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DENTON,H.R. Office of Nuclear Reactor Regulation

SUBJECT: Forwards application for amend to License DPR-63 & copy of proposed changes to Tech Specs.W/encl license amend fee.

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February 15, 1979

Mr. Harold R. Denton
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. Denton:

As counsel for Niagara Mohawk Power Corporation, I enclose the following:

(1) Three (3) originals and nineteen (19) copies of an Application for Amendment to Operating License; and

(2) Forty (40) copies each of three (3) documents designated Attachments A, B and C which set forth the requested change in the Technical Specifications along with its technical basis, and supporting information, which demonstrates that the proposed change does not involve a significant hazards considerarion, nor would authorize any change in the types or any increase in the amount of effluents or any change in the authorized power level of the facility.

A001 s/1/40 w/check $4,000.00

7902200001

The proposed amendment to the Operating License has been evaluated and determined to fall within the definition of Class III of 10 C.F.R. § 170.22; therefore, a check in the amount of $4,000.00 is enclosed to cover the appropriate fee.

Very truly yours,

LeBOEUF, LAMB, LEIBY & MacRAE

By *Eugene B. Thomas, Jr.*
Eugene B. Thomas, Jr.

Enclosures

ATTACHMENT A

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Proposed Changes to Facility Operating License (Appendix A)

Attached is a new Page 212a and revised Pages 6, 13, 188, 192-201, 203-215, 231, 232, 232a, 233 and 237a. The revised pages have been retyped in their entirety and the marginal markings indicate the specific changes to the text.

c. The neutron flux shall not exceed its scram setting for longer than 1.5 seconds as indicated by the process computer. When the process computer is out of service, a safety limit violation shall be assumed if the neutron flux exceeds the scram setting and control rod scram does not occur.

To ensure that the Safety Limit established in Specifications 2.1.1a and 2.1.1b is not exceeded, each required scram shall be initiated by its expected scram signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the expected scram signal.

d. Whenever the reactor is in the shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be more than 7 feet 11 inches (3.88 inches indicator scale) below minimum normal water level (Elevation 302'9"), except as specified "e" below.

e. For the purpose of performing major maintenance (not to exceed 12 weeks in duration) on the reactor vessel; the reactor water level may be lowered 9' below the minimum normal water level (Elevation 302'9"). Whenever the reactor water level is to be lowered below the low-low-low level set point redundant instrumentation will be provided to monitor the reactor water level.

d. The reactor water low level scram trip setting shall be no lower than -12 inches (53 inches indicator scale) relative to the minimum normal water level (302'9").

e. The reactor water low-low level setting for core spray initiation shall be no less than -5 feet (5 inches indicator scale) relative to the minimum normal water level (Elevation 302'9").

f. The flow biased APRM rod block trip settings shall be less than or equal to that shown in Figure 2.1.1.

During periods when the reactor is shut down, consideration must also be given to water level requirements, due to the effect of decay heat. If reactor water level should drop below the top of the active fuel during this time, the ability to cool the core is reduced. This reduction in core cooling capability could lead to elevated cladding temperatures and clad perforation. The core will be cooled sufficiently to prevent clad melting should the water level be reduced to two-thirds of the core height.

The lowest point at which the water level can normally be monitored is approximately 4 feet 8 inches above the top of the active fuel. This is the low-low-low water level trip point, which is 7 feet 11 inches (3.88 inches indicator scale) below minimum normal water level (Elevation 302'9"). The safety limit has been established here to provide a point which can be monitored and also can provide adequate margin. However, for performing major maintenance as specified in Specification 2.1.1.e, redundant instrumentation will be provided for monitoring reactor water level below the low-low-low water level set point. (For example, by installing temporary instrument lines and reference pots to redundant level transmitters, so that the reactor water level may be monitored over the required range.) In addition written procedures, which identify all the valves which have the potential of lowering the water level inadvertently, are established to prevent their operation during the major maintenance which requires the water level to be below the low-low level set point.

