UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 29
License No. DPR-63

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment by Niagara Mohawk Power Corporation (the licensee) dated January 24, 1977, October 26, 1977, March 22, 1978 and June 22, 1978, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-63 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 29, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 26, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 29

FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Replace the existing Appendix B Technical Specifications in their entirety with the enclosed Technical Specifications.

ENVIRONMENTAL TECHNICAL SPECIFICATIONS

APPENDIX B

TO

FACILITY OPERATING LICENSE NO. DPR-63

FOR

NINE MILE POINT NUCLEAR STATION

UNIT 1

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

MARCH 1, 1979

COMPLETE REVISION

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1.0 DEFINITIONS

1.1 Reactor Operating Conditions

a. Power Operating Condition

(1) Reactor mode switch is in startup or run position.
(2) Reactor is critical or criticality is possible due to control rod withdrawl.

b. Normal Station Operation

Normal operation is with the reactor critical and above one percent rated power and in conformance with the requirements of the Technical Specifications.

c. Hot Shutdown Condition

(1) The reactor mode switch is in the shutdown position.
(2) No core alterations leading to an addition of reactivity are being performed.
(3) Reactor coolant temperature is greater than 212 F.

1.2 Major Refueling Outage

For the purpose of designating frequency of testing and surveillance, a major refueling outage shall mean a regularly scheduled refueling outage; however, where such outages occur within 8 months of the end of the previous refueling outage, the test or surveillance need not be performed until the next regularly scheduled outage.

1.3 Operating Cycle

An operating cycle is that portion of Station operation between reactor startups following each major refueling outage as defined above.

1.4 Equipment Status

a. Operable

A system or component shall be considered operable when it is capable of performing its intended function in its required manner.

b. Operating

Operating means that a system or component is performing its required functions in its required manner.

1.5 Instrument Test Procedures

a. Instrument Channel Calibration

Instrument channel calibration means adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel including equipment actuation, alarm, or trip.

b. Instrument Channel Test

Instrument channel test means injection of a simulated signal into the channel to verify its proper response including, where applicable, alarm and/or trip initiating action.

c. Sensor Check

A sensor check is qualitative determination of acceptable operability by observation of sensor behavior during operation. This determination shall include, where possible, comparison of the sensor with other independent sensors measuring the same variable.

1.6 Circulating Water Heat Treatments

a. Tempering

During tempering, a gate in the screenwell is partially opened to recirculate part of the heated circulating water in the screenwell discharge bay to the intake bay. The procedure is used to maintain condenser inlet temperature at times of low lake temperature.

b. Normal Flow

In the normal flow configuration, circulating water is drawn from the lake into the screenwell intake bay through the intake tunnel. Heated water in the discharge bay is discharged to the discharge tunnel.

c. Reverse Flow

In the reverse flow configuration, circulating water is drawn from the lake into the screenwell intake bay through the discharge tunnel. Heated water in the discharge bay is discharged to the intake tunnel. This procedure is used to correct intake structure icing.

1.6.c (Cont'd)

The term "reverse flow operations" designates the period from the time reverse flow is initiated until two hours after normal flow is restored.

The reverse flow configuration includes a tempering arrangement similar to that described in 1.6.a but using a different gate.

1.7 Prior to Dilution

Liquid effluent concentrations prior to dilution are concentrations in the circulating water discharge tunnel, prior to dilution in Lake Ontario.

1.8 Ambient Lake Temperature

The temperature of incoming lake water, as measured in the screenhouse, before tempering.

2.0 LIMITING CONDITIONS FOR OPERATION

2.1 Thermal

2.1.1 Maximum ΔT

OBJECTIVE

The purpose of this Specification is to limit the thermal stress to the aquatic ecosystem by limiting the maximum ΔT across the condenser.

SPECIFICATION

Maximum ΔT across the main condenser during normal Station operation shall be limited to 32 F. If during normal Station operation the main condenser ΔT exceeds 32 F for eight hours in any given 24 hour period the cause of this deviation shall be investigated and positive action shall be taken to reduce the ΔT to within the Specification. Positive action also shall be taken to prevent any such deviations in the future. In addition, a report shall be submitted in accordance with Section 5.6.2.

MONITORING REQUIREMENT

The main condenser ΔT shall be monitored and recorded once per hour.

The temperatures at the main condenser inlet and in the screenwell discharge bay (upstream from the discharge tunnel) shall be measured by two Resistance Temperature Detectors (RTD) in each location. The RTD's shall be accurate to ±2.0 F. The difference of these temperatures, ΔT_1, shall be computed.

BASES

Nine Mile Point Unit 1 holds a permit from the New York State Department of Health to discharge cooling water to Lake Ontario when operating with a maximum ΔT across the main condenser of 32 F[1]. Lake studies and operating experience indicate that mortality of plankton, eggs, and larvae entrained in the condenser will not have a significant effect on the populations of the species involved.[2,3]

Station service water flow is 40 cubic feet per second (cfs), with a maximum temperature rise of 20 F. When the main condenser flow of 557 cfs with a maximum temperature rise of 32 F is mixed with the service water flow, the maximum temperature rise of the combined flow is 31.2 F.

2.1.2 Maximum Discharge Temperature

NOT APPLICABLE

2.1.3 Maximum BTU Per Hour

NOT APPLICABLE

2.1.4 Rate of Change of Discharge Temperature

OBJECTIVE

The purpose of this Specification is to limit the temperature changes to which aquatic organisms in the discharge plume may be subjected during Station startups, shutdowns, and power level changes.

SPECIFICATION

The discharge temperature shall not be changed by more than 18 F in any hour. This Specification shall not apply to temperature changes occurring during forced shutdowns, or to the temperature increase at the intake resulting from flow reversal.

MONITORING REQUIREMENT

Discharge temperature shall be monitored and recorded hourly as provided in the Monitoring Requirement of Section 2.1.1.

BASES

The cooling water discharge is diluted by a factor of at least 2.5 as it rises from the submerged discharge ports, outside of a conical volume of 100 foot maximum radius extending from the discharge structure to the lake surface. Therefore, outside of this volume, an 18 F per hour discharge temperature change would result in a maximum lake water temperature change of 7 F per hour. Moreover, while the specified rate of change may be reached in the first hour of a shutdown or power change, the rate will be less than 10 F per hour in subsequent hours. This would produce a 4 F per hour change in the lake, as described above.

Fish in Lake Ontario experience natural lake water temperature changes of 6 to 9 F per hour with a frequency greater than the expected frequency of changes induced by the Station. In 1974, for example, temperature drops of 9.5, 8.5, and 6.5 F per hour were recorded in the Station logs on July 29, September 3, and August 15, respectively.

2.1.5 Heat Treatment of Circulating Water System

OBJECTIVE

To limit the thermal stress to the aquatic ecosystem by limiting the circulating water temperature increase over lake ambient temperature resulting from tempering and reverse flow procedures.

SPECIFICATION

When the lake inlet temperature is between 32 F and 50 F, the discharge temperature shall not exceed the lake inlet temperature by more than 50 F, except during reverse flow operations. At no time during tempering, except during revense flow operations shall the discharge temperature exceed 82 F.

Following a flow reversal, the discharge temperature shall not exceed the lake inlet temperature by more than the following values:

70 F for the first hour following flow reversal
60 F for the second hour following flow reversal
50 F two hours following flow reversal and thereafter

MONITORING REQUIREMENT

The discharge temperature shall be monitored and recorded hourly as provided in the Monitoring Requirement of Section 2.1.1.

BASES

When lake temperature is less than 50 F, part of the discharge flow in the screenwell may be recirculated to the intake to maintain condenser inlet temperature between 40 F and 50 F. This procedure is known as "tempering." The maximum circulating water temperature rise due to tempering is 18 F, and occurs when the lake temperature is 32 F. When this is added to the 32 F ΔT, the maximum rise is 50 F over lake inlet temperature. Maintaining the condenser inlet temperature at no more than 50 F during tempering ensures that the discharge temperature will not exceed 82 F during tempering.

The amount of tempering is controlled by moving a gate in the screenwell, and is normally adjusted to maintain the optimal condenser inlet temperature of approximately 45 F. The gate can be adjusted to achieve this temperature within an error of approximately 5 F.

2.1.5 (Cont'd)

Flow reversal is required to correct intake icing at low intake temperatures. Flow reversal is also required to return to normal flow operations from reverse flow operations.

Prior to flow reversal Station power is reduced to approximately 75 percent power or less. Reversal is achieved by moving gates in the screenwell. Immediately after flow reversal, heated water in the discharge tunnel at essentially the condenser outlet temperature is drawn through the condenser. The reverse flow configuration also requires that some tempering be continued. Accordingly, the 70 F maximum difference between discharge temperature and lake inlet temperature was determined taking into account the elevated intake water temperature, a temperature rise due to tempering, and the condenser rise.

All of the heated water contained in the discharge tunnel at the time of flow reversal passes through the condenser within approximately 6 minutes. Operating experience has shown that dilution of the heated lake water near the discharge structure, sufficient to achieve a discharge temperature no more than 60 F higher than the lake inlet temperature, occurs within one hour after flow reversal. Within two hours the lake temperature near the discharge structure is essentially the lake inlet temperature. Therefore, the discharge temperature can be maintained within 50 F above the lake inlet temperature subsequent to this two hour interval.

