

**NINE MILE POINT NUCLEAR STATION - UNIT 1
SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

JANUARY - JUNE 1999

NIAGARA MOHAWK POWER CORPORATION

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NINE MILE POINT NUCLEAR STATION - UNIT 1
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SUPPLEMENTAL INFORMATION

Facility: Nine Mile Point Unit #1

Licensee: Niagara Mohawk Power Corporation

1. TECHNICAL SPECIFICATION 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 the concentrations specified in 10 CFR Part 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 $2E-04$ 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 gamma spectroscopic monitoring (intrinsic germanium crystal) or 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.

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.

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 <u>X</u> Unit 2 <u> </u>	Reporting Period <u>January - June 1999</u>	
Liquid Effluents:		
10CFR20, Appendix B, Table II, Column 2		
Average MPC - uCi/ml (Qtr. 1) = <u>3.00E-03</u>		
Average MPC - uCi/ml (Qtr. 2) = <u>2.84E-03</u>		
Average Energy (Fission and Activation gases - Mev):		
Qtr. <u>1</u>	: E _γ = <u>2.47E-01</u>	E _β = <u>3.17E-01</u>
Qtr. <u>2</u>	: E _γ = <u>N/A</u>	E _β = <u>N/A</u>
Liquid:		
Number of batch releases	:	<u>17</u>
Total time period for batch releases (hrs)	:	<u>6.11E+01</u>
Maximum time period for a batch release (hrs)	:	<u>4.08E+00</u>
Average time period for a batch release (hrs)	:	<u>3.64E+00</u>
Minimum time period for a batch release (hrs)	:	<u>3.45E+00</u>
Total volume of water used to dilute the liquid effluent during release period (L)	:	<u>1st Qtr. 4.77E+08</u> <u>2nd Qtr. 2.13E+09</u>
Total volume of water used to dilute the liquid effluent during reporting period (L)	:	<u>1st Qtr. 1.29E+11</u> <u>2nd Qtr. 5.50E+10</u>
Gaseous (Emergency Condenser Vent): There were no releases from the operation of the Emergency Condenser Vent.		
Number of batch releases	:	<u>0</u>
Total time period for batch releases (hrs)	:	<u>N/A</u>
Maximum time period for a batch release (hrs)	:	<u>N/A</u>
Average time period for a batch release (hrs)	:	<u>N/A</u>
Minimum time period for a batch release (hrs)	:	<u>N/A</u>
Gaseous (Primary Containment Purge):		
Number of batch releases	:	<u>1</u>
Total time period for batch releases (hrs)	:	<u>8.00E+00</u>
Maximum time period for a batch release (hrs)	:	<u>8.00E+00</u>
Average time period for a batch release (hrs)	:	<u>8.00E+00</u>
Minimum time period for a batch release (hrs)	:	<u>8.00E+00</u>



ATTACHMENT 1
Summary Data

Unit 1 <u>X</u> Unit 2 <u> </u>	Reporting Period <u>January - June 1999</u>
Abnormal Releases: There were no abnormal releases during the reporting period.	
A. Liquids:	
Number of releases	<u>0</u>
Total activity released	<u>N/A</u> Ci
B. Gaseous:	
Number of releases	<u>0</u>
Total activity released	<u>N/A</u> Ci



