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NRC FORM 195 (2-76)		U.S. NUCLEAR REGULATORY COMMISSION		DOCKET NUMBER <b>50-220</b>	
NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL				FILE NUMBER ENVIRONMENTAL	
TO:  Mr. James P. O'Reilly		FROM: Niagara Mohawk Power Corp. Syracuse, New York R. R. Schneider		DATE OF DOCUMENT 2/23/77	
				DATE RECEIVED 6/8/77	
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DESCRIPTION          PLANT NAME: Nine Mile Point Unit No. 1   RJL 6/8/77			ENCLOSURE  Radioactive Effluent Release Report for the period July 1, 1976 through December 31, 1976 including meteorological data in accordance with Reg. Guide 1.23...  <div style="text-align: right;"> <b>566</b>  <b>APP.</b>  <b>ACKNOWLEDGED</b>  <b>DO NOT REMOVE</b> </div>		
FOR ACTION/INFORMATION					
BRANCH CHIEF:		<i>Lear</i>			
PROJECT MANAGER:		<i>Nowicki</i>			
LIC. ASST. (5)**:		<i>Parrish</i>			
**FOR DISTRIBUTION AS FOLLOWS:					
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LPDR: <i>Oswego, NY</i>				CONTROL NUMBER  <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>671610031</b> </div>	
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NIAGARA MOHAWK POWER CORPORATION

NIAGARA  MOHAWK

300 ERIE BOULEVARD, WEST  
SYRACUSE, N. Y. 13202

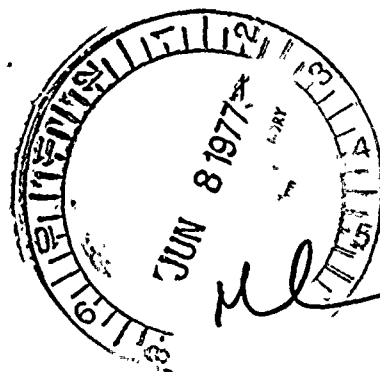
Regulatory

File Cy.

February 23, 1977

Mr. James P. O'Reilly  
Director  
United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA. 19406

RE: Nine Mile Point Unit #1  
Docket No. 50-220



Dear Mr. O'Reilly:

In conformance with Paragraph 5.6.2 of the Environmental Technical Specifications for Nine Mile Point Nuclear Station Unit #1, we are enclosing the Radioactive Effluent Release Report for the period July 1, 1976 through December 31, 1976. Also included is meteorological data in accordance with Regulatory Guide 1.23.

The format used for the effluent data is as outlined in Regulatory Guide 1.21. Distribution is in accordance with Regulatory Guide 10.1.

Very truly yours,



R.R. Schneider  
Vice President -  
Electric Production

MAS/mtm

Enc. (2 copies)

cc: Director, Office of Inspection and Enforcement (25)  
Director, Management Information and Program Control (2)

771610031

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## NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

TO: Mr. J. M. Toennies	FROM: New York State, Dept of Enviro. Conservation Division of Pure Waters	ENVIRO DATE OF DOCUMENT 2-23-77 DATE RECEIVED 3-2-77 NUMBER OF COPIES RECEIVED 1 cc
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## DESCRIPTION-

Ltr. Trans The Following:  
( 2 pages )

## ENCLOSURE

Consists of response to 2-24-76  
request concerning denial of 401 Water  
Quality Certification.....

( 1 encl rec'd )  
( 6 pages )

**DO NOT REMOVE****ACKNOWLEDGED**

PLANT NAME: NILE MILE POINT UNITS 1 &amp; 2

SAFETY		FOR ACTION/INFORMATION		ENVIRO	JCM 3-7-77
ASSIGNED AD:		ASSIGNED AD:			
BRANCH CHIEF:	Lear / Varga	BRANCH CHIEF:	BEVAN/REGAN		
PROJECT MANAGER:	Barnish / Service	PROJECT MANAGER:	Bevan / Norris (2)		
LIC. ASST. :		LIC. ASST. :	Duncan		
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OELD		LAINAS			
GOSSICK & STAFF	ENGINEERING	IPPOLITO	ENVIRO TECH.		
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CASE	BOSNAK		BALLARD		
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			SITE TECH.		
PROJECT MANAGEMENT	REACTOR SAFETY	OPERATING TECH.	GAMMILL		
BOYD	ROSS	EISENHUT	STEPP		
P. COLLINS	NOVAK	SHAO	HULMAN		
HOUSTON	ROSZTOCZY	BAER			
PETERSON	CHECK	BUTLER	SITE ANALYSIS		
MELTZ		CRIMES	VOLLMER		
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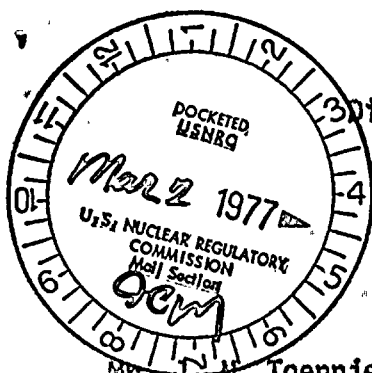
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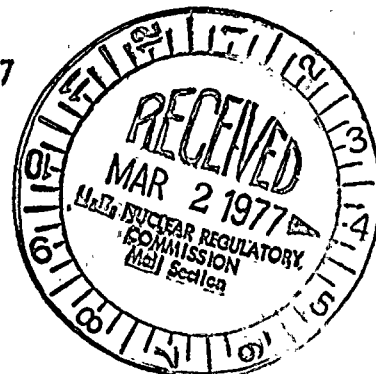
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Division of Pure Waters

February 23, 1977

Regulatory Docket File



Mr. J. H. Toennies  
Director, Environmental Affairs  
Niagara Mohawk Power Corporation  
300 Erie Boulevard West  
Syracuse, New York 13202

Re: 401 Water Quality Certification  
Nine Mile Point Nuclear Station Unit #1

Dear Mr. Toennies:

Your request of February 24, 1976 for recertification pursuant to Section 401 of the Federal Water Control Act Amendments of 1972 to supersede a previous certification issued April 9, 1974 is denied. The current certification shall remain in force and effect.

This denial is without prejudice to Niagara Mohawk's rights to make reapplication for certification, and is done in consideration that the issues upon which recertification would depend are not now resolved.

The National Pollution Discharge Elimination System Permit issued by the U. S. Environmental Protection Agency has been disputed by Niagara Mohawk and is currently the subject of a pending adjudicatory hearing before the Agency. The maintenance of a balanced indigenous fish population pursuant to Section 316a of the Act, and the design, location, construction and capacity of the intake to minimize adverse environmental impact pursuant to 316b of the Act, as well as similar State requirements of the Thermal Criteria pursuant to Sections 704.1(a) and 704.5 respectively, still require resolution.