The thermal power transient resulting when a scram is accomplished other than by the expected scram signal (e.g., scram from neutron flux following closure of the main turbine stop valves) does not necessarily cause fuel damage. However, for this specification a safety limit violation will be assumed when a scram is only accomplished by means of a backup feature of the plant design. The concept of not approaching a safety limit provided scram signals are operable is supported by the extensive plant safety analysis.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

3.6.2 PROTECTIVE INSTRUMENTATION

Applicability:

Applies to the operability of the plant instrumentation that performs a safety function.

Objective:

To assure the operability of the instrumentation required for safe operation.

Specification:

a. The set points, minimum number of trip systems, and minimum number of instrument channels that must be operable for each position of the reactor mode switch shall be as given in Tables 3.6.2a to 3.6.2k.

   If the requirements of a table are not met, the actions listed below for the respective type of instrumentation shall be taken.

   (1) Instrumentation that initiates scram - control rods shall be inserted, unless there is no fuel in the reactor vessel.

4.6.2 PROTECTIVE INSTRUMENTATION

Applicability:

Applies to the surveillance of the instrumentation that performs a safety function.

Objective:

To verify the operability of protective instrumentation.

Specification:

a. Sensors and instrument channels shall be checked, tested and calibrated at least as frequently as listed in Tables 4.6.2a to 4.6.2k.

Table 3.6.2a (cont'd)

INSTRUMENTATION THAT INITIATES SCRAM

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
(6) Main-Steam-Line Isolation Valve Position	2	4(h)	$\leq$10 percent valve closure from full open		(c)	(c)	X
(7) High Radiation Main-Steam-Line	2	2	$\leq$5 times normal background at rated power		X	X	X
(8) Shutdown Position of Reactor Mode Switch	2	1	- -		(k)	X	X
(9) Neutron Flux							
(a) IRM							
(i) Upscale	2	3(d)	$\leq$96 percent of full scale		(g)	(g)	(g)

Table 3.6.2a (cont'd)

INSTRUMENTATION THAT INITIATES SCRAM

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
(ii) Inoperative	2	3(d)	- -		X	X	
(b) APRM							
(i) Upscale	2	3(e)	Figure 2.1.1		X	X	X
(ii) Inoperative	2	3(e)	- -		X	X	X
(iii) Downscale	2	3(e)	≥5 percent of full scale		(g)	(g)	(g)
(10) Turbine Stop Valve Closure	2	4	≤10% valve closure				(i)
(11) Generator Load Rejection	2	2	(j)				(i)

Table 4.6.2a

INSTRUMENTATION THAT INITIATES SCRAM

Surveillance Requirement

	Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(1)	Manual Scram	None	Once per 3 months	None
(2)	High Reactor Pressure	None	Once per month (1)	Once per 3 months (1)
(3)	High Drywell Pressure	None	Once per month (1)	Once per 3 months (1)
(4)	Low Reactor Water Level	Once/day	Once per month (1)	Once per 3 months (1)
(5)	High Water Level Scram Discharge Volume	None	Once per month	Once per 3 months
(6)	Main-Steam-Line Isolation Valve Position	None	Once per 3 months	None
(7)	High Radiation Main-Steam Line	Once/shift	Once per week	Once per 3 months

Table 4.6.2a (cont'd)

INSTRUMENTATION THAT INITIATES SCRAM

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(8) Shutdown Position of Reactor Mode Switch	None	Once during each major refueling outage	None
(9) Neutron Flux			
(a) IRM			
(i) Upscale	(f)	(f)	(f)
(ii) Inoperative	(f)	(f)	(f)
(b) APRM			
(i) Upscale	None	Once/week	Once/week
(ii) Inoperative	None	Once/week	Once/week
(iii) Downscale	None	Once/week	Once/week
(10) Turbine Stop Valve Closure	None	Once per 3 months	None
(11) Generator Load Rejection	None	Once per month	Once per 3 months

NOTES FOR TABLES 3.6.2a AND 4.6.2a

(a) May be bypassed when necessary for containment inerting.

