ENCLOSURE (1)

NINE MILE POINT NUCLEAR STATION, UNIT 2

RADIOACTIVE EFFLUENT RELEASE REPORT

January 1, 2005 – December 31, 2005

Facility Operating License NPF-69
Docket No. 50-410

Nine Mile Point Nuclear Station, LLC
May 01, 2006

NINE MILE POINT NUCLEAR STATION - UNIT 2

RADIOACTIVE EFFLUENT RELEASE REPORT

January – December 2005

Constellation Energy®

Nine Mile Point Nuclear Station

NINE MILE POINT NUCLEAR STATION - UNIT 2

RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY – DECEMBER 2005

SUPPLEMENTAL INFORMATION

Facility: Nine Mile Point Unit #2 Licensee: Nine Mile Point Nuclear Station, LLC

1. TECHNICAL SPECIFICATION/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 or beyond the site boundary shall be less than or equal to 500 mrem/year to the whole body and less than or equal to 3000 mrem/year to the skin.

2. The air dose from noble gases released in gaseous effluents from Nine Mile Point Unit 2 to areas at or beyond the site boundary shall be limited during any calendar quarter to less than or equal to 5 mrad 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 mrad 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 or 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 2 to areas at or 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. Improved Technical Specifications (ITS) limits the concentration of radioactive material released in the liquid effluents to unrestricted areas to ten times the concentrations specified in 10CFR20.1001-20.2402, 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 2 to unrestricted areas shall be limited during any calendar quarter to less than or equal to 1.5 mrem to the whole 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 whole 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 gamma spectroscopic monitoring (intrinsic germanium crystal) of an isokinetic sample stream.

B) IODINES

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

C) PARTICULATES

Activity released from the main stack and the combined Radwaste/Reactor Building vent 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.

E) 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.

F) SOLID EFFLUENTS

Isotopic contents of waste shipments are determined by gamma spectroscopy analyses 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 __ **Unit 2** X **Reporting Period** January - December 2005

Liquid Effluents:

ODCM Required MEC = 10 x 10CFR20.1001-20.2402, Appendix B, Table 2, Column 2

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

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):

Qrtr. 1:	$\bar{E}\gamma$ =	6.46E-01		$\bar{E}\beta$ =	2.37E-01	
Qrtr. 2:	$\bar{E}\gamma$ =	6.24E-01		$\bar{E}\beta$ =	2.36E-01	
Qrtr. 3:	$\bar{E}\gamma$ =	8.97E-01		$\bar{E}\beta$ =	3.03E-01	
Qrtr. 4:	$\bar{E}\gamma$ =	7.68E-01		$\bar{E}\beta$ =	2.63E-01	

Liquid:

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	N/A

	1st	2nd	3rd	4th
Total volume of water used to dilute the liquid effluent during the release period (L)	N/A	N/A	N/A	N/A

	1st	2nd	3rd	4th
Total volume of water available to dilute the liquid effluent during the release period (L)	N/A	N/A	N/A	N/A

Gaseous (Emergency Condenser Vent): "Not applicable for Unit 2"

Numbr of Batch Releases	N/A
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	N/A

Gaseous (Primary Containment Purge):

Numbr of Batch Releases	10
Total Time Period for Batch Releases (hrs)	4.33E+02
Maximum Time Period for a Batch Release (hrs)	9.17E+01
Average Time Period for a Batch Release (hrs)	4.33E+01
Minimum Time Period for a Batch Release	7.48E+00

Attachment 1

Summary Data

Unit 1 __ **Unit 2** X **Reporting Period** January - December 2005

Abnormal Releases:

A. Liquid:

Number of Releases	0	
Total Activity Released	N/A	Ci

B. Gaseous:

Number of Releases	0	
Total Activity Released	N/A	Ci

Attachment 2

Unit 1 __ Unit 2 X Reporting Period January - December 2005

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. Total release	Ci	3.56E+01	4.12E+01	5.20E+01	4.59E+01	5.00E+01
2. Average release rate	µCi/sec	4.60E+00	5.23E+00	6.55E+00	5.76E+00	
B. Iodines						
1. Total Iodine - 131	Ci	2.02E-05	4.74E-05	2.63E-04	1.08E-04	3.00E+01
2. Average release rate for period	µCi/sec	2.57E-06	6.02E-06	3.35E-05	1.38E-05	
C. Particulates						
1. Particulates with half-lives >8 days	Ci	1.50E-04	7.05E-05	9.53E-05	8.85E-05	3.00E+01
2. Average release rate for period	µCi/sec	1.90E-05	8.96E-06	1.21E-05	1.13E-05	
3. Gross alpha radioactivity	Ci	1.16E-05	2.37E-05	3.18E-05	1.91E-05	2.50E+01
D. Tritium						
1. Total release	Ci	2.33E+01	2.26E+01	4.26E+01	4.55E+01	5.00E+01
2. Average release rate for period	µCi/sec	2.96E+00	2.87E+00	5.41E+00	5.78E+00	
E. Percent of Tech. Spec. Limits						
Fission and Activation Gases						
Percent of Quarterly Gamma Air Dose Limit (5 mR)	%	5.27E-02	5.88E-02	1.08E-01	8.12E-02	
Percent of Quarterly Beta Air Dose Limit (10 mrad)	%	9.38E-04	1.08E-03	1.74E-03	1.34E-03	
Percent of Annual Gamma Air Dose Limit to Date (10 mR)	%	2.64E-02	5.58E-02	1.10E-01	1.50E-01	
Percent of Annual Beta Air Dose Limit to Date (20 mRad)	%	4.69E-04	1.01E-03	1.88E-03	2.56E-03	
Percent of Whole Body Dose Rate Limit (500 mrem/yr)	%	2.07E-03	2.29E-03	4.15E-03	3.13E-03	
Percent of Skin Dose Rate Limit (3000 mrem/yr)	%	4.04E-04	4.46E-04	8.08E-04	6.09E-04	
Tritium, Iodines, and Particulates (with half-lives greater than 8 days)						
Percent of Quarterly Dose Limit (7.5 mrem)	%	1.29E-02	1.89E-02	7.96E-02	3.92E-02	
Percent of Annual Dose Limit to Date (15 mrem)	%	6.52E-03	1.60E-02	5.61E-02	7.61E-02	
Percent of Organ Dose Limit (1500 mrem/yr	%	2.63E-04	3.79E-04	1.58E-03	7.79E-04	

Attachment 3

Unit 1 __ Unit 2 X Reporting Period January - December 2005

GASEOUS EFFLUENTS - ELEVATED RELEASE

Continuous Mode (2)

Nuclides Released		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Fission Gases (1)					
Argon-41	Ci	**	**	5.83E-02	1.20E-01
Krypton-85	Ci	**	**	**	**
Krypton-85m	Ci	8.93E+00	1.09E+01	1.36E+01	1.48E+01
Krypton-87	Ci	**	**	1.56E+00	1.09E-01
Krypton-88	Ci	1.07E+01	1.19E+01	2.18E+01	1.64E+01
Xenon-127	Ci	**	**	**	**
Xenon-131m	Ci	**	**	**	**
Xenon-133	Ci	1.60E+01	1.84E+01	1.50E+01	1.44E+01
Xenon-133m	Ci	**	**	**	**
Xenon-135	Ci	**	**	**	**
Xenon-135m	Ci	**	**	**	**
Xenon-137	Ci	**	**	**	**
Xenon-138	Ci	**	**	**	**
Iodines (1)					
Iodine-131	Ci	2.02E-05	4.74E-05	2.52E-04	1.02E-04
Iodine-133	Ci	5.21E-05	2.50E-04	2.44E-03	4.67E-04
Iodine-135	Ci	**	**	**	**
Particulates (1)					
Strontium-89	Ci	**	**	**	**
Strontium-90	Ci	**	**	**	**
Cesium-134	Ci	**	**	**	**
Cesium-137	Ci	**	**	**	**
Cobalt-60	Ci	3.12E-06	1.32E-05	4.33E-05	**
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	**	**	**	**
Zirconium-95	Ci	**	**	**	**
Tritium (1)	Ci	1.46E+01	1.15E+01	1.95E+01	1.87E+01

(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, and 1.00E-06 µCi/ml for Tritium as required by the ODCM, has been verified.
(2) Contributions from purges are included. There were no other batch releases during the reporting period.