According to the adjudicatory hearing procedures, the Environmental Conservation Department, as a party to the hearing, will be afforded recertification rights based upon the determinations of the Environmental Protection Agency when a decision is proposed on the referenced matters, and on any of the other permit requirements which form the subject of the adjudicatory hearing. If certification were processed now, it could be construed as a prejudgement of the adjudicatory proceedings.



Examination Desk File

ears



and in any event would have to be redone at the time the Environmental Protection Agency proposed to modify the permit.

Should you have any questions please contact  
Mr. Thomas E. Quinn at (518) 457-6939.

Very truly yours,

William L. Garvey  
Director, Bureau of  
Standards and Compliance

cc: U. S. EPA - Region II  
Mr. Garvey  
TEQ:sam

1. The first part of the report is a general description of the project and its objectives. It includes a brief history of the project and a statement of the problem being studied. The second part of the report is a description of the methods used in the study. This includes a description of the experimental design, the subjects, and the procedures used to collect and analyze the data. The third part of the report is a description of the results of the study. This includes a description of the data collected and a discussion of the findings. The fourth part of the report is a conclusion and a discussion of the implications of the study. This includes a summary of the findings and a discussion of the limitations of the study and the need for further research.

2. The second part of the report is a description of the methods used in the study. This includes a description of the experimental design, the subjects, and the procedures used to collect and analyze the data.

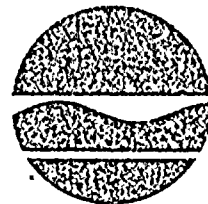
3. The third part of the report is a description of the results of the study. This includes a description of the data collected and a discussion of the findings.

4. The fourth part of the report is a conclusion and a discussion of the implications of the study. This includes a summary of the findings and a discussion of the limitations of the study and the need for further research.

5. The fifth part of the report is a conclusion and a discussion of the implications of the study. This includes a summary of the findings and a discussion of the limitations of the study and the need for further research.

New York State Department of Environmental Conservation

Division of Pure Waters



Peter A. A. Berle,  
Commissioner

February 23, 1977

Mr. J. M. Toennies, Director  
Environmental Affairs  
Niagara Mohawk Power Corporation  
300 Erie Boulevard West  
Syracuse, New York 13202

Re: 401 Water Quality Certification  
Nine Mile Point Nuclear Station  
Unit #2

Dear Mr. Toennies:

In response to your request of February 24, 1976 for recertification pursuant to Section 401 of the Federal Water Pollution Control Act Amendments of 1972 to the original certification issued for this facility dated October 12, 1973, the New York State Department of Environmental Conservation hereby supercedes the existing certification as follows:

Public notice was duly given pursuant to Part 608.16 of the Official Compilation of Codes, Rules and Regulations of the State of New York. The Department of Environmental Conservation hereby issues the certification in accordance with Section 401 of the Act and in accordance with applicable effluent limitations or other limitations in Sections 301, 302, 306 and 307 of the Act for construction of the Nine Mile Point Unit #2 Nuclear Generating facility on Lake Ontario in the Town of Scriba, Oswego County, New York.

This certification is intended to apply to proceedings before the U. S. Nuclear Regulatory Commission and the U. S. Environmental



Mr. J. M. Toennies, Director

February 23, 1977

Protection Agency. This certification is issued due to fundamental changes in the circulating cooling water system from open cycle once through cooling to closed cycle cooling utilizing a natural draft evaporative cooling tower. Based upon the foregoing, the Department of Environmental Conservation hereby certifies that Niagara Mohawk will comply with all applicable provisions of 301, 302, 306 and 307 of the Act for its Nine Mile Point Nuclear Generating Station Unit #2 provided that:

I. There are no future changes in any of the following that would result in non-compliance with Sections 301, 302, 306 and 307 of the Act.

- A. The proposed construction and operation of the facility;
- B. The characteristics of the waters into which discharges are made;
- C. The water quality criteria applicable to such waters;

or

- D. Applicable effluent limitations or other requirements.

II. The applicable provisions of State laws and regulations are complied with; and

III. The following effluent limitations and monitoring requirements which shall be conditions of any U. S. Nuclear Regulatory Commission license or U. S. Environmental Protection Agency NPDES permit for Nine Mile Point Unit #2 pursuant to Section 401d of the Act are complied with.

1. Pursuant to Part 704 Criteria Governing Thermal Discharges Section 704.1(a), all thermal discharges to the waters of the State shall assure the protection and propagation of a balanced indigenous population of shellfish, fish and wildlife in and on the body of water



Mr. J. M. Toennies, Director

February 23, 1977

2. Pursuant to Part 704 Criteria Governing Thermal Discharges Section 704.5 the location, design, construction and capacity of cooling water intake structures in connection with point source thermal discharges shall reflect the best technology available for minimizing adverse environmental impact.

3. Pursuant to Part 701 Classifications and Standards of Quality and Purity Part 701.4 the following classes and standards for fresh surface waters shall be attained in Lake Ontario outside the zone of active mixing induced by the turbulence of the discharge.

Suspended, colloidal or settleable solids

None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.

Oil and floating substances

No residue attributable to sewage, industrial wastes or other wastes nor visible oil film nor globules of grease.

Taste and odor-producing substances, toxic wastes and deleterious substances

None in amounts that will be injurious to fishlife or which in any manner shall adversely effect the flavor, color or odor thereof, or impair the waters for any best usage as determined for the specific waters which are assigned to each class.

Radioactivity

a. Gross Beta

Shall not exceed 1,000 picocuries per liter in the absence of  $\text{Sr}^{90}$  and alpha emitters.

b. Radium 226

Shall not exceed 3 picocuries per liter.

c. Strontium 90

Shall not exceed 10 picocuries per liter.





Mr. J. M. Toennies, Director

February 23, 1977

4. Pursuant to Part 702 Special Classifications and Standards Section 702.1 Quality Standards for Class A Special Waters the following additional requirements shall be achieved in Lake Ontario outside the zone of active mixing induced by the turbulence of the discharge.

Total Dissolved Solids	Should not exceed 200 milligrams per liter
pH	Should not be outside the range of 6.7 to 8.5
Radioactivity	Should be kept at the lowest practicable levels and in any event should be controlled to the extent necessary to prevent harmful effects on health.

5. No discharge from this facility shall cause violation of the New York State Department of Health regulations contained in 10 NYCRR Part 170 at the source of intake of any water supply used for drinking culinary or food processing purposes.

6. Pursuant to Part 704 Criteria Governing Thermal Discharges Section 704.3 Mixing Zone Criteria, upon the presentation of a final design for the discharge the Department shall specify definable numerical limits for the mixing zone, including linear distances from the point of discharge, surface area involvement, of volume of receiving water entrained in the thermal plume, as appropriate.