(b) May be bypassed in the refuel and shutdown positions of the reactor mode switch with a keylock switch.

(c) May be bypassed in the refuel and startup positions of the reactor mode switch when reactor pressure is less than 600 psi.

(d) No more than one of the four IRM inputs to each trip system shall be bypassed.

(e) No more than two C or D level LPRM inputs to an APRM shall be bypassed and only four LPRM inputs to an APRM shall be bypassed in order for the APRM to be considered operable. No more than one of the four APRM inputs to each trip system shall be bypassed provided that the APRM in the other instrument channel in the same core quadrant is not bypassed. A Travelling In-Core Probe (TIP) chamber may be used as a substitute APRM input if the TIP is positioned in close proximity to the failed LPRM it is replacing.

(f) Calibrate prior to starting and normal shutdown and thereafter check once per shift and test once per week until no longer required.

(g) IRM's are bypassed when APRM's are onscale. APRM downscale is bypassed when IRM's are onscale.

(h) Each of the four isolation valves has two limit switches. Each limit switch provides input to one of two instrument channels in a single trip system.

(i) May be bypassed when reactor power level is below 45%.

(j) Trip upon loss of oil pressure to the acceleration relay.

(k) May be bypassed when placing the reactor mode switch in the SHUTDOWN position and all control rods are fully inserted.

(l) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2a, the primary sensor will be calibrated and tested once per operating cycle.

Table 3.6.2b

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
PRIMARY COOLANT ISOLATION (Main Steam, Cleanup, and Shutdown)							
(1) Low-Low Reactor Water Level	2	2	>5 inches (Indicator Scale)			X	X
(2) Manual	2	1	- -	X	X	X	X
MAIN-STEAM-LINE ISOLATION							
(3) High Steam Flow Main-Steam Line	2	2	≤105 psid			X	X

Table 3.6.2b (cont'd)

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
(4) High Radiation Main-Steam Line	2	2	$\leq$5 times normal background at rated power			X	X
(5) Low Reactor Pressure	2	2	$\geq$850 psig				X
(6) Low-Low-Low Condenser Vacuum	2	2	$\geq$7 in. mercury vacuum			(a)	X
(7) High Temperature Main-Steam-Line Tunnel	2	2	$\leq$200F			X	X

Table 3.6.2b (cont'd)

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable			
				Shutdown	Refuel	Startup	Run
CLEANUP SYSTEM ISOLATION							
(8) High Area Temperature	1	2	≤190	X	X	X	X
SHUTDOWN COOLING SYSTEM ISOLATION							
(9) High Area Temperature	1	1	≤170	X	X	X	X
CONTAINMENT ISOLATION							
(10) Low-Low Reactor Water	2	2	≥5 inches (Indicator Scale)	(c)		X	X

Table 3.6.2b (cont'd)

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set Point	Reactor Mode Switch Position in Which Function Must Be Operable			
				Shutdown	Refuel	Startup	Run
(11) High Drywell Pressure	2	2	$\leq$3.5 psig	(c)		(b)	(b)
(12) Manual	2	1	- -	X	X	X	X

Table 4.6.2b

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
PRIMARY COOLANT ISOLATION (Main Steam, Cleanup and Shutdown)			
(1) Low-Low Reactor Water Level	Once/day	Once per month(d)	Once per 3 months(d)
(2) Manual	--	Once during each major refueling outage	--
MAIN-STEAM-LINE ISOLATION			
(3) High Steam Flow Main-Steam Line	Once/day	Once per month(d)	Once per 3 months(d)
(4) High Radiation Main-Steam Line	Once/shift	Once/week	Once per 3 months
(5) Low Reactor Pressure	Once/day	Once per month(d)	Once per 3 months(d)

Table 4.6.2b (cont'd)

INSTRUMENTATION THAT INITIATES
PRIMARY COOLANT SYSTEM OR CONTAINMENT ISOLATION

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
CONTAINMENT ISOLATION			
(10) Low-Low Reactor Water Level	Once/day	Once per month(d)	Once per 3 months(d)
(11) High Drywell Pressure	Once/day	Once per month(d)	Once per 3 months(d)
(12) Manual	- -	Once during each operating cycle	- -

NOTES FOR TABLES 3.6.2b AND 4.6.2b

(a) May be bypassed in the refuel and startup positions of the reactor mode switch when reactor pressure is less than 600 psi.

