NINE MILE POINT NUCLEAR STATION - UNIT 1

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY - JUNE 1994

NIAGARA MOHAWK POWER CORPORATION

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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 from the site to areas at and beyond the site boundary shall be less than or equal to 500 mrems/year to the total body and less than or equal to 3000 mrems/year to the skin.

2. The air dose due to noble gases released in gaseous effluents from the Nine Mile Point 1 Station 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 mrads 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 mrads 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 to the environs as part of the gaseous wastes from the site, shall be less than or equal to 1500 mrems/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 as part of gaseous effluents released from the Nine Mile Point 1 Station to areas at and beyond the site boundary shall be limited during any calendar quarter to less than or equal to 7.5 mrems to any organ and, during any calendar year to less than or equal to 15 mrems 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 gas, 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 mrems to the total body and to less than or equal to 5 mrems to any organ, and during any calendar year to less than or equal to 3 mrems to the total body and to less than or equal to 10 mrems to any organ.

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 main stack is determined by gamma spectroscopic analysis (at least weekly) of particulate filters sampled from an isokinetic sample stream.

For emergency condenser vent releases, effluent curie quantities are estimated based on the isotopic distribution in the Condensate Storage Tank and the Emergency Condenser shell. 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. For emergency condenser vent releases, the activity of Tritium released during normal operation or during batch releases is conservatively estimated by multiplying recent condensate storage tank H-3 activity by assumed steaming rates out the vents.

D) TRITIUM

Tritium effluent activity is estimated by liquid scintillation or gas proportional counting of monthly samples taken with an air sparging/water trap apparatus.

E) LIQUID EFFLUENTS

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, gross alpha and water content 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 X Unit 2 ___ Reporting Period January - June 1994

Liquid Effluents:

10CFR20, Appendix B, Table II, Column 2

Average MPC (Qtr. 1) = N/A
Average MPC (Qtr. 2) = N/A

Average Energy (Fission and Activation gases - Mev): There were no fission and activation gases detected during the first quarter 1994.

Qtr. 1 : $\bar{E}\gamma$ = 0.00E+00 $\bar{E}_\beta$ = 0.00E+00
Qtr. 2 : $\bar{E}\gamma$ = 7.41E-02 $\bar{E}_\beta$ = 1.62E-01

Liquid: There were no liquid releases during the reporting period.

Number 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
Total volume of water used to dilute the liquid effluent during release period (L)	: N/A
Total volume of water available to dilute the liquid effluent during reporting period (L)	: 2.58E+11

UNIT 1 (ONLY)

Gaseous (Emergency Condenser Vent): There were no releases from the operation of the emergency condenser vent.

Number 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):

Number of batch releases	: 1
Total time period for batch releases (hrs)	: 8.00E+00
Maximum time period for a batch release (hrs)	: 8.00E+00
Average time period for a batch release (hrs)	: 8.00E+00
Minimum time period for a batch release (hrs)	: 8.00E+00

ATTACHMENT 1
Summary Data

Unit 1 X Unit 2 ___	Reporting Period January - June 1994
Abnormal Releases: There were no abnormal releases during the reporting period.	
A. Liquids:	
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 X Unit 2 ___ Reporting Period January - June 1994

