-02	<3.21E-04	<4.99E-04
Cs-136	Ci	N/A	N/A	7.53E-07	N/A
Cs-137	Ci	<4.28E-02	<4.16E-02	2.11E-05	3.21E-05
Ce-141	Ci	<4.28E-02	<4.16E-02	<3.21E-04	<4.99E-04
Ce-144	Ci	<4.28E-02	<4.16E-02	<3.21E-04	<4.99E-04
Sr-91	Ci	N/A	N/A	N/A	2.94E-06
Nb-95	Ci	N/A	N/A	N/A	N/A
W-187	Ci	N/A	N/A	N/A	N/A
Gross Alpha	Ci	<8.56E-03	<8.31E-03	1.04E-05	1.62E-05
Ar-41	Ci	<8.56E-01	<8.31E-01	<6.43E-03	3.93E-06
Kr-85M	Ci	<8.56E-01	<8.31E-01	<6.43E-03	1.72E-05
Kr-85	Ci	<8.56E-01	<8.31E-01	<6.43E-03	<9.97E-03
Kr-87	Ci	<8.56E-01	<8.31E-01	<6.43E-03	<9.97E-03
Kr-88	Ci	<8.56E-01	<8.31E-01	<6.43E-03	<9.97E-03
Xe-131M	Ci	<8.56E-01	<8.31E-01	<6.43E-03	<9.97E-03
Xe-133M	Ci	<8.56E-01	<8.31E-01	7.27E-05	2.00E-04
Xe-133	Ci	<8.56E-01	<8.31E-01	6.54E-03	8.31E-03
Xe-135M	Ci	<8.56E-01	<8.31E-01	<6.43E-03	<9.97E-03
Xe-135	Ci	<8.56E-01	<8.31E-01	3.77E-05	1.21E-03
Xe-138	Ci	N/A	N/A	3.14E-05	N/A

NOTE

"Less than" values are calculated using the Lower Limit of Detection (LLD) values listed in Table 2-1 of the ODCM multiplied by the volume of waste discharged during the respective quarter. The "less than" values are not included in the summation for the total release values.

LIQUID CUMULATIVE DOSE SUMMARY (2006) TABLE 1

QUARTER 1 OF 2006 (mrem)	ODCM CALCULATED DOSE	ODCM LIMIT(1)	% OF LIMIT
TOTAL DOSE FOR BONE	7.50E-05	5.00E+00	1.50E-03
TOTAL DOSE FOR LIVER	2.29E-02	5.00E+00	4.58E-01
TOTAL DOSE FOR TOTAL BODY	2.29E-02	1.50E+00	1.52E+00
TOTAL DOSE FOR THYROID	2.28E-02	5.00E+00	4.56E-01
TOTAL DOSE FOR KIDNEY	2.28E-02	5.00E+00	4.56E-01
TOTAL DOSE FOR LUNG	2.28E-02	5.00E+00	4.56E-01
TOTAL DOSE FOR GI-LLI	2.28E-02	5.00E+00	4.56E-01
QUARTER 2 OF 2006 (mrem)			
TOTAL DOSE FOR BONE	6.25E-05	5.00E+00	1.25E-03
TOTAL DOSE FOR LIVER	4.38E-02	5.00E+00	8.77E-01
TOTAL DOSE FOR TOTAL BODY	4.38E-02	1.50E+00	2.92E+00
TOTAL DOSE FOR THYROID	4.38E-02	5.00E+00	8.75E-01
TOTAL DOSE FOR KIDNEY	4.38E-02	5.00E+00	8.76E-01
TOTAL DOSE FOR LUNG	4.38E-02	5.00E+00	8.75E-01
TOTAL DOSE FOR GI-LLI	4.38E-02	5.00E+00	8.76E-01
QUARTER 3 OF 2006 (mrem)			
TOTAL DOSE FOR BONE	6.89E-05	5.00E+00	1.38E-03
TOTAL DOSE FOR LIVER	3.57E-02	5.00E+00	7.13E-01
TOTAL DOSE FOR TOTAL BODY	3.56E-02	1.50E+00	2.37E+00
TOTAL DOSE FOR THYROID	3.56E-02	5.00E+00	7.11E-01
TOTAL DOSE FOR KIDNEY	3.56E-02	5.00E+00	7.12E-01
TOTAL DOSE FOR LUNG	3.56E-02	5.00E+00	7.11E-01
TOTAL DOSE FOR GI-LLI	3.56E-02	5.00E+00	7.11E-01
QUARTER 4 OF 2006 (mrem)			
TOTAL DOSE FOR BONE	1.84E-04	5.00E+00	3.69E-03
TOTAL DOSE FOR LIVER	4.68E-02	5.00E+00	9.35E-01
TOTAL DOSE FOR TOTAL BODY	4.67E-02	1.50E+00	3.11E+00
TOTAL DOSE FOR THYROID	4.65E-02	5.00E+00	9.30E-01
TOTAL DOSE FOR KIDNEY	4.66E-02	5.00E+00	9.31E-01
TOTAL DOSE FOR LUNG	4.65E-02	5.00E+00	9.30E-01
TOTAL DOSE FOR GI-LLI	4.68E-02	5.00E+00	9.37E-01
TOTALS FOR 2006 (mrem)			
TOTAL DOSE FOR BONE	3.91E-04	1.00E+01	3.91E-03
TOTAL DOSE FOR LIVER	1.49E-01	1.00E+01	1.49E+00
TOTAL DOSE FOR TOTAL BODY	1.49E-01	3.00E+00	4.97E+00
TOTAL DOSE FOR THYROID	1.49E-01	1.00E+01	1.49E+00
TOTAL DOSE FOR KIDNEY	1.49E-01	1.00E+01	1.49E+00
TOTAL DOSE FOR LUNG	1.49E-01	1.00E+01	1.49E+00
TOTAL DOSE FOR GI-LLI	1.49E-01	1.00E+01	1.49E+00

1. Based on ODCM Section 2.2, which restricts dose to the whole body to ≤ 1.5 mRem per quarter and 3.0 mRem per year. Dose restriction of any organ is ≤ 5.0 mRem per quarter and 10.0 mRem per year.

LIQUID CUMULATIVE DOSE SUMMARY (2006) TABLE 2

A.	Fission and Activation Products (not including H-3, gases, alpha)	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
1.	Total Release - (Ci)	3.03E-04	5.44E-04	4.92E-04	8.64E-03	9.98E-03
2.	Maximum Organ Dose (mRem)	1.03E-04	8.55E-05	9.46E-05	3.41E-04	5.49E-04
3.	Organ Dose Limit (mRem)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
4.	Percent of Limit	2.07E-03	1.71E-03	1.89E-03	6.82E-03	5.49E-03
B.	Tritium					
1.	Total Release - (Ci)	1.99E+02	5.53E+02	4.41E+02	1.88E+02	1.38E+03
2.	Maximum Organ Dose (mRem)	2.28E-02	4.38E-02	3.56E-02	4.65E-02	1.49E-01
3.	Organ Dose Limit (mRem)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
4.	Percent of Limit	4.56E-01	8.75E-01	7.11E-01	9.30E-01	1.49E+00

This table is included to show the correlation between Curies released and the associated calculated maximum organ dose. Wolf Creek ODCM methodology is used to calculate the maximum organ dose that assumes that an individual drinks the water and eats the fish from the discharge point. ODCM Section 2.2 organ dose limits are used. The less than values are not included in the summation for the total release values.