7. Not less than 180 days prior to the initiation of discharge from the Nine Mile Point Nuclear Generating Unit #2 Niagara Mohawk shall submit to the Department of Environmental Conservation, for approval, a plan of study for evaluating the environmental effects of such discharges on Lake Ontario, which shall include, but not be limited to the following:

A. Assessment of the effects of the intake on organisms entrained in the intake water flow.

B. Assessment of the effects of the intake on fishes impinged on any intake structure screens



Mr. J. M. Toennies, Director

February 23, 1977

C. The extent of the thermal plume in the receiving waters, to be verified by thermal survey in alternate months except for December through March during the first two years of operation.

D. Prior to operation of Nine Mile Point Unit #2 existing biological studies in Lake Ontario as required by regulatory agencies shall continue; subsequent to Unit #2 operation such study programs shall be adjusted as required by regulatory agencies to assess the operating impact of Unit #2. Requirements to submit reports, frequency of submission, and content shall be established at the time of approval of the study programs

7. Starting one month subsequent to plant operation Niagara Mohawk shall submit to the Department a monthly report of daily operating data by the 30th of the month following for:

A. Daily minimum, maximum and average station electrical output in megawatts;

B. Daily minimum, maximum and average intake water volume;

C. Temperature in degrees fahrenheit of the intake and discharge shall be monitored continuously and daily minimum, maximum and average intake and discharge temperatures shall be reported.

8. There shall be no discharge of heat from the main condensers except heat may be discharged in blowdown from recirculated cooling water systems provided the temperature at which the blowdown is discharged does not exceed at any time the lowest temperature of recirculated cooling water prior to the addition of make-up water.

9. Neither free available chlorine or total residual chlorine may be discharged from any unit for more than two hours in any one day.

10. The discharge of free available chlorine shall not exceed a maximum concentration of 0.5 mg/l nor an average concentration of 0.2 mg/l, with the further restriction that the concentration of total residual chlorine in the receiving waters outside the zone of active mixing induced by the turbulence of the discharge shall not exceed 0.05 mg/l.



Mr. J. M. Toennies, Director

February 23, 1977

11. Niagara Mohawk shall notify the Department within one week from the time of submission to the Nuclear Regulatory Commission of any requested change in the environmental technical specifications requirements which could in any way affect the requirements of this certification.

12. Niagara Mohawk shall also submit concurrently to the Department any report on the environment it submits to any Federal, State or local agency.

13. Niagara Mohawk shall provide access to the Nine Mile Point Site at any time to representatives of the Department subject to site security regulations to assess the environmental impact of the operation of the Nine Mile Point Nuclear Unit #2, and to review any sampling program, methodology, and the gathering and reporting of any data, pursuant to the conditions of this certification.

This certification is issued solely for the purpose of Section 401 of the Act. If any condition of this certification is subsequently declared invalid, the Department shall reconsider the entire certification and make appropriate amendments and modifications as a result of such considerations.

A copy of this certification is being forwarded to the Director of Regulation, United States Nuclear Regulatory Commission and the Regional Administrator of the U. S. Environmental Protection Agency, Region II.

Very truly yours,

William L. Garvey  
Director  
Bureau of Standards & Compliance

cc: U.S. NRC ✓  
cc: U.S. EPA



50-220

## NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

FILE NUMBER

Environmental

TO: Mr B Rusche

FROM: LEBBEUF, LAMB, LEIBY & MACRAE  
Washington, DC  
AddresseesDATE OF DOCUMENT  
1-24-77

DATE RECEIVED 1-24-77

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## DESCRIPTION

Ltr on behalf of Niagara Mohawk Pwr Corp....  
notarized 1-24-77....trans the following:

PLANT NAME: Nine Mile Point #1

**DO NOT REMOVE****ACKNOWLEDGED**

## ENCLOSURE

Amdt to OL/Change to Appendix B Tech Specs:  
Revising Appendix B in it's entirety by the  
submittal of attachment A & B which cover  
the following areas:

1. Changes to instrumentation sensitivities which permit reasonable deviations.....
2. Changes to account for site specific rather than generic industry donditions.....
3. Changes to the environmental analysis & sampling program.....
4. Editorial changes for clarification.....

(40 cys encl rec'd)

## SAFETY

## FOR ACTION/INFORMATION

## ENVIRO

1-26-77 ehf

ASSIGNED AD:		ASSIGNED AD:	V. Moore (Ltr)
BRANCH CHIEF:	Leav.	BRANCH CHIEF:	Regan
PROJECT MANAGER:	Nowicki	PROJECT MANAGER:	Worris
LIC. ASST.:	Parvish	LIC. ASST.:	Duncan

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<input checked="" type="checkbox"/> GOSSICK & STAFF Ltr	ENGINEERING	IPPOLITO	ENVIRO TECH.
MIPC	MACARRY	KIRKWOOD	ERNST
CASE	KNIGHT		BALLARD
HANAUER	SINWEIL	OPERATING REACTORS	SPANGLER
HARLESS	PAWLICKI	STELLO	
			SITE TECH.
PROJECT MANAGEMENT	REACTOR SAFETY	OPERATING TECH.	GAMMILL
BOYD	ROSS	EISENHUT Ltr	STEPP
P. COLLINS	NOVAK	SHAO	HULMAN
HOUSTON	ROSZTOCZY	RAER	
PETERSON	CHECK	BUTLER	SITE ANALYSIS
MELTZ		GRIMES	VOLLMER Ltr
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ASLB:	CONSULTANTS:	
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LAW OFFICES OF  
LEBOEUF, LAMB, LEIBY & MACRAE

1757 N STREET, N.W.  
WASHINGTON, D. C. 20036

TELEPHONE 202 457-7500

CABLE ADDRESS

LEBWIN, WASHINGTON, D. C.

TELEX: 440274

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RANDALL J. LEBOEUF, JR. 1929-1975  
ADRIAN C. LEIBY 1952-1976

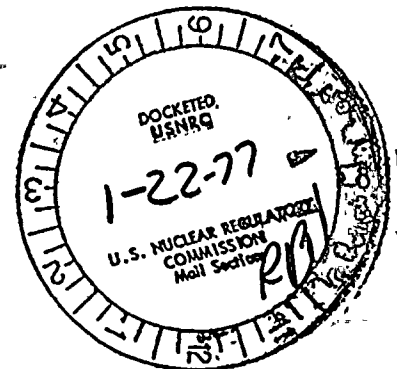
OF COUNSEL  
ARVIN E. UPTON

140 BROADWAY  
NEW YORK, N.Y. 10005  
TELEPHONE 212 269-1100  
CABLE ADDRESS  
LEBWIN, NEW YORK  
TELEX: 423416

LEON A. ALLEN, JR.  
JOSEPH E. BACHELDER, III  
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HARRY H. VOIGT  
H. RICHARD WAGTEL  
GERARD P. WATSON

January 24, 1977



\* RESIDENT PARTNERS WASHINGTON OFFICE  
\* ADMITTED TO THE DISTRICT OF COLUMBIA BAR

Mr. Ben C. Rusche  
Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Niagara Mohawk Power Corporation  
Nine Mile Point Nuclear Station Unit No. 1  
Docket No. 50-220

Dear Mr. Rusche:

As counsel for Niagara Mohawk Power Corporation, we hereby transmit three (3) signed originals and nineteen (19) copies of a document entitled "Application for Amendment to Operating License." This Application seeks to amend in its entirety Appendix B to Facility Operating License No. DPR-63.