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

			1st QUARTER	2nd QUARTER	EST. TOTAL ERROR, %
A.	Fission & Activation Gases[1]				
1.	Total release	Ci	**	2.69E+00	5.00E+01
2.	Average release rate	µCi/sec	**	3.42E-01	
B.	Iodines[1]				
1.	Total iodine-131	Ci	**	3.48E-05	3.00E+01
2.	Average release rate for period	µCi/sec	**	4.43E-06	
C.	Particulates[2]				
1.	Particulates with half-lives >8 days	Ci	1.44E-04	5.15E-04	3.00E+01
2.	Average release rate for period	µCi/sec	1.85E-05	6.55E-05	
3.	Gross alpha radioactivity	Ci	2.82E-05	5.09E-05	2.50E+01
D.	Tritium[2]				
1.	Total release	Ci	5.77E+00	1.77E+01	5.00E+01
2.	Average release rate for period	µCi/sec	7.42E-01	2.25E+00	
E.	Percent of Tech Spec Limits				
	Fission and Activation Gases[1]				
	Percent of Quarterly Gamma Air Dose Limit (5 mrem)	%	**	3.48E-03	
	Percent of Quarterly Beta Air Dose Limit (10 mrem)	%	**	2.71E-03	
	Percent of Annual Gamma Air Dose Limit to Date (10 mrem)	%	**	1.74E-03	
	Percent of Annual Beta Air Dose Limit to Date (20 mrem)	%	**	1.36E-03	
	Percent of Whole Body Dose Rate Limit (500 mrem/yr)	%	**	8.82E-05	
	Percent of Skin Dose Rate Limit (3000 mrem/yr)	%	**	3.37E-05	
	Tritium, Iodines, and Particulates[2] (with half-lives greater than 8 days)				
	Percent of Quarterly Dose Limit (7.5 mrem)	%	5.60E-02	9.86E-02	
	Percent of Annual Dose Limit (15 mrem)	%	2.81E-02	7.44E-02	
	Percent of Organ Dose Rate Limit (1500 mrem/yr)	%	1.14E-03	1.98E-03	

[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 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 X Unit 2 ___ Reporting Period January - June 1994

GASEOUS EFFLUENTS - ELEVATED RELEASE

Nuclides Released		CONTINUOUS MODE[3] 1st QUARTER	CONTINUOUS MODE[3] 2nd QUARTER
1. Fission Gases[1]			
Argon-41	Ci	**	**
Krypton-85	Ci	**	**
Krypton-85m	Ci	**	1.58E-01
Krypton-87	Ci	**	**
Krypton-88	Ci	**	**
Xenon-127	Ci	**	**
Xenon-133	Ci	**	2.14E+00
Xenon-133m	Ci	**	**
Xenon-135	Ci	**	2.95E-01
Xenon-135m	Ci	**	**
Xenon-137	Ci	**	**
Xenon-138	Ci	**	**
2. Iodines[1]			
Iodine-131	Ci	**	3.48E-05
Iodine-133	Ci	**	9.12E-04
Iodine-135	Ci	**	**
3. Particulates[1,2]			
Strontium-89	Ci	2.48E-05	2.53E-04
Strontium-90	Ci	**	2.83E-05
Cesium-134	Ci	**	**
Cesium-137	Ci	**	**
Cobalt-60	Ci	1.19E-04	6.03E-05
Cobalt-58	Ci	**	**
Manganese-54	Ci	**	**
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	**	**
Zinc-65	Ci	**	**
Iron-55	Ci	**	1.68E-04
Molybdenum-99	Ci	**	**
4. Tritium[2]	Ci	1.78E+00	1.30E+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 Technical Specifications, has been verified.

[2] Tritium, Iron-55, and Strontium results 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] No batch mode release occurred during the reporting period.

ATTACHMENT 4

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

GASEOUS EFFLUENTS - GROUND LEVEL RELEASES

There were no releases via the emergency condenser vent operation. Only leakage from the vents results in an assumed release based on the concentrations in the condensate storage tanks and condenser shell.