Attachment 4

Unit 1 __ Unit 2 X Reporting Period January - December 2005

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

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	**	**	**	**
Kypton-87	Ci	**	**	**	**
Krypton-88	Ci	**	**	**	**
Xenon-127	Ci	**	**	**	**
Xenon-131m	Ci	**	**	**	**
Xenon-133	Ci	**	**	**	**
Xenon-133m	Ci	**	**	**	**
Xenon-135	Ci	**	**	**	**
Xenon-135m	Ci	**	**	**	**
Xenon-137	Ci	**	**	**	**
Xenon-138	Ci	**	**	**	**
Iodines (1)					
Iodine-131	Ci	**	**	1.17E-05	6.77E-06
Iodine-133	Ci	**	**	2.94E-05	4.00E-06
Iodine-135	Ci	**	**	**	**
Particulates (1)					
Strontium-89	Ci	**	**	**	**
Strontium-90	Ci	**	**	**	**
Cesium-134	Ci	**	**	**	**
Cesium-137	Ci	**	**	**	**
Cobalt-60	Ci	1.17E-04	5.73E-05	5.20E-05	8.85E-05
Cobalt-58	Ci	**	**	**	**
Manganese-54	Ci	2.91E-05	**	**	**
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	**	**	**	**
Zirconium-95	Ci	**	**	**	**
Tritium (1)	Ci	8.68E+00	1.11E+01	2.31E+01	2.68E+01

(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 and gross alpha, 1.00E-12 µCi/ml for required iodines, and 1.00E-06 µCi/ml for Tritium, as required by the ODCM, has been verified.
(2) There were no batch releases from this path during the reporting period.

Attachment 5

Unit 1 __ Unit 2 X Reporting Period January - December 2005

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 Release	No Release	No Release	No Release	5.00E+01
2. Average diluted concentration during reporting period	µCi/ml	No Release	No Release	No Release	No Release	
B. Tritium						
1.Total release	Ci	No Release	No Release	No Release	No Release	5.00E+01
2. Average diluted concentration during the repoorting period	µCi/ml	No Release	No Release	No Release	No Release	
C. Dissolved and Entrained Gases						
1. Total release	Ci	No Release	No Release	No Release	No Release	5.00E+01
2. Average diluted concentration during the reporting period	µCi/ml	No Release	No Release	No Release	No Release	
D. Gross Alpha Radioactivity						
1. Total release	Ci	No Release	No Release	No Release	No Release	5.00E+01
E. Volumes						
1. Prior to Dilution	Liters	No Release	No Release	No Release	No Release	5.00E+01
2. Volume of dilution water used during release period	Liters	No Release	No Release	No Release	No Release	5.00E+01
3. Volume of dilution water available during reporting period	Liters	1.17E+10	1.27E+10	1.61E+10	1.36E+10	5.00E+01
F. Percent of Tech. Spec. Limits Fission and Activation Gases						
Percent of Quarterly Whole Body Dose Limit (1.5 mrem)	%	No Release	No Release	No Release	No Release	
Percent of Annual Whole Body Dose Limit to Date (3 mrem)	%	No Release	No Release	No Release	No Release	
Percent of Quarterly Organ Dose Limit (5 mrem)	%	No Release	No Release	No Release	No Release	
Percent of Annual Organ Dose Limit to Date (10 mrem)	%	No Release	No Release	No Release	No Release	
Percent of 10CFR20 Concentration Limit	%	No Release	No Release	No Release	No Release	
Percent of Dissolved or Entrained Noble Gas Limit (2.00E-04 µCi/ml)	%	No Release	No Release	No Release	No Release	