REPORT OF 2006 RADIOACTIVE EFFLUENTS: AIRBORNE

	Unit	Quarter 1	Quarter 2
A. Fission and Activation Gases			
1. Total Release	Ci	3.01E-01	2.36E-01
2. Average Release Rate for Period	μCi/sec	3.86E-02	3.00E-02
3. Percent of ODCM Limit (1)	%	3.90E-03	3.00E-03
B. Iodine			
1. Total Release	Ci	0.00E+00	0.00E+00
2. Average Release Rate for Period	μCi/sec	0.00E+00	0.00E+00
3. Percent of Applicable Limit (2)	%	0.00E+00	0.00E+00
C. Particulates			
1. Particulates with Half-lives > 8 days	Ci	0.00E+00	0.00E+00
2. Average Release Rate for Period	μCi/sec	0.00E+00	0.00E+00
3. Percent of ODCM Limit (3)	%	0.00E+00	0.00E+00
4. Gross Alpha Radioactivity	Ci	0.00E+00	0.00E+00
D. Tritium			
1. Total Release	Ci	1.20E+01	1.56E+01
2. Average Release Rate for Period	μCi/sec	1.55E+00	1.98E+00
3. Percent of ODCM Limit (4)	%	1.17E-01	1.49E-01

NOTES:

1) The percent of ODCM limit for fission and activation gases is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Qtrly Total Beta Airdose})(100)}{10\ \text{mrad}} \text{ or } \frac{(\text{Qtrly Total Gamma Airdose})(100)}{5\ \text{mrad}}$$

The largest value calculated between Gamma and Beta air dose is listed as the % of ODCM Limit.

2) The percent of ODCM limit for iodine is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Total Curies of Iodine-131})(100)}{1\ \text{Curie}}$$

3) The percent of ODCM limit for particulates is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Highest Organ Dose Due to Particulates})(100)}{7.5\ \text{mrem}}$$

This type of methodology is used since the Wolf Creek ties release limits to doses rather than curie release rates.

4) The percent of ODCM limit for tritium is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Highest Organ Dose Due to H-3})(100)}{7.5\ \text{mrem}}$$

REPORT OF 2006 RADIOACTIVE EFFLUENTS: AIRBORNE

	Unit	Quarter 3	Quarter 4
A. Fission and Activation Gases			
1. Total Release	Ci	1.28E+00	2.47E-01
2. Average Release Rate for Period	µCi/sec	1.61E-01	3.11E-02
3. Percent of ODCM Limit (1)	%	5.70E-03	3.21E-03
B. Iodines			
1. Total Iodine-131	Ci	0.00E+00	0.00E+00
2. Average Release Rate for Period	µCi/sec	0.00E+00	0.00E+00
3. Percent of Applicable Limit (2)	%	0.00E+00	0.00E+00
C. Particulates			
1. Particulates with Half-lives > 8 days	Ci	0.00E+00	0.00E+00
2. Average Release Rate for Period	µCi/sec	0.00E+00	0.00E+00
3. Percent of ODCM Limit (3)	%	0.00E+00	0.00E+00
4. Gross Alpha Radioactivity	Ci	0.00E+00	0.00E+00
D. Tritium			
1. Total Release	Ci	1.41E+01	1.17E+01
2. Average Release Rate for Period	µCi/sec	1.77E+00	1.47E+00
3. Percent of ODCM Limit (4)	%	1.29E-01	1.08E-01

NOTES:

1) The percent of ODCM limit for fission and activation gases is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Qtrly Total Beta Airdose})(100)}{10\ \text{mrad}} \text{ or } \frac{(\text{Qtrly Total Gamma Airdose})(100)}{5\ \text{mrad}}$$

The largest value calculated between Gamma and Beta air dose is listed as the % of ODCM Limit.

2) The percent of ODCM limit for iodine is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Total Curies of Iodine-131})(100)}{1\ \text{Curie}}$$

3) The percent of ODCM limit for particulates is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Highest Organ Dose Due to Particulates})(100)}{7.5\ \text{mrem}}$$

This type of methodology is used since the Wolf Creek ODCM ties release limits to doses rather than curie release rates.

4) The percent of ODCM limit for tritium is calculated using the following methodology:

$$\%\ \text{of ODCM Limit} = \frac{(\text{Highest Organ Dose Due to H-3})(100)}{7.5\ \text{mrem}}$$

2006 GASEOUS EFFLUENTS

	Nuclides Released	Unit	Continuous Mode Quarter 1	Continuous Mode Quarter 2	Batch Mode Quarter 1	Batch Mode Quarter 2
1.	Fission and Activiation Gases					
	Ar-41	Ci	N/A	N/A	3.01E-01	2.28E-01
	Kr-85	Ci	N/A	N/A	N/A	1.13E-03
	Kr-85M	Ci	N/A	N/A	N/A	1.45E-04
	Kr-87	Ci	<1.50E+01	<1.53E+01	<1.88E-02	3.45E-04
	Kr-88	Ci	<1.11E+01	<1.14E+01	<1.40E-02	3.70E-04
	Xe-131M	Ci	N/A	N/A	N/A	N/A
	Xe-133	Ci	<1.41E+01	<1.45E+01	<1.77E-02	1.55E-03
	Xe-133M	Ci	<3.25E+01	<3.32E+01	<4.08E-02	<3.18E-02
	Xe-135	Ci	<2.31E+00	<2.37E+00	<2.90E-03	1.52E-03
	Xe-135M	Ci	N/A	N/A	N/A	6.41E-04
	Xe-138	Ci	<3.63E+02	<3.72E+02	<4.56E-01	1.63E-03
	Total	Ci	0.00E+00	0.00E+00	3.01E-01	2.35E-01
2.	Halogens (Gaseous)					
	I-131	Ci	<2.57E-04	<2.63E-04	<3.23E-07	<2.52E-07
	I-133	Ci	<2.57E-02	<2.63E-02	<3.23E-05	<2.52E-05
	Total	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.	Particulates and Tritium					
	H-3	Ci	1.15E+01	1.48E+01	5.48E-01	7.55E-01
	Mn-54	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Fe-59	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Co-58	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Co-60	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Zn-65	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Mo-99	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Cs-134	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Cs-137	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Ce-141	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Ce-144	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Sr-89	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Sr-90	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Gross Alpha	Ci	<2.57E-03	<2.63E-03	<3.23E-06	<2.52E-06
	Total	Ci	1.15E+01	1.48E+01	5.48E-01	7.55E-01

NOTE

"Less than" values for Noble Gases are calculated using the Lower Limit of Detection (LLD) values obtained at Wolf Creek Generating Station multiplied by the volume of air discharged during the respective quarter. For the Halogens and Particulates the ODCM LLD values are used.

2006 GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode Quarter 3	Continuous Mode Quarter 4	Batch Mode Quarter 3	Batch Mode Quarter 4
1. Fission and Activiation Gases					
Ar-41	Ci	N/A	N/A	3.67E-01	2.47E-01
Kr-85	Ci	N/A	N/A	3.59E-02	N/A
Kr-85M	Ci	N/A	N/A	7.31E-06	N/A
Kr-87	Ci	<1.56E+01	<1.63E+01	<1.92E-02	<1.04E+00
Kr-88	Ci	<1.16E+01	<1.21E+01	<1.42E-02	<7.74E-01
Xe-131M	Ci	N/A	N/A	7.21E-05	N/A
Xe-133	Ci	6.41E-01	<1.54E+01	1.31E-02	<9.84E-01
Xe-133M	Ci	<3.38E+01	<3.53E+01	2.06E-04	<2.26E+00
Xe-135	Ci	2.16E-01	<2.51E+00	6.07E-04	<1.61E-01
Xe-135M	Ci	N/A	N/A	8.80E-03	N/A
Xe-138	Ci	<3.78E+02	<3.95E+02	<4.65E-01	<2.53E+01
Total	Ci	8.57E-01	0.00E+00	4.26E-01	2.47E-01
2. Halogens (Gaseous)					
I-131	Ci	<2.68E-04	<2.79E-04	<3.29E-07	<1.79E-05
I-133	Ci	<2.68E-02	<2.79E-02	<3.29E-05	<1.79E-03
Total	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3. Particulates and Tritium					
H-3	Ci	1.28E+01	8.60E+00	1.28E+00	3.11E+00
Mn-54	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Fe-59	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Co-58	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Co-60	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Zn-65	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Mo-99	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Cs-134	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Cs-137	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Ce-141	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Ce-144	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Sr-89	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Sr-90	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Gross Alpha	Ci	<2.68E-03	<2.79E-03	<3.29E-06	<1.79E-04
Total	Ci	1.28E+01	8.60E+00	1.28E+00	3.11E+00

NOTE

"Less than" values for Noble Gases are calculated using the Lower Limit of Detection (LLD) values obtained at Wolf Creek Generating Station multiplied by the volume of air discharged during the respective quarter. For the Halogens and Particulates, the ODCM LLD values are used.