ATTACHMENT 2

Unit 1 <u>X</u> Unit 2 <u> </u>		Reporting Period <u>January - June 1999</u>			
GASEOUS EFFLUENTS – SUMMATION OF ALL RELEASES, ELEVATED AND GROUND LEVEL					
			<u>1st</u> <u>QUARTER</u>	<u>2nd</u> <u>QUARTER</u>	<u>EST. TOTAL</u> <u>ERROR, %</u>
A.	<u>Fission & Activation gases¹</u>				
	1. Total release	Ci	<u>1.68E-01</u>	<u>**</u>	5.00E+01
	2. Average release rate	μ Ci/sec	<u>2.16E-02</u>	<u>**</u>	
B.	<u>Iodines</u>				
	1. Total Iodine-131	Ci	<u>1.02E-04</u>	<u>5.37E-05</u>	3.00E+01
	2. Average release rate for period	μ Ci/sec	<u>1.30E-05</u>	<u>7.32E-06</u>	
C.	<u>Particulates²</u>				
	1. Particulates with half-lives >8 days	Ci	<u>4.23E-04</u>	<u>2.40E-03</u>	3.00E+01
	2. Average release rate for period	μ Ci/sec	<u>5.37E-05</u>	<u>3.27E-04</u>	
	3. Gross alpha radioactivity	Ci	<u>3.31E-05</u>	<u>5.93E-05</u>	2.50E+01
D.	<u>Tritium²</u>				
	1. Total release	Ci	<u>2.89E+01</u>	<u>2.52E+01</u>	5.00E+01
	2. Average release rate for period	μ Ci/sec	<u>3.71E+00</u>	<u>3.43E+00</u>	
E.	<u>Percent of Tech. Spec. Limits</u>				
	<u>Fission and Activation Gases</u>				
	Percent of Quarterly Gamma Air Dose Limit (5 mR)	%	<u>7.72E-04</u>	<u>**</u>	
	Percent of Quarterly Beta Air Dose Limit (10 mrad)	%	<u>3.19E-04</u>	<u>**</u>	
	Percent of Annual Gamma Air Dose Limit to Date (10 mR)	%	<u>3.86E-04</u>	<u>3.86E-05</u>	
	Percent of Annual Beta Air Dose Limit to Date (20 mrad)	%	<u>1.60E-04</u>	<u>1.60E-04</u>	
	Percent of Whole Body Dose Rate Limit (500 mrem/yr)	%	<u>2.08E-05</u>	<u>**</u>	
	Percent of Skin Dose Rate Limit (3000 mrem/yr)	%	<u>7.35E-06</u>	<u>**</u>	
	<u>Tritium, Iodines, and Particulates²</u> <u>(with half-lives greater than 8 days)</u>				
	Percent of Quarterly Dose Limit (7.5 mrem)	%	<u>2.30E-01</u>	<u>5.35E-01</u>	
	Percent of Annual Dose Limit (15 mrem)	%	<u>1.16E-01</u>	<u>3.87E-01</u>	
	Percent of Organ Dose Rate Limit (1500 mrem/yr)	%	<u>4.67E-03</u>	<u>1.15E-02</u>	

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

² Tritium, Iron-55, and Strontium results for the second quarter were not received from the off-site vendor at the time of this report. These numbers include estimates, and actual numbers will be provided in the next Semi-Annual Report.



ATTACHMENT 3

Unit 1 <u>X</u> Unit 2 <u> </u>		Reporting Period <u>January - June 1999</u>	
GASEOUS EFFLUENTS - ELEVATED RELEASE			
CONTINUOUS MODE ³			
Nuclides Released		1 st QUARTER	2 nd QUARTER
1. <u>Fission Gases</u> ¹			
Argon-41	Ci	**	**
Krypton-85	Ci	**	**
Krypton-85m	Ci	**	**
Krypton-87	Ci	**	**
Krypton-88	Ci	**	**
Xenon-127	Ci	**	**
Xenon-133	Ci	**	**
Xenon-133m	Ci	**	**
Xenon-135	Ci	<u>1.66E-01</u>	**
Xenon-135m	Ci	**	**
Xenon-137	Ci	**	**
Xenon-138	Ci	**	**
2. <u>Iodines</u> ¹			
Iodine-131	Ci	<u>1.02E-04</u>	<u>5.37E-05</u>
Iodine-133	Ci	<u>1.27E-03</u>	<u>3.15E-04</u>
Iodine-135	Ci	**	**
3. <u>Particulates</u> ^{1,2}			
Strontium-89	Ci	<u>1.38E-04</u>	<u>5.73E-04</u>
Strontium-90	Ci	**	<u>7.04E-05</u>
Cesium-134	Ci	**	**
Cesium-137	Ci	<u>1.18E-05</u>	<u>2.54E-05</u>
Cobalt-60	Ci	<u>2.04E-04</u>	<u>7.28E-04</u>
Cobalt-58	Ci	<u>8.54E-06</u>	<u>3.39E-05</u>
Manganese-54	Ci	**	<u>1.49E-04</u>
Barium-Lanthanum-140	Ci	**	**
Antimony-125	Ci	**	**
Niobium-95	Ci	**	<u>4.12E-06</u>
Cerium-141	Ci	**	**
Cerium-144	Ci	**	**
Iron-59	Ci	**	<u>7.01E-05</u>
Cesium-136	Ci	**	**
Chromium-51	Ci	<u>5.87E-05</u>	<u>1.40E-04</u>
Zinc-65	Ci	**	**
Iron-55	Ci	**	<u>6.03E-04</u>
Molybdenum-99	Ci	**	**
4. <u>Tritium</u> ²	Ci	<u>6.31E+00</u>	<u>2.08E+01</u>

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 Technical Specifications, has been verified.

