NINE MILE POINT NUCLEAR STATION - UNIT 2

SEMI-ANNUAL RADIOACTIVE EFFLUENT

RELEASE REPORT

JULY - DECEMBER 1987

DOCKET NO.: 50-410

LICENSE NO.: NPF-69

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION - UNIT 2

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

JULY - DECEMBER 1987

Facility: Nine Mile Point Unit #2

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 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 the Nine Mile Point 2 Station to areas at and 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 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 8 days as part of gaseous effluents released from the Nine Mile Point 2 Station 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 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 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. Maximum Permissible Concentrations

A) Fission and activation gases:

None specified

B&C) Iodines and particulates, half lives $\geq$ 8 days:

None specified

D) Liquid Effluents:

10CFR 20, Appendix B, Table II, Column 2, during batch discharges:
Avg MPC (July - Sept.) = 3.15E-04 uc/ml
Avg MPC (Oct. - Dec.) = 6.38E-03 uc/ml

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

July - Sept.: $\bar{E}$ = 1.06; $\bar{E}_\beta$ = 0.57
Oct. - Dec.: $\bar{E}$ = 1.12; $\bar{E}_\beta$ = 0.64

4. 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. When on-line instruments are inoperable grab samples are collected and analyzed every 12 hours.

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

C) Particulates: Activity released is determined by gamma spectroscopic analysis (at least weekly) of particulate filters manually or automatically sampled from an isokinetic sample stream.

4. (Cont'd)

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.

F) Solid Effluents: Isotopic contents of waste shipments are determined by gamma spectroscopy 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 is estimated by dose rate measurement and application of appropriate scaling factors.

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: 150
2. Total time period for batch releases: 516 hours 59 min.
3. Maximum time period for a batch release: 3 hours 28 min.
4. Average time period for a batch release: 3 hours 27 min.
5. Minimum time period for a batch release: 3 hours 13 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 : 3.15 E9 liters
8. Total volume of water available to dilute the liquid effluent during reporting period : 2.65 E10 liters

B) Gaseous (Primary Containment Purge)

1. Number of batch releases: 7
2. Total time period for batch releases: 226 hours
3. Maximum time period for a batch release: 58 hours
4. Average time period for a batch release: 32 hours
5. Minimum time period for a batch release: 4 hours

6. Abnormal Releases

A. Liquids - Condensate tank rupture. 200,000 gallons of water was pumped to a storm sewer over a 12 hour period at 275 gpm without dilution. Tritium concentration was 2.20E-4 µCi/ml for a total of 0.167 Ci of activity. Niagara Mohawk submitted a LER-87-75 which describes the event in more detail.

B. Gaseous - none

TABLE 1A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
ELEVATED AND GROUND LEVEL

JULY - DECEMBER 1987

	UNIT	3rd QUARTER	4th QUARTER	EST.TOTAL ERROR, %
A. Fission & Activation gases				
1. Total release	Ci	2.80E-00	1.83E-00	5.00E+01
2. Average release rate for period	µCi/sec	3.52E-01	2.31E-01	
3. Percent of Technical Specification Limit	%	*	*	
B. Iodines				
1. Total iodine-131	Ci	6.64E-06	3.14E-05	5.00E+01
2. Average release rate for period	µCi/sec	8.35E-07	3.96E-06	
3. Percent of Technical Specification Limit	%	*	*	
C. Particulates				
1. Particulates with half-lives >8 days	Ci	9.52E-05	5.17E-00	5.00E+01
2. Average release rate for period	µCi/sec	1.20E-05	6.50E-01	
3. Percent of Technical Specification Limit	%	*	*	
4. Gross alpha radio-activity	Ci	3.88E-05	5.49E-06	5.00E+01
D. Tritium				
1. Total release	Ci	1.58E-03	2.92E-02	5.00E+01
2. Average release rate for period	µCi/sec	1.99E-04	3.67E-03	
3. Percent of Technical Specification Limit	%	*	*	

*See Page 6 for specific % of applicable limits.

