Constellation Energy
Nine Mile Point Nuclear Station

P.O. Box 63
Lycoming, NY 13093

May 1, 2009

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: Nine Mile Point Nuclear Station
Unit No. 1; Docket No. 50-220

Radioactive Effluent Release Report, January – December 2008

In accordance with 10 CFR 50.36a and the Nine Mile Point Unit 1 (NMP1) Technical Specifications, enclosed is the Radioactive Effluent Release Report for the period January through December 2008.

Included in this report is a summary of gaseous and liquid effluents, and solid waste released from the station during the reporting period (Attachments 1-6), a summary of revisions to the Offsite Dose Calculation Manual (ODCM) and the Radwaste Process Control Program (PCP) during the reporting period (Attachments 7 and 8), and an explanation as to the cause and corrective actions regarding the inoperability of any station liquid and/or gaseous effluent monitoring instrumentation greater than 30 days (Attachment 9). Attachments 10 and 11 provide a summary and assessment of radiation doses to members of the public within and outside the site boundary, respectively, from liquid and gaseous effluents as well as direct radiation in accordance with 40 CFR 190.

The format used for the effluent data is outlined in Appendix B of Regulatory Guide 1.21, Revision 1. Dose assessments were made in accordance with the NMP1 ODCM. During the reporting period from January through December 2008, NMP1 did not exceed any 10 CFR 20, 10 CFR 50, Technical Specification, or ODCM limits for gaseous or liquid effluents.

Should you have questions regarding the information in this submittal, please contact me at (315) 349-5219.

Very truly yours,

Terry F. Syrell
Director Licensing

TFS/KES

Enclosure: Radioactive Effluent Release Report, January – December 2008

IE48
NRR

cc: S. J. Collins, NRC Region I Administrator
R.V. Guzman, NRC Project Manager
J. Furia, NRC
Senior NRC Resident Inspector

ENCLOSURE

NINE MILE POINT NUCLEAR STATION, UNIT 1

RADIOACTIVE EFFLUENT RELEASE REPORT

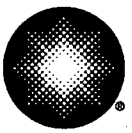
January – December 2008

Nine Mile Point Nuclear Station, LLC
May 1, 2009

NINE MILE POINT NUCLEAR STATION - UNIT 1

RADIOACTIVE EFFLUENT RELEASE REPORT

January – December 2008



Constellation Energy®

Nine Mile Point Nuclear Station

NINE MILE POINT NUCLEAR STATION - UNIT 1

RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY – DECEMBER 2008

SUPPLEMENTAL INFORMATION

Facility: Nine Mile Point Unit #1 **Licensee: Nine Mile Point Nuclear Station, LLC**

1. **TECHNICAL SPECIFICATION LIMITS/ODCM Limits**

A) FISSION AND ACTIVATION GASES

1. The dose rate limit of noble gases released in gaseous effluents from the site to areas at and beyond the site boundary shall be less than or equal to 500 mrem/year to the total body and less than or equal to 3000 mrem/year to the skin.

2. The air dose due to noble gases released in gaseous effluents from Nine Mile Point Unit 1 to areas at and beyond the site boundary shall be limited during any calendar quarter to less than or equal to 5 milliroentgen for gamma radiation and less than or equal to 10 mrad for beta radiation, and during any calendar year to less than or equal to 10 milliroentgen for gamma radiation and less than or equal to 20 mrad for beta radiation.

B&C) TRITIUM, IODINES AND PARTICULATES, HALF LIVES > 8 DAYS

1. The dose rate limit of Iodine-131, Iodine-133, Tritium and all radionuclides in particulate form with half-lives greater than eight days, released in gaseous effluents from the site to areas at and beyond the site boundary shall be less than or equal to 1500 mrem/year to any organ.

2. The dose to a member of the public from Iodine-131, Iodine-133, Tritium and all radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from Nine Mile Point Unit 1 to areas at and beyond the site boundary shall be limited 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.

D) LIQUID EFFLUENTS

1. The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to ten times the concentrations specified in 10 CFR Part 20, 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 2E-04 microcuries/ml total activity.

2. The dose or dose commitment to a member of the public from radioactive materials in liquid effluents released from Nine Mile Point Unit 1 to unrestricted areas shall be limited 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 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.

2. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

Described below are the methods used to measure or approximate the total radioactivity and radionuclide composition in effluents.

A) FISSION AND ACTIVATION GASES

Noble gas effluent activity is determined by on-line gross activity monitoring (calibrated against gamma isotopic analysis of a 4.0L Marinelli grab sample) of an isokinetic stack sample stream.

B) IODINES

Iodine effluent activity is determined by gamma spectroscopic analysis (at least weekly) of charcoal cartridges sampled from an isokinetic stack sample stream.

C) PARTICULATES

Activity released from the main stack is determined by gamma spectroscopic analysis (at least weekly) of particulate filters sampled from an isokinetic sample stream and composite analysis of the filters for non-gamma emitters.

D) TRITIUM

Tritium effluent activity is measured by liquid scintillation or gas proportional counting of monthly samples taken with an air sparging/water trap apparatus. Tritium effluent activity is measured during purge and weekly when fuel is offloaded until stable tritium release rates are demonstrated.