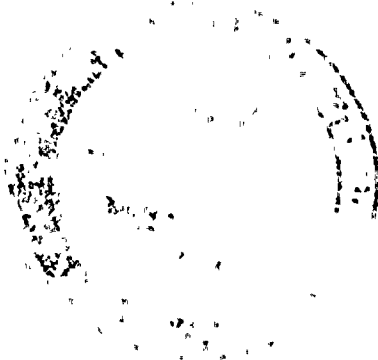
In summary, the proposed Technical Specifications enclosed with this letter cover the following four areas:

- (1) Instrumentation sensitivities changes, proposed to allow for reasonable deviations inherent to current "state of the art" measurement devices;
- (2) Changes, proposed to account for site specific rather than generic industry conditions;
- (3) Changes, proposed to the environmental sampling and analysis program; and

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RECEIVED



(4) Changes of an editorial nature, proposed for clarification.

Forty (40) copies each of the proposed changes and of the accompanying technical data (Attachments A and B, respectively) are also transmitted.

Very truly yours,

*LeBoeuf, Lamb, Leiby & MacRae*

LeBoeuf, Lamb, Leiby & MacRae  
Attorneys for Niagara Mohawk  
Power Corporation

Enclosures



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of )

NIAGARA MOHAWK POWER CORPORATION )  
(Nine Mile Point Nuclear Station )  
Unit No. 1) )

Docket No. 50-220

APPLICATION FOR AMENDMENT

TO

OPERATING LICENSE

Pursuant to Section 50.90 of the regulations of the Nuclear Regulatory Commission, Niagara Mohawk Power Corporation, holder of Facility Operating License No. DPR-63, hereby requests that the Environmental Technical Specifications set forth in Appendix B to that License be amended. These proposed changes have been accepted by the Site Operations Review Committee and Safety Review and Audit Board.

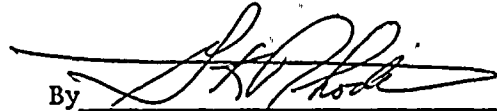
The proposed Environmental Technical Specifications are set forth in Attachment A to this application. Supporting information, which demonstrates that the proposed specifications do not involve a significant hazards consideration, is set forth in Attachment B. The proposed specifications would not authorize any change in the types or any increase in the amounts of effluents or any change in the authorized power level of the facility.



WHEREFORE, Applicant respectfully requests that Appendix B to Facility Operating License No. DPR-63 be amended in the form attached hereto as Attachment A.

NIAGARA MOHAWK POWER CORPORATION

By



G. K. Rhode  
Vice President-Engineering

Subscribed and sworn to before me  
on this 18<sup>th</sup> day of January, 1977.

  
Notary Public

HAZEL J. CARRICK  
Notary Public in the State of New York  
Qualified in Onon. Co. No. 4524460  
My Commission Expires March 30, 1978





Attachment A

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Proposed Changes to Facility Operating License

The attached is a revision to Appendix B of DPR-63.



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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



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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 withdrawal.

#### 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 Procedure

#### 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 control 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.



1.6c

(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 above except 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

Lake Inlet Temperature

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

7. 55 4. 7. 7.

## 2.0 LIMITING CONDITIONS FOR OPERATION

### 2.1 Thermal

#### 2.1.1 Maximum $\Delta T$ Between Condenser Inlet and Discharge Tunnel

##### OBJECTIVE

The purpose of this Specification is to limit the thermal stress to the aquatic ecosystem by limiting the maximum  $\Delta T$  between the condenser inlet and discharge tunnel.

##### SPECIFICATION

Maximum  $\Delta T$  between condenser inlet and discharge tunnel during normal Station operation shall be limited to 32 F. If during normal Station operation the  $\Delta T$  exceeds 32 F for a period of 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  $\Delta T$  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 5.6.2a(1).

##### MONITORING REQUIREMENT

The  $\Delta T$  shall be 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's) in each location. The RTD's shall be accurate to  $\pm 2.0^\circ$  F. The difference of these temperatures,  $\Delta T$ , shall be computed.

##### BASES

Nine Mile Point Unit 1 holds a National Pollutant Discharge Elimination System (NPDES) permit from the United States Environmental Protection Agency (USEPA) to discharge cooling water to Lake Ontario when operating with a maximum  $\Delta T$  of 32 F. Lake studies and operating experience indicate that mortality of plankton, fish, eggs, and larvae entrained in the condenser will not have a significant effect on the populations of the species involved.



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 normal 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 measured 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 inlet 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 50 F, except during reverse flow operations. At no time during tempering, except during reverse 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 measured 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 maybe 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 maximum  $\Delta T$ , 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.



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 ambient lake 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 systems.

#### 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 could 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	100.0	
Total Dissolved Solids	50.0	
Calcium (as Ca)	5.0	4,900
Sodium (as Na)	1.5	27,000
Sulfate (as $\text{SO}_4^{-2}$ )	3.0	49,000
Total Phosphorus (as $\text{PO}_4^{-3}$ )	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

<u>Sample</u>	<u>Sample Frequency</u>	<u>Type of Analysis (3)</u>	<u>Sensitivity of Analysis</u>
Cooling water Discharge	Monthly (1) Composite	Total Dissolved Solids Total Suspended Solids	± 10.0 mg/liter ± 5.0 mg/liter
Cooling water Intake	Monthly (1) Composite	Total Dissolved Solids Total Suspended Solids	± 10.0 mg/liter ± 5.0 mg/liter
Waste Tanks	Each Batch	pH Conductivity	± 0.5 pH units ± 1.0 µmho/cm (4)
	Monthly Proportional Composite (2)	Total Dissolved Solids Total Suspended Solids Ca Na SO <sub>4</sub> <sup>-2</sup> PO <sub>4</sub> <sup>-3</sup> Cr	± 10.0 mg/liter ± 5.0 mg/liter ± 5.0 mg/liter ± 5.0 mg/liter ± 5.0 mg/liter ± 1.0 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 2.3-1. 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  $\mu\text{mho/cm}$ , 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  $\text{CO}_2$  as contaminate, a lower pH is allowed for low conductivity tanks.



## 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 each reactor 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 calendar year.
- 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.



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 a instrument channel test monthly and a sensor check prior to making a release.