TABLE 1A
(Continued)

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
ELEVATED AND GROUND LEVEL

JULY - DECEMBER, 1987

	UNIT	3rd QUARTER	4th QUARTER
E. Percent of Technical Specification Limits (NMP-2 Elevated Release)			
Fission and Activation Gases:			
1. Percent of Quarterly Gamma Air Dose Limit	%	2.66E-02	1.86E-02
2. Percent of Quarterly Beta Air Dose Limit	%	1.71E-04	8.80E-05
3. Percent of Annual Gamma Air Dose Limit to Date	%	1.95E-02	2.88E-02
4. Percent of Annual Beta Air Dose Limit to Date	%	1.76F-04	2.20E-04
5. Percent of Whole Body Dose Rate Limit	%	1.01E-03	7.04E-06
6. Percent of Skin Dose Rate Limit	%	1.95E-04	1.36E-04
Tritium, Iodines and Particulates (with half-lives greater than 8 days):			
1. Percent of Quarterly Dose Limit	%	1.07E-04	2.19E-04
2. Percent of Annual Dose Limit to Date	%	5.37E-05	1.63E-04
3. Percent of Organ Dose Rate Limit	%	3.33E-07	8.27E-08

TABLE 1B

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
GASEOUS EFFLUENTS-ELEVATED (STACK)

JULY - DECEMBER, 1987

Nuclides Released	Unit	CONTINUOUS MODE 3rd Quarter	CONTINUOUS MODE 4th Quarter	BATCH MODE 3rd Quarter	BATCH MODE 4th Quarter
1. Fission Gases					
Argon-41	Ci	1.29E-00	1.46E-00	-------	-------
Krypton-85m	Ci	-------	1.39E-01	-------	-------
Krypton-87	Ci	-------	-------	-------	-------
Krypton-88	Ci	-------	-------	-------	-------
Xenon-133	Ci	-------	-------	-------	-------
Xenon-135	Ci	-------	-------	-------	-------
Xenon-135m	Ci	-------	-------	-------	-------
Xenon-137	Ci	7.15E-02	1.39E-01	-------	-------
Xenon-138	Ci	1.44E-00	2.34E-01	-------	-------
2. Iodines					
Iodine-131	Ci	-------	2.24E-06	-------	-------
Iodine-133	Ci	6.64E-06	2.92E-05	-------	-------
Iodine-135	Ci	-------	-------	-------	-------
3. Particulates					
Strontium-89	Ci	7.00E-06	1.70E-06	-------	-------
Strontium-90	Ci	-------	-------	-------	-------
Cesium-134	Ci	-------	-------	-------	-------
Cesium-137	Ci	-------	-------	-------	-------
Cobalt-60	Ci	-------	-------	-------	-------
Cobalt-58	Ci	-------	-------	-------	-------
Manganese-54	Ci	-------	5.17E-00	-------	-------
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	-------	-------	-------	-------
4. Tritium	Ci	-------	2.29E-02	1.58E-03	*
5. Gross Alpha Activity	Ci	7.88E-06	2.76E-06	-------	-------

Note: For the 2nd quarter of 1987 2.92E-5 Ci of Sr-89 was detected in the stack continuous mode.

* Not all tritium results have been received yet.

TABLE 1C

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
GASEOUS EFFLUENTS-COMBINED GROUND LEVEL-ELEVATED (REACTOR BUILDING VENT)

JULY - DECEMBER

Nuclides Released	Unit	CONTINUOUS MODE 3rd Quarter	CONTINUOUS MODE 4th Quarter	BATCH MODE 3rd Quarter	BATCH MODE 4th 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	-------	-------	-------	-------
Strontium-90	Ci	-------	-------	-------	-------
Cesium-134	Ci	-------	-------	-------	-------
Cesium-137	Ci	-------	-------	-------	-------
Cobalt-60	Ci	-------	-------	-------	-------
Cobalt-58	Ci	2.81E-6	-------	-------	-------
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	8.54E-5	-------	-------	-------
Zinc-65	Ci	-------	-------	-------	-------
Iron-55	Ci	-------	-------	-------	-------
4. Tritium	Ci	-------	-------	-------	-------
5. Gross Alpha Activity	Ci	3.09E-5	2.73E-6	-------	-------

Sr89, 90 and Fe-55 results have not been received yet.