E) EMERGENCY CONDENSER VENT EFFLUENTS

The effluent curie quantities are estimated based on the isotopic distribution in the Condensate Storage Tank water and the Emergency Condenser shell water. Actual isotopic concentrations are found via gamma spectroscopy. Initial release rates of Sr-89, Sr-90 and Fe-55 are estimated by applying scaling factors to release rates of gamma emitters and actual release rates are determined from post offsite analysis results. The activity of fission and activation gases released due to tube leaks is based on reactor steam leak rates using offgas isotopic analyses.

F) LIQUID EFFLUENTS

Isotopic contents of liquid effluents are determined by isotopic analysis of a representative sample of each batch and composite analysis of non-gamma emitters. Tritium activity is estimated on the most recent analysis of the Condensate Storage Tank water. Initial release rates of Sr-89, Sr-90, and Fe-55 are estimated by applying scaling factors to release rates of gamma emitters and actual release rates are determined from post offsite analysis results.

G) SOLID EFFLUENTS

Isotopic contents of waste shipments are determined by gamma spectroscopy analysis of a representative sample of each batch. Scaling factors established from primary composite sample analyses conducted off-site are applied, where appropriate, to find estimated concentration of non-gamma emitters. For low activity trash shipments, curie content is estimated by dose rate measurement and application of appropriate scaling factors.

ATTACHMENT 1
SUMMARY DATA

Unit 1 X Unit 2 _____ Reporting Period January -December 2008

Liquid Effluents:

ODCM Required MEC = 10 x 10CFR20, Appendix B, Table 2, Column 2

There were no discharges of liquid radwaste requiring use of MEC to determine allowable release rate.

There were no Emergency Condenser Vent Liquid Discharges in 2008

Average MEC - µCi/ml (Qtr. 1) =	NO RELEASES	Average MEC - µCi/ml (Qtr. 3) =	NO RELEASES
Average MEC - µCi/ml (Qtr. 2) =	NO RELEASES	Average MEC - µCi/ml (Qtr. 4) =	NO RELEASES

Average Energy (Fission and Activation gases - MeV):

Qtr. 1:	$\bar{E}\gamma$	=	N/A	$\bar{E}\beta$	=	N/A
Qtr. 2:	$\bar{E}\gamma$	=	N/A	$\bar{E}\beta$	=	N/A
Qtr. 3:	$\bar{E}\gamma$	=	2.47E-01	$\bar{E}\beta$	=	3.17E-01
Qtr. 4:	$\bar{E}\gamma$	=	4.54E-02	$\bar{E}\beta$	=	1.35E-01

Liquid:

	Radwaste	EC Vent
Numbr of Batch Releases	0	0
Total Time Period for Batch Releases (hrs)	N/A	N/A
Maximum Time Period for a Batch Release (hrs)	N/A	N/A
Average Time Period for a Batch Release (hrs)	N/A	N/A
Minimum Time Period for a Batch Release (hrs)	N/A	N/A

Total volume of water used to dilute the liquid effluent during release period (L)

1st	2nd	3rd	4th
N/A	N/A	N/A	N/A

Total volume of water available to dilute the liquid effluent during report period (L)

1st	2nd	3rd	4th
1.31E+11	1.32E+11	1.38E+11	1.35E+11

Gaseous(Emergency Condenser Vent):

Numbr of Batch Releases	0
Total Time Period for Batch Releases (hrs)	N/A
Maximum Time Period for a Batch Release (hrs)	N/A
Average Time Period for a Batch Release (hrs)	N/A
Minimum Time Period for a Batch Release (hrs)	N/A

Gaseous (Primary Containment Purge):

Numbr of Batch Releases	0
Total Time Period for Batch Releases (hrs)	N/A
Maximum Time Period for a Batch Release (hrs)	N/A
Average Time Period for a Batch Release (hrs)	N/A
Minimum Time Period for a Batch Release (hrs)	N/A

ATTACHMENT 1
SUMMARY DATA

Unit 1 X Unit 2 _____ Reorting Period January - December 2008

Abnormal Releases:

A. Liquids:

Number of Releases	0*	
Total Activity Released	N/A	Ci

B. Gaseous:

Number of Releases	0	
Total Activity Released	N/A	Ci

*On March 21, 2008, there was an unanticipated release of approximately 0.5 liters of condensate during a purge of a hydrogen gas supply system via a vent line. Tritium soil analysis was performed on samples of soil, rocks and ice collected at the potentially contaminated area. The results indicated the tritium concentrations in the soil samples were less than a LLD of 140 pCi/kg. Tritium and gamma emitters were less than environmental LLD. An Environmental Spill Evaluation based on 0.5 liters of condensate with a tritium concentration of 1.3E6 pCi/l determined the release to be 0.645 µCi of tritium. The spill was completely remediated. Valves were repaired and a procedure was revised to prevent re-occurrence of this type of event at Unit 1. An extent of condition evaluation was performed for Unit 2. It was concluded that the potential for a similar event does not exist at Unit 2.

Separate from above, on January 28 and April 7, 2008 Chemistry collected samples for the Nine Mile Point Unit 1 (NMP1) storm water drainage system (Outfall 020) per station procedures. The tritium concentrations were determined to be 757 +/- 141 pCi/l and 464 +/-137 pCi/l, respectively.

Water from the Nine Mile Point Unit 2 (NMP2) switchgear building roof drains and condensate from heating and ventilation air conditioners are discharged into the storm water drainage system and subsequently discharged at the site boundary through Outfall 020. These areas have been identified as a potential source of tritium from "washout/rainout" and or the reconstitution of tritium from the NMP2 reactor building vent. The water enters the storm water drainage system at Manhole #28 and travels from Manhole #28 to Manhole #32, combining with other inputs from the south and west side of Unit 2. The water then travels via the NMP1 storm water drainage system to the discharge point on the lake shore (Outfall 020). The NMP1 storm drainage system was re-sampled and analyzed for tritium on three occasions following each identification of tritium. The results for these samples were less than the lower limit of detection (<500 pCi/l).