Operating experience has shown that reverse flow is required less than five times each winter.

2.2 Hydraulic

NOT APPLICABLE

2.3 Chemical

2.3.1 Biocides

OBJECTIVE

The purpose of this Specification is to protect the quality and purity of Lake Ontario waters.

SPECIFICATION

No biocides shall be used in the main condenser cooling water or service water systems.

MONITORING REQUIREMENT

No monitoring is required because no biocides shall be used in the main condenser cooling water or service water systems.

BASES

The Specification will ensure that the lake water quality is not jeopardized by the introduction of biocides from the main condenser cooling water or service water systems.

2.3.2 Corrosion Inhibitors

OBJECTIVE

The purpose of this Specification is to protect the quality and purity of Lake Ontario waters.

SPECIFICATION

The Station shall not normally discharge corrosion inhibitors to the lake. If inplant system leakage occurs and chromate corrosion inhibitor must be discharged to the lake, the discharge shall not exceed the limits shown in Table 2.3-1, and shall be made to the circulating water system.

MONITORING REQUIREMENTS

Waste tanks shall be analyzed for chromium as shown in Table 2.3-2.

BASES

Adherence to the Specification will ensure that the lake water quality is not jeopardized by the introduction of corrosion inhibitors from the Station.

Chromate corrosion inhibitor is used in the diesel generator closed loop cooling system. No discharges from this system are made to the lake. If leakage from this system should occur, the chromate would be collected in floor drains and routed to the waste tanks. It would ultimately be discharged in the cooling water under controlled conditions. Prompt action will be taken to correct any such leakage.

TABLE 2.3-1

LIMITING VALUES FOR CHEMICALS IN LIQUID EFFLUENTS

Parameter	Maximum Increase Over Lake Ambient Concentration (mg/l Prior to Dilution)	Maximum Annual Discharge From Plant Sources (lbs/year)
Total Suspended Solids	15.0	
Total Dissolved Solids	50.0	
Calcium (as Ca)	5.0	4,900
Sodium (as Na)	1.5	27,000
Sulfate (as SO_4^{-2})	3.0	49,000
Total Phosphorous (as P)	1.0	10
Chromium (as Cr)(1)	0.05	(1)

NOTES

1. Annual discharge of chromium shall normally be zero. Small amounts of chromium may be discharged if chromate leakage from the diesel generator closed loop cooling system should occur. Such leakage would be handled as discussed in the Bases of Section 2.3.2. Small amounts of chromium occur in Station waste water as corrosion products.

TABLE 2.3-2

CHEMICAL LIQUID WASTE ANALYSIS

Sample	Sample Frequency	Type of Analysis (3)	Sensitivity of Analysis
Cooling water Discharge	Monthly (1) Composite	pH	± 0.5 pH units
		Total Dissolved Solids	± 10.0 mg/liter
		Total Suspended Solids	± 5.0 mg/liter
Cooling water Intake	Monthly (1) Composite	pH	± 0.5 pH units
		Total Dissolved Solids	± 10.0 mg/liter
		Total Suspended Solids	± 5.0 mg/liter
Waste Tanks	Each Batch	pH	± 0.5 pH units
		Conductivity	± 1.0 μmho/cm
	Monthly Proportional Composite (2)	pH	± 0.5 pH units
		Total Dissolved Solids	± 10.0 mg/liter
		Total Suspended Solids	± 5.0 mg/liter
		Ca^{+}	± 1.0 mg/liter
		Na^{+}	± 1.0 mg/liter
		SO_4^{-2}	± 1.0 mg/liter
		PO_4^{-3}	± 1.0 mg/liter
		Cr	± 0.5 mg/liter

(1) The cooling water intake and discharge are sampled continuously, for each week. The monthly composite includes an aliquot from each week's collection. If the continuous sampler is unavailable, grab samples shall be taken at a maximum interval of 96 hours.

(2) The monthly proportional composite shall be composited from a representative aliquot of each waste tank batch discharge.

(3) Standard techniques such as ASTM or equivalent methods shall be used for analyses.

(4) This sensitivity applies only to measurements below 10 μmho/cm.

2.3.3 Suspended and Dissolved Solids

OBJECTIVE

The purpose of this Specification is to limit the suspended solids, total dissolved solids and individual solute concentrations in the cooling water discharge to values consistent with the classifications and standards governing the quality and purity of Lake Ontario waters.

SPECIFICATION

For suspended solids, total dissolved solids, and individual solutes in the cooling water discharge, the increase in concentration over lake inlet shall not exceed the limits shown in Table 2.2-1. Total annual discharge of individual solutes shall not exceed the limits shown in Table 2.3-1.

If these limits are exceeded, corrective action shall be taken to decrease concentrations to within the Specification.and a report shall be submitted in accordance with Section 5.6.2 a(1).

MONITORING REQUIREMENT

Liquid wastes discharged to Lake Ontario shall be monitored and analyzed as shown in Table 2.3-2.

BASES

Adherence to the Specification will ensure that the water quality of Lake Ontario is not jeopardized by suspended and dissolved solids in Station discharges.

The data obtained from waste tank monthly proportional composite samples will be used with known flow rates to determine the increase in cooling water chemical concentrations over lake inlet concentrations resulting from waste tank releases. Analyses of the cooling water intake and discharge will provide a check against gross errors in the proportional composite sample analysis.

Records of waste tank analyses will provide sufficient information to ensure that the annual discharge limits will not be exceeded.

2.3.4 pH and Conductivity

OBJECTIVE

The purpose of this Specification is to limit the liquid effluent pH to a range of values consistent with the classifications and standards governing the quality and purity of Lake Ontario waters.

SPECIFICATION

The pH of treated water in the waste tanks prior to being discharged into the discharge tunnel shall be between 6.0 and 9.0. When the conductivity of a waste tank is below 10 μmho/cm, the pH shall be between 4.0 and 9.0. If water with a pH value outside these limits is discharged, corrective action shall be taken and a report shall be filed in accordance with Section 5.6.2a (1).

MONITORING REQUIREMENT

Sampling and analysis for pH and conductivity shall be performed in accordance with Table 2.3-2.

BASES

Lake Ontario is designated Class A-Special (International Boundary Water). This classification specifies a lake water pH range of 6.7 to 8.5. However, pH observations performed during site monitoring programs have fallen predominantly in the range from 8.0 to 9.0, and have frequently exceeded 8.5.

Waste tank releases are diluted by a factor of more than 2,000 in the circulating water prior to discharge. After such dilution the discharge is at essentially the same pH as the incoming lake water. Therefore, waste tank releases will have insignificant impact on the frequency with which Class A - Special limits are exceeded when maintained within the Specification.

With increased usage of the waste concentrator, pure water inventory increases. To allow for discharge of water with only CO_2 as contaminant, a lower pH is allowed for low conductivity tanks.

2.4 Radioactive Discharges

OBJECTIVE

To define the limits and conditions for the controlled release of radioactive materials in liquid and gaseous effluents to the environs to ensure that these releases are as low as reasonably achievable. The release rate for all effluent discharges shall be within the limits specified in 10 CFR Part 20.

To ensure that the releases of radioactive material above background to unrestricted areas will be as low as reasonably achievable as defined in Appendix I to 10 CFR Part 50, the following design objectives apply:

For liquid wastes:

a. The annual dose above background to the total body or any organ of an individual from all reactors at a site should not exceed 5 mrem in an unrestricted area.

b. The annual total quantity of radioactive materials in liquid waste, excluding tritium and dissolved gases, discharged from each reactor should not exceed 5 Ci.

For gaseous wastes:

c. The annual total quantity of noble gases above background discharged from the site should result in an air dose due to gamma radiation of less than 10 mrad, and an air dose due to beta radiation of less than 20 mrad, at any location near ground level which could be occupied by individuals at or beyond the boundary of the site.

d. The annual total quantity of all radioiodines and radioactive material in particulate forms above background from all reactors at a site should not result in an annual dose to any organ of an individual in an unrestricted area from all pathways of exposure in excess of 15 mrem.

e. The annual total quantity of iodine-131 discharged from each reactor at a site should not exceed 1 Ci.

2.4.1 SPECIFICATIONS FOR LIQUID WASTE EFFLUENTS

a. The concentration of radioactive materials released in liquid wastes from all reactors at the site shall not exceed the values specified in 10 CFR Part 20, Appendix B, Table II, Column 2, for unrestricted areas.

b. The cumulative release of radioactive materials in liquid waste effluents, excluding tritium and dissolved gases, shall not exceed 10 Ci/reactor/calendar quarter.

c. The cumulative release of radioactive materials in liquid waste effluents, excluding tritium and dissolved gases, shall not exceed 20 Ci/reactor in any 12 consecutive months.

d. The radiation monitor on the discharge line from the waste disposal tanks to the discharge tunnel shall continuously monitor released activity and shall be set to alarm prior to exceeding Specification 2.4.1.a.

e. If Specification 2.4.1.d cannot be met, continued release of liquid effluents shall be permitted only during the succeeding 72 hour period. Two independent samples of each tank shall be analyzed and two Station personnel shall independently check valving prior to discharge.

f. The equipment installed in the liquid radioactive waste system shall be maintained and shall be operated to process radioactive liquid wastes prior to their discharge when the projected cumulative release could exceed 1.25 Ci/reactor/calendar quarter, excluding tritium and dissolved gases.

g. The maximum radioactivity to be contained in any liquid radwaste tank that can be discharged directly to the environs shall not exceed 10 Ci, excluding tritium and dissolved gases.

h. If the cumulative release of radioactive materials in liquid effluents, excluding tritium and dissolved gases, exceeds 2.5 Ci/reactor/calendar quarter, the licensee shall make an investigation to identify the causes of such release rates, define and initiate a program of action to reduce such releases to the design objective levels listed in Section 2.4, and report these actions to the Commission within 30 days from the end of the quarter during which the release occurred.