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 ( $\mu\text{Ci/ml}$ ) <sup>(3)</sup>
A. Waste Tank Releases	Each Batch	Principal Gamma Emitters (Ba-La-140, I-131)	$5 \times 10^{-7}$ (2)
	One Batch/Month	Dissolved Gases	$10^{-5}$
		Sr-89, 90	$5 \times 10^{-8}$
	Quarterly Composite <sup>(1)</sup>	H-3	$10^{-5}$
		Gross $\alpha$	$10^{-7}$
B. Primary Coolant	Weekly <sup>(4)</sup>	I-131, I-133	$10^{-6}$

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.



## 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 reasonably achievable 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 operation 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.



## BASES FOR LIQUID WASTE SPECIFICATIONS (Cont'd.)

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 50.36a. 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:

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

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 2.4-2 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 2.4-2

AVERAGE ENERGY PER DISINTEGRATION

Isotope	$\bar{E}_\gamma$ , Mev/dis	(Ref)	$\bar{E}_\beta$ , Mev/dis <sup>(3)</sup>	(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  $\beta$  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  $\beta$  energy includes conversion electrons.



- 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.



- 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.



(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:

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

OR

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

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.





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 refuel 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 2.4-3.



TABLE 2.4-3

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

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



NOTES FOR TABLE 2.4-3

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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 where the steady state gross radioactivity release rate increases by 50% over the 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 reasonably achievable 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 reasonable 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 operation 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.



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## BASES FOR GASEOUS WASTE SPECIFICATIONS (Cont'd.)

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 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  $1.6 \times 10^{-6}$  sec/m<sup>3</sup> 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  $1.9 \times 10^{-8}$  sec/m<sup>3</sup> 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  $4 \times 10^{-7}$  sec/m<sup>3</sup> for ground releases (FitzPatrick vent), and  $1.2 \times 10^{-8}$  sec/m<sup>3</sup> for Nine Mile Point Unit 1 elevated releases. The grass-cow-milk-child thyroid chain is controlling.



## BASES FOR GASEOUS WASTE SPECIFICATIONS (Cont'd.)

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 operation 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 50.36(a)(2) on a semi-annual basis. Data is summarized on a quarterly basis in the annual Environmental Operating 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, principle radionuclides, and total curie quantity, shall be submitted in accordance with Section 5.6.1.b.

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

Periodic evaluation of the findings of the surveillance program (Section 5.6.1a - Annual Environmental Operating Report) will provide the basis for modification of the program to insure that the surveillance effort is sufficient and justified when compared to current assessment of the effect that plant operation is having on the environment.

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 insure early discovery of adverse long range environmental trends.



### 3.1.1

#### Abiotic

##### a. Aquatic

##### (1) Chemical Discharges

###### OBJECTIVE

The objective of these surveys is to measure and document water quality conditions and chemical characteristics in the vicinity of the site and to provide data on those factors which are related to plant operation.

###### SPECIFICATION

Water Quality samples shall be collected as prescribed by Table 3.1-1 at the location indicated on Figure 3.1-1. to the extent weather permits. The sample shall be analyzed for:

1. Dissolved Oxygen
2. Temperature
3. pH
4. Total Solids
5. Total Suspended Solids
6. Total Phosphorus
7. Calcium
8. Sodium
9. Sulfate

###### REPORTING REQUIREMENTS

The results of the year's data as specified above shall be reported in the annual report. (See reporting requirements 5.6.1a).

###### BASES

(Refer section 2.3) Results of data analysis will indicate overall water quality in the plant vicinity.



(2) Dissolved Gases

Not required.

BASES

Sampling for dissolved oxygen is prescribed in Section 3.1.1a(1).

(3) Thermal Measurements

Not required.

BASES

Thermal plume studies performed during 1970 through 1975 have thoroughly characterized the dispersion and extent of the Nine Mile Point Unit 1 thermal plume under varying meteorological conditions. No further thermal plume studies shall be required.



3.1.1.a (Cont'd.)

b. Terrestrial

(1) Soil Chemistry

NOT APPLICABLE

(2) Groundwater

NOT APPLICABLE





3.1.1.b (Cont'd.) (3) 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 3.1-2 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 3.13. 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 Radiological Releases 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, Directorate of Licensing. Modifications to the meteorological monitoring program as described above shall have the written approval of the Nuclear Regulatory Commission, Directorate of Licensing, 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 E of 10 CFR Part 50, and 10 CFR Part 51.



TABLE 3.1-2  
Meteorological Measurements

<u>Parameter</u>	<u>Instrument Accuracy</u>
Wind direction	$\pm 5^{\circ}$ (instantaneous values)
Wind speed	$\pm 0.5$ mph (time average values)
Temperature (Two levels)	$\pm 0.5$ C (time average values)
$\Delta T$	$\pm 0.1$ C (average temperature difference.)



TABLE 3.1-3

HOURS AT EACH WIND SPEED AND DIRECTION<sup>a</sup>

PERIOD OF RECORD:

STABILITY CLASS:

ELEVATION:

<u>Wind Direction</u>	<u>Wind Speed (mph) at 10m Level</u>						<u>TOTAL</u>
	<u>1-3</u>	<u>4-7</u>	<u>8-12</u>	<u>13-18</u>	<u>19-24</u>	<u>&gt;24</u>	
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:

<sup>a</sup> 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. Aquatic

##### (1) General Ecological Survey

###### 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 3.1-1 summarizes the complete lake monitoring program. Sampling locations and type of sampling shall be in accordance with Figure 3.1-1.

###### (i) Phytoplankton and Zooplankton

Phytoplankton samples shall be collected as prescribed by Table 3.1-1 from approximately one-half meter below the surface at the four sampling locations shown on Figure 3.1-1. Zooplankton samples shall be collected as prescribed by Table 3.1-1 by oblique tows at the phytoplankton sampling locations. Relative phytoplankton density shall be determined for diatoms, and green and blue-green algae present. The density of total phytoplankton and dominant organisms shall be reported. Density in numbers per cubic meter shall be determined for major zooplankton taxa and dominant species.

###### (iv) Ichthyoplankton

Ichthyoplankton sampling (sampling for fish eggs and larvae) shall be conducted at the stations shown on Figure 3.1-1. Collections will be made at 20 and 40-foot depths at the four transects at surface and bottom. Samples will also be collected at the nearshore location of each transect (approximately 10-foot depth). Samples shall be collected as prescribed by Table 3.1-1 with metered nets.

Fish eggs and larvae samples will be enumerated and speciated in so far as possible. Density in numbers per cubic meter shall be determined for major taxa.





REPORTING REQUIREMENTS

At the end of each year of study, the results from the General Ecological Surveys shall be summarized in a report and submitted in accordance with Section 5.6.1.

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. The information collected through 1976 has provided data for determining the impact of the operation of Nine Mile Unit 1 and the FitzPatrick Plant on the aquatic environment. The continuing surveys will provide data to monitor the impact of the combined operations of these Plants on the aquatic environment. Specifications for future General Ecological Surveillance at this site will be based upon evaluations of these data.