GASEOUS CUMULATIVE DOSE SUMMARY (2006) TABLE 1

QUARTER 1 OF 2006 (mRem)	ODCM CALCULATED DOSE	ODCM LIMIT (1)	% OF LIMIT
TOTAL DOSE FOR BONE	0.00E+00	7.50E+00	0.00E+00
TOTAL DOSE FOR LIVER	8.51E-03	7.50E+00	1.13E-01
TOTAL DOSE FOR TOTAL BODY	8.51E-03	7.50E+00	1.13E-01
TOTAL DOSE FOR THYROID	8.51E-03	7.50E+00	1.13E-01
TOTAL DOSE FOR KIDNEY	8.51E-03	7.50E+00	1.13E-01
TOTAL DOSE FOR LUNG	8.51E-03	7.50E+00	1.13E-01
TOTAL DOSE FOR GI-LLI	8.51E-03	7.50E+00	1.13E-01
QUARTER 2 OF 2006 (mRem)			
TOTAL DOSE FOR BONE	0.00E+00	7.50E+00	0.00E+00
TOTAL DOSE FOR LIVER	1.10E-02	7.50E+00	1.47E-01
TOTAL DOSE FOR TOTAL BODY	1.10E-02	7.50E+00	1.47E-01
TOTAL DOSE FOR THYROID	1.10E-02	7.50E+00	1.47E-01
TOTAL DOSE FOR KIDNEY	1.10E-02	7.50E+00	1.47E-01
TOTAL DOSE FOR LUNG	1.10E-02	7.50E+00	1.47E-01
TOTAL DOSE FOR GI-LLI	1.10E-02	7.50E+00	1.47E-01
QUARTER 3 OF 2006 (mRem)			
TOTAL DOSE FOR BONE	0.00E+00	7.50E+00	0.00E+00
TOTAL DOSE FOR LIVER	9.95E-03	7.50E+00	1.33E-01
TOTAL DOSE FOR TOTAL BODY	9.95E-03	7.50E+00	1.33E-01
TOTAL DOSE FOR THYROID	9.95E-03	7.50E+00	1.33E-01
TOTAL DOSE FOR KIDNEY	9.95E-03	7.50E+00	1.33E-01
TOTAL DOSE FOR LUNG	9.95E-03	7.50E+00	1.33E-01
TOTAL DOSE FOR GI-LLI	9.95E-03	7.50E+00	1.33E-01
QUARTER 4 OF 2006 (mRem)			
TOTAL DOSE FOR BONE	0.00E+00	7.50E+00	0.00E+00
TOTAL DOSE FOR LIVER	8.28E-03	7.50E+00	1.10E-01
TOTAL DOSE FOR TOTAL BODY	8.28E-03	7.50E+00	1.10E-01
TOTAL DOSE FOR THYROID	8.28E-03	7.50E+00	1.10E-01
TOTAL DOSE FOR KIDNEY	8.28E-03	7.50E+00	1.10E-01
TOTAL DOSE FOR LUNG	8.28E-03	7.50E+00	1.10E-01
TOTAL DOSE FOR GI-LLI	8.28E-03	7.50E+00	1.10E-01
TOTALS FOR 2006 (mRem)			
TOTAL DOSE FOR BONE	0.00E+00	1.50E+01	0.00E+00
TOTAL DOSE FOR LIVER	3.77E-02	1.50E+01	2.52E-01
TOTAL DOSE FOR TOTAL BODY	3.77E-02	1.50E+01	2.52E-01
TOTAL DOSE FOR THYROID	3.77E-02	1.50E+01	2.52E-01
TOTAL DOSE FOR KIDNEY	3.77E-02	1.50E+01	2.52E-01
TOTAL DOSE FOR LUNG	3.77E-02	1.50E+01	2.52E-01
TOTAL DOSE FOR GI-LLI	3.77E-02	1.50E+01	2.52E-01

1. Based on Wolf Creek ODCM Section 3.2.2 which restricts dose during any calendar quarter to less than or equal to 7.5 mRem to any organ and during any calendar year to less than or equal to 15 mRem to any organ.

GASEOUS CUMULATIVE DOSE SUMMARY (2006) TABLE 2

	Nuclides Released	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
A.	Fission and Activation Gases					
1.	Total Release - (Ci)	3.01E-01	2.36E-01	1.28E+00	2.47E-01	2.07E+00
2.	Total Gamma Airdose (mRad)	1.95E-04	1.50E-04	2.85E-04	1.60E-04	7.91E-04
3.	Gamma Airdose Limit (mRad)	5.00E+00	5.00E+00	5.00E+00	5.00E+00	1.00E+01
4.	Percent of Gamma Airdose Limit	3.90E-03	3.00E-03	5.70E-03	3.21E-03	7.91E-03
5.	Total Beta Airdose (mRad)	6.88E-05	5.37E-05	1.74E-04	5.66E-05	3.53E-04
6.	Beta Airdose Limit (mRad)	1.00E+01	1.00E+01	1.00E+01	1.00E+01	2.00E+01
7.	Percent of Beta Airdose Limit (mRad)	6.88E-04	5.37E-04	1.74E-03	5.66E-04	1.77E-03
B.	Particulates					
1.	Total Particulates (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.	Maximum Organ Dose (mRem)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.	Organ Dose Limit (mRem)	0.00E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
4.	Percent of Limit	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
C.	Tritium					
1.	Total Release (Ci)	1.20E+01	1.56E+01	1.41E+01	1.17E+01	5.34E+01
2.	Maximum Organ Dose (mRem)	8.77E-03	1.12E-02	9.71E-03	8.09E-03	3.77E-02
3.	Organ Dose Limit (mRem)	7.50E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
4.	Percent of Limit	1.17E-01	1.49E-01	1.29E-01	1.08E-01	2.52E-01
D.	Iodine					
1.	Total I-131, I-133 (Ci)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.	Maximum Organ Dose (mRem)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.	Organ Dose Limit (mRem)	7.50E+00	7.50E+00	7.50E+00	7.50E+00	1.50E+01
4.	Percent of Limit	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

This table is included to show the correlation between Curies released and the associated calculated maximum organ dose. The maximum organ dose is calculated using Wolf Creek ODCM methodology which assumes that an individual actually resides at the release point. ODCM Section 3.2.2 organ dose limits are used.

SECTION II

SUPPLEMENTAL INFORMATION

1. **Offsite Dose Calculation Manual Limits**

   A. **For liquid waste effluents**

   A.1 The concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS shall be limited to the concentrations specified in 10 CFR 20, Appendix B, Table II, Column 2, for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microCuries/ml total activity.

   A.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each unit, to UNRESTRICTED AREAS shall be limited:

   a. During any calendar quarter to less than or equal to 1.5 mrems to the whole body and to less than or equal to 5 mrems to any organ, and
   b. During any calendar year to less than or equal to 3 mrems, to the whole body and to less than or equal to 10 mrems to any organ.

   B. **For gaseous waste effluents**

   B.1 The dose rate due to radioactive material released in gaseous effluents from the site to area at and beyond the SITE BOUNDARY shall be limited to the following:

   a. For noble gases: Less than or equal to 500 mrems/yr to the whole body and less than or equal to 3000 mrems/yr to the skin, and
   b. For Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days: Less than or equal to 1500 mrems/yr to any organ.

