NINE MILE POINT NUCLEAR STATION

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY - JUNE 1986

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NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

JANUARY - JUNE 1986

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 8 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.

D. Liquid Effluents (Cont'd)

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 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.

2. Maximum Permissible Concentrations

A) Fission and activation gases:

None specified

B&C) Iodines and particulates, half lives > 8 days:

None specified

D) Liquid Effluents:

10CFR 20, Appendix B, Table II, Column 2.
Avg MPC (Jan. - March) = no discharges
Avg MPC (April - June) = 2.90E-03 μCi/ml

3. Average Energy (Fission and Activation gases - Mev)

Jan. - March: $\bar{E}_\gamma$ = 0.543; $\bar{E}_\beta$ = 0.641
April - June: $\bar{E}_\gamma$ = 0.673; $\bar{E}_\beta$ = 0.920

4. Measurements and Approximations of Total Radioactivity

Described below are the general 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 sample) of an isokinetic stack sample stream.

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

For emergency condenser vent batch releases, effluent curie quantities are estimated by subtracting activity remaining in the shell side of the emergency condenser after batch release from activity delivered to the shell from Make-Up sources. Actual isotopic concentrations are found via gamma spectroscopy. Activities of Sr-89, Sr-90 and H-3 are estimated by applying scaling factors or condensate storage activity concentrations.

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: Gamma spectroscopic 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 spectroscopic, 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 emmitters. For low activity trash shipments, curie content may be estimated by dose rate measurement.

5. Batch Releases

The following information relates to batch releases of radioactive materials in liquid and gaseous effluents.

A) Liquid

1.	Number of batch releases: 6				
2.	Total time period for batch releases:	28	hours	20	min.
3.	Maximum time period for a batch release:	4	hours	50	min.
4.	Average time period for a batch release:	4	hours	43	min.
5.	Minimum time period for a batch release:	4	hours	30	min.
6.	Average stream flow during period of release of effluent into a flowing stream:	Not Applicable			
7.	Total volume of water used to dilute the liquid effluent during release periods :	1.74E+00 GL			
8.	Total volume of water available to dilute the liquid effluent during reporting period :	1.43E+02 GL			

B) Gaseous (Emergency Condenser Vents)

1.	Number of batch releases: 3	
2.	Total time period for batch releases:	0 hours 35 min.
3.	Maximum time period for a batch release:	0 hours 20 min.
4.	Average time period for a batch release:	0 hours 12 min.
5.	Minimum time period for a batch release:	0 hours 5 min.

6. Abnormal Releases

A. Liquids - none

B. Gaseous - none

TABLE 1A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
ELEVATED AND GROUND LEVEL

JANUARY - JUNE

		UNIT	1st QUARTER	2nd QUARTER	EST.TOTAL ERROR, %
A.	Fission & Activation gases				
	1. Total release	Ci	2.34E+02	8.78E+00	2.5E+01
	2. Average release rate for period	µCi/sec	3.02E+01	1.12E+00	
	3. Percent of Technical Specification Limit	%	*	*	
B.	Iodines				
	1. Total iodine-131	Ci	5.54E-03	1.53E-04	2.0E+01
	2. Average release rate for period	µCi/sec	7.12E-04	1.95E-05	
	3. Percent of Technical Specification Limit	%	*	*	
C.	Particulates				
	1. Particulates with half-lives >8 days	Ci	4.46E-03	2.30E-03	2.5E+01
	2. Average release rate for period	µCi/sec	5.74E-04	2.93E-04	
	3. Percent of Technical Specification Limit	%	*	*	
	4. Gross alpha radio-activity	Ci	2.83E-05	3.62E-05	2.5E+01
D.	Tritium				
	1. Total release	Ci	2.72E+01	6.37E+00	2.0E+01
	2. Average release rate for period	µCi/sec	3.50E+00	8.10E-01	
	3. Percent of Technical Specification Limit	%	*	*	

TABLE 1A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
ELEVATED AND GROUND LEVEL

JANUARY - JUNE (Cont'd)