(ii) Benthos

Samples of the macroinvertebrate benthic community shall be collected as prescribed in Table 3.1-1 at each of the four sampling locations shown in Figure 3.1-1. Results shall be reported in terms of numbers of organisms by major taxon and dominant species per unit area of the substrate sampled.

(iii) Fish

As prescribed by Table 3.1-1, adult and juvenile fish shall be collected bimonthly by gill nets. Bottom gill nets shall be set at the 40 ft. depth at all four transects. Replicate day samples will be taken at all stations as indicated on Figure 3.1-1. The number of individuals of each species collected shall be recorded.

Secondary analysis of fish by species for each collection will include length, weight and sex. Only a random sample of forty fish per species will be analyzed from collections with more than 40 fish of a species.



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3.1.2.a (Cont'd.) (2) 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 during various seasons.

SPECIFICATION

The species and numbers of fish removed from the traveling screens during a 24-hour period shall be recorded monthly. During the months of possible higher rates (March through June), 24-hour samples shall be collected once per week.

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.

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, subsampling 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 diminish to less than 20,000 in a 24-hour period.

REPORTING REQUIREMENTS

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.

If the number of fish collected during a 24-hour period exceeds 20,000, notifications shall be made to the Director of the NRC Regional Office in accordance with Section 5.6.2.a.(1) "Prompt Report". In the event that numbers of fish in excess of 20,000/24 hours are collected for consecutive days, "Prompt Report" notifications will be made when the number first exceeds 20,000/24 hours and when the number falls below 20,000/24 hours followed by a single "10 day" report.

BASES

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

(3) Entrainment of Plankton, Fish Eggs, and Larvae

Not applicable.



TABLE 5.3

RESPONSIBILITIES AND AUTHORITY FOR ENVIRONMENTAL REVIEW ORGANIZATION

Site Operations Review Committee

Safety Review and Audit Board

Vice President-Engineering  
Vice President-Electric Operations

RESPONSIBILITIES

Review results of environmental monitoring programs prior to submittal in each annual environmental operating report.

The function of the Vice President Engineering and the Vice President Electric Operations are identical for environmental matters with those described for safety in the Technical Specifications of Appendix A.

Review proposed changes to the environmental technical specifications and the evaluated impact of the change.

Review proposed environmental technical specification changes or license amendments. Submit analysis to the Vice President-Engineering and Vice President-Electric Operations for the submittal to the NRC.

Review proposed changes or modifications to the station systems or equipment and the evaluated impact which would require a change in the procedures or which would affect the evaluation of the station's environmental impact.

Review the environmental technical specification development with the safety technical specifications to avoid conflicts and for consistency.

Review all proposed procedures or changes which as determined by the station Superintendent may affect the station's environmental impact.



TABLE 5.3 (Cont'd.)

Site Operations Review Committee

Investigate all reported violations of environmental technical specifications. Where the investigation indicates, prepare and forward a report covering their evaluation and recommendation to prevent recurrence, to the General Superintendent Nuclear Generation, and the Chairman of the Safety Review and Audit Board.

AUTHORITY

Advisory to the General Superintendent Nuclear Generation

Make tentative determinations as to whether or not proposals submitted to the committee involve a change in the station's environmental impact. This determination subject to review by the Safety Review and Audit Board.

RECORDS

Separate minutes shall be kept of all meetings of the SORC when convened for review of environmental matters. Copies shall be sent to the General Superintendent Nuclear Generation and to the Chairman of the Safety Review and Audit Board.

Safety Review and Audit Board

Review violations of environmental technical specifications and submit an analysis to the Vice President-Engineering and the Vice President-Electric Operations.

The Board shall report to and advise the Vice President-Engineering and the Vice President-Electric Operations in all matters relating to environmental impact.

Vice President-Engineering  
Vice President-Electric Operations





TABLE 5.3 (Cont'd.)

Site Operations Review Committee

Safety Review and Audit Board

Vice President-Engineering  
Vice President-Electric Operations

MEMBERSHIP

The membership of the Site Operations Review Committee and the Safety Review and Audit Board shall be as shown in 6.2-2 of Appendix A.

MEETING FREQUENCY, QUORUM

The meeting frequency and quorum requirements shall be identical with those listed in Figure 6.1.4 of Appendix A.



Plant Reporting Requirements5.6.1 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 6 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. 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:



(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 Regional NRC 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.





TABLE 5.6

Facility Nine Mile Point Unit 1Docket No. 50-220A. Sample ResultsAverage Quarterly Results  
(specify radionuclide or entity)

Medium/Sample	Location	Quarter <u>1</u>	Quarter <u>2</u>	Quarter <u>3</u>	Quarter <u>4</u>
---------------	----------	------------------	------------------	------------------	------------------

AIRBORNE

Particulate

- 1)
- 2)

Iodine

- 1)
- 2)

Soil

- 1)
- 2)

DIRECT

- 1)
- 2)

WATERBORNE

Surface

- 1)
- 2)

Ground

Drinking

- 1)
- 2)



TABLE 5.6 (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

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- 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<sup>3</sup>, iodine, water and milk, pCi/l, sediment, and vegetation, pCi/gm dry.



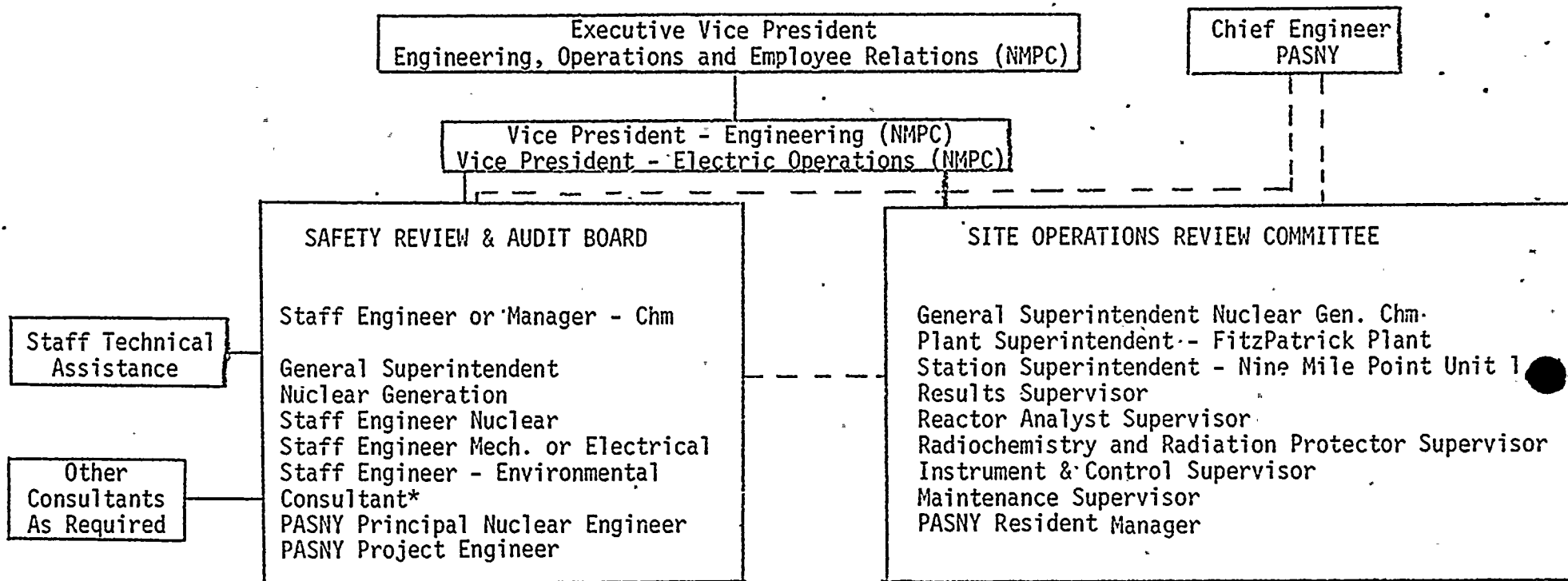
5.6.2 (Cont'd.)