TABLE 2A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

JULY - DECEMBER

	Unit	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	1.53E-01	1.14E-00	5.00E+1
2. Average diluted concentration during reporting period	µCi/ml	7.39E-08	9.94E-07	
3. Percent of applicable limit	%	2.72E-02	6.28E-01	
B. Tritium				
1. Total release	Ci	2.65E-01	1.98E-01	5.00E+1
2. Average diluted concentration during reporting period	µCi/ml	1.28E-07	2.87E-07	
3. Percent of applicable limit	%	4.27E-03	9.71E-03	
C. Dissolved and entrained gases				
1. Total release	Ci	-------	-------	-------
2. Average diluted concentration during reporting period	µCi/ml	-------	-------	
3. Percent of applicable limit	%	-------	-------	
D. Gross alpha radioactivity				
1. Total release	Ci	-------	-------	-------
E. Volumes				
1. Prior to dilution	liters	8.37E+06	5.72E+06	5.00E+1
2. Volume of dilution water used during release period	liters	1.99E+09	1.16E+09	5.00E+1
3. Volume of dilution water used during reporting period	liters	1.43E+10	1.22E+10	5.00E+1

TABLE 2A
(Continued)

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

JULY - DECEMBER

		Unit	3rd Quarter	4th Quarter
F.	Percent of Technical Specification Limits			
1.	Percent of Quarterly Whole Body Dose Limit	%	3.34E-03	1.10E-02
2.	Percent of Quarterly Organ Dose Limit (GI-LLI)	%	2.09E-01	3.76E-02
3.	Percent of Annual Whole Body Dose Limit to Date	%	5.86E-03	1.09E-02
4.	Percent of Annual Organ Dose Limit to Date (GI-LLI)	%	1.06E-01	1.10E-11
5.	Percent of 10CFR20 Concentration Limit	%	3.15E-02	6.38E-01
6.	Percent of Dissolved or Entrained Noble Gas Limit	%	--------	--------

TABLE 2B

RADIOACTIVE EFFLUENT RELEASE SEMI-ANNUAL REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
LIQUID EFFLUENTS RELEASED
JULY - DECEMBER

		CONTINUOUS MODE		BATCH MODE	
	Unit	3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Nuclides Released					
Strontium-89	Ci	-------	-------	-------	-------
Strontium-90	Ci	-------	-------	-------	-------
Cesium-134	Ci	-------	-------	-------	-------
Cesium-137	Ci	-------	-------	-------	-------
Iodine-131	Ci	-------	-------	-------	-------
Cobalt-58	Ci	-------	-------	1.62E-02	2.45E-01
Cobalt-60	Ci	-------	-------	9.91E-04	4.58E-02
Iron-59	Ci	-------	-------	1.81E-04	5.76E-02
Zinc 65	Ci	-------	-------	-------	-------
Manganese-54	Ci	-------	-------	1.08E-03	7.09E-02
Chromium-51	Ci	-------	-------	1.10E-01	7.25E-01
Zirconium-niobium-95	Ci	-------	-------	4.95E-05	8.41E-05
Molybdenum-99	Ci	-------	-------	2.10E-04	-------
Technetium-99m	Ci	-------	-------	3.14E-04	-------
Barium-lanthanum-140	Ci	-------	-------	-------	-------
Cerium-141	Ci	-------	-------	-------	-------
Tungsten-187	Ci	-------	-------	2.88E-03	-------
Zicronium-97	Ci	-------	-------	1.40E-04	-------
Copper-64	Ci	-------	-------	5.72E-03	-------
Neptunium-239	Ci	-------	-------	1.90E-04	-------
Hydrogen-3	Ci	-------	-------	--------	-------
Manganese-56	Ci	-------	-------	1.30E-02	6.61E-05
Sodium-24	Ci	-------	-------	1.73E-03	1.25E-04
Total for period (above)	Ci	-------	-------	-------	-------
Xenon-133	Ci	-------	-------	-------	-------
Xenon-135	Ci	-------	-------	-------	-------