	UNIT	1st QUARTER	2nd QUARTER
E.* Percent of Technical Specification Limits (NMP-1 Elevated Release)			
Fission and Activation Gases:			
1. Percent of Quarterly Gamma Air Dose Limit	%	9.48E-01	7.00E-02
2. Percent of Quarterly Beta Air Dose Limit	%	5.52E-01	4.77E-02
3. Percent of Annual Gamma Air Dose Limit to Date	%	4.74E-01	5.09E-01
4. Percent of Annual Beta Air Dose Limit to Date	%	2.76E-01	3.00E-01
5. Percent of Whole Body Dose Rate Limit	%	9.48E-03	7.00E-04
6. Percent of Skin Dose Rate Limit	%	1.84E-03	1.59E-04
Tritium, Iodines and Particulates (with half-lives greater than 8 days):			
1. Percent of Quarterly Dose Limit	%	2.68E+00	7.54E-01
2. Percent of Annual Dose Limit to Date	%	1.35E+00	1.37E+00
3. Percent of Organ Dose Rate Limit	%	1.34E-02	3.78E-03

TABLE 1B

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
GASEOUS EFFLUENTS-ELEVATED RELEASE

JANUARY - JUNE

Nuclides Released	Unit	CONTINUOUS MODE 1st Quarter	2nd Quarter
1. Fission Gases			
Argon-41	Ci	1.93E+00	1.23E-01
Krypton-85m	Ci	4.16E+00	2.99E-01
Krypton-87	Ci	2.52E+00	--------
Krypton-88	Ci	1.38E+00	--------
Xenon-133	Ci	3.63E+01	--------
Xenon-135	Ci	1.41E+01	5.79E-01
Xenon-135m	Ci	1.85E+01	5.88E-01
Xenon-137	Ci	7.82E+01	3.22E+00
Xenon-138	Ci	7.74E+01	3.97E+00
2. Iodines			
Iodine-131	Ci	5.54E-03	1.53E-04
Iodine-133	Ci	3.92E-02	<1.45E-03
Iodine-135	Ci	7.22E-02	<3.17E-03
3. Particulates			
Strontium-89	Ci	1.31E-03	7.14E-05
Strontium-90	Ci	4.90E-06	9.10E-07
Cesium-134	Ci	1.26E-05	4.67E-06
Cesium-137	Ci	4.28E-04	3.57E-04
Cobalt-60	Ci	1.50E-03	1.41E-03
Cobalt-58	Ci	1.41E-05	1.29E-05
Manganese-54	Ci	6.84E-06	5.21E-05
Barium-Lanthanum-140	Ci	1.15E-03	2.06E-05
Antimony-125	Ci	--------	--------
Niobium-95	Ci	--------	--------
Cerium-141	Ci	2.36E-05	--------
Cerium-144	Ci	--------	--------
Iron-59	Ci	--------	--------
Cesium-136	Ci	8.96E-06	3.28E-06
Chromium-51	Ci	--------	2.07E-05
Zinc-65	Ci	3.28E-06	9.15E-06
4. Tritium	Ci	1.16E+01	2.58E+00

TABLE 1C

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
GASEOUS EFFLUENTS-GROUND LEVEL (EMERGENCY CONDENSER VENT) RELEASES

JANUARY - JUNE

Nuclides Released	Unit	CONTINUOUS MODE 1st Quarter	CONTINUOUS MODE 2nd Quarter	BATCH MODE 1st Quarter	BATCH MODE 2nd Quarter
1. Fission Gases					
Argon-41	Ci	--------	--------	--------	--------
Krypton-85m	Ci	--------	--------	--------	--------
Krypton-87	Ci	--------	--------	--------	--------
Krypton-88	Ci	--------	--------	--------	--------
Xenon-133	Ci	--------	--------	--------	--------
Xenon-135	Ci	--------	--------	--------	--------
Xenon-135m	Ci	--------	--------	--------	--------
Xenon-137	Ci	--------	--------	--------	--------
Xenon-138	Ci	--------	--------	--------	--------
2. Iodines					
Iodine-131	Ci	--------	--------	--------	--------
Iodine-133	Ci	--------	--------	--------	--------
Iodine-135	Ci	--------	--------	--------	--------
3. Particulates					
Strontium-89	Ci	--------	--------	--------	1.10E-04
Strontium-90	Ci	--------	--------	--------	2.75E-06
Cesium-134	Ci	--------	--------	--------	--------
Cesium-137	Ci	--------	--------	--------	2.75E-05
Cobalt-60	Ci	--------	--------	--------	1.77E-04
Cobalt-58	Ci	--------	--------	--------	--------
Manganese-54	Ci	--------	--------	--------	2.15E-05
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	--------	--------	--------	--------
4. Tritium	Ci	1.56E+01	2.74E+00	--------	1.05E+00