2.4.2 SPECIFICATIONS FOR LIQUID WASTE SAMPLING AND MONITORING

a. Plant records shall be maintained of the radioactive concentration and volume before dilution of liquid waste intended for discharge, and the average dilution flow and length of time over which each discharge occurred. Sample analysis results and other reports shall be submitted in accordance with Section 5.6.1 of these specifications. Estimates of the sampling and analytical error associated with each reported value shall be included.

b. Prior to release of each batch of liquid waste, a sample shall be taken from that batch and analyzed for the concentration of each significant gamma energy peak in accordance with Table 2.4-1 to demonstrate compliance with Specification 2.4.1 using the flow rate of the stream into which the waste is discharged during the period of discharge.

c. Sampling and analysis of liquid radioactive waste shall be performed in accordance with Table 2.4-1. Prior to taking samples, at least two tank volumes of entrained fluid shall be recirculated through the mixing nozzles.

d. The radioactivity in liquid wastes shall be continuously monitored during release. Whenever the monitor is inoperable for a period not to exceed 72 hours, two independent samples of each tank to be discharged shall be analyzed and two plant personnel shall independently check valving prior to the discharge. If the monitor is inoperable for a period exceeding 72 hours, no release from a liquid waste tank shall be made and any release in progress shall be terminated.

e. The flow rate of liquid radioactive waste shall be continuously measured and recorded during release.

f. The liquid effluent radiation monitor shall be calibrated at least quarterly by means of a radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall also have an instrument channel test monthly and a sensor check prior to making a release.

g. The location of process and effluent monitors and samples shall be as stated in Table 2.4-2.

REPORTING REQUIREMENTS

Exceeding limiting conditions for operation contained in this section shall be reported on the prompt schedule.

TABLE 2.4-1

RADIOACTIVE LIQUID SAMPLING AND ANALYSIS

	Liquid Source	Sampling Frequency	Type of Activity Analysis	Detectable Concentrations (μCi/ml)(3)
A.	Waste Tank Releases	Each Batch	1. I-131	1. 10^{-6}
			2. Principal Gamma Emitters (Ba-La-140)	2. 5×10^{-7} (2)
		One Batch/Month	1. Dissolved Gases	1. 10^{-5}
		Monthly Composite(1)	1. H-3	1. 10^{-5}
			2. Gross α	2. 10^{-7}
			3. Sr 89,90	3. 5×10^{-8}
B.	Primary Coolant	Weekly(4)	1. I-131, I-133	1. 10^{-6}

NOTES FOR TABLE 2.4-1

1. A composite sample shall be formed by mixing together individual samples, each of which is proportional in volume to the volume of liquid discharge during the period represented by the sample.

2. For certain mixtures of gamma emitters, it may not be possible to measure radionuclides in concentrations near their sensitivity limits when other nuclides are present in the sample in much greater concentrations. Under these circumstances, it will be more appropriate to calculate the concentrations of such radionuclides using measured ratios with those radionuclides which are routinely identified and measured.

3. The detectability limits for activity analysis are based on technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable and when nuclides are measured below the stated limits, they should also be reported.

4. The power level and cleanup or purification flow rate at the sample time shall also be reported.

TABLE 2.4-2

Nine Mile Point Unit 1 Liquid Waste System

Location of Process and Effluent Monitors and Samplers Required By Technical Specifications

Process Stream or Release Point	Alarm	Auto Control to Isolation Valve	Continuous Monitor	Grab Sample Station	Measurements					
					Gross Activity	I	Dissolved Gases	Alpha	^{3}H	Isotopic Analysis
High purity waste sample (test) tank*	(a)			X	X	X	X	X	X	X
Floor drain waste sample (test) tank	(a)			X	X	X	X	X	X	X
Chemical waste sample (test) tank	(a)			X	X	X	X	X	X	X
Detergent waste collector tank**	(a)			X	X	X	X	X	X	X
Primary coolant system	(b)			X	X	X				
Liquid radwaste discharge pipe	(c)		X	X	X					
Service water discharge pipe	(c)		X	X	X					
Emergency cooling system vent	(c)	X	X		X					
Nuclear closed cooling system	(c)		X	X	X					

NOTES TO TABLE 2.4-2

(a) High liquid level alarms are provided for these tanks.

(b) A conductivity alarm is provided for this system.

(c) Radiation alarms are provided for these locations.

*. In some BWR's the High Purity Waste Storage may not have a waste sample (test) tank. The processed liquid will be routed directly to the condensate storage tank or to the floor drain waste sample (test) tank.

** In most BWR's the contents of the detergent waste collector tank are sampled, analyzed and then filtered prior to release through the liquid radwaste discharge pipe. The detergent waste system must be designed with either a split tank or two separate collection or sample (test) tanks to permit isolation of the tanks for mixing, sampling and analysis prior to release.

BASES FOR LIQUID WASTE SPECIFICATIONS

The release of radioactive materials in liquid waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20 and should be as low as practicable in accordance with the requirements of 10 CFR Part 50.36a. These Specifications provide reasonable assurance that the resulting annual dose to the total body or any organ of an individual in an unrestricted area will not exceed 5 mrem. At the same time, these Specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20. It is expected that by using this operational flexibility under unusual operating conditions, and exerting every effort to keep levels of radioactive material in liquid wastes as low as reasonably achievable, the annual releases will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20.

The design objectives have been developed based on operating experience taking into account a combination of variables including defective fuel, primary system leakage, and the performance of the various waste treatment systems, and are consistent with Appendix I to 10 CFR Part 50.

Specification 2.4.1.a requires the licensee to limit the concentration of radioactive materials in liquid waste effluents released from the site to levels specified in 10 CFR Part 20, Appendix B, Table II, Column 2, for unrestricted areas. This Specification provides assurance that no member of the general public will be exposed to liquid containing radioactive materials in excess of limits considered permissible under the Commission's Rules and Regulations.

Specifications 2.4.1.b and 2.4.1.c establish the upper limits for the release of radioactive materials in liquid effluents. The intent of these Specifications is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the levels normally achievable when the plant and the liquid waste treatment systems are functioning as designed. Releases of up to these limits will result in concentrations of radioactive material in liquid waste effluents at small percentages of the limits specified in 10 CFR Part 20.

Specifications 2.4.1.d and 2.4.1.e require that suitable equipment to control and monitor the releases of radioactive materials in liquid wastes is operating during any period these releases are taking place consistent with the requirements of 10 CFR Part 50, Appendix A, Design Criterion 64.

Specification 2.4.1.f requires that the licensee maintain and operate the equipment installed in the liquid waste systems to reduce the release of radioactive materials in liquid effluents to as low as reasonably achievable consistent with the requirements of 10 CFR Part 50.36. Normal use and maintenance of installed equipment in the liquid waste system provides reasonable assurance that the quantity released will not exceed the design objective. In order to keep releases of radioactive materials as low as reasonably achievable, the Specification requires, as a minimum, operation of equipment whenever it appears that the projected cumulative discharge rate will exceed one-fourth of this design objective annual quantity during any calendar quarter.

Specification 2.4.1.g limits the amount of radioactive material that could be inadvertently released to the environment to an amount that will not exceed the Technical Specification limit.

In addition to limiting conditions for operation listed under Specification 2.4.1.b and 2.4.1.c, the reporting requirements of Specification 2.4.1.h delineate that the licensee shall identify the cause whenever the cumulative release of radioactive materials in liquid waste effluents exceeds one half the design objective annual quantity during any calendar quarter and describe the proposed program of action to reduce such releases to design objective levels on a timely basis. This report must be filed within 30 days following the calendar quarter in which the release occurred.

The sampling and monitoring requirements given under Specification 2.4.2 provide assurance that radioactive materials in liquid wastes are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive liquid wastes released to the environment. Reports on the quantities of radioactive materials released in liquid waste effluents are furnished to the Commission according to Section 5.6.1 of these Technical Specifications in conformance with Regulatory Guide 1.21. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

2.4.3 SPECIFICATIONS FOR GASEOUS WASTE EFFLUENTS

a. (1) The release rate limit of noble gases from the site shall be:

$$\sum_i [Q'_{is}(1.6\,\bar{E}_{i\gamma} + 0.3\,\bar{E}_{i\beta}) + Q_{is}(2.7\,\bar{E}_{i\gamma} + 0.5\,\bar{E}_{i\beta}) + Q_{iv}(11.0\,\bar{E}_{i\gamma} + 24.0\,\bar{E}_{i\beta})] \leq 1$$

where Q'_s = release rate from Nine Mile Point Unit 1 main stack in Ci/sec (as elevated release)

Q_s = release rate from the FitzPatrick main stack in Ci/sec (as elevated release)

Q_v = release rate from the FitzPatrick vents in Ci/sec (ground release)

i = the individual nuclide

$\bar{E}_\gamma$ = the average gamma energy per disintegration

$\bar{E}_\beta$ = the average beta energy per disintegration

Refer to Table 2.4-3 for $\bar{E}_\gamma$ and $\bar{E}_\beta$ values to be used.