² Tritium, Iron-55, and Strontium results for the second quarter were not received from the off-site vendor at the time of this report. These numbers include estimates and actual numbers will be included in the next Semi-Annual Report.

³ Contributions from purges are included.



ATTACHMENT 4

Unit 1 X Unit 2

Reporting Period January - June 1999

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

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

		CONTINUOUS MODE		BATCH MODE There were no batch releases during the reporting period.	
		1 st QUARTER	2 nd QUARTER	1 st QUARTER	2 nd QUARTER
1.	<u>Fission Gases</u> ¹				
	Argon-41	Ci	**	**	
	Krypton-85	Ci	**	**	
	Krypton-85m	Ci	**	**	
	Krypton-87	Ci	**	**	
	Krypton-88	Ci	**	**	
	Xenon-133	Ci	**	**	
	Xenon-133m	Ci	**	**	
	Xenon-135	Ci	<u>1.73E-03</u>	**	
	Xenon-135m	Ci	**	**	
	Xenon-137	Ci	**	**	
	Xenon-138	Ci	**	**	
	Xenon-127	Ci	**	**	
2.	<u>Iodines</u> ¹				
	Iodine-131	Ci	**	**	
	Iodine-133	Ci	**	**	
	Iodine-135	Ci	**	**	
3.	<u>Particulates</u> ^{1,2}				
	Strontium-89	Ci	**	<u>2.03E-07</u>	
	Strontium-90	Ci	**	<u>2.54E-08</u>	
	Cesium-134	Ci	**	**	
	Cesium-137	Ci	**	**	
	Cobalt-60	Ci	<u>9.73E-07</u>	<u>1.27E-06</u>	
	Cobalt-58	Ci	<u>2.84E-08</u>	<u>7.63E-08</u>	
	Manganese-54	Ci	**	<u>1.15E-07</u>	
	Barium-Lanthanum-140	Ci	**	**	
	Antimony-125	Ci	**	**	
	Niobium-95	Ci	**	**	
	Cerium-141	Ci	**	**	
	Cerium-144	Ci	**	**	
	Iron-59	Ci	**	**	
	Cesium-136	Ci	**	**	
	Chromium-51	Ci	**	<u>7.32E-07</u>	
	Zinc-65	Ci	**	**	
	Iron-55	Ci	**	<u>1.17E-06</u>	
	Molybdenum-99	Ci	**	**	
4.	<u>Tritium</u> ²	Ci	<u>2.26E+01</u>	<u>4.37E+00</u>	

¹ Concentrations less than the lower limit of detection of the counting system used are indicated with a double asterisk.
² Tritium, Iron-55, and Strontium results for the second quarter were not received from the off-site vendor at the time of this report. These numbers include estimates and actual numbers will be included in the next Semi-Annual Report.



Unit 1 X Unit 2

Reporting Period January - June 1999

LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES

		<u>1st</u> <u>QUARTER</u>	<u>2nd</u> <u>QUARTER</u>	<u>EST.</u> <u>TOTAL</u> <u>ERROR,</u> <u>%</u>
A.	<u>Fission & Activation Products</u> ¹			
1.	Total release (not including Tritium, gases, alpha)	<u>**</u>	<u>2.92E-04</u>	5.00E+01
2.	Average diluted concentration during reporting period	<u>**</u>	<u>5.31E-12</u>	
B.	<u>Tritium</u>			
1.	Total release	<u>6.59E-01</u>	<u>5.95E+00</u>	5.00E+01
2.	Average diluted concentration during reporting period	<u>5.11E-09</u>	<u>1.08E-07</u>	
C.	<u>Dissolved and Entrained Gases</u>			
1.	Total release	<u>1.19E-04</u>	<u>4.19E-04</u>	5.00E+01
2.	Average diluted concentration during reporting period	<u>9.22E-13</u>	<u>7.63E-12</u>	
D.	<u>Gross Alpha Radioactivity</u> ²			
1.	Total release	<u>**</u>	<u>**</u>	5.00E+01
E.	<u>Volumes</u>			
1.	Prior to dilution	<u>1.85E+05</u>	<u>1.39E+06</u>	5.00E+01
2.	Volume of dilution water used during release period	<u>4.77E+08</u>	<u>2.13E+09</u>	5.00E+01
3.	Volume of dilution water available during reporting period:	<u>1.29E+11</u>	<u>5.50E+10</u>	5.00E+01
F.	<u>Percent of Technical Specification Limits</u>			
	Percent of Quarterly Whole Body Dose Limit (1.5 mrem)	<u>7.07E-01</u>	<u>1.53E+00</u>	
	Percent of Quarterly Organ Dose Limit (5 mrem)	<u>2.12E-01</u>	<u>1.29E+00</u>	
	Percent of Annual Whole Body Dose Limit to Date (3 mrem)	<u>3.53E-01</u>	<u>9.49E-01</u>	
	Percent of Annual Organ Dose Limit to Date (10 mrem)	<u>1.06E-01</u>	<u>7.98E-01</u>	
	Percent of 10CFR20 Concentration Limit	<u>1.70E-04</u>	<u>3.82E-03</u>	
	Percent of Dissolved or Entrained Noble Gas Limit (2.00E-04 μ Cl/ml)	<u>4.61E-07</u>	<u>3.81E-06</u>	