TABLE 2A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

JANUARY - JUNE

	Unit	1st Quarter	2nd Quarter	Est. Total Error, %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	None	<6.70-04	2.5E+01
2. Average diluted concentration during reporting period	µCi/ml	-----	<1.17E-11	
3. Percent of applicable limit	%	-----	*	
B. Tritium				
1. Total release	Ci	None	2.19E+00	2.0E+01
2. Average diluted concentration during reporting period	µCi/ml	-----	3.83E-08	
3. Percent of applicable limit	%	-----	*	
C. Dissolved and entrained gases				
1. Total release	Ci	None	<2.05E-03	3.0E+01
2. Average diluted concentration during reporting period	µCi/ml	-----	<3.58E-11	
3. Percent of applicable limit	%	-----	*	
D. Gross alpha radioactivity				
1. Total release	Ci	None	3.35E-07	3.0E+01
E. Volumes				
1. Prior to dilution	liters	None	5.20E+05	1.0E+01
2. Volume of dilution water used during release period	liters	-----	1.74E+09	2.0E+01
3. Volume of dilution water used during reporting period	liters	8.56E+10	5.72E+10	2.0E+01

TABLE 2A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

JANUARY - JUNE (Cont.)

	Unit	1st Quarter	2nd Quarter
F.* Percent of Technical Specification Limits			
1. Percent of Quarterly Whole Body Dose Limit	%		<3.51E-03
2. Percent of Quarterly Organ Dose Limit	%		<1.36E-03
3. Percent of Annual Whole Body Dose Limit to Date	%	No Discharges	<1.76E-03
4. Percent of Annual Organ Dose Limit	%		<6.82E-04
5. Percent of 10CFR20 Concentration Limit	%		<1.32E-03
6. Percent of Dissolved or Entrained Noble Gas Limit	%		<1.79E-05

TABLE 2B

RADIOACTIVE EFFLUENT RELEASE SEMI-ANNUAL REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1

JANUARY - JUNE

		BATCH MODE	
	Unit	1st Quarter	2nd Quarter
Nuclides Released			
Strontium-89	Ci	--------	<2.34E-05
Strontium-90	Ci	--------	<3.85E-06
Cesium-134	Ci	--------	2.87E-06
Cesium-137	Ci	--------	3.14E-05
Iodine-131	Ci	--------	---------
Cobalt-58	Ci	--------	---------
Cobalt-60	Ci	--------	8.83E-05
Manganese-54	Ci	--------	---------
Chromium-51	Ci	--------	---------
Zirconium-niobium-95	Ci	--------	---------
Barium-lanthanum-140	Ci	--------	---------
Tungsten-187	Ci	--------	---------
Arsenic-76	Ci	--------	---------
Iodine-133	Ci	--------	---------
Iron-59	Ci	--------	---------
Iron-55	Ci	--------	<5.20E-04
Neptunium-239	Ci	--------	---------
Praseodymium-144	Ci	--------	---------
Iodine-135	Ci	--------	---------
Σ Dissolved or entrained gases	Ci	--------	<2.05E-03

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not irradiated fuel)