   B.2 The air dose due to noble gases released in gaseous effluents, from each unit, to areas at and beyond the SITE BOUNDARY shall be limited to the following:

   a. During any calendar quarter: Less than or equal to 5 mrads for gamma radiation and less than or equal to 10 mrads for beta radiation, and
   b. During any calendar year: Less than or equal to 10 mrads for gamma radiation and less than or equal to 20 mrads for beta radiation.

   B.3 The dose from Iodine-131, Iodine-133, tritium, and a radionuclide in particulate form with half-lives greater than 8 days in gaseous effluents released to area at and beyond the SITE BOUNDARY shall be limited to the following:

   a. During any calendar quarter: Less than or equal to 7.5 mrems to any organ, and
   b. During any calendar year: Less than or equal to 15 mrems to any organ.

2. **Effluent Concentration Limits (ECLs)**

   Water - covered in Section I.A.
   Air - covered in Section I.B.

3. **Average Energy**

Average energy of fission and activation gaseous effluents is not applicable. See ODCM Section 3.1 for the methodology used in determining the release rate limits from noble gas releases.

4. **Measurements and Approximations of Total Radioactivity**

A. Liquid Effluents

Liquid Release Type	Sampling Frequency	Method of Analysis	Type of Activity Analysis
1. Batch Waste Release Tank	P Each Batch	P.H.A.	Principal Gamma Emitters
	P Each Batch	P.H.A.	I-131
a. Waste Monitor Tank	P One Batch/M	P.H.A.	Dissolved and Entrained Gases (Gamma Emitters)
b. Secondary Liquid Waste Monitor Tanks	P Each Batch	L.S. S.A.C.	H-3 Gross Alpha
	P	O.S.L.	Sr-89, Sr-90
2. Continuous Releases	Daily Grab Sample	P.H.A.	Principal Gamma Emitters
		P.H.A.	I-131
a. Steam Generator Blowdown	M Grab Sample	P.H.A.	Dissolved and entrained Gases (Gamma Emitters)
b. Turbine Building Sump/Waste Water Treatment	Daily Grab Sample	L.S.	H-3
		S.A.C.	Gross Alpha
c. Lime Sludge Pond	Daily Grab Sample	O.S.L.	Sr-89, Sr-90
		O.S.L.	Fe-55

P = prior to each batch
M = monthly
L. S. = Liquid scintillation detector
S.A.C. = scintillation alpha counter
O.S.L. = performed by an offsite laboratory
P.H.A. = gamma spectrum pulse height analysis using a High Purity Germanium detector

B. Gaseous Waste Effluents

Gaseous, Release Type	Sampling Frequency	Method of Analysis	Type of Activity Analysis
Waste Gas Decay Tank	P Each Tank Grab Sample	P.H.A.	Principal Gamma Emitters
Containment Purge or Vent	P Each Purge Grab Sample	P.H.A. Gas Bubbler and L.S.	Principal Gamma Emitters H-3 (oxide)
Unit Vent	M Grab Sample	P.H.A. Gas Bubbler and L.S.	Principal Gamma Emitters H-3 (oxide)
Radwaste Building Vent	M Grab Sample	P.H.A	Principal Gamma Emitters
For Unit Vent and Radwaste Building Vent release types listed above	Continuous	P.H.A.	I-131 I-133
	Continuous	P.H.A. Particulate Sample	Principal Gamma Emitters
	Continuous Composite	S.A.C. Particulate Sample	Gross Alpha
	Continuous	O.S.L. Composite Particulate Sample	Sr-89, Sr-90

P = prior to each batch
M = monthly
L.S. = Liquid scintillation detector
S.A.C. = scintillation alpha counter
O.S.L. = performed by an offsite laboratory
P.H.A. = gamma spectrum pulse height analysis using a High Purity Germanium detector

5. **Batch Releases**

A batch release is the discontinuous release of gaseous or liquid effluents, which takes place over a finite period of time, usually hours or days.

There were 68 gaseous batch releases during the reporting period. The longest gaseous batch release lasted 9399 minutes, while the shortest lasted 29 minutes. The average release lasted 682 minutes with a total gaseous batch release time of 48,501 minutes.

There were 50 liquid batch releases during the reporting period. The longest liquid batch release lasted 316 minutes, while the shortest lasted 65 minutes. The average release lasted 146 minutes with a total liquid batch release time of 7,069 minutes.

6. **Continuous Releases**

A continuous release is a release of gaseous or liquid effluent, which is essentially uninterrupted for extended periods during normal operation of the facility. Four liquid release pathways were designated as continuous releases during this reporting period: Steam Generator Blowdown, Turbine Building Sump, Waste Water Treatment, and Lime Sludge Pond. Two gas release pathways were designated as continuous releases: Unit Vent and Radwaste Building Vent.

7. **Doses to a Member of the Public from Activities Inside the Site Boundary**

Four activities by members of the public were considered in this evaluation: personnel making deliveries to the plant, workers at the William Allen White Building located outside of the protected area boundary, the use of the access road south of the Radwaste Building, and public use of the cooling lake during times when fishing was allowed. The dose calculated for the maximum exposed individual for these four activities was as follows:

Plant Deliveries	4.07E-01 mRem
William Allen White Building Workers	8.98E-03 mRem
Access Road Users	4.17E-03 mRem
Lake Use	5.45E-02 mRem

The plant delivery calculations were based on deliveries 3 hours per week for 50 weeks per year. The William Allen White Building occupancy was based on normal working hours of 2000 per year. The usage factor for the access road south of the Radwaste Building was 25 hours per year. The dose to fishermen on the lake was based upon 3756 hours (12 hours a day for 313 days, based on the number of days that the lake was open to fisherman). Pathways used in the calculation were gaseous inhalation, submersion, and ground plane. All calculations were performed in accordance with the methodology and parameters in the ODCM.

8. **Additional Information**

CR 2006-000398 – While purging the Volume Control Tank (VCT) to Gas Decay Tank (GDT) #2, a Treatment Systems Operator (TSO) noticed water in the %Oxygen bypass flow meter on the 'A' Gas Analyzer Rack. The presence of water was interfering with waste gas operations. The VCT purge tripped due to excessive O2 in the recombiner outlet, but the waste gas compressor continued recirculating the contents of GDT #2. An attempt was made by the TSO to remove the water in the %Oxygen meter by opening HA-V0706, 'A' Recombiner H2/O2 Analyzer Rad H2O drain. Opening HA-V0706 during the VCT purge process released radioactive gas, which resulted in an unplanned, monitored release of noble gases from the Radwaste Building Vent. No ODCM limits were exceeded. An estimated 7.44E-03 curies were released. This estimate was corrected for the Radwaste Vent flow rate and the amount of time the associated RM-11 readings remained elevated.