¹ Concentrations of fission and activation products were lower than 5.00E-07, the lower limit for detection.

² Concentrations of gross alpha radioactivity were lower than 10⁻⁷ μ Cl/ml, the lower limit for detection.



Unit 1 X Unit 2

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LIQUID EFFLUENTS RELEASED

Nuclides Released ²		BATCH MODE ¹	
		1 st QUARTER	2 nd QUARTER
Strontium-89	Cl	**	<u>1.51E-04</u>
Strontium-90	Cl	**	<u>1.89E-05</u>
Cesium-134	Cl	**	**
Cesium-137	Cl	**	**
Iodine-131	Cl	**	**
Cobalt-58	Cl	**	**
Cobalt-60	Cl	**	<u>2.83E-05</u>
Iron-59	Cl	**	**
Zinc-65	Cl	**	**
Manganese-54	Cl	**	**
Chromium-51	Cl	**	**
Zirconium-Niobium-95	Cl	**	**
Molybdenum-99	Cl	**	**
Technetium-99m	Cl	**	**
Barium-Lanthanum-140	Cl	**	**
Cerium-141	Cl	**	**
Tungsten-187	Cl	**	**
Arsenic-76	Cl	**	**
Iodine-133	Cl	**	**
Iron-55	Cl	**	<u>9.38E-05</u>
Neptunium-239	Cl	**	**
Praseodymium-144	Cl	**	**
Iodine-135	Cl	**	**
Dissolved or Entrained Gases	Cl	<u>1.19E-04</u>	<u>4.19E-04</u>
Tritium	Cl	<u>6.59E-01</u>	<u>5.95E+00</u>

¹ No continuous mode release occurred during the report period.

² Concentrations less than the lower limit of detection of the counting system used are indicated by a double asterisk.



Unit 1 X Unit 2 Reporting Period January - June 1999

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Volume (m ³)			Activity ¹ (Ci)			
	Class			Class			
1. Spent Resins, Filter Sludges, Concentrated Waste, Evaporator Bottoms, etc. ^{2,3} (Dewatered)	A	B	C	A	B	C	
	2.79E+01	0	0	3.47E+01	0	0	
	2. Dry Compressible Waste (to vendor for processing)			2. Dry Compressible Waste (to vendor for processing)			
	5.80E+02	0	0	5.99E-01	0	0	
3. Irradiated Components (Non-Combustible Solid)	3. Irradiated Components (Non-Combustible Solid)			3. Irradiated Components (Non-Combustible Solid)			
	0	0	0	0	0	0	
4. Other: (to vendor for processing)	4. Other: (to vendor for processing)			4. Other: (to vendor for processing)			
	a. Asbestos (Solid)	7.25E+01	0	0	3.53E-03	0	0
	b. Sludge	1.66E+01	0	0	2.58E+00	0	0

¹ The estimated total error is 5.00E+01%.

² There were six Unit 1 steel encased high integrity containers of waste Class A bead resin liners were placed in Interim storage at Nine Mile Point during the reporting period. The total activity was 3.97E+01 curies and the waste volume was 2.62E+01m³.

³ There were two Unit 1 steel encased high integrity containers of waste Class B powdered resin placed in Interim storage at Nine Mile Point during the reporting period. The total activity was 2.55E+02 curies and the waste volume was 6.54E+00m³.