1. Class of Waste	January - June	Est.Total Error, %
a. Class A		
Spent Resins		
m^3	8.28E+01	
Ci	5.24E+01	2.5E+01
Solidification Agent	Dewatered	
Container	HIC	
Package	Type A	
Principle Isotopes	Co-60, Mn-54,Co-58, Cr-51	
Filter Media		
m^3	5.04E+00	
Ci	1.61E+01	2.5E+01
Solidification Agent	Cement	
Container	Steel Liner	
Package	Type A	
Principle Isotopes	Co-60, Cs-137, Fe-55, Mn-54, Cs-134	
Evaporator Bottoms		
m^3	2.97E+00	
Ci	1.96E+00	2.5E+01
Solidification Agent	Polymer (Dow)	
Container	55 gallon drums	
Package	Type A	
Principle Isotopes	Co-60, Cs-137, Cs-134 Mn-54	
Evaporator Bottoms		
m^3	5.01E+00	
Ci	1.51E+00	2.5E+01
Solidification Agent	Cement	
Container	Steel Liner	
Package	Type A	
Principle Isotopes	Co-60, Cs-137, Cs-134, Mn-54	
Dry Compressible Waste		
m^3	3.25E+02	
Ci	1.59E+00	4.0E+01
Solidification Agent	None	
Container	Strong Tight Container	
Package	LSA Box	
Principle Isotopes	Co-60, Mn-54,Co-58, Cr-51, Cs-137	

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
(Continued)

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not irradiated fuel)

1. Class of Waste	January - June	Est.Total Error, %
a. Class A (Cont'd)		
Dry Non-Compressed Waste		
m^3	1.73E+01	
Ci	3.09E+00	3.5E+01
Solidification Agent	None	
Container	Steel Liner	
Package	Type A	
Principle Isotopes	Cs-137, Co-60, Mn-54, Cs-134	
Contaminated Charcoal		
m^3	5.01E+00	
Ci	3.20E-02	3.5E+01
Solidification Agent	Cement	
Container	Steel Liner	
Package	LSA Container	
Principle Isotopes	H-3, Co-60, Cs-137, Co-58	
Irradiated Reactor Components		
m^3	2.55E+00	
Ci	6.84E+00	2.5E+01
Solidification Agent	None	
Container	Steel Liner	
Package	Type A	
Principle Isotopes	Co-60, Fe-55, Ni-63	
Contaminated Condenser Tubes*		
m^3	3.48E+02	
Ci	1.08E-01	3.5E+01
Solidification Agent	None	
Container	Strong Tight Container	
Package	LSA Box	
Principle Isotopes	Co-60, Ce-141, Ba-La-140, Zn-65	

* Condenser Tubes were shipped to Babcock and Wilcox for decontamination.

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
(Continued)

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not irradiated fuel)

1. Class of Waste		January - June	Est.Total Error, %
b. Class B			
Spent Resins			
	m^3	1.42E+01	
	Ci	4.11E+02	2.5E+01
	Solidification Agent	Dewatered	
	Container	HIC	
	Package	Type A	
	Principle Isotopes	Co-60,Cs-137,Mn-54,Cs-134	
Filter Media			
	m^3	1.49E+01	
	Ci	9.62E+01	2.5E+01
	Solidification Agent	Cement	
	Container	Steel Liner	
	Package	Type A	
	Principle Isotopes	Co-60,Cs-137,Mn-54,Cs-134	
c. Class C			
None			

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
(Continued)

2. Estimate of Major Nuclide Composition (by Type of Waste)

a. Evaporator Bottoms - Resins - Filter Media

Cobalt-60	%	6.56E+01
Cesium-137	%	7.94E+00
Manganese-54	%	7.46E+00
Iron-55	%	4.59E+00
Cobalt-58	%	3.82E+00
Chromium-51	%	3.78E+00
Cesium-134	%	2.41E+00
Zinc-65	%	2.18E+00
Other	%	2.22E+00

b. Dry Compressible Waste, Contaminated Components

Cesium-137	%	4.93E+01
Cobalt-60	%	4.21E+01
Manganese-54	%	2.90E+00
Cesium-134	%	2.50E+00
Other	%	3.20E+00

c. Irradiated Components

Cobalt-60	%	6.44E+01
Iron-55	%	3.30E+01
Nickel-63	%	2.35E+00
Other	%	2.50E-01

3. Solid Waste Disposition

a. Number of Shipments*	Mode	Destination
41	Truck	Barnwell, SC

* Excludes condenser tubes shipped to Babcock and Wilcox for decontamination.