Attachment 5

Unit 1 __ Unit 2 X Reporting Period January - December 2005

LIQUID EFFLUENTS RELEASED

Nuclides Released		Continuous Mode (1) 1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Nuclides Released					
Strontium-89	Ci	No Release	No Release	No Release	No Release
Strontium-90	Ci	No Release	No Release	No Release	No Release
Cesium-134	Ci	No Release	No Release	No Release	No Release
Cesium-137	Ci	No Release	No Release	No Release	No Release
Iodine-131	Ci	No Release	No Release	No Release	No Release
Cobalt-58	Ci	No Release	No Release	No Release	No Release
Cobalt-60	Ci	No Release	No Release	No Release	No Release
Iron-59	Ci	No Release	No Release	No Release	No Release
Zinc-65	Ci	No Release	No Release	No Release	No Release
Manganese-54	Ci	No Release	No Release	No Release	No Release
Chromium-51	Ci	No Release	No Release	No Release	No Release
Zirconium-95	Ci	No Release	No Release	No Release	No Release
Niobium-95	Ci	No Release	No Release	No Release	No Release
Molybdenum-99	Ci	No Release	No Release	No Release	No Release
Technetium-99m	Ci	No Release	No Release	No Release	No Release
Barium-140	Ci	No Release	No Release	No Release	No Release
Lanthanum-140	Ci	No Release	No Release	No Release	No Release
Cerium-141	Ci	No Release	No Release	No Release	No Release
Tungsten-187	Ci	No Release	No Release	No Release	No Release
Arsenic-76	Ci	No Release	No Release	No Release	No Release
Iodine-133	Ci	No Release	No Release	No Release	No Release
Iron-55	Ci	No Release	No Release	No Release	No Release
Neptunium-239	Ci	No Release	No Release	No Release	No Release
Silver-110m	Ci	No Release	No Release	No Release	No Release
Gold-199	Ci	No Release	No Release	No Release	No Release
Cerium-144	Ci	No Release	No Release	No Release	No Release
Cesium-136	Ci	No Release	No Release	No Release	No Release
Copper-64	Ci	No Release	No Release	No Release	No Release
Manganese-56	Ci	No Release	No Release	No Release	No Release
Sodium-24	Ci	No Release	No Release	No Release	No Release
Nickel-65	Ci	No Release	No Release	No Release	No Release
Antimony-124	Ci	No Release	No Release	No Release	No Release
Strontium-92	Ci	No Release	No Release	No Release	No Release
Tellurium-132	Ci	No Release	No Release	No Release	No Release
Dissolved or Entrained Gases	Ci	No Release	No Release	No Release	No Release
Tritium	Ci	No Release	No Release	No Release	No Release

(1) There were no Batch Mode releases during the report period. No continuous mode release occurred during the indicated by effluent monitoring.

Attachment 6

Unit 1 __	Unit 2 X	Reporting Period January - December 2005					
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS							
A1. TYPE	**Volume (m^3) Class**			**Activity (1) (Ci) Class**			
	A	**B**	**C**	**A**	**B**	**C**
a.1 Spent Resins (Dewatered)	1.72E+02	3.41E+00	0.00E+00	2.49E+03	4.59E+02	0.00E+00
a.2 Filter Sludge	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
a.3 Concentrated Waste	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Totals	**1.72E+02**	**3.41E+00**	**0.00E+00**	**2.49E+03**	**4.59E+02**	**0.00E+00**
b.1 Dry, compactible waste	1.42E+02	0.00E+00	0.00E+00	3.35E+00	0.00E+00	0.00E+00
b.2 Dry, non-compactible waste (contaminated equipment)	3.56E+01	0.00E+00	0.00E+00	2.37E-02	0.00E+00	0.00E+00
Totals	**1.78E+02**	**0.00E+00**	**0.00E+00**	**3.37E+00**	**0.00E+00**	**0.00E+00**
c. Irradiated Components, Control Rods	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
d. Other (to Vendor for Processing or Consolidation)						
d.1 Cooling Tower Silt	6.74E+01	0.00E+00	0.00E+00	9.75E-07	0.00E+00	0.00E+00
d.2 Tank Sediment	3.80E+00	0.00E+00	0.00E+00	9.68E+00	0.00E+00	0.00E+00
(1) The estimated total error is 5.0E+01%						

Attachment 6

Unit 1 __	Unit 2 X	Reporting Period January - December 2005

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A1. TYPE	Container	Package	Solidification Agent
a.1 Spent Resin (Dewatered)	Poly Liner	General Design Type A/Type B	None
a.2 Filter Sludge	N/A	N/A	N/A
a.3 Concentrated Waste	N/A	N/A	N/A
b.1 Dry, Compressible waste	Metal Box	General Design	None
b.2 Dry, non-compressible waste	Metal Box	General Design	None
c. Irradiated Components, Control Rods	N/A	N/A	N/A
d. Other (To vendor for processing)			
d.1 Cooling Tower Silt	Metal Box	General Design	None
d.2 Tank Sediment	Poly Liner	Type A	None

Attachment 6

Unit 1 __	Unit 2 X	Reporting Period January - December 2005

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	43.1
Co-60	39.1
Mn-54	6.6
Zn-65	6.2
Ni-63	1.2
Ce-144	3.0
Other	0.8

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

Nuclide	Percent
Fe-55	79.9
Co-60	16.3
Mn-54	3.1
Other	0.7

c. Irradiated Components, Control Rods

Nuclide	Percent
N/A	N/A

d. Other (To vendor for processing)