(2) The release rate limit of all radionuclides and radioactive materials 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:

$$1.2 \times 10^4\,(Q'_s + 0.08\,Q_s + 5.5\,Q_v) \leq 1$$

where Q'_s = release rate from Nine Mile Point Unit 1 main stack in Ci/sec (as elevated release)

Q_s = release rate from the FitzPatrick main stack in Ci/sec (as elevated release)

Q_v = release rate from the FitzPatrick vents in Ci/sec (ground release)

TABLE 2.4-3

AVERAGE ENERGY PER DISINTEGRATION

Isotope	$\bar{E}_\gamma$, mev/dis	(Ref)	$\bar{E}_\beta$, mev/dis[3]	(Ref)
Kr-83m	0.00248	(1)	0.0371	(1)
Kr-85	0.0022	(1)	0.250	(1)
Kr-85m	0.159	(1)	0.253	(1)
Kr-87	0.793	(1)	1.32	(1)
Kr-88	1.95	(1)	0.377	(1)
Kr-89	2.22	(2)	1.37	(2)
Kr-90	2.10	(2)	1.01	(2)
Xe-131m	0.0201	(1)	0.143	(1)
Xe-133	0.0454	(1)	0.135	(1)
Xe-133m	0.042	(1)	0.19	(1)
Xe-135	0.247	(1)	0.317	(1)
Xe-135m	0.432	(1)	0.095	(1)
Xe-137	0.194	(1)	1.64	(1)
Xe-138	1.18	(1)	0.611	(1)

(1) ORNL-4923, Radioactive Atoms - Supplement I, M. S. Martin, November 1973.

(2) NEDO-12037, "Summary of Gamma and Beta Emitters and Intensity Data"; M. E. Meek, R. S. Gilbert, January 1970. (The average β energy was computed from the maximum energy using the ICRP II equation, not the 1/3 value assumption used in this reference).

(3) The average β energy includes conversion electrons.

2.4.3 (Cont'd)

b. (1) The average release rate of noble gases from the site during any calendar quarter shall be:

$$\sum_i \bar{E}_{i\beta} [0.9 Q'_{is} + 1.7 Q_{is} + 74.0 Q_{iv}] \leq 1$$

AND

$$\sum_i \bar{E}_{i\gamma} [10.0 Q'_{is} + 17.0 Q_{is} + 71.0 Q_{iv}] \leq 1$$

(2) The average release rate of noble gases from the site during any 12 consecutive months shall be:

$$\sum_i \bar{E}_{i\beta} [1.8 Q'_{is} + 3.4 Q_{is} + 149.0 Q_{iv}] \leq 1$$

AND

$$\sum_i \bar{E}_{i\gamma} [21.0 Q'_{is} + 35.0 Q_{is} + 142.0 Q_{iv}] \leq 1$$

(3) The average release rate from the site of all iodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter shall be:

$$1.5 \times 10^5 \ (Q'_s + 0.08 Q_s + 5.5 Q_v) \leq 1$$

(4) The average release rate from the site of all iodines and radioactive materials in particulate form with half-lives greater than eight days during any period of 12 consecutive months shall be:

$$3.0 \times 10^5 \ (Q'_s + 0.08 Q_s + 5.5 Q_v) \leq 1$$

(5) The amount of iodine-131 released during any calendar quarter shall not exceed 2 Ci/reactor.

(6) The amount of iodine-131 released during any period of 12 consecutive months shall not exceed 4 Ci/reactor.

2.4.3 (Cont'd)

c. Should the conditions of 2.4.3.c(1), (2) or (3) listed below exist, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Section 2.4 and report these actions to the Commission within 30 days from the end of the quarter during which the releases occurred.

(1) If the average release rate of noble gases from the site during any calendar quarter is:

$$\sum_i \bar{E}_{i\beta} [3.5\ Q'_{is} + 6.8\ Q_{is} + 282.0\ Q_{iv}] > 1$$

OR

$$\sum_i \bar{E}_{i\gamma} [41.0\ Q'_{is} + 68.0\ Q_{is} + 310.0\ Q_{iv}] > 1.$$

(2) If the average release rate from the site of all iodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter is:

$$5.8 \times 10^5 (Q'_s + 0.08\ Q_s + 5.5\ Q_v) > 1$$

(3) If the amount of iodine-131 released during any calendar quarter is greater than 0.5 Ci/reactor.

2.4.3. (Cont'd.)

d. An air ejector off-gas monitor shall be operating and set to alarm and to initiate the automatic closure of the waste gas discharge valve prior to exceeding the limits specified in 2.4.3.a above. The operability of each automatic isolation valve in the gaseous radwaste discharge line shall be demonstrated quarterly.

e. If no air ejector off-gas monitor is operating, shutdown shall be initiated so that the reactor will be in the hot shutdown condition within 10 hours.

f. If the release rate from the site of noble gases from the main condenser vacuum system is:

$$\sum_i \bar{E}_{i\beta} \left[1.8\, Q'_{is} + 3.4\, Q_{is} + 149.0\, Q_{iv}\right] > 1$$

OR

$$\sum_i \bar{E}_{i\gamma} \left[21.0\, Q'_{is} + 35.0\, Q_{is} + 142.0\, Q_{iv}\right] > 1$$

for a period of greater than 48 hours, the licensee shall notify the Commission in writing within 10 days, identifying the causes of activity. The report should include the flow rate of the off-gas from the main condenser vacuum system, and the activity measured downstream of the main condenser vacuum system prior to holdup, and at a point upstream of the point of release.

g. The drywell shall be purged through the standby Gas Treatment System until Specification 2.4.3 a(1) and 2.4.3 a(2) can be met using normal containment purge systems.

h. A hydrogen monitor in the off-gas line downstream of the recombiners shall be operable during power operation. If the hydrogen concentration reaches an alarm set point of four percent by volume, recombiner section of the Off-Gas System shall be isolated. Whenever the hydrogen monitor is inoperable during power operation, grab samples shall be taken and analyzed for hydrogen concentration each shift. Calibration of the monitoring system shall be performed weekly.

2.4.4 SPECIFICATIONS FOR GASEOUS WASTE SAMPLING AND MONITORING

a. Plant records shall be maintained and reports of the sampling and analysis results shall be submitted in accordance with Section 5.6.1 of these Specifications. Estimates of the sampling and analytical error associated with each reported value should be included.

b. The flow rate of Gaseous releases to the environment shall be measured and recorded. Gross radioactivity shall be continuously monitored except as noted in Specification 2.4.4.c below. Whenever these monitors are inoperable, grab samples shall be taken and analyzed daily for gross radioactivity. If these monitors are inoperable for more than seven days, these releases shall be terminated.

c. An isotopic analysis shall be made of a representative sample of gaseous activity downstream of the steam jet air ejectors and at the stack sample point:

   (1) at least monthly

   (2) following each refueling outage within one week of attaining steady state power

   (3) if the offgas monitors indicate an increase of greater than 50% in the steady state fission gas release after factoring out increases due to power changes.

d. All waste gas effluent monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall have an instrument channel test at least weekly and a sensor check at least daily.

e. Sampling and analysis of radioactive material in gaseous waste, particulate form, and radioiodine shall be performed in accordance with Table 2.4-4.

TABLE 2.4-4

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

	Gaseous Source	Sampling Frequency	Type of Activity Analysis	Detectable Concentrations (μCi/ml)(1) (3)
A.	Drywell Atmosphere	Each Purge	Principal Gamma Emitters	10^{-4}
			H-3	10^{-6}
B.	Environmental Release Points	Monthly (Gas Samples) (2)	Principal Gamma Emitters	10^{-4}
			H-3	10^{-6}
		Weekly (Charcoal Sample) (4)	I-131	10^{-12}
		Weekly (Particulates)(4)	Principal Gamma Emitters (at least for Ba-La-140,I-131)	10^{-11}
		Monthly (Charcoal Sample)	I-133	10^{-10}
		Monthly Composite (5) (Particulates)	Sr-89, Sr-90	10^{-11}
		Monthly	Gross α	10^{-11}

NOTES FOR TABLE 2.4-4

1. The detectability limits for activity analysis are based on technical feasibility and on the potential significance in the environment of the quantities released. For some nuclides, lower detection limits may be readily achievable and when nuclides are measured below the stated limits, they should also be reported.

2. Gamma analyses shall also be performed following each refueling, startup, or similar operational occurrence which could alter the mixture of radionuclides.

3. For certain mixtures of gamma emitters, it may not be possible to measure radionuclides at levels near their sensitivity limits when other nuclides are present in the sample at much higher levels. Under these circumstances it will be more appropriate to calculate the levels of such radionuclides using observed ratios with those radionuclides which are measurable.

4. When the average daily gross radioactivity release rate exceeds that given in 2.4.3.c(1) or when the release rate is in excess of 1000μCi/sec and steady state gross release rates increase by 50% over previous corresponding power level steady state release rate, the iodine and particulate collection device shall be removed and analyzed to determine the change in iodine-131 and particulate release rate. The analysis shall be done daily following such change until it is shown that a pattern exists which can be used to predict the release rate; after which it may revert to weekly sampling frequency.