The NMP1 storm water drainage system is a surface water pathway, not a groundwater pathway, and tritium levels near LLD (NMPS required LLD of <500 pCi/l) values have been observed intermittently at this location in the past. The tritium identified in the storm water drainage system is attributed to a permitted effluent pathway, NMP2 Vent, which is evaluated and reported annually via the Unit 2 Radioactive Effluent Release Report.

The regulatory reporting levels from the NMP1 and NMP2 ODCM's for releases to surface waters of 30,000 pCi/l tritium to a non-drinking water source and 20,000 pCi/l to a drinking water source were not exceeded. The dose attributable to the tritium activity identified has already been determined and is reported in the NMP2 Radioactive Effluent Release Report for the gaseous continuous release effluent pathway for the NMP2 Vent in accordance with the ODCM.

The tritium activity values are not included in the Attachment 5 liquid effluent tables of this report because the activity is already accounted for in the reporting of the NMP2 gaseous Vent pathway.

ATTACHMENT 2

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES, ELEVATED AND GROUND LEVEL

		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	EST. TOTAL ERROR, %
A. Fission & Activation Gases (1)						
1. Total Release	Ci	**	**	1.90E-05	3.29E-01	5.00E+01
2. Average Release Rate	µCi/sec	**	**	2.40E-06	4.14E-02	
B. Iodines (1)						
1. Total Iodine - 131	Ci	3.69E-05	1.59E-04	1.10E-04	1.30E-04	3.00E+01
2. Average Release Rate for Period	µCi/sec	4.70E-06	2.03E-05	1.40E-05	1.66E-05	
C. Particulates (1)						
1. Particulates with half-lives>8 days	Ci	1.74E-03	2.46E-04	2.91E-04	1.48E-04	3.00E+01
2. Average Release Rate for Period	µCi/sec	2.22E-04	3.13E-05	3.70E-05	1.88E-05	
3. Gross alpha radioactivity	Ci	**	**	**	**	2.50E+01
D. Tritium (1)						
1. Total release	Ci	6.22E+00	8.37E+00	8.52E+00	8.89E+00	5.00E+01
2. Average Release Rate for Period	µCi/sec	7.90E-01	1.06E+00	1.08E+00	1.13E+00	
E. Percent of Tech. Spec. Limits Fission and Activation Gases						
Percent of Quarterly Gamma Air Dose Limit (5 mR)	%	0.00E+00	0.00E+00	1.54E-07	2.38E-04	
Percent of Quarterly Beta Air Dose Limit (10 mrad)	%	0.00E+00	0.00E+00	9.86E-08	2.63E-04	
Percent of Annual Gamma Air Dose Limit to Date (10 mR)	%	0.00E+00	0.00E+00	7.69E-08	1.19E-04	
Percent of Annual Beta Air Dose Limit to Date (20 mrad)	%	0.00E+00	0.00E+00	4.93E-08	1.32E-04	
Percent of Whole Body Dose Rate Limit (500 mrem/yr)	%	0.00E+00	0.00E+00	4.01E-09	5.54E-06	
Percent of Skin Dose Rate Limit (3000 mrem/yr)	%	0.00E+00	0.00E+00	1.77E-09	2.23E-06	
Tritium, Iodines, and Particulates (with half-lives greater than 8 days)						
Percent of Quarterly Dose Limit (7.5 mrem)	%	4.54E-02	6.70E-02	4.81E-02	5.57E-02	
Percent of Annual Dose Limit to Date (15 mrem)	%	2.28E-02	5.66E-02	8.11E-02	1.09E-01	
Percent of Organ Dose Limit (1500 mrem/yr	%	9.11E-04	1.35E-03	9.67E-04	1.12E-03	

(1) Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk.

ATTACHMENT 3

Unit 1 X Unit 2 _____ Reporting Period January -December 2008

GASEOUS EFFLUENTS - ELEVATED RELEASE

Continuous Mode (2)

Nuclides Released		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases (1)					
Argon-41	Ci	**	**	**	**
Krypton-85	Ci	**	**	**	**
Krypton-85m	Ci	**	**	**	**
Krypton-87	Ci	**	**	**	**
Krypton-88	Ci	**	**	**	**
Xenon-127	Ci	**	**	**	**
Xenon-131m	Ci	**	**	**	**
Xenon-133	Ci	**	**	**	3.29E-01
Xenon-133m	Ci	**	**	**	**
Xenon-135	Ci	**	**	**	**
Xenon-135m	Ci	**	**	**	**
Xenon-137	Ci	**	**	**	**
Xenon-138	Ci	**	**	**	**
Iodines (1)					
Iodine-131	Ci	3.69E-05	1.59E-04	1.10E-04	1.30E-04
Iodine-133	Ci	2.07E-04	1.41E-04	9.07E-06	6.85E-04
Iodine-135	Ci	**	**	**	**
Particulates (1)					
Strontium-89	Ci	**	**	**	**
Strontium-90	Ci	**	**	**	**
Cesium-134	Ci	**	**	**	**
Cesium-137	Ci	**	**	**	1.47E-05
Cobalt-60	Ci	6.17E-04	1.75E-04	1.40E-04	9.58E-05
Cobalt-58	Ci	**	**	**	**
Manganese-54	Ci	6.70E-05	2.90E-06	2.49E-06	2.91E-06
Barium-140	Ci	**	**	**	**
Lanthanum-140	Ci	**	**	**	**
Niobium-95	Ci	**	**	**	**
Cerium-141	Ci	**	**	**	**
Cerium-144	Ci	**	**	**	**
Iron-59	Ci	**	**	**	**
Cesium-136	Ci	**	**	**	**
Chromium-51	Ci	**	**	**	**
Zinc-65	Ci	**	**	**	**
Iron-55	Ci	1.06E-03	6.80E-05	1.49E-04	3.48E-05
Molybdenum-99	Ci	**	**	**	**
Neodymium-147	Ci	**	**	**	**
Tritium (1)	Ci	5.26E+00	7.33E+00	7.40E+00	7.73E+00