Nuclides Released		CONTINUOUS MODE 1st QUARTER	CONTINUOUS MODE 2nd QUARTER	BATCH MODE 1st QUARTER	BATCH MODE 2nd QUARTER
1. Fission Gases[1]					
Argon-41	Ci	**	**	No Releases	No Releases
Krypton-85	Ci	**	**	No Releases	No Releases
Krypton-85m	Ci	**	**	No Releases	No Releases
Krypton-87	Ci	**	**	No Releases	No Releases
Krypton-88	Ci	**	**	No Releases	No Releases
Xenon-133	Ci	**	9.53E-02	No Releases	No Releases
Xenon-133m	Ci	**	**	No Releases	No Releases
Xenon-135	Ci	**	**	No Releases	No Releases
Xenon-135m	Ci	**	**	No Releases	No Releases
Xenon-137	Ci	**	**	No Releases	No Releases
Xenon-138	Ci	**	**	No Releases	No Releases
Xenon-127	Ci	**	**	No Releases	No Releases
2. Iodines[1]					
Iodine-131	Ci	**	**	No Releases	No Releases
Iodine-133	Ci	**	**	No Releases	No Releases
Iodine-135	Ci	**	**	No Releases	No Releases
3. Particulates[1]					
Strontium-89	Ci	**	7.16E-07	No Releases	No Releases
Strontium-90	Ci	**	8.95E-08	No Releases	No Releases
Cesium-134	Ci	**	**	No Releases	No Releases
Cesium-137	Ci	**	1.79E-07	No Releases	No Releases
Cobalt-60	Ci	**	2.61E-06	No Releases	No Releases
Cobalt-59	Ci	**	**	No Releases	No Releases
Manganese-54	Ci	**	2.52E-07	No Releases	No Releases
Barium-Lanthanum-140	Ci	**	**	No Releases	No Releases
Antimony-125	Ci	**	**	No Releases	No Releases
Niobium-95	Ci	**	**	No Releases	No Releases
Cerium-141	Ci	**	**	No Releases	No Releases
Cerium-144	Ci	**	**	No Releases	No Releases
Iron-59	Ci	**	**	No Releases	No Releases
Cesium-136	Ci	**	**	No Releases	No Releases
Chromium-51	Ci	**	**	No Releases	No Releases
Zinc-65	Ci	**	**	No Releases	No Releases
Iron-55	Ci	**	1.08E-06	No Releases	No Releases
Molybdenum-99	Ci	**	**	No Releases	No Releases
4.Tritium	Ci	3.99E+00	4.71E+00	No Releases	No Releases

[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.

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

		1st QUARTER	2nd QUARTER	EST. TOTAL ERROR, %
A. Fission & Activation Products				
1. Total release (not including Tritium, gases, alpha)	Ci	No Releases	No Releases	5.00E+01
2. Average diluted concentration during reporting period	µCi/ml	No Releases	No Releases	
B. Tritium				
1. Total release	Ci	No Releases	No Releases	5.00E+01
2. Average diluted concentration during reporting period	µCi/ml	No Releases	No Releases	
C. Dissolved and Entrained Gases				
1. Total release	Ci	No Releases	No Releases	5.00E+01
2. Average diluted concentration during reporting period	µCi/ml	No Releases	No Releases	
D. Gross Alpha Radioactivity				
1. Total release	Ci	No Releases	No Releases	5.00E+01
E. Volumes				
1. Prior to dilution	Liters	No Releases	No Releases	5.00E+01
2. Volume of dilution water used during release period	Liters	No Releases	No Releases	5.00E+01
3. Volume of dilution water available during reporting period	Liters	1.29E+11	1.29E+11	5.00E+01
F. Percent of Technical Specification Limits				
Percent of Quarterly Whole Body Dose Limit (1.5 mrem)	%	No Releases	No Releases	
Percent of Quarterly Organ Dose Limit (5 mrem)	%	No Releases	No Releases	
Percent of Annual Whole Body Dose Limit to Date (3 mrem)	%	No Releases	No Releases	
Percent of Annual Organ Dose Limit to Date (10 mrem)	%	No Releases	No Releases	
Percent of 10CFR20 Concentration Limit	%	No Releases	No Releases	
Percent of Dissolved or Entrained Noble Gas Limit (2.00E-04 µCi/ml)	%	No Releases	No Releases	