(b) May be bypassed when necessary for containment inerting.

(c) May be bypassed in the shutdown mode whenever the reactor coolant system temperature is less than 215°F.

(d) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2b, the primary sensor will be calibrated and tested once per operating cycle.

Table 3.6.2c

INSTRUMENTATION THAT INITIATES OR ISOLATES EMERGENCY COOLING

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set-Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
EMERGENCY COOLING INITIATION							
(1) High-Reactor Pressure	2	2	≤1080 psig	(b)		x	x
(2) Low-Low Reactor Water Level	2	2	≥ 5 inches (Indicator Scale)	(b)		x	x
EMERGENCY COOLING ISOLATION (for each of two systems)							
(3) High Steam Flow Emergency Cooling System	2	2 (a)	≤19 psid	(b)		x	x
(4) High Radiation Emergency Cooling System Vent	1	2	≤25 mr/hr	(b)		x	x

Table 4.6.2c

INSTRUMENTATION THAT INITIATES OR ISOLATES EMERGENCY COOLING

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
EMERGENCY COOLING INITIATION			
(1) High Reactor Pressure	None	Once per month[c]	Once per 3 months[c]
(2) Low-Low Reactor Water Level	Once/day	Once per month[c]	Once per 3 months[c]
EMERGENCY COOLING ISOLATION (for each of two systems)			
(3) High Steam Flow Emergency Cooling System	None	Once per 3 months[c]	Once per 3 months[c]
(4) High Radiation Emergency Cooling System Vent	Once/shift	Once during each major refueling outage	Once during each major refueling outage

NOTES FOR TABLES 3.6.2c AND 4.6.2c

(a) Each of two differential pressure switches provide inputs to one instrument channel in each trip system.

(b) May be bypassed in the cold shutdown condition.

(c) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2c, the primary sensor will be calibrated and tested once per operating cycle.

Table 3.6.2d

INSTRUMENTATION THAT INITIATES CORE SPRAY[e]

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set-Point	Reactor Mode Switch Position in Which Function Must Be Operable			
				Shutdown	Refuel	Startup	Run
START CORE SPRAY PUMPS							
(1) High Drywell Pressure	2	2	≤3.5 psig	(d)	x	(a)	(a)
(2) Low-Low Reactor Water Level	2	2	≥5 inches (Indicator Scale)	(b)	X	X	X
OPEN CORE SPRAY DISCHARGE VALVES							
(3) Reactor Pressure and either (1) or (2) above.	2	2	≥365 psig	X	X	X	X

Table 4.6.2d

INSTRUMENTATION THAT INITIATES CORE SPRAY

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
START CORE SPRAY PUMPS			
(1) High Drywell Pressure	Once/day	Once per month(c)	Once per 3 months(c)
(2) Low-Low Reactor Water Level	Once/day	Once per month(c)	Once per 3 months(c)
OPEN CORE SPRAY DISCHARGE VALVES			
(3) Reactor Pressure and either (1) or (2) above	None	Once per month(c)	Once per 3 months(c)

NOTES FOR TABLES 3.6.2d AND 4.6.2d

(a) May be bypassed when necessary for containment inerting.

(b) May be bypassed when necessary for performing major maintenance as specified in Specification 2.1.1.e.

(c) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2d, the primary sensor will be calibrated and tested once per operating cycle.

(d) May be bypassed when necessary for integrated leak rate testing.