Unit 1 <input checked="" type="checkbox"/> Unit 2 <input type="checkbox"/>		Reporting Period <u>January - June 1999</u>		
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS				
A.1 TYPE	Container	Package	Solidification Agent	
1. Spent Resins, Filter Sludges, Concentrated Waste, Evaporator Bottoms, etc. (Dewatered)	HIC	Type A	None	
	HIC	STP	None	
2. Dry Compressible Waste	Metal Box	STP	None	
3. Irradiated Components (Non-Combustible Solid): There were no shipments.				
4. Other:	Metal Box	STP	None	
			a. Asbestos (Solid)	
b. Sludge	HIC	STC	None	



Unit 1 Unit 2

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SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.2 ESTIMATE OF MAJOR NUCLIDE COMPOSITION (BY TYPE OF WASTE)

a. Spent Resins, Filter Sludges, Concentrated Waste:

<u>Nuclide</u>	<u>Percent</u>
(1) Co-60	8.62E+01
(2) Mn-54	6.76E+00
(3) Cs-137	2.43E+00
(4) Ni-63	2.10E+00
(5) Other	2.51E+00

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

<u>Nuclide</u>	<u>Percent</u>
(1) Co-60	4.80E+01
(2) Mn-54	1.67E+01
(3) Cs-137	1.48E+01
(4) Fe-59	9.36E+00
(5) Cr-51	4.82E+00
(6) Co-58	1.61E+00
(7) Sr-90	1.41E+00
(8) Fe-55	1.06E+00
(9) Other	2.24E+00

c. Irradiated Components: There were no shipments

<u>Nuclide</u>	<u>Percent</u>

d. Other: Asbestos, Aqueous Sludges

1. Asbestos	
<u>Nuclide</u>	<u>Percent</u>
(1) Cr-51	4.78E+01
(2) Co-60	3.07E+01
(3) Mn-54	9.08E+00
(4) Ce-141	5.20E+00
(5) Co-58	4.34E+00
(6) Cs-137	2.84E+00
(7) Other	4.00E-02
2. Sludges	
<u>Nuclide</u>	<u>Percent</u>
(1) Co-60	8.81E+01
(2) Cs-137	4.30E+00
(3) Fe-55	2.96E+00
(4) Mn-54	2.41E+00
(5) H-3	1.15E+00
(6) Other	1.08E+00



Unit 1 Unit 2

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SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.3. SOLID WASTE DISPOSITION:

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
<u>5</u>	<u>Truck</u>	<u>Barnwell, SC</u>
<u>8</u>	<u>Truck</u>	<u>GTS - Duratek Oak Ridge, TN</u>
<u>1</u>	<u>Truck</u>	<u>Alaron Wampum, PA</u>
<u>3</u>	<u>Truck</u>	<u>CNSI Barnwell, SC</u>

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION): There were no shipments.

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
<u>0</u>	<u>N/A</u>	<u>N/A</u>



Unit 1 <input checked="" type="checkbox"/> Unit 2 <input type="checkbox"/>	Reporting Period <u>January - June 1999</u>																				
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS																					
<p>C. SOLID WASTE SHIPPED OFF-SITE TO VENDORS FOR PROCESSING AND SUBSEQUENT BURIAL</p> <p>Below is a summary of NMP-1 radwaste buried by vendor facilities during <u>January - June 1999</u>. These totals were reported separately from "10CFR61 Solid Waste Shipped for Burial" since (a) waste classification and burial was performed by the vendors, and (b) Technical Specification 6.9.1 requires reporting of "information for each class of solid waste (as defined by 10CFR61) shipped off-site during the reporting period." The following data represents the actual shipments made from the off-site vendors of our radwaste (e.g., non-compacted trash, dry non-compressible waste, asbestos and resins) that was processed and commingled prior to burial.</p>																					
<p>C.1. TYPE OF WASTE - Noncompacted trash, and/or dry non-compressible waste, asbestos and resins processed by vendor facilities prior to burial.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Burial Volume (m³)</th> <th style="text-align: center;">Activity (Ci)</th> <th style="text-align: center;">Est. Total Error, %</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2.14E+01</td> <td style="text-align: center;">3.93E+01</td> <td style="text-align: center;">5.00E+01</td> </tr> </tbody> </table>	Burial Volume (m ³)	Activity (Ci)	Est. Total Error, %	2.14E+01	3.93E+01	5.00E+01														
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Unit 1 Unit 2 Reporting Period January - June 1999**SOLID WASTE AND IRRADIATED FUEL SHIPMENTS****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 <input checked="" type="checkbox"/> Unit 2 <input type="checkbox"/>		Reporting Period <u>January - June 1999</u>		
SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL				
<p>The Unit 1 Offsite Dose Calculation Manual (ODCM) was revised during the reporting period to reflect the actual configuration and current procedures of the plant. The ODCM changes will not reduce the accuracy or reliability of the dose calculations or setpoint determinations in accordance with Technical Specifications. A copy of the ODCM, Revision 19 is attached and a summary of the changes presented to and approved by the Station Operations Review Committee in January and April 1999 is provided below. The summary also includes the justification for the changes.</p>				
Old Page #	New Page #	New/Amended Section #	Change	Reason for Change
D-1	D-1	Figure D-1	1) Delete "Regenerant Chemicals," chemicals associated with the acid and caustic treatment system; 2) To show that Resin Transfer Water is normally directed to the Waste Collector Tank and Ultrasonic Resin Cleaning Water is normally directed to the Waste Neutralizer Tank.	These changes reflect the actual configuration of the plant. The acid and caustic treatment system has been removed since resin regeneration is no longer necessary. The process water flow for resin transfer and ultrasonic resin cleaning can be directed to either the Waste Collector Tank or the Waste Neutralizer Tank. The resin transfer and ultrasonic resin cleaner flow paths in Figure D1 are the normally selected flow paths.
5	5	2.1.4.2	Change the wording in Section 2.1.4.2 from Site Chemistry Procedures, N1-CSP-V201, to Liquid Waste Processing Procedures, N1-LWPP-03.	This change is editorial. It reflects current procedures used to control simultaneous discharges of radioactive liquids.