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LIQUID EFFLUENTS RELEASED

Nuclides Released		BATCH MODE 1st QUARTER	BATCH MODE 2nd QUARTER
Strontium-89	Ci	No Releases	No Releases
Strontium-90	Ci	No Releases	No Releases
Cesium-134	Ci	No Releases	No Releases
Cesium-137	Ci	No Releases	No Releases
Iodine-131	Ci	No Releases	No Releases
Cobalt-58	Ci	No Releases	No Releases
Cobalt-60	Ci	No Releases	No Releases
Iron-59	Ci	No Releases	No Releases
Zinc-65	Ci	No Releases	No Releases
Manganese-54	Ci	No Releases	No Releases
Chromium-51	Ci	No Releases	No Releases
Zirconium-Niobium-95	Ci	No Releases	No Releases
Molybdenum-99	Ci	No Releases	No Releases
Technetium-99m	Ci	No Releases	No Releases
Barium-Lanthanum-140	Ci	No Releases	No Releases
Cerium-141	Ci	No Releases	No Releases
Tungsten-187	Ci	No Releases	No Releases
Arsenic-76	Ci	No Releases	No Releases
Iodine-133	Ci	No Releases	No Releases
Iron-55	Ci	No Releases	No Releases
Neptunium-239	Ci	No Releases	No Releases
Praseodymium-144	Ci	No Releases	No Releases
Iodine-135	Ci	No Releases	No Releases
Dissolved or Entrained Gases	Ci	No Releases	No Releases
Tritium	Ci	No Releases	No Releases

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Volume (m^3) Class			Activity[1] (Ci) Class		
	A	B	C	A	B	C
1. Spent Resin	1.75E+01	1.29E+01	0	3.25E+01	1.58E+02	0
Filter Sludge	4.84E+00	1.03E+01	0	1.68E+01	9.67E+01	0
Concentrated Waste Evaporator Bottoms	0	0	0	0	0	0
Total	2.23E+01	2.32E+01	0	4.93E+01	2.55E+02	0
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	5.03E+00	0	0	1.51E+00	0	0
3. Irradiated Components	0	1.64E+00	1.64E+00	0	4.18E+03	1.52E+04

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

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Container	Package	Solidification Agent
1. Spent Resin	HIC	Type A	None
Filter Sludge	HIC	Type A	Cement
Concentrated Waste	N/A	N/A	N/A
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	Steel-Liner	Type A	None
3. Irradiated Components	Steel-Liner	Type B	None

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

a. Spent Resins, Filter Sludges, Concentrated Waste:

	Nuclide	Percent
(1)	Co-60	5.27E+01
(2)	Cs-137	1.71E+01
(3)	Fe-55	1.13E+01
(4)	Mn-54	9.79E+00
(5)	Cs-134	4.05E+00
(6)	Fe-59	1.47E+00
(7)	Other	3.59E+00

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

	Nuclide	Percent
(1)	Co-60	5.32E+01
(2)	Mn-54	1.80E+01
(3)	Cr-51	1.10E+01
(4)	Cs-137	1.05E+01
(5)	Fe-55	2.05E+00
(6)	Fe-59	1.94E+00
(7)	Co-58	1.91E+00
(8)	Other	1.40E+00

c. Irradiated Components:

	Nuclide	Percent
(1)	Fe-55	5.12E+01
(2)	Co-60	3.98E+01
(3)	Mn-54	6.61E+00
(4)	Ni-63	2.39E+00
(5)	Other	<1.00E+00

d. Other: There were no shipments.

Nuclide	Percent

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
13	Truck	Barnwell, SC

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

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

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS[1]

C. SOLID WASTE SHIPPED OFF-SITE TO VENDORS FOR PROCESSING AND SUBSEQUENT BURIAL

Below is a summary of Dry Active Waste that was shipped off-site for processing and burial by vendor facilities (i.e., ALARON, AMERICAN ECOLOGY RECYCLE CENTER, INC., and/or SCIENTIFIC ECOLOGY GROUP) during January - June 1994. 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 information provided in this section, therefore, is in addition to that required by the Technical Specifications. The following data represents the actual shipments made from the off-site vendors of our non-compacted commingled trash that was processed prior to burial.