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 condition under which a report is required within 10 days...







\* At least one technical member from outside Niagara Mohawk Power Corporation organization for the first few years of Station Operation

FIGURE 5.3  
SAFETY ORGANIZATION  
NINE MILE POINT - JAMES A. FITZPATRICK SITE



5.3.2 The responsibilities and authorities of the environmental review and audit units are shown in Table 5.3.

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

Detailed written procedures, including applicable checklists and instructions, shall be prepared and followed for all activities involved in carrying out the environmental technical specifications. Procedures shall include sampling, data recording and storage, instrument calibration, measurements and analyses, and actions to be taken when limits are approached or exceeded. 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.



. 3.1.2.b (Cont'd.)

b. Terrestrial

NOT APPLICABLE



TABLE 3.1-1

FREQUENCY OF SAMPLING FOR ECOLOGICAL SURVEY IN  
THE NINE MILE POINT AREA OF LAKE ONTARIO

<u>Survey Group</u>	<u>Frequency (1)</u>	<u>Period (2)</u>
A. Water Quality	Bimonthly	April through October
B. General Ecological Survey (Site)		
Phytoplankton and Zooplankton	Bimonthly	April through October
Benthos	Bimonthly	April through October
Fish Gill Netting	Bimonthly	April through October
Ichthyoplankton	Monthly	April through August
C. Impingement of Organisms		
Collection of Impinged Fish	Monthly Weekly	Jan., Feb., July through Dec. March through June

NOTE:

(1)

Bimonthly means every other month

(2)

Sampling shall not be required when prevented by inclement weather.





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Radiological Environmental MonitoringOBJECTIVE

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 material sources.

SPECIFICATION

An environmental radiological monitoring program shall be conducted as follows:

- a. The environmental radiation monitoring program specified in Table 3.2 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 1.0 picocuries per liter of milk at the time of sampling. For activity levels at or above 1.0 picocuries per liter, counting 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 milk animals in potentially affected areas.

\* 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<sup>(1)</sup>

<u>MEDIA</u>	<u>SENSITIVITY</u>	<u>ANALYSIS</u>	<u>FREQUENCY</u>	<u>LOCATIONS</u> <sup>(2)</sup>	
1. Fish	80 pCi/Kq dry	GSA, <sup>89</sup> Sr & <sup>90</sup> Sr	2/yr	2 onsite	1 offsite
2. Cladophora	N/A	GSA	in season	2 onsite	1 offsite
3. Lake Water	N/A	GSA <sup>3</sup> H, <sup>89</sup> Sr, <sup>90</sup> Sr	M Comp. Qtr. Comp.	3 <sup>(3)</sup>	

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 ANALYSISSITE RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAMB. LAND PROGRAM<sup>(1)</sup>

<u>MEDIA</u>	<u>ANALYSIS</u>	<u>FREQUENCY</u>	<u>NO. OF LOCATIONS</u>		<u>LOCATIONS</u>
1. Air Particulates	GB GSA	W M Comp <sup>(4)</sup>	At least 10	7 onsite	6 offsite
2. Soil	GSA, <sup>90</sup> Sr	Every 3 years	13	7 on site	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 <sup>131</sup>	GSA	W	At least 10	7 onsite	6 offsite
6. Milk	I GSA, <sup>90</sup> Sr	M <sup>(5)</sup> M	4 <sup>(5)</sup>	(6)	
7. Human Food Crops	GSA, <sup>131</sup> I	A	3	(6)	
8. Meat, Poultry, Eggs	GSA Edible Portions	SA	3	(6)	

NOTES: (Cont'd.)

(4) Onsite samples counted together, offsite counted together, any high count (greater than three times average of latest four weeks of samples) counted separately.

(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

M - Monthly

C - Continuous

BW - Bi-weekly (alternate wks.)

Qtr. - Quarterly

SA - Semiannually





### 3.2 (Cont'd.)

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 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, 1.0 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.
- 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 organized as shown in Figure 5.3. 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.



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, Division of Reactor Licensing, for review and authorization. The request shall include an evaluation of the environmental impact of the proposed change and a supporting benefit-cost analysis.





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 portable 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 this 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.



Attachment B

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Supporting Information

It is proposed that the Environmental Technical Specifications for Nine Mile Point Unit 1 be revised in four general areas:

1. Instrumentation sensitivities changes are proposed to allow for reasonable deviations inherent to current "state of the art" measurement devices.
2. Changes are proposed to account for site specific rather than generic industry conditions.
3. Changes are proposed to the environmental sampling and analysis program.
4. Changes of an editorial nature are proposed for clarification.

Table 1 lists the sections that have been revised and the justification for revision.

Over the past four years, sampling at the site has been successful in establishing the variety, abundance and viability of the total aquatic community. The new revised sampling and analysis program will meet the goal of maintaining "no harm" to the receiving water body by monitoring changes to the established abundance and variety of the present aquatic community and providing for corrective action as necessary. By changing the scope and purpose of the program from discovery to monitoring the characteristics of the aquatic community, it is estimated that annual program cost will be reduced significantly. Niagara Mohawk believes these savings can be realized without sacrifice of environmental care or reduction in environmental concern.





Table 1

Summary of Changes

Environmental Technical Specifications

<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
Table of Contents	Changes required by changes in content	Editorial
List of Figures	Changes required by changes in content	Editorial
List of Tables	Changes required by changes in content	Editorial
1.8	Definition of "Ambient Lake Temperature," retitled, "Lake Intake Temperature," establishes correlation between the location of the temperature, as defined, and the location of the temperature, as measured.	Elimination of language ambiguity.
2.1.1	The $\Delta T$ is established as the difference in temperature between measured temperatures in the inlet and discharge tunnels. Change correlates measured temperatures with defined temperatures.	Elimination of language ambiguity.
2.1.4	Changes in wording.	Editorial
2.3.1	Changes in wording.	Editorial
2.3.2	Changes in wording. Section refers to Tables 2.3-1 and 2.3-2. Refer to changes in Tables specified below. Reference to $(Cr O_4^{-2})$ is deleted as inconsistent with Table 2.3-1.	Editorial
Table 2.3-1	Suspended solids is changed from 15.0 mg/l to 100 mg/l prior to dilution.	EPA effluent guidelines have been changed from 15 to 100 mg/l.