(1) Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk " ** ". A lower limit of detection of 1.00E-04 µCi/ml for required noble gases, 1.00E-11 µCi/ml for required particulates, 1.00E-12 µCi/ml for required Iodines, 1.00E-11 µCi/ml for Sr-89/90 and gross alpha radioactivity and 1.00E-06 µCi/ml for Tritium as required by the ODCM, has been verified.

(2) Contributions from purges, if any, are included. There were no other batch releases during the reporting period.

ATTACHMENT 4

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

Ground level releases are determined in accordance with the Off-Site Dose Calculation Manual and Chemistry procedures.

Nuclides Released		Continuous Mode (2) 1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases (1)					
Argon-41	Ci	**	**	**	**
Krypton-85	Ci	**	**	**	**
Krypton-85m	Ci	**	**	**	**
Krypton-87	Ci	**	**	**	**
Krypton-88	Ci	**	**	**	**
Xenon-127	Ci	**	**	**	**
Xenon-131m	Ci	**	**	**	**
Xenon-133	Ci	**	**	**	**
Xenon-133m	Ci	**	**	**	**
Xenon-135	Ci	**	**	1.90E-05	1.51E-05
Xenon-135m	Ci	**	**	**	**
Xenon-137	Ci	**	**	**	**
Xenon-138	Ci	**	**	**	**
Iodines (1)					
Iodine-131	Ci	**	**	**	**
Iodine-133	Ci	**	**	**	**
Iodine-135	Ci	**	**	**	**
Particulates (1)					
Strontium-89	Ci	**	**	**	**
Strontium-90	Ci	**	**	**	**
Cesium-134	Ci	**	**	**	**
Cesium-137	Ci	**	**	**	**
Cobalt-60	Ci	**	**	**	**
Cobalt-58	Ci	**	**	**	**
Manganese-54	Ci	**	**	**	**
Barium-140	Ci	**	**	**	**
Lanthanum-140	Ci	**	**	**	**
Niobium-95	Ci	**	**	**	**
Cerium-141	Ci	**	**	**	**
Cerium-144	Ci	**	**	**	**
Iron-59	Ci	**	**	**	**
Cesium-136	Ci	**	**	**	**
Chromium-51	Ci	**	**	**	**
Zinc-65	Ci	**	**	**	**
Iron-55	Ci	**	**	**	**
Molybdenum-99	Ci	**	**	**	**
Neodymium-147	Ci	**	**	**	**
Tritium (1)	Ci	9.60E-01	1.04E+00	1.12E+00	1.16E+00

(1) Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk **.

(2) There were no ground batch mode releases during the reporting period.

ATTACHMENT 5

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission & Activation Products						
1. Total Release (not including Tritium, gases, alpha)	Ci	No Releases	No Releases	No Releases	No Releases	5.00E+01
2. Average diluted concentration during reporting period	µCi/ml	No Releases	No Releases	No Releases	No Releases	
B. Tritium						
1.Total release	Ci	No Releases	No Releases	No Releases	No Releases	5.00E+01
2. Average diluted concentration during the repoorting period	µCi/ml	No Releases	No Releases	No Releases	No Releases	
C. Dissolved and Entrained Gases						
1. Total release	Ci	No Releases	No Releases	No Releases	No Releases	5.00E+01
2. Average diluted concentration during the reporting period	µCi/ml	No Releases	No Releases	No Releases	No Releases	
D. Gross Alpha Radioactivity						
1. Total release	Ci	No Releases	No Releases	No Releases	No Releases	5.00E+01
E. Volumes						
1. Prior to Dilution	Liters	No Releases	No Releases	No Releases	No Releases	5.00E+01
2. Volume of dilution water used during release period	Liters	No Releases	No Releases	No Releases	No Releases	5.00E+01
3. Volume of dilution water available during reporting period	Liters	1.31E+11	1.32E+11	1.38E+11	1.35E+11	5.00E+01
F. Percent of Tech. Spec. Limits						
Percent of Quarterly Whole Body Dose Limit (1.5 mrem)	%	No Releases	No Releases	No Releases	No Releases	
Percent of Annual Whole Body Dose Limit to Date (3 mrem)	%	No Releases	No Releases	No Releases	No Releases	
Percent of Quarterly Organ Dose Limit (5 mrem)	%	No Releases	No Releases	No Releases	No Releases	
Percent of Annual Organ Dose Limit to Date (10 mrem)	%	No Releases	No Releases	No Releases	No Releases	
Percent of 10CFR20 Concentration Limit	%	No Releases	No Releases	No Releases	No Releases	
Percent of Dissolved or Entrained Noble Gas Limit (2.00E-04 µCi/ml)	%	No Releases	No Releases	No Releases	No Releases	