5. To be representative of the average quantities and concentrations of radioactive materials in particulate form released in gaseous effluents, samples should be collected in proportion to the rate of flow of the effluent stream.

BASES FOR GASEOUS WASTE SPECIFICATIONS

The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20, and should be as low as practicable in accordance with the requirements of 10 CFR Part 50.36. These Specifications provide reasonable assurance that the resulting annual air dose from the site due to gamma radiation will not exceed 10 mrad, and an annual air dose from the site due to beta radiation will not exceed 20 mrad from noble gases, and that the annual dose to any organ of an individual from iodines and particulates will not exceed 15 mrem per site. At the same time these Specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided with a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20. It is expected that using this operational flexibility under unusual operating conditions, and by exerting every effort to keep levels of radioactive material in gaseous waste effluents as low as reasonably achievable, the annual releases will not exceed a small fraction of the concentration limits specified in 10 CFR Part 20. These efforts should include consideration of meteorological conditions during releases.

There is a reduction factor of 243 by which the maximum permissible concentration of radioactive iodine in air should be reduced to allow for the grass-cow-milk pathway. This factor has been derived for radioactive iodine, taking into account the milk pathway. It has been applied to radionuclides of iodine and to all radionuclides in particulate form with a half-life greater than eight days. The factor is not appropriate for iodine where milk is not a pathway of exposure, or for the other radionuclides.

The design objectives have been developed based on operating experience taking into account a combination of system variables including defective fuel, primary system leakage, and the performance of the various waste treatment systems.

The Specification 2.4.3.a(1) dose calculations have been made for the critical sector. These calculations consider site meteorology, buoyancy characteristics, and radionuclide content of the effluent from Nine Mile Point Unit 1 and from the FitzPatrick Plant. Meteorological calculations for offsite locations were performed, and the most critical one was selected to set the release rate. The controlling distance is 1900 meters to the east of Nine Mile Point Unit 1.

The gamma dose contribution was determined using the equation 7.63 in Section 7-5.2.5 of Meteorology and Atomic Energy - 1968. The releases from vents are considered to be ground level releases which could result in a beta dose from cloud submersion. The beta dose contribution was determined using Equation 7.21, as described in Section 7-4.1 of Meteorology and Atomic Energy - 1968. The beta dose contribution was determined on the basis of an infinite cloud passage with semi-infinite geometry for a ground level release (submersion dose). The beta and gamma components of the gross radioactivity in gaseous effluents were combined to determine the allowable continuous release rate. Based on these calculations, a continuous release rate of gross radioactivity from the site in the amount specified in 2.4.3.a(1) will not result in offsite annual doses above background in excess of the limits specified in 10 CFR Part 20.

The average gamma and beta energy per disintegration used in the equation of Specification 2.4.3.a(1) will be based on the average composition of gases determined from the plant stack and ventilation exhausts. The average energy per beta or gamma disintegration for those radioisotopes determined to be present from the isotopic analyses are given in Table 2.4-3. Where isotopes are identified that are not listed in Table 2.4-3, the gamma energies are determined from Table of Isotopes, C. M. Lederer, J. M. Hollander, and I. Perlman, Sixth Edition, 1967 and the beta energy shall be as given in USNRDL-TR-802, II. Spectra of Individual Negatron Emitters (Beta Spectra), O. Hogan, P. E. Zigman and J. L. Macklin.

For Specification 2.4.3.a(2), dose calculations have been made for the critical sectors and critical pathways for all radioiodines and radioactive material in particulate form with half-lives greater than eight days. The calculations consider site meteorology for these releases.

For radioiodines and radioactive materials in particulate form with half-lives greater than eight days, the critical location for ground releases is the east sector at a distance of 990 meters from the FitzPatrick Plant vent where the X/Q is 1.6×10^{-6} sec/m^3 for the dose, due to inhalation. The critical location for elevated releases is the east sector at a distance of 1900 meters from the Nine Mile Point Unit 1 stack where the X/Q is 1.9×10^{-8} sec/m^3 for the dose, due to inhalation. The nearest milk cow is located in the Nine Mile Point Unit 1 SW sector at a distance of 1250 meters where the X/Q is 4×10^{-7} sec/m^3 for ground releases (FitzPatrick vent), and 1.2×10^{-8} sec/m^3 for Nine Mile Point Unit 1 elevated releases. The grass-cow-milk-child thyroid chain is controlling.

The assumptions used for these calculations are: (1) onsite meteorological data for the most critical 22.5 degree sector; (2) credit for building wake; and (3) a reconcentration factor of 243 and a grazing factor of 0.41 were applied for possible ecological chain effects from radioactive iodine and particulate releases where applicable.

Specification 2.4.3.b establishes upper site levels for the releases of noble gases, iodines and particulates with half-lives greater than eight days, and iodine-131 at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. The intent of this Specification is to permit the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in higher releases than the objectives.

In addition to the limiting conditions for operation of Specifications 2.4.3.a and 2.4.3.b, the reporting requirements of 2.4.3.c delineate that the cause be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter, and describe the proposed program of action to reduce such release rates to the design objectives.

Specification 2.4.3.d and 2.4.3.e are in accordance with Design Criterion 64.

Specification 2.4.3.f is to monitor the performance of the core. A sudden increase in the activity levels of gaseous releases may be the result of defective fuel. Since core performance is of utmost importance in the resulting doses from accidents, a report must be filed within 10 days following the specified increase in gaseous radioactive releases.

Specification 2.4.3.g requires that the primary containment atmosphere receive treatment for the removal of gaseous iodine and particulates prior to its release.

Specification 2.4.3.h requires that hydrogen concentration in the system shall be monitored at all times.

BASES FOR GASEOUS WASTE SPECIFICATIONS (Cont'd.)

The sampling and monitoring requirements given under Specification 2.4.4 provide assurance that radioactive materials released in gaseous waste effluents are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in gaseous effluents are furnished to the Commission in conformance with 10 CFR 50.36a(a)(2) on a semi-annual basis. Data is summarized on a quarterly basis in the Semi-annual Radioactive Effluent Release Report and in conformance with Regulatory Guide 1.21. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

2.4.5 SPECIFICATIONS FOR SOLID WASTE HANDLING AND DISPOSAL

a. Measurements shall be made to determine or estimate the total curie quantity and principal radionuclide composition of all radioactive solid waste shipped offsite.

b. Solid wastes in storage and preparatory to shipment shall be monitored and packaged to assure compliance with 10 CFR Part 20, 10 CFR Part 71, and 49 CFR Parts 171-178.

c. Reports of the radioactive solid waste shipments, volumes, principal radionuclides, and total curie quantity, shall be submitted in accordance with Section 5.6.1.

BASES

The requirements for solid radioactive waste handling and disposal given under Specification 2.4.5 provide assurance that solid radioactive materials stored at the plant and shipped offsite are properly controlled, monitored, and packaged in conformance with 10 CFR Part 20, 10 CFR Part 71, and 49 CFR Parts 171-178. These requirements provide the data for the licensee and the Commission to evaluate the handling and storage facilities for solid radwaste, and to evaluate the environmental impact of offsite shipment and storage. Reports on the quantities and amounts of the radionuclides, and volumes of the shipments, shall be furnished to the Commission according to Section 5.6.1 of these Technical Specifications. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

3.0 ENVIRONMENTAL SURVEILLANCE

3.1 Nonradiological Surveillance

Major nonradiological environmental surveys have been conducted beginning in 1972. In 1975, the data obtained from the surveys was used to demonstrate no harm to the water body from Nine Mile Unit 1. The demonstration document was submitted to the Environmental Protection Agency in December 1975 under the provisions of paragraph 316(a) Federal Water Pollutant Control Act Amendments of 1972. Based on the substantial documentation of no harm to the water body Niagara Mohawk has established a program to provide for monitoring of nonradiological environmental parameters in order to ensure early discovery of adverse long range environmental trends.

3.1.1 Meteorological Monitoring

OBJECTIVE

The objective of meteorological monitoring is to adequately measure and document meteorological conditions at the site.

SPECIFICATION

The meteorological monitoring system shall measure parameters as prescribed by Table 3.1-1 to provide data that is representative of atmospheric conditions that exist at all gaseous effluent release points.

REPORTING REQUIREMENTS

Meteorological data shall be compiled for quarterly periods in a format consistent with Table 3.1-2. Summaries of data and observations shall be available to the Nuclear Regulatory Commission upon request. Data shall be reported in conjunction with the Semi-Annual Radioactive Effluent Release Report as specified in Section 5.6.1.b. If the outage time of any of the required meteorological instruments exceeds seven consecutive days, the total outage time and dates of outage, the cause of the outage, and the instrument(s) involved shall be reported within 30 days of the initial time of the outage to the Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation. Modifications to the meteorological monitoring program as described above shall have the written approval of the Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, prior to initiation of the modification.

BASES

The collection of meteorological data at the plant site will provide information which may be used to develop atmospheric diffusion parameters to estimate potential radiation doses to the public resulting from actual routine or accidental releases of radioactive materials to the atmosphere. A meteorological data collection program as described above is necessary to meet the requirements of sub-paragraph 50.36 a (a) (2) of 10 CFR Part 50, Appendix L of 10 CFR Part 50, and 10 CFR Part 51.