2006 EFFLUENT CONCENTRATION LIMITS

Nuclides	Curies	Average Diluted Concentration (μCi/ml)	10 CFR 20 ECL (μCi/ml)	% of ECL
H-3	1.38E+03	1.83E-06	1.00E-03	1.83E-01
Cr-51	N/A	N/A	5.00E-04	N/A
Mn-54	1.89E-05	2.51E-14	3.00E-05	8.37E-08
Mn-56	N/A	N/A	7.00E-05	N/A
Co-57	1.09E-05	1.45E-14	6.00E-05	2.42E-08
Fe-59	1.07E-05	1.42E-14	1.00E-05	1.42E-07
Co-60	3.20E-04	4.25E-13	3.00E-06	1.42E-05
Sb-124	3.21E-06	4.26E-15	7.00E-06	6.09E-08
Sb-125	1.80E-03	2.39E-12	3.00E-05	7.97E-06
I-131	N/A	N/A	1.00E-06	N/A
I-133	N/A	N/A	7.00E-06	N/A
I-135	N/A	N/A	3.00E-05	N/A
Ce-141	N/A	N/A	3.00E-05	N/A
Cs-134	N/A	N/A	9.00E-07	N/A
Cs-136	1.93E-06	2.56E-15	6.00E-06	4.27E-08
Cs-137	8.86E-05	1.18E-13	1.00E-06	1.18E-05
Nb-97	N/A	N/A	3.00E-04	N/A
Ba-139	N/A	N/A	2.00E-04	N/A
Rb-88	7.34E-05	9.75E-14	4.00E-04	2.44E-08
Sn-117M	4.61E-06	6.12E-15	1.00E-08	6.12E-05
Sb-122	N/A	N/A	1.00E-05	N/A
Sb-126	N/A	N/A	7.00E-06	N/A
Na-24	N/A	N/A	5.00E-05	N/A
Nb-95	6.47E-07	8.59E-16	3.00E-05	2.86E-09
Tc-99M	N/A	N/A	1.00E-03	N/A
Sr-91	5.36E-06	7.12E-15	2.00E-05	3.56E-08
Zn-65	N/A	N/A	5.00E-06	N/A
W-187	N/A	N/A	3.00E-05	N/A
Ar-41	3.93E-06	5.22E-15	2.00E-04	2.61E-09
Kr-85	N/A	N/A	2.00E-04	N/A
Kr-85M	1.72E-05	2.28E-14	2.00E-04	1.14E-08
Kr-88	N/A	N/A	2.00E-04	N/A
Xe-131M	N/A	N/A	2.00E-04	N/A
Xe-133M	2.81E-04	3.73E-13	2.00E-04	1.86E-07
Xe-133	1.70E-02	2.26E-11	2.00E-04	1.13E-05
Xe-135	1.25E-03	1.66E-12	2.00E-04	8.30E-07
Xe-138	3.14E-05	4.17E-14	2.00E-04	2.08E-08

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
2006 SOLID WASTE SHIPMENTS

A. SOLID RADWASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (Not irradiated fuel)

1. Type of Waste	Unit	1- Year Period	Est. Total Error %
a. Spent resins, filter sludges	m3*	3.15E+02**	
evaporator bottoms, etc.	Ci	2.50E+02	2.50E+01
b. Dry compressible waste,	m3*	3.08E+02**	
contaminated equip. etc.	Ci	1.42E+00	2.50E+01
c. Irradiated components,	m3*	0.00E+00	
control rods, etc.	Ci	0.00E+00	2.50E+01
d. Other	m3*	0.00E+00	
	Ci	0.00E+00	2.50E+01

*m3 = cubic meters ** This is the volume sent offsite for volume reduction, prior to disposal.

2. **Estimate of Major Nuclide Composition (by type of waste).**
[Nuclides listed with % abundance greater than 10 %]

a. Spent resin, filter sludges, evaporator bottoms, etc.

Nuclide Name	Percent Abundance	Curies
Be-7	10	2.51E+01
Fe-55	41	1.03E+02
Ni-63	16	4.09E+01
Co-58	13	3.13E+01

b. Dry compressible waste, contaminated equipment, etc.

Nuclide Name	Percent Abundance	Curies
Fe-55	33	4.72E-01
Ni-63	16	2.26E-01
H-3	26	3.69E-01

c. Irradiated components, control rods, etc. - None

d. Other - None

3. **Solid Waste Disposition**

Number of Shipments	Mode of Transportation	Destination
1	Truck (Hittman Transport Services)	Barnwell Waste Management Facility, Barnwell, SC
4	Truck (Hittman Transport Services)	Duratek; Kingston, TN
3	Truck (Hittman Transport Services)	Studsvik Processing Facility, LLC; Erwin, TN
11	Triad Transport	RACE, LLC; Memphis, TN

4. **Class of Solid Waste**

a. Class A, Class B, Class C- Corresponding to 2a
b. Class A - Corresponding to 2b
c. Not applicable
d. Not applicable

5. **Type of Container**

a. LSA (General Design), Type A, Type B - corresponding to 2a
b. LSA (General Design) - corresponding to 2b
c. Not applicable
d. Not applicable

6. **Solidification Agent**

a. Not applicable
b. Not applicable
c. Not applicable
d. Not applicable

B. **IRRADIATED FUEL SHIPMENTS (Disposition)**

No irradiated fuel shipments occurred during the 2006 period.

SECTION III

HOURS AT EACH WIND SPEED AND DIRECTION

This section documents WCGS meteorological data for wind speed, wind direction, and atmospheric stability.

The meteorological data supplied in the following tables covers the period from January 1, 2006, through December 31, 2006, and indicates the number of hours at each wind speed and direction for each stability class. All gaseous releases at the WCGS are ground level releases.

Wolf Creek Station did meet Regulatory Guide 1.23 requirement for data recovery and had a 91.59% meteorological data recovery for 2006.

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: A
ELEVATION: 10 METERS

	WIND SPEED (mph)						
WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2.00	12.75	29.25	30.00	6.75	0.75	81.50
NNE	13.75	11.00	24.50	10.25	0.25	0.00	59.75
NE	0.25	10.75	13.25	5.50	0.00	0.00	29.75
ENE	1.00	29.00	9.75	0.00	0.00	0.00	39.75
E	0.00	17.25	24.25	2.50	0.25	0.00	44.25
ESE	0.25	14.75	34.25	2.50	0.00	0.00	51.75
SE	2.25	20.75	27.00	20.75	1.00	0.25	72.00
SSE	1.50	24.75	94.00	51.25	23.75	2.50	197.75
S	1.75	21.50	76.00	118.75	53.25	4.00	275.25
SSW	2.75	13.75	47.00	46.00	14.75	2.00	126.25
SW	2.75	17.00	37.50	12.25	0.00	0.00	69.50
WSW	2.00	21.25	20.75	4.00	0.75	0.00	48.75
W	4.00	26.50	30.50	13.00	6.00	0.75	80.75
WNW	2.50	20.25	29.75	18.25	6.00	0.75	77.50
NW	1.75	18.00	28.25	15.50	5.75	0.00	69.25
NNW	1.25	14.25	42.25	49.00	7.00	1.00	114.75
TOTAL		37.75	293.50	568.25	399.50	125.50	12.00

PERIOD OF CALM (HOURS): 1.50

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: B
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0.75	5.75	10.50	7.50	1.75	0.75	27.00
NNE	1.25	4.00	7.25	5.00	0.25	0.00	17.75
NE	1.25	8.50	4.75	1.75	0.00	0.00	16.25
ENE	0.50	5.25	4.25	0.25	0.00	0.00	10.25
E	0.75	4.75	8.75	0.25	0.00	0.00	14.50
ESE	0.00	3.00	4.25	1.50	0.00	0.00	8.75
SE	1.00	4.00	7.75	5.50	1.25	0.50	20.00
SSE	1.25	9.50	15.00	10.00	4.00	1.25	41.00
S	0.25	10.00	17.50	15.75	6.25	0.25	50.00
SSW	0.25	2.75	14.75	7.25	6.50	1.75	33.25
SW	1.25	5.25	5.50	1.00	0.00	0.00	13.00
WSW	1.00	8.00	3.00	0.75	0.50	0.00	13.25
W	0.75	9.25	6.00	3.50	1.75	0.75	22.00
WNW	0.75	5.75	4.75	3.25	3.00	1.50	19.00
NW	1.75	6.00	8.50	9.25	4.75	0.00	30.25
NNW	1.00	5.00	14.75	18.75	8.25	0.00	47.75
TOTAL	13.00	96.75	137.25	91.25	38.25	6.75	384.00