TABLE 3A

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

	Unit	July-Dec.	Est. Total Error, %
1. Type of Waste			
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	9.89E+1	5.00E+01
	Ci	1.14E+1	5.00E+01
b. Dry compressible waste, contaminated equipment, etc.	m^3	0.00E-00	-------
	Ci	0.00E-00	-------
c. Irradiated components, control rods, etc.	m^3	0.00E-00	-------
	Ci	0.00E-00	-------
d. Other (describe)	m^3	0.00E-00	-------
	Ci	0.00E-00	-------

2. Estimate of major nuclide composition (by type of waste)

a. Spent resins, filter sludges, evaporator bottoms, etc.	Chromium-51	%	8.73E+01
	Cobalt-58	%	8.52E-00
	Manganese-54	%	1.09E-00
	Iron-59	%	7.07E-01
	Cobalt-60	%	6.90E-01
	Nickel-65	%	5.00E-01
	Iron-55	%	2.20E-01
	Zirconium-95	%	1.60E-01
	Zinc-65	%	1.40E-01
	Niobium-95	%	1.30E-01
	Others	%	5.00E-01
b. Dry compressible waste, contaminated equipment, etc.		-------	-------
c. Irradiated components, control rods, etc.		-------	-------
d. Others (describe)		-------	-------

3. Solid Waste Disposition

Number of Shipments	Mode	Destination
11	Truck	Barnwell, S.C.

(all were cement solidified in strong tight containers as Class A waste)

TABLE 3A
(Continued)

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode	Destination
None	-	-

TABLE 4

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION # 2
HOURS AT EACH WIND SPEED AND DIRECTION

JULY - DECEMBER

This information is available upon request.

TABLE 5

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL

JULY - DECEMBER

In accordance with the Nine Mile Point 2 Technical Specifications, this Table (a) describes and provides justification for recent changes to the Off-Site Dose Calculation Manual and (b) explains why these changes will not adversely affect the accuracy or reliability of off-site dose calculations or monitor alarm setpoint determinations.

Attachment 1 to this document provides a copy of the Off-Site Dose Calculation Manual (which shows recent changes made). All revisions to the Off-Site Dose Calculation Manual were reviewed and accepted by authorized station personnel in accordance with applicable administrative procedures and of the Technical Specifications. Review and approval documentation is affixed to the front side of Attachment 1.

TABLE 5
(Last Page)

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SUMMARY OF CHANGES TO THE OFF-SITE DOSE CALCULATION MANUAL

JULY - DECEMBER

CHG. NO.	ODCM SECTION CHANGED	DESCRIPTION OF CHANGE (JUSTIFICATION)	AFFECT ON ACCURACY/ RELIABILITY OF DOSE CALCULATIONS/ALARM SETPOINT DETERMINATIONS
1.	3.1.3.3	Offgas system flow alarm setpoints were not originally provided. They are now included.	None

TABLE 6

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM

JULY - DECEMBER

Nine Mile Point Nuclear Station Site Administrative Procedure AP 3.7.1, which describes the Nine Mile Point Unit 2 Process Control Program (PCP) was implemented during the past reporting period. In accordance with the Nine Mile Point 2 Technical Specifications, this Table: (a) describes the rationale for changes in the PCP and (b) explains why these changes will not adversely affect the overall conformance of the solidified waste product to existing criteria for solid wastes.