C.1. TYPE OF WASTE - noncompacted commingled trash shipped to Oak Ridge, TN for processing prior to burial at Barnwell, SC

Burial Volume (m^3)	Activity (Ci)	Est. Total Error, %
2.06E+01	1.49E−01	5.00+01

C.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION

	Nuclide	Percent
(1)	Co-60	6.14E+01
(2)	Cs-137	1.93E+01
(3)	Mn-54	9.10E+00
(4)	Cr-51	4.53E+00
(5)	Co-58	2.89E+00
(6)	Fe-59	1.45E+00
(7)	Other	1.33E+00

C.3. SOLID WASTE DISPOSITION[2]

Number of Shipments	Mode of Transportation	Destination
37	Truck	Barnwell, SC

[1] June results were not received from the off-site vendor at the time of this report. An updated attachment will be provided as necessary in the next Semi-Annual Report.

[2] The number of shipments reported here represents the total number that was shipped from the off-site vendor for burial. This does not represent the number of shipments Niagara Mohawk sent to be processed.

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

Below is a summary of the sewage sludge and sanitary influent sand and grit which was removed from the site sanitary treatment facility and transferred to a municipal sewage treatment facility, for subsequent drying and disposal to a landfill. This is a site release, and therefore includes the results from Unit 2 activities, also.

D.1. TYPE OF WASTE

	Burial Volume (L)	Activity (Ci)
Sewage Sludge	There were no shipments with detectable quantities of plant-related nuclides.	
Sanitary Influent Sand and Grit	3.41E+02	2.04E-08

D.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION

Nuclide	Percent
Co-60	1.00E+02

D.3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
*	*	Landfill

* There was one shipment of sanitary influent sand and grit with quantified Co-60 that was sent by vendor vacuum tank truck from NMP to the treatment facility. The number of shipments sent from NMP does not reflect the number of shipments to the ultimate destination (i.e. landfill). Wastes are mixed with other sludge, dried, and it is our intention that the material will be transferred to a state approved landfill by municipal personnel.

ATTACHMENT 7

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL

There was one revision to the Unit 1 ODCM during the reporting period. Copies of revisions 13 and 14 are attached and below is a summary of changes presented to and approved by the Station Operations Review Committee in June 1994. The summary also includes a justification for each change.

Change Summary

1) Page 69 - An editorial change is made to locations 4/34 on Figure 5.1-2 (memo from B.S. Zacharek to E.D. Thomas, dated January 6, 1994). The map revision (Figure 5.1-2) corrects an air sampling and an environmental TLD location which were not properly transferred during conversion to CAD. Calculations or deposition (D/Q) parameters are not impacted.

2) Page 16 - A change to section 3.2, "Dose and Dose Rate Determinations" is made to clarify that for ground level releases from the Emergency Condenser Vent, without tube leakage, a condensate storage tank and emergency condenser shell isotopic distribution is to be used. This clarification improves the accuracy of dose calculations by applying correct isotopic distributions to the evaluation. No changes are made to the calculational methodology, with the exception of which isotopic distribution to apply. Without this clarification, an overly conservative off-gas isotopic distribution would have been applied (Reference, NRC Assessment of ODCM, April 1994).

ATTACHMENT 8

Unit 1 X Unit 2 __ Reporting Period January - June 1994

SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM

There were no changes to the Process Control Program during the reporting period.

ATTACHMENT 9

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

SUMMARY OF INOPERABLE MONITORS

Monitor	Dates of Inoperability	Cause and Corrective Actions
There were no inoperable monitors for a period greater than 30 days during the reporting period.		

UPDATE TO THE PREVIOUS REPORTS

Unit 1 X Unit 2 ___ Reporting Period January - June 1994

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 of 1993.