TABLE 3.1-1

Meteorological Measurement

PARAMETER	INSTRUMENT ACCURACY	NOMINAL TOWER ELEVATION
Wind Direction	$\pm 5^{\circ}$ (Instantaneous Value)	30', 200'
Wind Speed	$\pm$0.5 mph (2.5-10 mph time average) $\pm$1.0 mph (10-50 mph, time average) +2.5 mph (Starting Speed)	200'
	$\pm$0.5 mph (Time Average) <1.0 MPH (Starting Speed)	30'
Temperature	$\pm$1.0 $^{\circ}$F (Time Average)	27'
Temperature Difference	$\pm$0.2 $^{\circ}$F (Time Average)	(200'-27')

TABLE 3.1-2

METEOROLOGICAL DATA FORMAT[a]

PERIOD OF RECORD:

STABILITY CLASS:

ELEVATION:

Wind Direction	Wind Speed (mph) at 10m Level						
	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N							
NNE							
NE							
ENE							
E							
ESE							
SE							
SSE							
S							
SSW							
SW							
WSW							
W							
WNW							
NW							
NNW							
VARIABLE							

Total
Periods of calm (hours):
Hours of missing data:

[a] In the table, record the total number of hours of each category of wind direction for each calendar quarter. Provide similar tables separately for each atmospheric stability class and elevation.

3.1.2 Biotic

a) Impingement of Organisms

OBJECTIVE

To estimate the number and weight and to determine the species of fish impinged on the traveling screens in the intake screenwell.

SPECIFICATION

The species and numbers of fish removed from the traveling screens during a 24-hour period shall be recorded.

The number of sampling days per month will be designated using the stratified random program as outlined on Table 3.1-3,

All fish collected will be separated by species. A random sample of 40 fish per species will be analyzed for length and weight from collections with more than 40 fish of a species only.

Based upon the mean weight of individuals of each species, an estimate of the number of fish by species will be calculated. In the event of large collections, sub-sampling during the 24-hour collection will be satisfactory and estimates of the number of fish of each species impinged can be based on volume. When the number of fish collected during a 24-hour period exceeds 20,000 sampling shall be continued until the number of fish is diminished to less than 20,000 in a 24-hour period.

REPORTING REQUIREMENTS

When the number of fish collected during a 24-hour period exceeds 20,000, the NRC Regional Office shall be notified by telephone within 24 hours after sample collections are completed. When the number of fish collected during a 24-hour period is reduced to less than 20,000, a licensing event report shall be prepared. In the event that collection exceeds 20,000 for more than 7 days, an LER shall be filed at the end of the seventh day and every seventh day thereafter.

When the average daily number of fish impinged for a specific month exceeds the range specified in Table 3.1-4, the NRC Regional Office shall be notified by telephone within 24 hours of determining such, and an environmental impact assessment will be conducted and a report of the assessment will be included in the Annual Environmental Operating Report.

Table 3.1-3

Frequency of Sampling

Nine Mile Point Area of Lake Ontario

Survey Group	Frequency		Period[1]
Water Quality	Monthly		April-December
Fish Gill Netting	Monthly		April-December
Impingement of Organisms	Sampling Days Per Month[2]		Throughout Year
	January	4	
	February	4	
	March	4	
	April	16	
	May	20	
	June	4	
	July	4	
	August	6	
	September	4	
	October	4	
	November	4	
	December	4	

[1] Sampling shall not be required when prevented by inclement weather.

[2] Days are to be randomly assigned within each month.

Table 3.1-4

Impingement Range[1]

Month	Daily Average # of Fish	
	Low	High
January	231	631
February	211	718
March	482	2,864
April	5,552	20,923
May	8,501	50,759
June	1,366	3,213
July	718	2,648
August	0	5,020
September	0	1,397
October	154	338
November	103	1,565
December	294	1,713

(1) 99% confidence level, based on impingement collections for the years of 1974 through 1977.

REPORTING REQUIREMENTS (Continued)

A report of impingement sampling results shall be included in the Annual Environmental Operating Report, submitted to the Director of the NRC Regional Office, in accordance with Section 5.6.1.

BASES

The program described in the Specification will monitor the magnitude of fish impingement at the Nine Mile Point site.

3.1.2 b. Lake Program

OBJECTIVE

To monitor effects of plant operation with respect to selected ecological parameters.

SPECIFICATION

Field sampling shall be performed as described below to the extent weather permits. Table 3.1-3 summarizes the lake monitoring program. Sampling locations and type of sampling shall be in accordance with Figure 3.1-1.

(i) Nekton

From April through August bottom gill nets shall be set twice monthly at the 30' depth at all four transects. From September through December bottom gill nets shall be set once monthly at the 30' depth at all four transects (see Figure 3.1-1). Nets will be set at night for a period of approximately 12 hours. In order to provide comparative data between impingement collections and the Lake Program, each gill net collection will be scheduled for the night preceding an impingement collection. All fish collected will be separated by species. A random sample of 40 fish per species will be analyzed for length and weight from collections with more than 40 fish of a species only.

(ii) Water Quality

Temperature and dissolved oxygen will be measured in conjunction with each gill net set.

REPORTING REQUIREMENTS

At the end of each year of study, the results from the Lake Program shall be summarized in the Annual Environmental Operating Report.

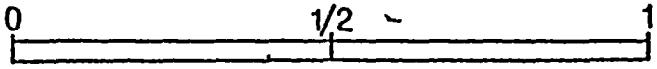
BASES

The information outlined in the Specification will provide data for interpretative analysis of the situation existing in the aquatic ecosystem of Lake Ontario in the Nine Mile Point area.

SAMPLING LOCATIONS

ENVIRONMENTAL TECHNICAL SPECIFICATIONS

NINE MILE POINT SITES



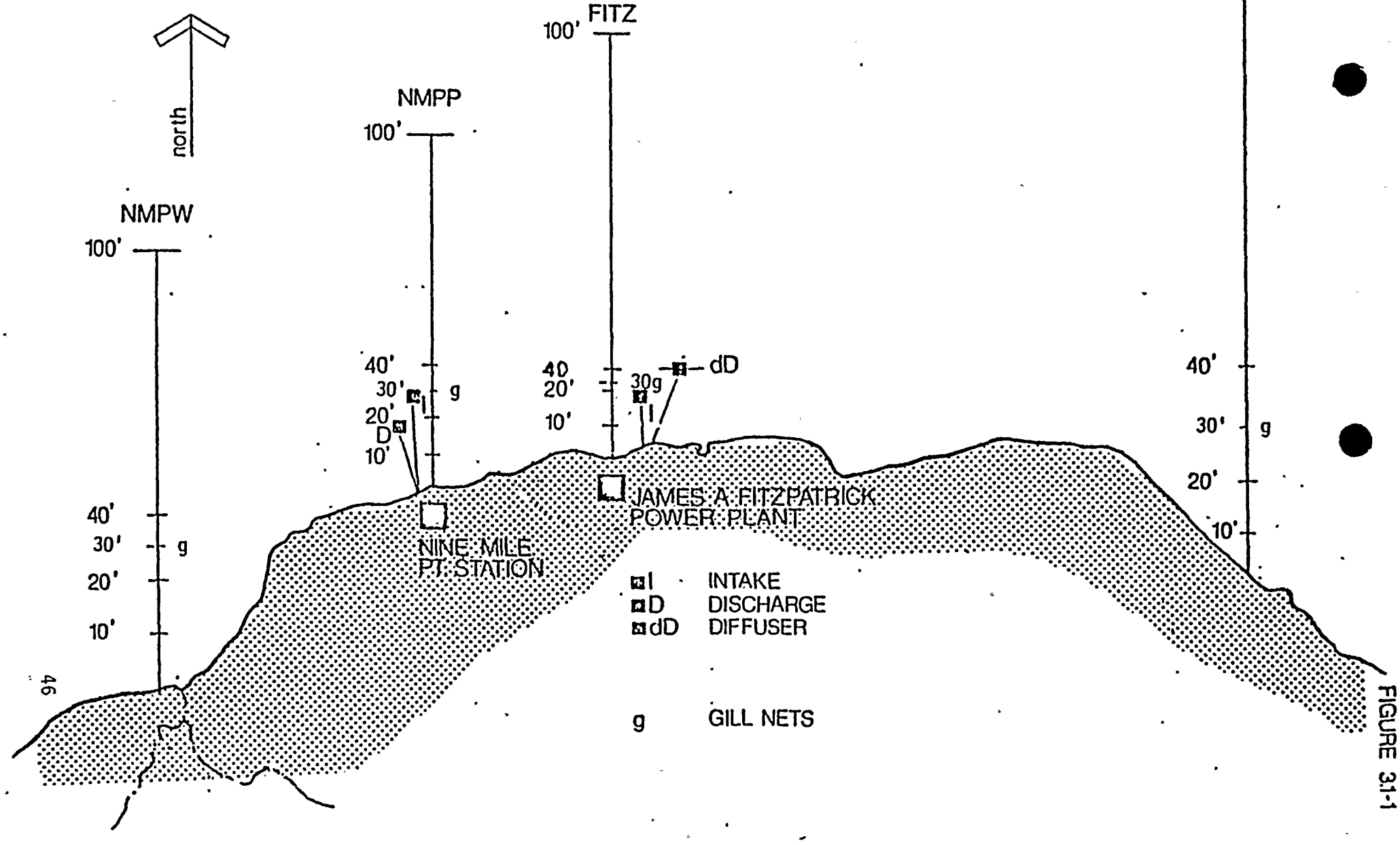


FIGURE 3.1-1

3.2 Radiological Environmental Monitoring

OBJECTIVE

An environmental radiological monitoring program shall be conducted to evaluate the effects of Station operation on the environs and to verify the effectiveness of the controls on radioactive materials sources.