PERIOD OF CALM (HOURS): 0

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: C
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1.00	5.75	14.00	9.00	1.75	0.50	32.00
NNE	0.75	5.75	11.00	8.50	0.50	0.00	26.50
NE	2.50	148.75	2.75	1.25	0.25	0.00	155.50
ENE	0.00	8.50	3.75	0.75	0.00	0.00	13.00
E	0.50	6.50	6.00	3.00	1.00	0.50	17.50
ESE	0.50	6.00	6.75	2.75	0.75	0.75	17.50
SE	0.00	5.25	4.25	6.00	0.25	0.50	16.25
SSE	1.25	8.00	15.50	12.50	4.50	1.00	42.75
S	1.50	9.50	15.50	15.50	4.75	0.25	47.00
SSW	0.25	3.75	10.75	7.75	7.00	2.75	32.25
SW	1.25	3.75	2.75	1.75	0.00	0.00	9.50
WSW	0.75	10.00	4.75	1.50	0.25	0.00	17.25
W	1.00	6.25	5.75	3.75	0.75	0.75	18.25
WNW	0.75	5.75	3.75	3.00	2.25	0.50	16.00
NW	1.50	7.50	10.75	8.00	3.75	1.00	32.50
NNW	0.50	4.75	12.50	15.25	7.75	0.50	41.25
TOTAL	13.00	245.75	130.50	100.25	35.50	9.00	535.00

PERIOD OF CALM (HOURS): 0

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: D
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4.00	23.50	63.25	81.25	43.50	8.75	224.25
NNE	6.50	34.75	70.00	51.00	11.00	1.00	174.25
NE	18.00	37.25	33.25	12.75	0.25	0.00	101.50
ENE	13.25	36.75	25.00	4.25	0.25	0.25	79.75
E	12.75	31.50	43.00	29.00	7.75	2.25	126.25
ESE	6.25	31.25	29.25	25.50	2.25	0.75	95.25
SE	4.00	32.25	33.50	15.25	5.25	2.50	92.75
SSE	4.75	28.75	95.75	90.50	32.75	9.50	262.00
S	5.25	23.00	86.50	88.00	26.50	2.50	231.75
SSW	3.50	19.50	59.50	41.00	20.00	3.00	146.50
SW	6.50	34.00	16.50	7.25	0.75	0.00	65.00
WSW	3.00	16.00	16.75	7.50	0.50	0.00	43.75
W	3.00	18.75	28.00	14.00	2.25	1.75	67.75
WNW	3.00	16.00	43.75	30.75	5.25	1.50	100.25
NW	3.00	20.25	72.00	43.25	22.00	4.50	165.00
NNW	5.50	29.50	92.25	83.25	39.00	3.25	252.75
TOTAL	98.25	433.00	808.25	624.50	219.25	41.50	2228.75

PERIOD OF CALM (HOURS): 1.25

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: E
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	7.25	32.25	39.25	14.75	1.25	0.00	94.75
NNE	8.25	27.25	21.00	5.50	0.00	0.00	62.00
NE	14.25	14.00	11.25	0.25	0.00	0.00	39.75
ENE	16.50	42.00	13.50	0.50	0.00	0.00	72.50
E	9.25	37.00	32.25	13.25	0.50	0.00	92.25
ESE	8.00	39.25	49.25	4.75	1.50	1.25	104.00
SE	6.25	52.25	78.50	17.50	4.00	1.50	160.00
SSE	10.00	92.00	341.75	250.50	20.25	4.50	719.00
S	4.75	35.00	152.50	144.50	30.75	6.00	373.50
SSW	4.00	27.00	78.25	28.25	4.00	0.50	142.00
SW	6.50	46.00	22.50	1.00	0.00	0.00	76.00
WSW	2.25	20.00	14.00	4.00	2.50	1.00	43.75
W	3.25	20.00	15.00	5.00	0.25	1.50	45.00
WNW	4.25	27.00	16.75	3.00	0.00	0.00	51.00
NW	3.00	44.50	56.25	12.75	0.00	0.00	116.50
NNW	3.75	39.00	62.00	21.00	0.75	0.00	126.50
TOTAL	104.25	594.50	1004.00	526.50	65.75	16.25	2318.50

PERIOD OF CALM (HOURS): 1.25

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: F
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	5.75	40.25	16.00	0.00	0.00	0.00	62.00
NNE	8.00	49.25	19.25	0.00	0.00	0.00	76.50
NE	16.25	23.25	1.00	0.00	0.00	0.00	40.50
ENE	10.00	50.00	3.25	0.00	0.00	0.00	63.25
E	11.00	55.00	4.25	0.00	0.00	0.00	70.25
ESE	6.75	56.50	10.25	0.00	0.00	0.00	73.50
SE	5.75	75.00	21.00	0.00	0.00	0.00	101.75
SSE	4.50	39.50	66.00	10.00	0.00	0.00	120.00
S	3.50	22.75	48.00	18.75	0.25	0.00	93.25
SSW	3.00	15.25	23.75	4.75	0.25	0.00	47.00
SW	8.75	21.25	1.75	0.25	0.00	0.00	32.00
WSW	6.75	11.50	2.00	0.00	0.25	0.00	20.50
W	5.00	8.50	2.50	1.25	0.00	0.00	17.25
WNW	6.25	15.00	2.25	0.00	0.00	0.00	23.50
NW	9.25	40.50	13.50	0.00	0.00	0.00	63.25
NNW	8.00	48.50	12.75	0.50	0.00	0.00	69.75
TOTAL	112.75	572.00	247.50	35.50	0.75	0.00	974.25

PERIOD OF CALM (HOURS): 1.75

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: G
ELEVATION: 10 METERS

	WIND SPEED (mph)						
WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	7.25	35.00	1.25	0.75	0.00	0.00	44.25
NNE	8.50	58.25	7.00	0.00	0.00	0.00	73.75
NE	13.50	38.75	0.75	0.00	0.00	0.00	53.00
ENE	6.50	30.50	1.00	0.00	0.00	0.00	38.00
E	9.75	44.00	3.50	0.00	0.00	0.00	57.25
ESE	6.75	46.75	1.25	0.00	0.00	0.00	54.75
SE	5.50	41.50	3.25	0.00	0.00	0.00	50.25
SSE	2.50	30.00	9.50	0.00	0.00	0.00	42.00
S	2.00	23.50	12.50	0.00	0.00	0.00	38.00
SSW	2.75	7.00	5.25	0.50	0.25	0.00	15.75
SW	4.50	8.00	0.50	0.00	0.00	0.00	13.00
WSW	5.25	1.75	0.00	0.00	0.00	0.00	7.00
W	4.00	2.00	1.00	0.75	0.00	0.00	7.75
WNW	7.75	3.00	0.75	0.00	0.00	0.00	11.50
NW	9.50	20.00	1.00	0.00	0.00	0.00	30.50
NNW	9.75	31.50	3.25	0.50	0.00	0.00	45.00
TOTAL	98.50	421.50	51.75	2.50	0.25	0.00	581.75

PERIOD OF CALM (HOURS): 1.25

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: JANUARY 1 THROUGH DECEMBER 31, 2006
STABILITY CLASS: ALL
ELEVATION: 10 METERS

WIND DIRECTION	WIND SPEED (mph) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	28.00	155.25	173.50	143.25	55.00	10.75	565.75
NNE	47.00	190.25	160.00	80.25	12.00	1.00	490.50
NE	66.00	281.25	67.00	21.50	0.50	0.00	436.25
ENE	47.75	202.00	60.50	5.75	0.25	0.25	316.50
E	44.00	196.00	122.00	48.00	9.50	2.75	422.25
ESE	28.50	197.50	135.25	37.00	4.50	2.75	405.50
SE	24.75	231.00	175.25	65.00	11.75	5.25	513.00
SSE	25.75	232.50	637.50	424.75	85.25	18.75	1424.50
S	19.00	145.25	408.50	401.25	121.75	13.00	1108.75
SSW	16.50	89.00	239.25	135.50	52.75	10.00	543.00
SW	31.50	135.25	87.00	23.50	0.75	0.00	278.00
WSW	21.00	88.50	61.25	17.75	4.75	1.00	194.25
W	21.00	91.25	88.75	41.25	11.00	5.50	258.75
WNW	25.25	92.75	101.75	58.25	16.50	4.25	298.75
NW	29.75	156.75	190.25	88.75	36.25	5.50	507.25
NNW	29.75	172.50	239.75	188.25	62.75	4.75	697.75
TOTAL	505.50	2657.00	2947.50	1780.00	485.25	85.50	8460.75

PERIOD OF CALM (HOURS): 7

SECTION IV

ADDITIONAL INFORMATION

1. Unplanned or Abnormal Releases

One unplanned, monitored release occurred in 2006. See Section II, Additional Information.