Nuclide[1]	GASEOUS 4th QUARTER Activity (Ci)	LIQUID 4th QUARTER Activity (Ci)
Sr-89	2.28E-05	No Releases
Sr-90	**	No Releases
H-3	6.15E+00	No Releases
Fe-55	1.41E-05	No Releases

			GASEOUS	LIQUID
Particulates				
	1. Particulates with half-lives >8 days	Ci	3.69E-05	N/A
	2. Average release rate for period	µCi/sec	4.64E-06	N/A
Tritium				
	1. Total release	Ci	6.15E+00	N/A
	2. Average release rate for period	µCi/sec	7.73E-01	N/A

Tritium, Iodines, and Particulates (with half-lives greater than 8 days)		GASEOUS	LIQUID
1. Percent of Quarterly Dose Limit[2]	%	2.40E-03 (Quarterly)	N/A (Quarterly)
2. Percent of Annual Dose Limit to Date[2]	%	9.92E-01 (Annual)	N/A (Annual)
3. Percent of Organ - Dose Rate Limit (Gaseous)(Quarterly) - Dose Limit (Liquid) (Annual & Quarterly)	%	4.75E-05 (Quarterly) N/A (Annual)	N/A (Quarterly) N/A (Annual)
4. Percent of 10CFR20 Concentration Limit (Liquid)	%	N/A	N/A
5. Percent of Dissolved or Entrained Noble Gas (Liquid)	%	N/A	N/A

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

[2] The dose is to the maximally exposed organ for gaseous effluents.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Volume (m^3) Class			Activity[2] (Ci) Class		
	A	B	C	A	B	C
1. Spent Resin	5.83E+00	0	0	6.06E+00	0	0
Filter Sludge	5.50E+00	0	0	1.40E+01	0	0
Concentrated Waste, Evaporator Bottoms	0	0	0	0	0	0
Total	1.13E+01	0	0	2.01E+01	0	0
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	0	0	0	0	0	0
3. Irradiated Components	There were no irradiated components shipped for burial during the reporting period.					
	0	0	0	0	0	0

[1] This Attachment 6 supersedes the information provided in the July - December 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and includes a change to the class A filter sludge activity as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

[2] The estimated total error is 5.00E+01%.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Container	Package	Solidification Agent
1. Spent Resin	HIC	Type A	None
Filter Sludge	HIC	Type A	Cement
Concentrated Waste	N/A	N/A	N/A
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	N/A	N/A	N/A
3. Irradiated Components	N/A	N/A	N/A

[1] This page is included in the update for completeness. There are no changes to information previously reported in the July-December 1993 Semi-Annual Report.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

a. Spent Resins, Filter Sludges, Concentrated Waste:

	Nuclide	Percent
(1)	Co-60	3.55E+01
(2)	Cs-137	3.07E+01
(3)	Fe-55	2.27E+01
(4)	Mn-54	6.54E+00
(5)	Cs-134	2.89E+00
(6)	Other	1.67E+00

b. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment): There were no shipments.

Nuclide	Percent

c. Irradiated Components: There were no shipments.

Nuclide	Percent

d. Other: There were no shipments.

Nuclide	Percent

[1] This Attachment 6 supersedes the information provided in the July - December 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and includes a change in the percentages of the major nuclide composition for A.2.a as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
2	Truck	Barnwell, SC

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION):

There were no shipments.

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

[1] This page is included in the update for completeness. There are no changes to the information previously reported in the July - December 1993 Semi-Annual Report.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

C. SOLID WASTE SHIPPED OFF-SITE TO VENDORS FOR PROCESSING AND SUBSEQUENT BURIAL

Below is a summary of Dry Active Waste that was shipped off-site for processing and burial by vendor facilities (i.e., ALARON, QUADREX, and/or SCIENTIFIC ECOLOGY GROUP) during July - December 1993. 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 information provided in this section, therefore, is in addition to that required by the Technical Specifications. The following data represents the actual shipments made from the off-site vendors of our non-compacted commingled trash that was processed prior to burial.