ATTACHMENT 5

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

LIQUID EFFLUENTS RELEASED

Nuclides Released		Batch Mode (1),(2) 1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Nuclides Released					
Strontium-89	Ci	No Releases	No Releases	No Releases	No Releases
Strontium-90	Ci	No Releases	No Releases	No Releases	No Releases
Cesium-134	Ci	No Releases	No Releases	No Releases	No Releases
Cesium-137	Ci	No Releases	No Releases	No Releases	No Releases
Iodine-131	Ci	No Releases	No Releases	No Releases	No Releases
Cobalt-58	Ci	No Releases	No Releases	No Releases	No Releases
Cobalt-60	Ci	No Releases	No Releases	No Releases	No Releases
Iron-59	Ci	No Releases	No Releases	No Releases	No Releases
Zinc-65	Ci	No Releases	No Releases	No Releases	No Releases
Manganese-54	Ci	No Releases	No Releases	No Releases	No Releases
Chromium-51	Ci	No Releases	No Releases	No Releases	No Releases
Zirconium-95	Ci	No Releases	No Releases	No Releases	No Releases
Niobium-95	Ci	No Releases	No Releases	No Releases	No Releases
Molybdenum-99	Ci	No Releases	No Releases	No Releases	No Releases
Barium-140	Ci	No Releases	No Releases	No Releases	No Releases
Lanthanum-140	Ci	No Releases	No Releases	No Releases	No Releases
Cerium-141	Ci	No Releases	No Releases	No Releases	No Releases
Iodine-133	Ci	No Releases	No Releases	No Releases	No Releases
Iron-55	Ci	No Releases	No Releases	No Releases	No Releases
Cerium-144	Ci	No Releases	No Releases	No Releases	No Releases
Cesium-136	Ci	No Releases	No Releases	No Releases	No Releases
Copper-64	Ci	No Releases	No Releases	No Releases	No Releases
Manganese-56	Ci	No Releases	No Releases	No Releases	No Releases
Nickel-65	Ci	No Releases	No Releases	No Releases	No Releases
Sodium-24	Ci	No Releases	No Releases	No Releases	No Releases
Dissolved or Entrained Gases	Ci	No Releases	No Releases	No Releases	No Releases
Tritium	Ci	No Releases	No Releases	No Releases	No Releases

(1) No continuous mode release occurred during the report period as indiacted by effluent sampling.

(2) Concentrations less than the lower limit of detection of the counting system used have been verified for sampled effluents. A lower limit of detection of 5.00E-07 µCi/ml for required gamma emitting nuclides, 1.00E-05 µCi/ml for required dissolved and entrained noble gases and tritium, 5.00E-08 µCi/ml for Sr-89/90, 1.00E-06 µCi/ml for I-131 and Fe-55, and 1.00E-07 µCi/ml for gross alpha radioactivity, as identified in the ODCM, has been verified.

ATTACHMENT 6

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Volume (m^3) Class			Activity (1) (Ci) Class		
	A	B	C	A	B	C
a.1 Spent Resin (Dewatered)	1.68E+01	0.00E+00	0.00E+00	2.72E+01	0.00E+00	0.00E+00
a.2 Filter Sludge	0.00E+00	1.70E+00	0.00E+00	0.00E+00	1.84E+02	0.00E+00
Totals	1.68E+01	1.70E+00	0.00E+00	2.72E+01	1.84E+02	0.00E+00
b.1 Dry Compressible Waste	1.80E+02	0.00E+00	0.00E+00	4.77E+00	0.00E+00	0.00E+00
b.2 Dry Non-Compressible Waste (Contaminated Equipment)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals	1.80E+02	0.00E+00	0.00E+00	4.77E+00	0.00E+00	0.00E+00
c. Irradiated Components, Control Rods, etc.	0.00E+00	0.00E+00	1.65E+00	0.00E+00	0.00E+00	4.75E+04
d. Other (to vendor for processing)						
d.1 Combined Packages & Iron Prefilter Waste	2.12E+01	0.00E+00	0.00E+00	2.80E+01	0.00E+00	0.00E+00
d.2 Sewage Sludge	2.23E+01	0.00E+00	0.00E+00	2.30E-05	0.00E+00	0.00E+00

(1) The estimated total error is 5.0E+01%

ATTACHMENT 6

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A1. TYPE	Container	Package	Solidification Agent
a.1 Spent Resin (Dewatered)	Poly Liner	General Design Type A	None
a.2 Filter Sludge	Poly Liner	Type A / Type B	None
b.1 Dry Compressible Waste	Metal Box / Steel Liner	General Design	None
b.2 Dry Non-Compressible Waste (contaminated equipment)	N/A	N/A	N/A
c. Irradiated Components, Control Rods	Steel Liner	Type A / Type B	None
d. Other (To vendor for processing)			
d.1 Combined Package & Iron Prefilter Waste	Poly Liner	General Design	None
d.2 Sewage Sludge	Metal Box	General Design	None

ATTACHMENT 6

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

a. Spent Resins, Filter Sludges, Concentrated Waste

Nuclide	Percent
Fe-55	68.2
Co-60	20.6
Cs-137	5.3
Mn-54	3.9
Ce-144	1.1
H-3, Ni-63, Zn-65, Sr-90, Tc-99, Cs-134, Pu-238, Pu-239, Am-241, Cm-242, Cm-243	0.9

b. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)