(e) The instrumentation that initiates the Core Spray System is not required to be operable, if there is no fuel in the reactor vessel.

Table 3.6.2e

INSTRUMENTATION THAT INITIATES CONTAINMENT SPRAY

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set-Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
(1) a. High Drywell Pressure	2	2	≤ 3.5 psig	(a)		x	x
and							
b. Low-Low Reactor Water Level	2	2	≥ 5 inches (Indicator Scale)	(a)		x	x

Table 4.6.2e

INSTRUMENTATION THAT INITIATES CONTAINMENT SPRAY

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(1)a. High Drywell Pressure	Once/day	Once per month[(b)]	Once per 3 months[(b)]
b. Low-Low Reactor Water Level	Once/day	Once per month[(b)]	Once per 3 months[(b)]

NOTES FOR TABLES 3.6.2e AND 4.6.2e

(a) May be bypassed in the shutdown mode whenever the reactor coolant temperature is less than 215° F.

(b) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2e, the primary sensor will be calibrated and tested once per operating cycle.

Table 3.6.2f

INSTRUMENTATION THAT INITIATES AUTO DEPRESSURIZATION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set-Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
INITIATION							
(1) a. Low-Low-Low Reactor Water Level	2 (a)	2 (a)	≥ 3.88 inches (Indicator scale)	(b)		(b)	x
and							
b. High Drywell Pressure	2 (a)	2 (a)	≤ 3.5 psig	(b)		(b)	x

Table 4.6.2f

INSTRUMENTATION THAT INITIATES AUTO DEPRESSURIZATION

Surveillance Requirement

Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
INITIATION			
(1) a. Low-Low-Low Reactor Water	None	Once per month (c)	Once per 3 months (c)
and			
b. High Drywell Pressure	Once/day	Once per month (c)	Once per 3 months (c)

NOTES FOR TABLES 3.6.2f AND 4.6.2f

(a) Both instrument channels in either trip system are required to be energized to initiate auto depressurization. One trip system is powered from power board 102 and the other trip system from power board 103.

(b) May be bypassed when the reactor pressure is less than 110 psig and the reactor coolant temperature is less than the corresponding saturation temperature.

(c) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2f, the primary sensor will be calibrated and tested once per operating cycle.

Table 3.6.2k

HIGH PRESSURE COOLANT INJECTION

Limiting Condition for Operation

Parameter	Minimum No. of Tripped or Operable Trip Systems	Minimum No. of Operable Instrument Channels per Operable Trip System	Set-Point	Reactor Mode Switch Position in Which Function Must Be Operable: Shutdown	Refuel	Startup	Run
(1) Low Reactor Water Level	2	2	≥ 53 inches (Indicator scale)	(a)		(a)	X
(2) Automatic Turbine Trip	1	1	---	(a)		(a)	X

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Table 4.6.2k

HIGH PRESSURE COOLANT INJECTION

Surveillance Requirement

	Parameter	Sensor Check	Instrument Channel Test	Instrument Channel Calibration
(1)	Low Reactor Water Level	Once per day	Once per month[b]	Once per 3 months[b]
(2)	Automatic Turbine Trip	None	Once during each operating cycle	None

NOTES FOR TABLES 3.6.2k AND 4.6.2k

(a) May be bypassed when the reactor pressure is less than 110 psig and the reactor coolant temperature is less than the corresponding saturation temperature.

(b) Only the trip circuit will be calibrated and tested at the frequencies specified in Table 4.6.2k, the primary sensor will be calibrated and tested once per operating cycle.

Amendment No. 1

The reactor protection system automatically initiates a reactor scram to prevent exceeding established limits. In addition, other protective instrumentation is provided to initiate action which mitigates the consequences of accidents or terminates operator error.