C.1. TYPE OF WASTE - noncompacted commingled trash and contaminated fuel pool equipment shipped to Oak Ridge, TN for processing prior to burial at Barnwell, SC

Burial Volume (m^3)	Activity (Ci)	Est. Total Error, %
2.33E+01	5.94E-01	5.00+01

C.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION

	Nuclide	Percent
(1)	Co-60	6.17E+01
(2)	Cs-137	2.09E+01
(3)	Mn-54	8.09E+00
(4)	Co-58	4.20E+00
(5)	Fe-55	1.83E+00
(6)	Fe-59	1.58E+00
(7)	Other	1.65E+00

C.3. SOLID WASTE DISPOSITION[2]

Number of Shipments	Mode of Transportation	Destination
32	Truck	Barnwell, SC

[1] This Attachment 6 supersedes the information provided in the July - December 1993 Semi-Annual Radioactive Effluent Release Report with updated burial volume, activity, and number of shipments for Nine Mile Point Nuclear Station Unit 1.

[2] The number of shipments reported here represents the total number that was shipped from the off-site vendor for burial. This does not represent the number of shipments Niagara Mohawk sent to be processed.

Unit 1 X Unit 2 ___ Reporting Period July - December 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

D. SEWAGE SLUDGE SHIPPED TO A TREATMENT FACILITY CENTER 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.

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[1] This page is included in the update for completeness. There are no changes to the information previously reported in the July - December 1993 Semi-Annual Report.

Unit 1 X Unit 2 ___ Reporting Period January - June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Volume (m^3) Class			Activity[2] (Ci) Class		
	A	B	C	A	B	C
1. Spent Resin	4.79E+01	0	0	3.50E+02	0	0
Filter Sludge	0	1.65E+01	0	0	2.27E+02	0
Concentrated Waste Evaporator Bottoms	0	1.10E+01	0	0	3.06E+01	0
Total	4.79E+01	2.75E+01	0	3.50E+02	2.58E+02	0
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	1.14E+01	0	0	4.06E+00	0	0
3. Irradiated Components	There were no irradiated components shipped for burial during the reporting period.					
	0	0	0	0	0	0

[1] This Attachment 6 supersedes the information provided in the January - June 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and corrects an error in the Semi-Annual Report for the filter sludge classification and also includes a change to the class B filter sludge activity and class A D.A.W. activity as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

[2] The estimated total error is 5.00E+01%.

Unit 1 X Unit 2 ___ Reporting Period January - June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.1 TYPE	Container	Package	Solidification Agent
1. Spent Resin	HIC	Type A	None
Filter Sludge	HIC	Type A	Cement
Concentrated Waste	HIC	Type A	Cement
2. Dry Compressible Waste, Dry Non-Compressible Waste (Contaminated Equipment)	Steel-Liner	Type A	None
3. Irradiated Components	N/A	N/A	N/A

[1] This Attachment 6 supersedes the information provided in the January - June 1993 Semi-Annual Radioactive Effluent Release Report with a correction to the package type for concentrated waste.

Unit 1 X Unit 2 ___ Reporting Period January - June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

a. Spent Resins, Filter Sludges, Concentrated Waste:

	Nuclide	Percent
(1)	Co-60	6.22E+01
(2)	Fe-55	1.41E+01
(3)	Mn-54	1.17E+01
(4)	Cs-137	8.24E+00
(5)	Co-58	1.08E+00
(6)	Other	2.68E+00

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

	Nuclide	Percent
(1)	Co-60	5.31E+01
(2)	Cs-137	2.47E+01
(3)	Mn-54	1.14E+01
(4)	Co-58	6.10E+00
(5)	Fe-59	1.76E+00
(6)	Fe-55	1.12E+00
(7)	Other	1.82E+00

c. Irradiated Components: There were no shipments.

Nuclide	Percent

d. Other: There were no shipments.