ATTACHMENT 8

Unit 1 Unit 2

Reporting Period January - June 1999

SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM

There were no changes to the Unit 1 PCP during the reporting period.



ATTACHMENT 9

Unit 1 Unit 2

Reporting Period January - June 1999

SUMMARY OF INOPERABLE MONITORS

There were no inoperable monitors for a period greater than 30 days during the reporting period.



ATTACHMENT 10

Update of Actual Data for the Fourth Quarter 1998



Unit 1 X Unit 2 Reporting Period July - December 1998**UPDATE OF RELEASE AND DOSE DATA FOR GASEOUS (ELEVATED AND GROUND LEVEL) AND LIQUID EFFLUENTS**

Update of data using actual results from the off-site vendors for Strontium, Tritium, and Iron-55 for the fourth quarter 1998.

Nuclide ¹	GASEOUS 4 th QUARTER 1998		LIQUID 4 th QUARTER 1998	
		Activity (Ci)		Activity (Ci)
Sr-89		<u>7.74E-05</u>		<u>No Releases</u>
Sr-90		<u>**</u>		<u>No Releases</u>
H-3		<u>3.19E+01</u>		<u>No Releases</u>
Fe-55		<u>3.47E-05</u>		<u>No Releases</u>
<u>Particulates</u>	1. Particulates with half-lives >8 days	CI	<u>4.34E-04</u>	<u>No Releases</u>
	2. Average release rate for period	$\mu\text{Ci/sec}$ (gaseous) $\mu\text{Ci/ml}$ (liquid)	<u>5.52E-05</u>	<u>No Releases</u>
<u>Tritium</u>	1. Total release	CI	<u>3.19E+01</u>	<u>No Releases</u>
	2. Average release rate for period	$\mu\text{Ci/sec}$ (gaseous) $\mu\text{Ci/ml}$ (liquid)	<u>4.06E+00</u>	<u>No Releases</u>
<u>Tritium, Iodines, and Particulates (with half-lives greater than 8 days)</u>	1. Percent of Quarterly Dose Limit ²	%	<u>2.82E-01</u> (Quarterly)	<u>No Releases</u> (Quarterly)
	2. Percent of Annual Dose Limit to Date ²	%	<u>3.66E-01</u> (Annual)	<u>No Releases</u> (Annual)
	3. Percent of Organ Dose Rate Limit (Gaseous)(Quarterly)-Dose Limit (Liquid) (Quarterly & Annual)	%	<u>5.66E-03</u> (Quarterly)	<u>No Releases</u> (Quarterly) <u>No Releases</u> (Annual)
	4. Percent of 10CFR20 Concentration Limit ³ (Liquid)	%		<u>No Releases</u>
	5. Percent of Dissolved or Entrained Noble Gas (Liquid)	%		<u>No Releases</u>

¹ Concentrations less than the lower limit of detection, as required by Technical Specifications or station procedures are indicated with a double asterisk.

² The dose is to the whole body for liquid effluents and to the maximally exposed organ for gaseous effluents.

³ The percent of the 10CFR20 concentration limit is based on the average concentration during the quarter.



ATTACHMENT 11

Off-Site Dose Calculation Manual, Rev 19