2. Offsite Dose Calculation Manual (ODCM)

The ODCM is in the form of two separate Wolf Creek Nuclear Operating Corporation (WCNOC) administrative procedures. One of these procedures, the WCNOC "Offsite Dose Calculation Manual", AP 07B-003, Revision 6, is included with this report as Attachment I. The other procedure, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program), AP 07B-004, Revision 13, is included with this report as Attachment II.

3. Major Changes to Liquid, Solid, or Gaseous Radioactive Waste Treatment Systems

Change Package #10399, to replace the Waste Gas Hydrogen and Oxygen Analyzers in the Gaseous Radwaste System, was partially completed in 2006. One train of the new Hydrogen and Oxygen Analyzer Rack was installed in September. The previous analyzers were not designed to compensate for the presence of Helium, which caused erroneously high readings. It was necessary for Radwaste Treatment Systems personnel to be in constant attendance during multiple evolutions. In addition the previous analyzers were obsolete to the point that vendor assistance was minimal and there were no parts available for repair. The new analyzers are able to discriminate between Helium and Hydrogen, making operation of the system easier and more efficient.

4. Land Use Census

No new locations for dose calculation were identified during this report period.

5. Radwaste Shipments

Nineteen shipments of radioactive waste occurred during this report period. Section II, Subsection 3, of this report contains specific details regarding each shipment's mode of transportation and destination.

6. Inoperability of Effluent Monitoring Instrumentation

No events occurred that violated ODCM Requirements Tables 2-2 and 3-2, liquid or gaseous effluent monitoring instrumentation.

7. Storage Tanks

At no time during the year 2006 was there an event that led to liquid holdup tanks or gas storage tanks exceeding the limits of Technical Requirements Manual Sections 3.10.1 or 3.10.3. Technical Specification requirements for the program are now covered by Technical Requirements Manual Section 3.10, "Explosive Gas and Storage Tank Radioactivity Monitoring."

8. **NEI Groundwater Protection Industry Initiative**

See attached 9 pages

ONSITE GROUNDWATER MONITORING

Basis

The onsite groundwater monitoring sample results are being reported in the Radioactive Effluent Release Report per guidance received in association with the Nuclear Energy Institute (NEI) Groundwater Protection Industry Initiative.

Program Description

In March of 2006, Wolf Creek Generating Station (WCGS) established an onsite groundwater monitoring program. This program was implemented via procedure AI 07-007, *Onsite Groundwater Monitoring Program*. The onsite groundwater samples were collected by the WCGS Environmental Management group and were analyzed by Environmental, Inc., Midwest Laboratory. The vendor lab participated in an interlaboratory comparison program. Onsite groundwater samples were analyzed by gamma isotopic analysis, radiochemical analysis for I-131 and tritium analysis. Quarterly grab samples were obtained from three wells: ESW-W-NE, ESW-W-NW and AUX. During 2006, three other locations were sampled once: ESW-E-NW, LSP and OW-002. The following tables describe the sample locations, the program required lower limits of detection and the reporting levels for radioactivity detected.

Sample Location	**Sample Location Description**
ESW-W-NE	Essential Service Water Dewatering Well, West Group, Northeast, located south of the reactor
ESW-W-NW	Essential Service Water Dewatering Well, West Group, Northwest, located south of the reactor
AUX	Dewatering Well located near the Auxiliary Building, on West Side
ESW-E-NW	Essential Service Water Dewatering Well, East Group, Northwest, located southeast of the reactor
LSP	Lime Sludge Pond, located northeast of the reactor
OW-002	Oily Waste Outfall 002, located south of the reactor

Onsite Groundwater Lower Limits of Detection

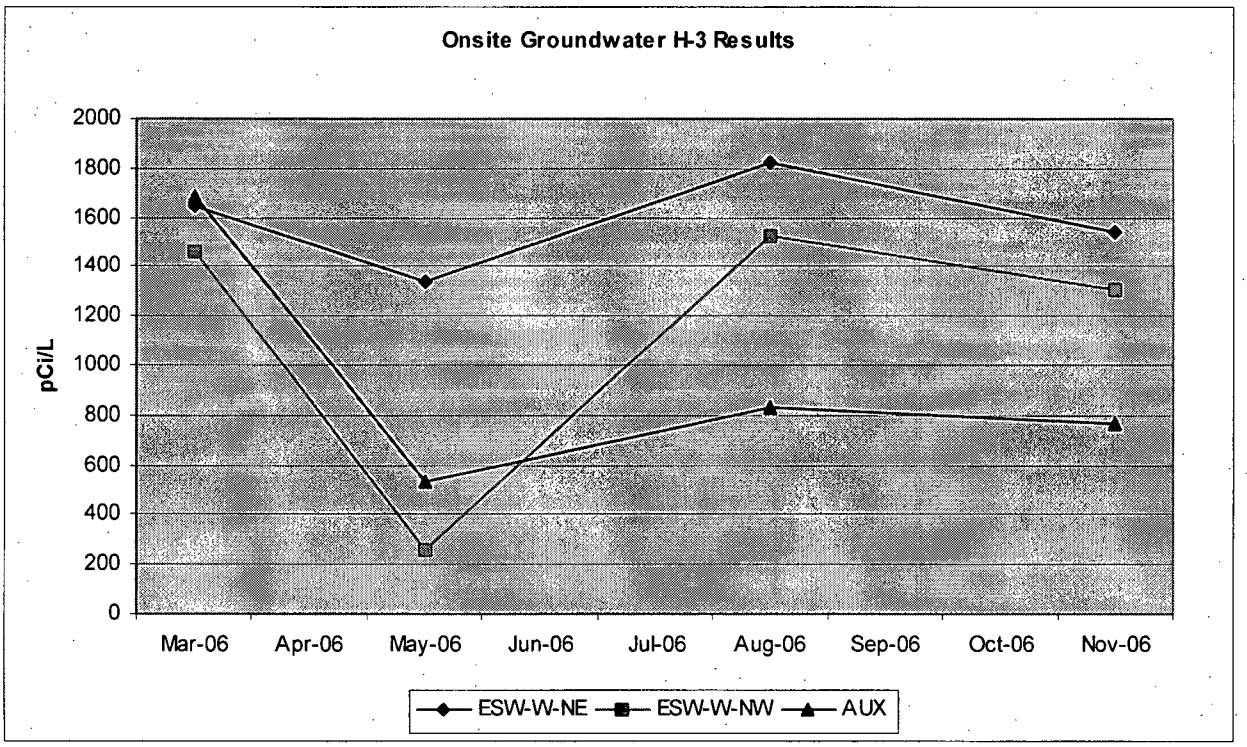
Analysis	**(pCi/l)**	**Analysis**	**(pCi/l)**
H-3	2,000	Zr-Nb-95	15
Mn-54	15	I-131	1
Co-58	15	Cs-134	15
Fe-59	30	Cs-137	18
Co-60	15	Ba-La-140	15
Zn-65	30		

Reporting Levels for Radioactivity Detected in Onsite Groundwater

Analysis	(pCi/l)	Analysis	(pCi/l)
H-3	20,000	Zr-Nb-95	400
Mn-54	1,000	I-131	2
Co-58	1,000	Cs-134	30
Fe-59	400	Cs-137	50
Co-60	300	Ba-La-140	200
Zn-65	300		

Discussion of Results

As expected, low levels of tritium were detected in all of the onsite groundwater samples. The location with the highest level of tritium detected was OW-002 (2,280 +/- 152 pCi/L). The measured level is significantly lower than the tritium levels routinely detected in surface water collected from Coffey County Lake (2006 range was 8,624 to 14,267 pCi/L). The location with the lowest level of tritium detected was location ESW-E-NW (197 +/- 87 pCi/L). The tritium activity was the only activity detected in the onsite groundwater samples. Required lower limits of detection were met. The individual sample results follow.



EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION AUX

Collection Date	Nuclide	Concentration (pCi/L)
28-MAR-06	MN-54	< 2.400
	CO-58	< 2.400
	FE-59	< 3.600
	CO-60	< 2.200
	ZN-65	< 3.400
	ZR-NB-95	< 2.600
	CS-134	< 1.900
	CS-137	< 2.400
	BA-LA-140	< 2.100
	H-3	1687.000 +/- 136.000
	I-131 (CHEM)	< 0.310
10-MAY-06	MN-54	< 4.000
	CO-58	< 4.300
	FE-59	< 7.800
	CO-60	< 5.400
	ZN-65	< 4.300
	ZR-NB-95	< 3.000
	CS-134	< 4.500
	CS-137	< 4.200
	BA-LA-140	< 5.700
	H-3	532.000+/- 94.000
	I-131 (CHEM)	< 0.339
30-AUG-06	MN-54	< 1.300
	CO-58	< 2.100
	FE-59	< 5.100
	CO-60	< 1.400
	ZN-65	< 3.500
	ZR-NB-95	< 1.800
	CS-134	< 2.800
	CS-137	< 2.600
	BA-LA-140	< 3.200
	H-3	831.000+/- 106.000
	I-131 (CHEM)	< 0.338
16-NOV-06	MN-54	< 2.100
	CO-58	< 2.600
	FE-59	< 4.100
	CO-60	< 3.500
	ZN-65	< 3.700
	ZR-NB-95	< 2.500
	CS-134	< 2.800
	CS-137	< 3.000
	BA-LA-140	< 2.500
	H-3	768.000+/- 116.000
	I-131 (CHEM)	< 0.446

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION ESW-E-NW

Collection Date	Nuclide	Concentration (pCi/L)
11-AUG-06	MN-54	< 3.700
	CO-58	< 3.600
	FE-59	< 6.400
	CO-60	< 6.300
	ZN-65	< 16.800
	ZR-NB-95	< 5.700
	I-131	< 0.216
	CS-134	< 6.400
	CS-137	< 7.900
	BA-LA-140	< 9.500
	H-3	197.000+/- 87.000

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION ESW-W-NE

Collection Date	Nuclide	Concentration (pCi/L)
28-MAR-06	MN-54	< 3.000
	CO-58	< 3.600
	FE-59	< 4.600
	CO-60	< 3.900
	ZN-65	< 5.400
	ZR-NB-95	< 4.300
	CS-134	< 3.300
	CS-137	< 2.500
	BA-LA-140	< 3.000
	H-3	1649.000+/- 135.000
	I-131 (CHEM)	< 0.270
10-MAY-06	MN-54	< 3.600
	MN-54-DUPLICATE	< 3.200
	CO-58	< 3.000
	CO-58-DUPLICATE	< 3.000
	FE-59	< 3.600
	FE-59-DUPLICATE	< 5.100
	CO-60	< 4.500
	CO-60 DUPLICATE	< 1.500
	ZN-65	< 3.200
	ZN-65-DUPLICATE	< 4.800
	ZR-NB-95	< 2.000
	ZR-NB-95-DUPLICATE	< 4.100
	CS-134	< 2.700
	CS-134-DUPLICATE	< 4.000
	CS-137	< 2.800
	CS-137-DUPLICATE	< 3.100
	BA-LA-140	< 3.400
	BA-LA-140-DUPLICATE	< 3.100
	H-3	1339.000+/- 119.000
	H-3-DUPLICATE	1463.000+/- 122.000
	I-131 (CHEM)	< 0.480
	I-131 (CHEM)-DUPLICATE	< 0.433
30-AUG-06	MN-54	< 4.700
	CO-58	< 5.000
	FE-59	< 9.000
	CO-60	< 3.300
	ZN-65	< 3.100
	ZR-NB-95	< 7.400
	CS-134	< 3.700
	CS-137	< 3.800
	BA-LA-140	< 6.700
	H-3	1823.000+/- 136.000
	I-131 (CHEM)	< 0.404

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION ESW-W-NE (Cont'd)

Collection Date	Nuclide	Concentration (pCi/L)
16-NOV-06	MN-54	< 2.100
	CO-58	< 3.500
	FE-59	< 3.900
	CO-60	< 2.600
	ZN-65	< 3.900
	ZR-NB-95	< 3.500
	CS-134	< 3.300
	CS-137	< 3.100
	BA-LA-140	< 4.600
	H-3	1542.000+/- 139.000
	I-131 (CHEM)	< 0.520

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION ESW-W-NW

Collection Date	Nuclide	Concentration (pCi/L)
28-MAR-06	MN-54	< 7.100
	CO-58	< 5.000
	FE-59	< 11.400
	CO-60	< 5.700
	ZN-65	< 13.900
	ZR-NB-95	< 6.100
	CS-134	< 6.800
	CS-137	< 3.100
	BA-LA-140	< 8.200
	H-3	1458.000+/- 130.000
	I-131 (CHEM)	< 0.326
10-MAY-06	MN-54	< 4.000
	CO-58	< 3.500
	FE-59	< 9.700
	CO-60	< 4.500
	ZN-65	< 8.200
	ZR-NB-95	< 5.100
	CS-134	< 2.200
	CS-137	< 3.500
	BA-LA-140	< 4.600
	H-3	256.000+/- 84.000
	I-131 (CHEM)	< 0.296
30-AUG-06	MN-54	< 5.100
	CO-58	< 4.800
	FE-59	< 9.500
	CO-60	< 5.400
	ZN-65	< 9.100
	ZR-NB-95	< 5.100
	CS-134	< 4.100
	CS-137	< 4.500
	BA-LA-140	< 3.700
	H-3	1527.000+/- 128.000
	I-131 (CHEM)	< 0.401
16-NOV-06	MN-54	< 3.500
	CO-58	< 3.600
	FE-59	< 5.900
	CO-60	< 2.500
	ZN-65	< 3.500
	ZR-NB-95	< 3.500
	CS-134	< 3.800
	CS-137	< 3.900
	BA-LA-140	< 2.900
	H-3	1309.000+/- 132.000
	I-131 (CHEM)	< 0.341

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION LSP

Collection Date	Nuclide	Concentration (pCi/L)
11-AUG-06	MN-54	< 3.600
	CO-58	< 4.200
	FE-59	< 9.600
	CO-60	< 4.000
	ZN-65	< 6.500
	ZR-NB-95	< 4.200
	I-131	< 0.262
	CS-134	< 6.000
	CS-137	< 4.400
	BA-LA-140	< 4.800
	H-3	632.000+/- 104.000

EXPOSURE PATHWAY – WATERBORNE
GROUND WATER

LOCATION OW-002

Collection Date	Nuclide	Concentration (pCi/L)
11-AUG-06	MN-54	< 4.500
	CO-58	< 4.100
	FE-59	< 3.000
	CO-60	< 4.700
	ZN-65	< 3.200
	ZR-NB-95	< 4.400
	I-131	< 0.218
	CS-134	< 5.900
	CS-137	< 4.000
	BA-LA-140	< 2.800
	H-3	2280.000+/- 152.000

ATTACHMENTS TO WCGS ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT – REPORT 30

Changes to the Wolf Creek Generating Station (WCGS) Offsite Dose Calculation Manual (ODCM) are submitted annually with the "Annual Radioactive Effluent Release Report". The WCGS ODCM is divided into two administrative procedures: WCNOC procedure AP 07B-003, "Offsite Dose Calculation Manual" and WCNOC procedure AP 07B-004, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)".

Attachment I is AP 07B-003, Revision 6, "Offsite Dose Calculation Manual"

Attachment II is AP 07B-004, Revision 13, "Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program)"

Attachment III is AP 31A-100, Revision 6, "Solid Radwaste Process Control Program"