SPECIFICATION

An environmental radiological monitoring program shall be conducted as follows:

a. The environmental radiation monitoring program specified in Table 3.2-1 shall be conducted. Variations from the frequency and location of samples are permitted if due to sample unavailability or seasonal conditions.

b. Reporting requirements for the environmental radiological monitoring program are outlined in Section 5.6.

c. During the seasons that animals producing milk for human consumption are on pasture at locations that may be significantly affected* by emissions from Nine Mile Point-1, samples of fresh milk shall be obtained monthly. For those animals on pasture for which the milk chain dose has been calculated to exceed 15 mrem/year, sampling shall be done weekly. Samples shall be analyzed for their radioiodine content, calculated as I-131. Analysis shall be carried out within eight days (one I-131 half-life) of sampling. Suitable analytical procedures shall be used to determine the radioiodine concentration to a sensitivity of 0.5 picocuries per liter of milk at the time of sampling. For activity levels at or above 0.5 picocuries per liter, overall error (two sigma confidence level) of the analysis shall be within $\pm$ 50 percent. Results shall be reported with associated calculated error, as picocuries of I-131 per liter of milk at the time of sampling.

   Special attention shall be paid to those locations where milk is produced for direct consumption by humans; e.g., the family farm.

d. A census shall be conducted twice annually, (during the beginning and midpoint of the grazing season) to determine the location of cows in potentially affected areas.

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* For the purposes of this requirement, "Significantly affected" means that calculations, using standard NRC staff assumptions, predict that a two year old child drinking milk produced by animals at that location may receive a thyroid dose of 1 mrem/year or greater.

TABLE 3.2-1

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A. LAKE PROGRAM(1)

	MEDIA	SENSITIVITY	ANALYSIS	FREQUENCY	LOCATIONS(2)	
1.	Fish	80 pCi/Kq, dry	GSA, ^{89}Sr & ^{90}Sr	2/yr	2 onsite	1 offsite
2.	Cladophora	N/A	GSA	in season	2 onsite	1 offsite
3.	Lake Water	N/A	GSA ^{3}H, ^{89}Sr, ^{90}Sr	M Comp. Qtr. Comp.	3(3)	
4.	Sediment	N/A	GSA	Semi-Annual	Dam Shoreline	1 offsite

NOTES:

(1) Program continued for at least three years after the startup of James A. FitzPatrick Nuclear Power Plant.
(2) Onsite samples collected in the vicinity of discharges, offsite samples collected at a distance of at least five miles from site.
(3) The three lake water samples to include Nine Mile Point Unit 1 intake water, James. A. FitzPatrick intake water, and Oswego city raw water.

TABLE 3.2-1 (Cont'd.)

SAMPLE COLLECTION AND ANALYSIS

SITE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

B. LAND PROGRAM(1)

	MEDIA	ANALYSIS	FREQUENCY	NO. OF LOCATIONS	LOCATIONS	
1.	Air Particulates	GB GSA	W M Comp(4)	At least 10	7 onsite	6 offsite
2.	Soil	GSA, ^{90}Sr	Every 3 years	13	7 onsite	6 offsite
3.	TLD	Gamma Dose	Qtr.	20	14 onsite	6 offsite
4.	Radiation Monitors	Gamma Dose	C	At least 7	7 onsite	1 offsite
5.	Airborne - I^{131}	GSA	W	At least 10	7 onsite	6 offsite
6.	Milk	I GSA, ^{90}Sr	M(5) M	4(5)	(6)	
7.	Human Food Crops	GSA, ^{131}I	A	3	(6)	
8.	Meat, Poultry, Eggs	GSA Edible Portions	SA	3	(6)	

NOTES: (Cont'd.)

(4) Onsite samples counted as two composites; offsite samples counted as two composites; any high gross beta count samples counted separately (not included in composite).
(5) Frequency applied only during grazing season.
(6) Samples to be collected from farms within a 10-mile radius having the highest potential concentrations of radionuclides.

Abbreviations:

M Comp. - Monthly composite of weekly or bi-weekly samples
GB - Gross beta analysis
GSA - Gamma spectral analysis on a NaI or GeLi system (quantitative)

A - Annually
W - Weekly
BW - Bi-weekly (alternate wks.)
M - Monthly
Qtr. - Quarterly
C - Continuous
SA - Semiannually

If it is learned from this census that animals producing milk for human consumption are present at a location which yields a calculated infant thyroid dose greater than from previously sampled animals, the new location shall be added to the surveillance program as soon as practicable. The sampling location having the lowest calculated dose may then be dropped from the surveillance program at the end of the grazing season during which the census was conducted

BASES

The number and distribution of sampling locations and the various types of measurements described in Table 3.2-1 together with the preoperational background data, will provide verification of the effectiveness of Station effluent control and indication of measurable changes in the activity of the environment.

The concentration of I-131 in milk of 2.4 picocuries per liter will result in a dose to the thyroid of a 0-2 year old child of 15 mrem/year, based upon consumption of one liter per day for the year. To assure that no child will receive a dose of greater than 15 mrem/year to the thyroid it is necessary to know the radioiodine concentration in the milk to the sensitivity given above, 0.5 pCi/liter.

Ground water sampling is not required because ground water in the vicinity of the station flows north to the lake, away from any nearby wells.

4.0 SPECIAL SURVEILLANCE AND STUDY ACTIVITIES

NOT APPLICABLE

5.0 Administrative Controls

OBJECTIVE

Administrative controls for implementation of the Environmental Technical Specifications are the means by which environmental protection is subject to Station management control and independent review and audit. These measures ensure that the Environmental Technical Specifications will be properly implemented.

5.1 Responsibility

5.1.1 The responsibilities of the General Superintendent-Nuclear Generation as prescribed in paragraph 6.1.1 Appendix A shall include the continuing protection of the environment.

5.1.2 Operation of the Station in compliance with the Environmental Technical Specifications is the responsibility of the Station Superintendent with the assistance of the Station staff organization.

5.1.3 The structure of corporate responsibility is shown in Figure 6.2-1 of Appendix A.

5.2 Organization

5.2.1 The Station organization and its relationship to the site organization is shown in Figure 6.2-2 of Appendix A to Facility Operating License No. DPR-63, "Radiological Technical Specifications".

5.2.2 Environmental monitoring will be performed by site technical personnel and when requested by environmental consultant personnel. Engineers from the corporate staff will be available for technical assistance when required.

5.3 Review and Audit

5.3.1 Units for review and audit of environmental matters shall be as described in section 6.5 of Appendix A to Facility Operating License No. DPR-63, "Radiological Technical Specifications." In addition to the regular members of the Site Operations Review Committee, a responsible supervisor from each consultant organization performing environmental monitoring shall participate in Committee meetings as required.

5.3.2 The responsibilities and authorities of the environmental review and audit units are as detailed in section 6.5 of Appendix A.

5.4 Action to be Taken if a Limiting Condition for Operation is Exceeded

5.4.1 Remedial action as permitted by the Technical Specification shall be taken until the condition can be met.

5.4.2 Exceeding a limiting condition for operation shall be investigated by the Site Operation Review Committee.

5.4.3 A report for each occurrence shall be prepared in accordance with one of the schedules specified in Section 5.6.2 or as required by the particular specification involved.

5.5 Procedures

5.5.1 Detailed written procedures, including applicable checkoff lists and instructions, shall be prepared, approved as specified in Section 5.5.2 and adhered to for operation of all systems and components involved in carrying out the environmental monitoring program. Procedures shall include sampling, instrument calibration, analysis, and actions to be taken when specified limits or report levels are approached or exceeded. Calibration frequencies for instruments used in performing the measurements required by the environmental Technical Specifications shall be included. Testing frequency of any alarms shall be included. These frequencies shall be determined from experience with similar instruments in similar environments and from manufacturers' technical manuals.

5.5.2 Prior to implementation, all procedures described in 5.5.1 above, and changes hereto, shall be reviewed as provided in Section 5.3 and approved by the Station Superintendent. Temporary changes to procedures which do not change the intent of the original procedure may be made, provided such changes are approved by the Station Superintendent and one of the following Supervisors: Assistant Radiochemistry and Radiation Protection Supervisor, Radiochemistry and Radiation Protection Supervisor, or Result Supervisor. Such changes shall be documented, subsequently reviewed as provided in Section 5.3 and approved on a timely basis.