<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
Table 2.3-2	pH measurements of the monthly composites of the intake, discharge, and waste tanks are deleted. Conductivity measurement of waste tanks for each batch is added. Analysis for $\text{Cr O}_4^{-2}$ is deleted and Cr substituted therefor.	See basis under Section 2.3.4.
2.3.3	Reporting specifications are added for clarity. Nine Mile 1 will not use Nine Mile 2 water purification facilities; therefore, the contingency specification is deleted.	Clarity of language and conformance to current situation.
2.3.4	Conductivity measurements added. pH excursion authorized for low conductivity tanks.	Basis paragraph as changed provides support for change to allow for site specific pH excursions. No adverse impact on water quality is predicted.
2.4.2	Reporting requirements are added to the specification.	Elimination of ambiguity.
Table 2.4-1	Sampling and analysis requirements are adjusted for easier understanding. Table 2.4-3 is deleted. See list of tables for new titles.	Editorial
2.4.3	The equation in 2.4.3 a (1) is corrected.	Editorial
2.4.4	Table 2.4-4 and reference thereto is deleted as no longer necessary.	Elimination of ambiguity.
Table 2.4-3	Table is adjusted for easier understanding and more accurate identification of specifications.	Elimination of ambiguity.
3.1	Introductory remarks added.	Remarks provide general basis for major changes to Section 3.



<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
3.1.1a. Figure 3.1-1 Table 3.1-1	Water quality sampling specification reduced in scope and modified in language.	Reduced scope supported by introductory remarks. Specification rewritten for clarity of understanding.
3.1.1b	Atomic Energy Commission changed to Nuclear Regulatory Commission.	Editorial
Table 3.1-2 Table 3.1-3	Table establishes concise requirements for Meteorological Measurement without reference to the Reg. Guides.	Elimination of ambiguity.
3.1.2 Figure 3.1-1 Table 3.1-1	Reduction in aquatic sampling and analysis.	Reduced scope supported by introductory remarks. Change specification purpose to aquatic monitoring effort rather than investigation effort.
3.2	Change sensitivity for determination of radiodine concentrations from 0.5 picocuries per liter to 1.0 picocuries per liter.	Conform to the sensitivity of measurement instrumentation. Provides adequate margin of safety.
Table 3.2-1	Simplifies and reduces sampling and analysis procedures for radiological monitoring of lake organisms.	Reduce cost without changing the objective or reducing requirement Editorial changes.
5.1	Changes in words to conform to Appendix A.	Editorial
Figure 5.3	Modification in SRAB to include PASNY Project Engineer. Change title of PASNY representative to SORC to correct title.	Editorial
5.5.1	Changes conforming to deletion of 5.5.2.	Editorial
5.5.2	Deleted.	Redundant with Section 5.3.



<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
5.6.1	Change semi-annual to an annual report.	Annual report provides required information at lower cost.
5.7	Clarifies records retention for non-specified records.	Eliminates ambiguity.
5.8n	Survey for bog turtle eliminated.	Two years of surveys have indicated that neither the bog turtle nor bog turtle habitat is present in this location.
6	References eliminated.	Editorial





## Attachment B

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

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## Table 1

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#### Environmental Technical Specifications

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Table 2.3-2	pH measurements of the monthly composites of the intake, discharge, and waste tanks are deleted. Conductivity measurement of waste tanks for each batch is added. Analysis for $\text{Cr O}_4^{-2}$ is deleted and Cr substituted therefor.	See basis under Section 2.3.4.
2.3.3	Reporting specifications are added for clarity. Nine Mile 1 will not use Nine Mile 2 water purification facilities; therefore, the contingency specification is deleted.	Clarity of language and conformance to current situation.
2.3.4	Conductivity measurements added. pH excursion authorized for low conductivity tanks.	Basis paragraph as changed provides support for change to allow for site specific pH excursions. No adverse impact on water quality is predicted.
2.4.2	Reporting requirements are added to the specification.	Elimination of ambiguity.
Table 2.4-1	Sampling and analysis requirements are adjusted for easier understanding. Table 2.4-3 is deleted. See list of tables for new titles.	Editorial
2.4.3	The equation in 2.4.3 a (1) is corrected.	Editorial
2.4.4	Table 2.4-4 and reference thereto is deleted as no longer necessary.	Elimination of ambiguity.
Table 2.4-3	Table is adjusted for easier understanding and more accurate identification of specifications.	Elimination of ambiguity.
3.1	Introductory remarks added.	Remarks provide general basis for major changes to Section 3.



<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
3.1.1a. Figure 3.1-1 Table 3.1-1	Water quality sampling specification reduced in scope and modified in language.	Reduced scope supported by introductory remarks. Specification rewritten for clarity of understanding.
3.1.1b	Atomic Energy Commission changed to Nuclear Regulatory Commission.	Editorial
Table 3.1-2 Table 3.1-3	Table establishes concise requirements for Meteorological Measurement without reference to the Reg. Guides.	Elimination of ambiguity.
3.1.2 Figure 3.1-1 Table 3.1-1	Reduction in aquatic sampling and analysis.	Reduced scope supported by introductory remarks. Change specification purpose to aquatic monitoring effort rather than investigation effort.
3.2	Change sensitivity for determination of radiiodine concentrations from 0.5 picocuries per liter to 1.0 picocuries per liter.	Conform to the sensitivity of measurement instrumentation. Provides adequate margin of safety.
Table 3.2-1	Simplifies and reduces sampling and analysis procedures for radiological monitoring of lake organisms.	Reduce cost without changing the objective or reducing requirement Editorial changes.
5.1	Changes in words to conform to Appendix A.	Editorial
Figure 5.3	Modification in SRAB to include PASNY Project Engineer. Change title of PASNY representative to SORC to correct title.	Editorial
5.5.1	Changes conforming to deletion of 5.5.2.	Editorial
5.5.2	Deleted.	Redundant with Section 5.3.





<u>Section</u>	<u>Description</u>	<u>Basis for Change</u>
5.6.1	Change semi-annual to an annual report.	Annual report provides required information at lower cost.
5.7	Clarifies records retention for non-specified records.	Eliminates ambiguity.
5.8n	Survey for bog turtle eliminated.	Two years of surveys have indicated that neither the bog turtle nor bog turtle habitat is present in this location.
6	References eliminated.	Editorial