Nuclide	Percent
Fe-55	66.5
Co-60	29.0
Ni-63	1.7
Cs-137	1.4
Mn-54	1.1
H-3, C-14, Cr-51, Fe-59, Co-58, Ni-59, Zn-65, Sr-90, Zr-93, Zr-95, Nb-94, Nb-95, Tc-99, Sb-124, I-129, Ce-144, Pu-238, Pu-239, Pu-241, Am-241, Cm-242, Cm-243	0.3

c. Irradiated Components, Control Rods

Nuclide	Percent
Fe-55	48.7
Co-60	45.5
Ni-63	3.6
Mn-54	1.8
H-3, C-14, Cr-51, Fe-59, Co-58, Ni-59, Zn-65, Sr-90, Zr-93, Zr-95, Nb-94, Nb-95, Tc-99, Sb-124, I-129, Cs-134, Cs-137, Ce-144, U-234, U-235, U-238, Pu-238, Pu-239, Pu-240, Pu-241, Am-241, Cm-242, Cm-243, Cm-244	0.4

d. Other: (To vendor for processing)

1. Combined Packages & Iron Prefilter Waste

Nuclide	Percent
Fe-55	51.7
Co-60	34.8
Cs-137	8.3
Mn-54	2.3
Ni-63	1.5
H-3, Cr-51, Fe-59, Co-58, Zn-65, Sr-90, Nb-95, Sb-124, Cs-134, Ce-141, Ce-144, Pu-238, Pu-239, Pu-241, Am-241, Cm-242, Cm-243	1.4

2. Sewage Sludge

Nuclide	Percent
Co-60	88.0
Mn-54	6.6
Cs-137	5.4

ATTACHMENT 6

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
2	Hittman Transport	Barnwell Disposal Facility
5	Hittman Transport	Duratek Services, Inc
3	Hittman Transport	Studsvik Processing Facility, Memphis
8	Hittman Transport	Studsvik Processing Facility, Erwin

B. IRRADIATED FUEL SHIPMENTS (Disposition)

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

D. SEWAGE WASTES SHIPPED TO A TREATMENT FACILITY FOR PROCESSING AND BURIAL

Volume (m3)	Activity (Ci)
2.23E+01	2.30E-05
Nuclide	**Percent**
Co-60	88.0
Cs-137	5.4
Mn-54	6.6

ATTACHMENT 7

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL (ODCM)

The Unit 1 Off-Site Dose Calculation Manual (ODCM) was not revised during the reporting period.

ATTACHMENT 8

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM (PCP)

There were no changes to the NMP1 Radwaste Process Control Program (RPCP) during the report period.

ATTACHMENT 9

Unit 1 X Unit 2 _____ Reporting Period January - December 2008

SUMMARY OF INOPERABLE MONITORS

Monitor	Dates of Inoperability	Cause and Corrective Actions
1) Service Water Discharge Monitor RAM-72-406	December 16, 2007 to February 4, 2008	The sample stream selector switch failed. The switch was not repairable, and was also determined to be obsolete. The switch was replaced with a PLC controlled switch via design change. The monitor was declared operable on February 4, 2008.

ATTACHMENT 10

Unit 1 _X_ Unit 2 ___ Reporting Period **January – December 2008**

DOSES TO MEMBERS OF THE PUBLIC DUE TO THEIR ACTIVITIES INSIDE THE SITE BOUNDARY

Introduction

An assessment of the radiation dose potentially received by a Member of the Public due to their activities inside the site boundary from Nine Mile Point Unit 1 (NMP1) liquid and gaseous effluents has been conducted for the period January through December 2008.

This assessment considers the maximum exposed individual and the various exposure pathways resulting from liquid and gaseous effluents to identify the maximum dose received by a Member of the Public during their activities within the site boundary.

Prior to September 11, 2001, the public had access to the Energy Information Center for purposes of observing the educational displays or for picnicking and associated activities. Fishing also occurred near the shoreline adjacent to the NMP. Fishing near the shoreline adjacent to the NMP Site was the onsite activity that resulted in the potential maximum dose received by a Member of the Public. Following September 11, 2001 public access to the Energy Information Center has been restricted and fishing by Members of the Public at locations on site is also prohibited. Although fishing was not conducted during 2008 the annual dose to a hypothetical fisherman was still evaluated to provide continuity of data for the location.

Dose Pathways

Dose pathways considered for this evaluation included direct radiation, inhalation and external ground (shoreline sediment or soil doses). Other pathways, such as ingestion pathways, are not considered because they are either not applicable, insignificant, or are considered as part of the evaluation of the total dose to a member of the public located off-site. In addition, only releases from the NMP1 stack and emergency condenser vent were evaluated for the inhalation pathway. Dose due to aquatic pathways such as liquid effluents is not applicable since swimming is prohibited at the Nine Mile Point Site.

Dose to a hypothetical fisherman is received through the following pathways while standing on the shoreline fishing:

- External ground pathway; this dose is received from plant related radionuclides detected in the shoreline sediment.
- Inhalation pathway; this dose is received through inhalation of gaseous effluents released from NMP1 Stack and Emergency Condenser Vent.
- Direct radiation pathway; dose resulting from the operation of NMP1, Nine Mile Point Unit 2 (NMP2) and the James A. Fitzpatrick (JAF) Facilities.