5.6 Plant Reporting Requirements

5.6.1 Routine Reports

a. Annual Environmental Operating Report

PART A: Nonradiological Report

A report on the environmental surveillance programs for the previous 12 months of operation shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document within 6 months after January 1 of each year. The report shall include summaries of the nonradiological environmental surveillance activities (Section 3) for the report period. If harmful effects or evidence of damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

PART B: Radiological Report

A report on the radiological environmental surveillance programs for the previous 12 months of operation shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) as a separate document within 4 months after January 1 of each year. The reports shall include summaries of the radiological environmental surveillance activities for the report period. The reports shall also include the results of land use censuses required by the specifications. If harmful effects or evidence of irreversible damage are detected by the monitoring, the licensee shall provide an analysis of the problem and a proposed course of action to alleviate the problem.

Results of all radiological environmental samples taken shall be summarized and tabulated on an annual basis in the format of Table 5.6-1. In the event that some results are not available within the 6 months period, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

b. Radioactive Effluent Release Report

A report on the radioactive discharges released from the site during the previous 6 months of operation shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the plant.

The report shall include a summary of the meteorological conditions concurrent with the release of gaseous effluents during each quarter as prescribed in Section 3.1.1(b)(3).

5.6.2 Nonroutine Reports

a. Nonroutine Environmental Operating Reports

A report shall be submitted in the event that (a) a limiting condition for operation is exceeded (as specified in Section 2, "Limiting Conditions for Operation") or (b) a report level or specification is reached (as specified in Section 3, "Environmental Surveillance"). Reports shall be submitted under one of the report schedules described below:

TABLE 5.6-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORT

Facility Nine Mile Point Unit 1 Docket No. 50-220

A. Sample Results

Medium/Sample	Location	Quarter 1	Quarter 2	Quarter 3	Quarter 4
		Average Quarterly Results (specify radionuclide or entity) 2/			
AIRBORNE					
Particulate					
1)					
2)					
Iodine					
1)					
2)					
Soil					
1)					
2)					
DIRECT					
1)					
2)					
WATERBORNE					
Surface					
1)					
2)					
Ground					
Drinking					
1)					
2)					

TABLE 5.6-1 (cont.)

AQUATIC

Sediment

1)
2)

Benthic Organisms

1)
2)

Plants

1)
2)

INGESTION

Milk

1)
2)

Fish and Shellfish

1)
2)

Meat and Poultry

1)
2)

OTHER

B. Evaluation

(Include a summary evaluation of the results from the monitoring program).

NOTES FOR TABLE 5.6-1

1) Specify location and its distance and direction from the facility, and indicate which is used for background.

2) Use the following units; direct radiation, mrem/quarter; particulate pCi/m^3, iodine, water and milk, pCi/l, precipitation, nCi/m^2; sediment, and vegetation, pCi/gm dry.

5.6.2 (Cont'd.)

(1) Prompt Report. Those events requiring prompt reports shall be reported within 24 hours by telephone, telegraph, or facsimile transmission to the Director of the NRC Regional Office and within 10 days by a written report to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation).

(2) 30-Day Report. Those events not requiring prompt reports shall be reported within 30 days by a written report to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation).

Reports concerning unusual or important events shall be reported on the prompt schedule.

Written 10-day and 30-day reports and, to the extent possible, the preliminary telephone, telegraph, or facsimile reports shall (a) describe, analyze, and evaluate the occurrence, including extent and magnitude of the impact, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

b. Nonroutine Radiological Environmental Operating Reports

If a confirmed measured level of radioactivity in any environmental medium exceeds ten times the control value, a written report shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 10 days after confirmation.* This report shall include an evaluation of any release conditions, environmental factors, or other aspects necessary to explain the anomalous result.

* A confirmatory reanalysis of the original, a duplicate, or a new sample may be desirable, as appropriate. The results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis, but in any case within 30 days.

5.6.2 (Cont'd.)

c. Nonroutine Radioactive Effluent Reports

If the quantity of radioactive material released in effluents to unrestricted areas during any calendar quarter is such that the resulting radiation exposure or cumulative activity release exceeds one-half the design objective annual exposure derived pursuant to Appendix I 10 CFR Part 50, as stated in the Objective of Section 2.4, the licensee shall make an investigation to identify the causes of such releases and define and initiate a program of action to reduce such releases to the design objective levels. A written report of these actions shall be submitted to the Director of the NRC Regional Office (with a copy to the Director, Office of Nuclear Reactor Regulation) within 30 days from the end of the quarter during which the release occurred. The release levels at which such a report is required are given in Specifications 2.4.1.h and 2.4.3.c for liquid and gaseous releases, respectively. In addition, Specification 2.4.3.f gives conditions under which a report is required within 10 days.

5.6.3 CHANGES IN ENVIRONMENTAL TECHNICAL SPECIFICATIONS

a. A report shall be made to the NRC prior to implementation of a change in plant design, in plant operation, or in procedures described in Section 5.5 if the change would have a significant effect on the environment or involves an environmental matter or question not previously reviewed and evaluated by the NRC. The report shall include a description and evaluation of the change and a supporting benefit-cost analysis.

b. Request for changes in environmental technical specifications shall be submitted to the Director, Office of Nuclear Reactor Regulation, for review and authorization. The request shall include an evaluation of the environmental impact of the proposed change and a supporting benefit-cost analysis.

5.7 RECORDS RETENTION

5.7.1 Records and logs relative to the following areas shall be made and retained for the life of the plant:

a. Records and drawings detailing plant design changes and modifications made to systems and equipment as described in Section 5.6.3.

b. Records of all data from environmental monitoring, surveillance, and special surveillance and study activities required by these Environmental Technical Specifications.

5.7.2 All other records and logs relating to the Environmental Technical Specifications shall be retained for five years following logging or recording.

LAND MANAGEMENT

It is Niagara Mohawk's policy to encourage growth of desirable species of trees, shrubs and ground covers which will preserve and enhance the ecological values of unoccupied land on its generating sites and transmission rights-of-way. Transmission line maintenance is accomplished on a scheduled basis under the supervision of Niagara Mohawk personnel and includes selective use of herbicides, approved for such use by appropriate governmental agencies. The guides for the use of herbicides are as follows and apply within the site boundary:

a. Selective use of herbicides shall be employed to maintain "tight ground cover" which will allow growth of compatible weeds and woody species and tend to encourage wildlife habitat growth.

b. No herbicide shall be used in an application for which it is restricted by the New York State Department of Environmental Conservation (DEC) restricted use list.

c. Herbicides such as 2, 4, 5-T or similar compounds which are approved for use by the U. S. Environmental Protection Agency and DEC for the purpose intended shall be used as prescribed and directed by registered label.

d. No formulation with a dioxin contamination level that exceeds 0.1 parts per million shall be used.

e. No contamination of potable water supplies shall be permitted.

f. Application of herbicides to potential human foodstuffs including wild berries shall be avoided.

g. Niagara Mohawk policy mandates fee ownership of transmission rights-of-way. If herbicides are to be applied to an area where a grazing easement is in effect, the holder of the easement shall be notified of product label requirements regarding grazing prior to application of the herbicides.

h. Treatment shall not be more than once per year.

i. When the Administrator of EPA and the DEC issue standards for pesticide applicators, all spraying shall be done by an individual meeting these standards or under his immediate supervision. Implementation of these requirements shall conform to any compliance schedule contained in such standards.

5.8 (Cont'd.)

j. When it becomes necessary to cut or spray vegetation which in the wilting stage has a potential for physiological harm to grazing animals, precautions shall be taken to preclude availability of such material to livestock.

h. Only selective use of herbicides shall be employed on vegetation used for road and stream screening. Such application may be used to eliminate undesirable species which would encroach on the right-of-way and inhibit the growth of more desirable species. Treatment shall be such that visual impact is minimized. Treatment of stream screening vegetation shall be performed such that no herbicide shall be introduced into the water body.

l. Aerial spraying operations shall be performed only when wind speed is less than 5 mph. During such operations a procedure to control drift shall be employed. Two examples of an acceptable procedure are:

(1) A thickening agent may be added to the herbicide mix to permit "on target" deposition.

(2) A "microfoil" delivery system may be used to control droplet size.

m. Work of contractors performing spray operations shall be inspected for compliance with these specifications. Records (field logs) shall be kept for each inspection.

Subject to the above restrictions, herbicides may be used in initial clearing operations and in right-of-way maintenance. Following initial clearing, stumps will be treated with herbicides to prevent "resurge". It is Niagara Mohawk policy to effectively remove tall-growing species from the right-of-way which can invade the "wire security zone" through the use of herbicides. This policy allows low-growing compatible species to occupy the growing space. Subsequently, as field observations dictate, various herbicides may be employed on a selective basis to prevent the growth of those species which could result in interference and potential short circuit of transmission lines.

6.0 REFERENCES

1. New York State Department of Health Permit to Discharge Sewage or Wastes into the Waters of the State, issued to Niagara Mohawk Power Corporation for the Nine Mile Point Nuclear Power Station on April 28, 1965. This Permit is presented as Item 5 of Appendix G in the Nine Mile Point Nuclear Station Unit 1 Environmental Report.

2. Nine Mile Point Nuclear Station Unit 1 Environmental Report, Sections 5.1.3, 5.5.1-5.5.4, 9.5.1.2.2

3. Nine Mile Point Nuclear Power Station Unit 2, Effect of Circulating Water Systems on Lake Ontario Water Temperature and Aquatic Biology, Volume I.

4. Final Environmental Statement Related to operation of Nine Mile Point Nuclear Station Unit 1, pg. 2-16.