The reactor protection system is a dual channel type (Table 3.6.2.a). Each trip system except the manual scram has two independent instrument channels. Operation of either channel will trip the trip system, i.e., the trip logic of the channel is one-out-of-two. A simultaneous trip of both trip systems will cause a reactor scram, i.e., the tripping logic of the trip systems is two-out-of-two. The tripping logic of the total system is referred to as one-out-of-two taken twice. This system will accommodate any single failure and still perform its intended function and in addition, provide protection against spurious scrams. The reliability of the dual channel system or probability that it will perform its intended function is less than that of a one-out-of-two system and somewhat greater than that of a two-out-of-three system (Section VIII-A.1.0 of the FSAR).

The instrumentation used to initiate action other than scram is generally similar to the reactor protection system. There are usually two trip systems required or available for each function. There are usually two instrument channels for each trip system. Either channel can trip the trip system but both trip systems are required to initiate the respective action. Where only one trip system is provided only one instrument channel is required to trip the trip system. All instrument channels except those for automatic depressurization are normally energized. De-energizing causes a trip. Power to the trip systems for each function is from reactor protection system buses 11 and 12.

The signals for initiating automatic blowdown and rod block differ from other initiating signals in that only one of the two trip systems is required to start blowdown or initiate rod block. Both instrument channels in the trip system must trip to initiate automatic blowdown. This difference is due to the requirement that automatic depressurization be prevented unless A.C. power is available to the emergency core cooling systems. The instrument channels in the trip system for automatic depressurization are normally de-energized. In order to cause a trip both instrument channels must be energized. Power to energize the instrument channels is from power boards 102 and 103. If A.C. power is lost to one power board, one trip system becomes inoperable

b. The control rod block functions are provided to prevent excessive control rod withdrawal so that MCPR is maintained greater than 1.06. The trip logic for this function is 1 out of n; e.g., any trip on one of the eight APRM's, eight IRM's or four SRM's will result in a rod block. The minimum instrument channel requirements provide sufficient instrumentation to assure the single failure criteria is met. The minimum instrument channel requirements for the rod block may be reduced by one for a short period of time to allow maintenance, testing, or calibration. This time period is only ∿3% of the operating time in a month and does not significantly increase the risk of preventing an inadvertent control rod withdrawal.

The APRM rod block trip is flow biased and prevents a significant reduction in MCPR especially during operation at reduced flow. The APRM provides gross core protection; i.e., limits the gross core power increase from withdrawal of control rods in the normal withdrawal sequence. The trips are set so that MCPR is maintained greater than 1.06.

The APRM rod block also provides local protection of the core; i.e., the prevention of critical heat flux in a local region of the core, for a single rod withdrawal error from a limiting control rod pattern. The trip point is flow biased. The worst case single control rod withdrawal error has been analyzed and the results show that with the specified trip settings rod withdrawal is blocked before the MCPR reaches 1.06, thus allowing adequate margin. Below ∿60% power the worst case withdrawal of a single control rod results in a MCPR > 1.06 without rod block action, thus below this level it is not required.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level. Analysis of the worst case accident results in rod block action before MCPR approaches 1.06.

A downscale indication on an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in control rod motion and the control rod motion is prevented. The downscale rod blocks are set at 5 percent of full scale for IRM and 2 percent of full scale for APRM (APRM signal is generated by averaging the output signals from eight LPRM flux monitors).

ATTACHMENT B

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Supporting Information

The purpose of these changes is to make corrections and changes in the Protective Instrumentation Tables. The reason for each change is provided below:

Page 6 & 13 — The low-low-low reactor vessel water level set point has been changed from 127.1 inches to 3.88 inches (Indicator Scale). The reason for this change is that new instruments are being installed in accordance with recommended manufacturer's instructions with the high pressure side connected to the core spray inlet header and the low side connected to the condensing pot. In this way the indicator scale will be decreasing as the water level decreases. Although the indicator scale set point will be different, the actual water level set point elevation (7'11" below minimum normal water level) will be the same. Therefore, the same margin of safety will be maintained.

Page 188 — Currently, Specification 3.6.2a(1) requires the control rods to be inserted, when the instrumentation that initiates scram is inoperable. Since this instrumentation is not required to be operable, when there is no fuel in the reactor vessel; Specification 3.6.2a(1) is being revised to delete the requirement for inserting control rods.