Methodologies for Determining Dose for Applicable Pathways

External Ground (Shoreline Sediment) pathway

Dose from the external ground (shoreline sediment) is based on the methodology in the NMP1 Offsite Dose Calculation Manual (NMP1 ODCM) as adapted from Regulatory Guide 1.109. For this evaluation it is assumed that the hypothetical maximum exposed individual fished from the shoreline at all times.

The total dose received by the whole body and skin of the maximum exposed individual during 2008 was calculated using the following input parameters:

- Usage Factor = 312 hours (fishing 8 hours per week, 39 weeks per year)
- Density in grams per square meter = 40,000
- Shore width factor = 0.3
- Whole body and skin dose factor for each radionuclide = Regulatory Guide 1.109, Table E-6.
- Fractional portion of the year = 1 (used average radionuclide concentration over total time period)
- Average Cs-137 concentration = 1.57E-01 pCi/g

The total whole body and skin doses received by a hypothetical maximum exposed fisherman from the external ground pathway is presented in Table 1, Exposure Pathway Annual Dose.

ATTACHMENT 10

Unit 1 X Unit 2 ___ Reporting Period **January – December 2008**

DOSES TO MEMBERS OF THE PUBLIC DUE TO THEIR ACTIVITIES INSIDE THE SITE BOUNDARY

Inhalation Pathway

The inhalation dose pathway is evaluated by utilizing the inhalation equation in the NMP1 ODCM, as adapted from Regulatory Guide 1.109. The total whole body dose and organ dose received by the hypothetical maximum exposed fisherman during 2008 calculated using the following input parameters for gaseous effluents released from both the NMP1 Stack and Emergency Condenser Vent for the time period exposure is received:

NMP 1 Stack:

Variable	Fisherman *
X/Q (s/m³)	8.9E-06
Inhalation dose factor	Table E-7 Regulatory Guide 1.109
Annual air intake m³/year) (adult)	8000
Fractional portion of the year (hours)	0.0356
H-3 (pCi/sec)	9.53 E+05
Mn-54 (pCi/sec)	3.52 E-01
Fe-55 (pCi/sec)	1.07 E+01
Co-60 (pCI/sec)	1.74 E+01
Cs-137 (pCi/sec)	6.23 E-01
I-131 (pCi/sec)	1.69 E+01
I-133 (pCi/sec)	3.54 E+01

NMP1 Emergency Condenser Vent:

Variable	Fisherman *
X/Q (s/m³)	6.63E-06
Inhalation dose factor	Table E-7 Regulatory Guide 1.109
Annual air intake m³/year) (adult)	8000
Fractional portion of the year	0.0356
H-3 (pCi/sec)	1.40 E+05

- The maximum exposed fisherman is assumed to be present on site during the period of April through December at a rate of 8 hours per week for 39 weeks per year equivalent to 312 hours for the year (fractional portion of the year = 0.0356). Therefore, the Average Stack and Vent flow rates and radionuclide concentrations used to determine the dose are represented by second, third and fourth quarter gaseous effluent flow and concentration values.

The total whole body dose and maximum organ dose received by the hypothetical maximum exposed fisherman is presented in Table 1, Exposure Pathway Annual Dose.

ATTACHMENT 10

Unit 1 _X_ Unit 2 ___ Reporting Period **January – December 2008**

DOSES TO MEMBERS OF THE PUBLIC DUE TO THEIR ACTIVITIES INSIDE THE SITE BOUNDARY

Direct Radiation Pathway

The direct radiation pathway is evaluated in accordance with the methodology found in the NMP1 ODCM. This pathway considers four components: direct radiation from the generating facilities, direct radiation from any possible overhead plume, direct radiation from ground deposition and direct radiation from plume submersion. The direct radiation pathway is evaluated by the use of high sensitivity environmental Thermoluminescent Dosimeters (TLDs). Since fishing activities occur between April 1 – December 31, TLD data for the second, third, and fourth quarters of 2008 from TLDs placed in the general area where fishing once occurred were used to determine an average dose to the hypothetical maximum exposed fisherman from direct radiation. The following is a summary of the average dose rate and assumed time spent on site used to determine the total dose received:

Variable	Fisherman
Average Dose Rate (mRem/hr)	1.53 E-03
Exposure time (hours)	312

Total Doses received by the hypothetical maximum exposed fisherman from direct radiation is presented in Table 1, Exposure Pathway Annual Dose.

Dose Received By A Hypothetical Maximum Exposed Member Of The Public Inside the Site Boundary During 2008

The following is a summary of the dose received by a hypothetical maximum exposed fisherman from Liquid and Gaseous effluents released from NMP1 during 2008:

TABLE 1 Exposure Pathway Annual Dose

Exposure Pathway	Dose Type	Fisherman (mRem)
External Ground	Whole Body	2.47 E-03
	Skin of Whole Body	2.88 E-03
Inhalation	Whole Body	4.24 E-04
	Maximum Organ	Lung: 4.56 E-04
Direct Radiation	Whole Body	0.48

Based on these values the total annual dose received by a hypothetical maximum exposed member of the public inside the site boundary is as follows:

TABLE 2 Annual Dose Summary

Total Annual Dose for 2008	Fisherman
Total Whole Body (mRem)	4.83 E-01
Skin of Whole Body (mRem)	2.88 E-03
Maximum Organ (mRem)	Lung: 4.56 E-04

ATTACHMENT 11

Unit 1 _X_ Unit 2 ___ Reporting Period **January – December 2008**

DOSES TO MEMBERS OF THE PUBLIC DUE TO THEIR ACTIVITIES OUTSIDE THE SITE BOUNDARY

Introduction

An assessment of radiation doses potentially received by the likely most exposed member of the public located beyond the site boundary was conducted for the period January through December 2008 for comparison against the 40CFR190 annual dose limits.