Nuclide	Percent

[1] This Attachment 6 supersedes the information provided in the January - June 1993 Semi-Annual Radioactive Effluent Release Report for Nine Mile Point Nuclear Station Unit 1 and includes changes to the nuclide order and percentages for A.2.a and percentages for A.2.b as a result of an independent technical evaluation of the off-site vendor analyses performed by Niagara Mohawk Power Corporation.

Unit 1 X Unit 2 ___ Reporting Period January- June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A.3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
17	Truck	Barnwell, SC

B. IRRADIATED FUEL SHIPMENTS (DISPOSITION):

There were no shipments.

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

[1] This page is included in the update for completeness. There are no changes to the information previously reported in the January - June 1993 Semi-Annual Report.

Unit 1 X Unit 2 ___ Reporting Period January - June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

C. SOLID WASTE SHIPPED OFF-SITE TO VENDORS FOR PROCESSING AND SUBSEQUENT BURIAL

Below is a summary of Dry Active Waste that was shipped off-site for processing and burial by vendor facilities (i.e., ALARON, QUADREX, and/or SCIENTIFIC ECOLOGY GROUP) during January - June 1993. These totals were reported separately from "10CFR61 Solid Waste Shipped for Burial" (i.e., Section A of Table 3A) 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 information provided in this section, therefore, is in addition to that required by the Technical Specifications. The following data represents the actual shipments made from the off-site vendors of our non-compacted commingled trash that was processed prior to burial.

C.1. TYPE OF WASTE - noncompacted commingled trash and contaminated fuel pool equipment shipped to Oak Ridge, TN for processing prior to burial at Barnwell, SC

Burial Volume (m^3)	Activity (Ci)	Est. Total Error, %
1.92E+01	2.71E−01	5.00+01

C.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION

	Nuclide	Percent
(1)	Co-60	5.98E+01
(2)	Cs-137	2.27E+01
(3)	Mn-54	9.54E+00
(4)	Co-58	5.10E+00
(5)	Fe-59	1.88E+00
(6)	Other	9.34E−01

C.3. SOLID WASTE DISPOSITION[2]

Number of Shipments	Mode of Transportation	Destination
29	Truck	Barnwell, SC

[1] This Attachment 6 supersedes the updated January - June 1993 information provided with the July - December 1993 Semi-Annual Radioactive Effluent Release Report with an updated number of shipments and destination for all shipments for Nine Mile Point Nuclear Station Unit 1.

[2] The number of shipments reported here represents the total number that was shipped from the off-site vendor for burial. This does not represent the number of shipments Niagara Mohawk sent to be processed.

Unit 1 X Unit 2 ___ Reporting Period January - June 1993

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

Below is a summary of the sewage sludge which was removed from the site sanitary treatment facility and transferred to a municipal sewage treatment facility, for subsequent drying and disposal to a landfill. This is a site release, and therefore includes the results from Unit 2 activities, also.

D.1. TYPE OF WASTE

	Burial Volume (L)	Activity (Ci)
sewage sludge	3.03E+04	2.4E−07

D.2. ESTIMATE OF MAJOR NUCLIDE COMPOSITION

Nuclide	Percent
Co-60	1.00E+02

D.3. SOLID WASTE DISPOSITION

Number of Shipments	Mode of Transportation	Destination
*	--	Landfill

Note: There were two shipments of sewage sludge with quantified Co-60 that were sent by vendor vacuum tank truck from NMP to the treatment facility. The number of shipments sent from NMP does not reflect the number of shipments to the ultimate destination (i.e. landfill). Sludge is mixed with municipal sludge, dried, and subsequently transferred to a state approved landfill by municipal personnel.

[1] This page is included in the update for completeness. There are no changes to the data previously reported in the January - June 1993 Semi-Annual Report.

OFF-SITE DOSE CALCULATION MANUAL

Revision 13 and 14 enclosed per Attachment 7 of the
Semi-Annual Radioactive Effluent Release Report