1. Cooling Tower Silt

Nuclide	Percent
Co-60	67.7
Mn-54	25.2
Cs-137	7.1

2. Tank Sediment

Nuclide	Percent
Fe-55	68.6
Co-60	24.5
Mn-54	4.1
Zn-65	2
Other	0.8

Attachment 6

Unit 1 __	Unit 2 X	Reporting Period January - December 2005

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
33	Hittman Transport	Studsvik Processing Facility
2	Hittman Transport	GTS Duratek
2	Hittman Transport	Race, LLC
2	Race Logistics	Race, LLC
1	Tri State Motor Transit	Studsvik Processing Facility

B. IRRADIATED FUEL SHIPMENTS (Disposition)

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

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

There were no shipments of sewage sludge with detectable quantities of plant-related nuclides from NMP to the treatment facility during the reporting period.

Attachment 7

Unit 1 ___ Unit 2 X Reporting Period January – December 2005

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

The Unit 2 Off-Site Dose Calculation Manual (ODCM) was revised during the reporting period to add a new food product sample location and a new milk sample location and to delete two milk sample locations because the samples are no longer available. These changes are in conformance with the ODCM Part I and S-ENVSP-18 procedural requirements. These changes do not affect the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50 Appendix I, and do not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations. A copy of the ODCM, Revision 26 is attached and a summary of the changes presented to and approved by the Station Operations Review Committee on December 20, 2005 is provided below. The summary also includes the justification for the change.

Revision 26

Page #	New/Amended Section #	Description of Change	Reason for Change
II 64 II 107	Table D 5.1 Figure D 5.1-2	Added a new sample location for food product, map location 68/produce location #18 (1.52 miles East (85° E) of Nine Mile Point.	During the 2005 land use census a new food product location was selected. The new food location is at 1.52 miles @ 85° E. The current food location is 1.76 miles @ 97° E. This new location is in the same sector of the current location and has the same site average D/Q.
II 63 II 107	Table D 5.1 Figure D 5.1-2	Added Milk location #76 and removed milk locations #50 and #60.	Milk locations #50 and #60 are no longer available. These locations are not required by the ODCM. They are not within 5 miles nor do the meet the requirements of a control location (9-20 miles distant and in the least prevailing wind direction). This change is administrative, the new location is consistent the previous location #50, i.e. similar wind direction and within the 5 – 9 mile distance.

Attachment 8

Unit 1 ___ Unit 2 X Reporting Period January – December 2005

SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM (PCP)

There were no changes to the NMP2 Process Control Program (PCP) during this report period.

Attachment 9

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SUMMARY OF INOPERABLE MONITORS

Monitor	Dates of Inoperability	Cause and Corrective Actions
1) Main Stack Effluent Noble Gas Activity Monitor, 1a) Flow-Rate Monitor	November 10, 2005 @ 08:10 to December 12, 2005 @ 14:55	The Gaseous Effluent Monitoring System (GEMS) Main Stack Effluent Noble Gas Activity Monitor and Flow-Rate Monitor channels were declared inoperable due to the failure of a communication link between the GEMS computer and both the Stack and Vent Monitors. Additionally, there was a power supply failure associated with the GEMS stack monitor. The necessary computer communication/interface card repair was completed on 12/9/05. Successful restart of the GEMS stack monitor and associated flow-rate monitor occurred after repair was made to the power supply. Repairs were not timely due to the obsolescence of failed components. GEMS is a one-of-a-kind off line real time gamma spectroscopy system. Because of the system age and obsolescence, replacement parts rely on used parts that are refurbished. The station has approved the consideration of a system replacement under the corrective action program.
2) Radwaste/Reactor Building Vent Effluent Noble Gas Activity Monitor, 2a) Flow-Rate Monitor	November 10, 2005 @ 08:10 to December 12, 2005 @ 10:58	The Gaseous Effluent Monitoring System (GEMS) Radwaste/Reactor Building Vent Effluent Noble Gas Activity Monitor and Flow-Rate Monitor channels were declared inoperable due to the failure of a communication link between the GEMS computer and both the Stack and Vent Monitors. The necessary computer communication/interface card repair was completed on 12/9/05. Successful restart of the GEMS vent monitor occurred on 12/9/05 and operability was restored on 12/12/05 after repairs to the stack monitor power supply were completed. Repairs were not timely due to the obsolescence of failed components. GEMS is a one-of-a-kind off line real time gamma spectroscopy system. Because of the system age and obsolescence, replacement parts rely on used parts that are refurbished. The station has approved the consideration of a system replacement under the corrective action program.