The intent of 40 CFR 190 requires that the effluents of Nine Mile Point Unit 1 (NMP1), as well as other nearby uranium fuel cycle facilities, be considered. In this case, the effluents of NMP1, Nine Mile Point Unit 2 (NMP2) and the James A. FitzPatrick (JAF) facilities must be considered.

40CFR190 requires the annual radiation dose received by members of the public in the general environment, as a result of plant operations, be limited to:

- < 25 mRem wholebody
- < 25 mRem any organ (except thyroid)
- < 75 mRem thyroid

This evaluation compares doses resulting from Liquid and Gaseous effluents and direct radiation originating from the site as a result of the operation of the NMP1, NMP2 and JAF nuclear facilities.

Dose Pathways

Dose pathways considered for this evaluation included doses resulting from liquid effluents, gaseous effluents and direct radiation from all nuclear operating facilities located on the Nine Mile Point Site.

Dose to the most likely member of the public, outside the site boundary, is received through the following pathways:

- Fish consumption pathway; this dose is received from plant radionuclides that have concentrated in fish that is consumed by a member of the public.
- Shoreline Sediment; this dose is received as a result of an individual's exposure to plant radionuclides deposited in the shoreline sediment, which is used as a recreational area.
- Deposition, Inhalation and Ingestion pathways resulting from gaseous effluents; this dose is received through exposure to gaseous effluents released from NMP1, NMP2 and JAF operating facilities.
- Direct Radiation pathway; radiation dose resulting from the operation of NMP1, NMP2 and JAF facilities.

Methodologies for Determining Dose for Applicable Pathways

Fish Consumption

Dose received as a result of fish consumption is based on the methodology specified in the NMP1 Off-site Dose Calculation Manual (NMP1 ODCM) as adapted from Regulatory Guide 1.109. The dose for 2008 is calculated from actual analysis results of environmental fish samples taken near the site discharge points. For this evaluation it is assumed that the most likely exposed member of the public consumes fish taken near the site discharge points.

No radionuclides were detected in fish samples collected and analyzed during 2008; therefore no dose was received by the whole body and organs of the likely most exposed Member of the Public during 2008.

Shoreline Sediment

Dose received from shoreline sediment is based on the methodology in the NMP1 ODCM as adapted from Regulatory Guide 1.109. For this evaluation it is assumed that the most likely exposed member of the public spends 67 hours/year along the shoreline for recreational purposes.

ATTACHMENT 11

Unit 1 _X_ Unit 2 ___ Reporting Period **January – December 2008**

DOSES TO MEMBERS OF THE PUBLIC DUE TO THEIR ACTIVITIES OUTSIDE THE SITE BOUNDARY

Shoreline Sediment Continued:

No radionuclides were detected in shoreline sediment samples collected and analyzed during 2008; therefore no dose was received by the whole body and organs of the likely most exposed Member of the Public during 2008.

Dose Pathways Resulting From Gaseous Effluents

Dose received by the likely most exposed member of the public due to gaseous effluents is calculated in accordance with the methodology provided in the NMP1 ODCM, NMP2 Offsite Dose Calculation Manual, and the JAF Offsite Dose Calculation Manual. These calculations consider deposition, inhalation and ingestion pathways. The total sum of doses resulting from gaseous effluents from NMP1, NMP2 and JAF during 2008 provide a total dose to the whole body and maximum organ dose for this pathway.

Direct Radiation Pathway

Dose as a result of direct gamma radiation from the site, encompasses doses from direct "shine" from the generating facilities, direct radiation from any overhead gaseous plumes, plume submersion and from ground deposition. This total dose is measured by environmental TLDs. The critical location is based on the closest year-round residence from the generating facilities as well as the closest residence in the critical downwind sector in order to evaluate both direct radiation from the generating facilities and gaseous plumes as determined by the local meteorology. During 2008, the closest residence and the critical downwind residence are at the same location.

Dose Potentially Received by the Likely Most Exposed Member of the Public Outside the Site Boundary During 2006

Exposure Pathway	Dose Type	Dose (mRem)
Fish Consumption	Total Whole Body	No Dose
	Total Maximum Organ	No Dose
Shoreline Sediment	Total Whole Body	No Dose
	Total Skin of Whole Body	No Dose
Gaseous Effluents	Total Whole Body	8.18 E-03
	Total Maximum Organ	Thyroid: 1.08 E-01
Direct Radiation	Total Whole Body	0.48

Based on these values the maximum total annual dose potentially received by the most likely exposed member of the public during 2008 is as follows:

- Total Whole Body: 4.92 E-01 mRem
- Total Skin of Whole Body: 4.90 E-03 mRem
- Maximum Organ: Thyroid: 1.08 E-01 mRem

40CFR190 Evaluation

The maximum total doses presented in this attachment are the result of operations at the NMP1, NMP2 and the JAF facilities. The maximum organ dose (Thyroid: 0.108 mRem) and the maximum whole body dose (0.492 mRem) are below the 40 CFR 190 criteria of 25 mRem per calendar year to the maximum exposed organ or the whole body, and below 75 mRem per calendar year to the thyroid.