There were no changes to the Process Control Program.

TABLE 6
(Last Page)

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2
SUMMARY OF CHANGES TO THE PROCESS CONTROL PROGRAM

JULY - DECEMBER

CHG. NO.	AP-3.7.1 SECTION CHANGED	RATIONALE FOR CHANGE	AFFECT ON CONFORMANCE OF WASTE PRODUCT TO EXISTING CRITERIA

There were no changes to the Process Control Program.

TABLE 7

SEMI-ANNUAL RADIOACTIVE RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2

EXPLANATION OF INSTRUMENTATION INOPERABILITY

INSTRUMENT	DATE OUT OF SERVICE	DATE RETURNED TO SERVICE	EXPLANATION
Stack Noble Gas	7-13-87 10:30	7-16-87 11:46	Difficulty in diagnosing the problem and replacing M.C.A
Stack Noble Gas	7-22-87 10:30	7-25-87 21:55	Maintenance work being performed on electrical supply system took longer than anticipated to complete.
Stack Noble Gas	8-14-87 18:45	8-17-87 19:37	Computer hardware failure took time for diagnosis and repair.
Stack Noble Gas	8-19-87 11:50	9-17-87 11:10	Problem in diagnosis of problem with electrical supply battery backup system.
Stack Noble Gas	9-23-87 23:00	-------	Design deficiency with alarm annunciation reflash. Anticipated completion 3-31-88.
Stack Particulate & Iodine Sampler	11-17-87 01:00	11-17-87 07:00	Auxiliary pump failed. Discovered at 0500.
Vent Noble Gas	7-10-87 16:32	7-19-87 16:40	Unacceptable detector performance. Reconditioning detector takes time.
Vent Noble Gas	8-14-87 18:45	8-17-87 19:37	Computer hardware failure took time for diagnosis and repair.
Vent Noble Gas	8-19-87 11:50	8-22-87 11:40	Problem with electrical supply battery backup system.
Vent Noble Gas	9-9-87 14:30	9-14-87 14:45	Computer hardware failure took time for diagnosis and repair.
Vent Noble Gas	9-23-87 23:00	-------	Design deficiency with alarm annunciation reflash. Anticipated completion 3-31-88.
Stack System Flow	1-87	-------	Difficulty, due to location of completing calibration and disagreement as to resolution.

TABLE 7
(Last Page)

SEMI-ANNUAL RADIOACTIVE RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION #2

EXPLANATION OF INSTRUMENTATION INOPERABILITY

INSTRUMENT	DATE OUT OF SERVICE	DATE RETURNED TO SERVICE	EXPLANATION
Reactor - Radwaste Vent System Flow	2-87	-------	Difficulty due to location of completing calibration and disagreement as to resolution.
Offgas System Flow	8-87	-------	Original Monitor has an inappropriate location. Modification will be worked on after commercial operation.
Offgas Hydrogen Monitors	8-87	-------	Original design is inappropriate. Is sensitive to moisture. Expected return to service 3-88.
Service Water A Radiation	7-10-87 7-13-87 8-11-87 8-27-87	7-12-87 7-15-87 8-17-87 8-31-87	Problem with pump motor cooling and qualification of replacements.
Service Water B Radiation	7-10-87	7-15-87	Problem with Pump Motor Cooling and qualification of replacements.
Cooling Tower Blowdown	7-1-87 8-28-87	7-9-87 8-30-87	Loss of suction due to pump location and blowdown flowrate.

ATTACHMENT 1

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (1987)
NINE MILE POINT NUCLEAR STATION # 2

OFFSITE DOSE CALCULATIONS MANUAL

Attached is a copy of the Offsite Dose Calculation Manual Revision 3 for Nine Mile Point Nuclear Station Unit 2. Description of changes made to the manual are provided in Table 5 of this report.