Attachment 10

Unit 1 ___ Unit 2 X Reporting Period January – December 2005

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 2 (NMP2) liquid and gaseous effluents has been conducted for the period January through December 2005.

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 2005 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 NMP2 stack and 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 NMP2 Stack and Vent.
- Direct radiation pathway; dose resulting from the operation of NMP2, Nine Mile Point Unit 1 (NMP1) 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 Unit 2 Offsite Dose Calculation Manual (NMP2 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 2005 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 = 1.75E-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 Dose.

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Inhalation Pathway

The inhalation dose pathway is evaluated by utilizing the inhalation equation in the NMP2 ODCM, as adapted from Regulatory Guide 1.109. The total whole body dose and organ dose received by the hypothetical maximum exposed fisherman during 2005 is calculated using the following input parameters for gaseous effluents released from both the NMP2 Stack and Vent for the time period exposure is received:

NMP 2 Stack:

Variable	Fisherman *
X/Q (s/m^3)	9.60E-07
Inhalation dose factor	Table E-7 Regulatory Guide 1.109
Annual air intake m^3/year) (adult)	8000
Fractional portion of the year (hours)	0.0356
H-3 (pCi/sec)	2.11E+06
Co-60 (pCi/sec)	2.39E+00
I-131 (pCi/sec)	1.70E+01
I-133 (pCi/sec)	1.34E+2

NMP2 Vent:

Variable	Fisherman *
X/Q (s/m^3)	2.80E-06
Inhalation dose factor	Table E-7 Regulatory Guide 1.109
Annual air intake (m^3/year) (adult)	8000
Fractional portion of the year (hours)	0.0356
H-3 (pCi/sec)	2.59E+06
Co-60 (pCi/sec)	5.01E+00
I-131 (pCi/sec)	7.83E-01
I-133 (pCi/sec)	1.42E+00

- 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 Dose.

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Direct Radiation Pathway

The direct radiation pathway is evaluated in accordance with the methodology found in the NMP2 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 2005 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)	1.59E-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 2005

The following is a summary of the dose received by a hypothetical maximum exposed fisherman from Liquid and Gaseous effluents released from NMP2 during 2005:

Table 1 Exposure Pathway Annual Dose

Exposure Pathway	Dose Type	Fisherman (mRem)
External Ground	Whole Body	2.79E-03
	Skin of Whole Body	3.25E-03
Inhalation	Whole Body	4.17E-04
	Maximum Organ	Thyroid: 4.35E-04
Direct Radiation	Whole Body	0.50

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

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

Table 2 Annual Dose Summary

Total Annual Dose for 2005	Fisherman (mRem)
Total Whole Body	5.00E-01
Skin of Whole Body	3.25E-03
Maximum Organ	Thyroid: 4.35E-04

Attachment 11

Unit 1 ___ Unit 2 _X_ Reporting Period **January – December 2005**

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 2005 for comparison against the 40 CFR 190 annual dose limits.

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

40 CFR 190 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 NMP2, NMP1 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 NMP2 Off-site Dose Calculation Manual (NMP2 ODCM) as adapted from Regulatory Guide 1.109. The dose for 2005 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 2005; therefore no dose was received by the whole body and organs of the likely most exposed Member of the Public during 2005.

Shoreline Sediment

Dose received from shoreline sediment is based on the methodology in the NMP2 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.

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Shoreline Sediment Continued:

The total dose received by the whole body and skin of the maximum exposed individual during 2005 is calculated using the following input parameters:

- Usage Factor = 67 hours 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
- Average Cs-137 Concentration = 0.076 pCi/g

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 NMP2 ODCM, NMP1 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 2005 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 2005, 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 2005

Exposure Pathway	Dose Type	Dose (mRem)
Fish Consumption	Total Whole Body	No Dose
	Total Maximum Organ	No Dose
Shoreline Sediment	Total Whole Body	2.58E-04
	Total Skin of Whole Body	3.01E-04
Gaseous Effluents	Total Whole Body	1.69-02
	Total Maximum Organ	Thyroid: 1.55E-01
Direct Radiation	Total Whole Body	1.49

Based on these values the maximum total annual dose potentially received by the most likely exposed member of the public during 2005 is as follows:

- Total Whole Body: 1.51 mRem
- Total Skin of Whole Body: 1.31E-02 mRem
- Maximum Organ: Thyroid: 1.55E-01 mRem

40 CFR 190 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: 0.155 mRem) and the maximum whole body dose (1.51 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.