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
(Continued)

4. a. Irradiated Reactor Components Disposition

Number of Shipments	Mode	Destination
1	Truck	Barnwell, SC

b. Irradiated Fuel Shipments Disposition

Number of Shipments	Mode	Destination
None	-	-

TABLE 4

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1

CAUSE AND CORRECTIVE ACTIONS REGARDING
LIQUID DISCHARGE EFFLUENT MONITOR INOPERABILITY

JANUARY - JUNE

The NMP-1 Liquid Discharge Effluent monitors were declared inoperable prior to 6 liquid discharge batch releases in June of 1986 for two reasons: (1) monitor sensitivity was insufficient to ensure alarm activation prior to exceeding 10CFR20 release rate limits and (2) alarm setpoint formula specified in the ODCM did not adequately address the contribution of tritium to the calculated liquid discharge batch MPC.

Item (2) above can be resolved with a small change to the Offsite Dose Calculation Manual. This will be accomplished prior to the next liquid discharge at Unit 1. Details of the ODCM revision will be supplied in a future Semi-Annual Effluent Release Report in accordance with Section 6.9.1 of the Technical Specifications.

Ironically, monitor sensitivity problems are partly a function of the low radionuclide concentration of the batch tank requiring discharge. This is because the monitor setpoint is a function of the quantity:

$$\frac{[\Sigma(C_i)_\gamma\ ] \cdot TDF}{[\Sigma(C_i/MPC_i)_{total}] \cdot F}$$

Where: $(C_i)_\gamma$ is the radionuclide concentration of gamma emitter, i

and: C_i is the radionuclide concentration of any isotope, i

MPC_i is the MPC for isotope C_i

TDF is the total dilution water flow during the discharge

F is the flow from the tank being discharged.

Thus, lowering gamma emitting isotope concentrations while maintaining the quantities $\Sigma\ (C_i/MPC_i)$ and TDF/F essentially constant (as is the case at NMP-1 where tritium is the predominant isotope), results in lower monitor alarm setpoint requirements.

Calculated monitor Hi alarm setpoints for the batch releases in June 1986 were about 4E-04 μC_i/ml gamma. This value was slightly lower than the current monitors would tolerate without alarming due to background radiation.

For future resolution of the current monitors' sensitivity problems, Niagara Mohawk has purchased a new Liquid Discharge Effluent Monitor and has included the monitor on the site modification priority list. The relative need for completing monitor installation will be evaluated. In the interim, NMP-1 will minimize liquid discharge occurrences. Should a discharge of a low activity tank become necessary, verification processes and additional sampling requirements specified in the Technical Specifications will be accomplished. In the unlikely event the discharge of a relatively high activity tank becomes necessary, it should not be necessary to declare monitor inoperability since calculated setpoints will be higher than the monitors' sensitivity threshold.

TABLE 5

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION # 1
HOURS AT EACH WIND SPEED AND DIRECTION

JANUARY - JUNE

In accordance with Amendment 66 of Nine Mile Point Unit 1 Technical Specifications, an annual summary of hourly meteorological data shall be included and submitted in the Semi-Annual Radioactive Effluent Release Report within 60 days after January 1 of each year. Therefore, meteorological data has not been included in this report. Data will appear in the subsequent Semi-Annual Report.

TABLE 6

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1985)
NINE MILE POINT NUCLEAR STATION #1
SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL

JANUARY - JUNE

There were no changes to the NMP-1 ODCM during the period January - June 1986.

TABLE 7

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1986)
NINE MILE POINT NUCLEAR STATION #1
CHANGES TO THE PROCESS CONTROL PROGRAM

JANUARY - JUNE

The Nine Mile Point #1 Process Control Program (PCP) for waste solidification, as described in Administrative Procedure 3.7, Revision 0, has not been revised during the current reporting period. Some waste solidification procedure revisions have been made; however, these changes have not affected the overall PCP.

Copies of waste solidification procedure revisions and explanations are available upon request.