Page 192 — The Condenser Low Vacuum scram was deleted, since this trip is not considered part of the Reactor Protection System. As indicated on Page 9 of the Additional Information section of the Sixth Supplement to the Final Safety Analysis Report, this trip is provided for the protection of equipment other than the reactor.

The remaining parameters on Page 192 have been renumbered.

The wording of the setpoint for the High Radiation Main-Steam-Line has been clarified to accurately describe the setpoint as $\leq$ 5 times normal background at rated power.

The footnote (k) has been placed in the REFUEL column for the Shutdown Position of the Reactor Mode Switch. The footnote is explained with the changes on Page 196.

<u>Page 193</u>

Renumbered the remaining parameters on Page 193 due to the deletion of the Condenser Low Vacuum scram.

Footnote (g) has been added to the "RUN" column of the APRM downscale scram. This footnote which appears on Page 196, indicates that the APRM downscale scram is bypassed in the "RUN" mode when the IRM's are onscale. This footnote addition allows the APRM's downscale scram to be bypassed in any operating condition whenever the IRM's are onscale.

<u>Page 194</u>

Added footnote (1) to the Instrument Channel Calibration column for parameters (2), (3) and (4). This footnote is explained with the changes on Page 196.

The surveillance requirement for the Condenser Low Vacuum change has been deleted for the same reasons as indicated on Page 192.

The remaining parameters on Page 194 have been renumbered due to the deletion of the Condenser Low Vacuum scram.

<u>Page 195</u>

The parameters on Page 195 have been renumbered due to the deletion of the Condenser Low Vacuum scram.

<u>Page 196</u>

Footnote (h) has been revised to reflect the actual design of the main steam line isolation valve scram logic (i.e. each isolation valve has two limit switches and each limit switch provides input to one of two instrument channels in a single trip system). Isolation valves 01-01 and 01-03 provide inputs into trip system 11 and isolation valves 01-02 and 01-04 provide inputs into trip system 12. This provides an increased margin of safety because each valve has two limit switches providing input to separate instrument channels in the same trip system. The original design consisted of one limit switch for each isolation valves, with each limit switch providing input to each of two instrument channels in a single trip system.

Footnote (k) has been added to allow bypassing the shutdown position of Reactor Mode Switch scram in the "REFUEL" mode when placing the switch in the "SHUTDOWN" position and it has been verified that all control rods are fully inserted. This change is requested to prevent unnecessary hydraulic shock to the Control Rod Drive System when switching to

SHUTDOWN from the REFUEL mode with all rods fully inserted.

Footnote (1) has been added to indicate that the trip circuits for the reactor pressure indicators, drywell pressure indicators and reactor water level indicators will be calibrated once per three months, and tested once per month, while the primary sensors will be calibrated and tested once per operating cycle. This change is requested because the existing primary sensors for this instrumentation are being replaced with electronic sensors which are reliable and maintain their accuracy for longer periods of time than mechanical switches, as discussed in NEDO-21617-A. The new sensors will be located outside primary containment and have been environmentally qualified in accordance with the IEEE-323-1974. The environmental conditions for which this equipment has been qualified are given in Table 4-2 of NEDO-21617-A and meets the requirements for the maximum abnormal environmental conditions in the Reactor Building Outside Primary Containment.[1]

<u>Page 197</u>

The requirement that primary coolant isolation on low-low reactor water level signal be operable in the SHUTDOWN and REFUEL modes has been deleted. This is consistent with Specification 3.2.7 which requires the reactor coolant system isolation capability to be operable only during power operating conditions, whenever the reactor head is on.

The requirement that main steam line isolation on high steam flow in the main steam line signal be operable in the SHUTDOWN and REFUEL mode has been deleted. This is consistent with the requirements of Specification 3.2.7.

<u>Page 198</u>

The wording of the setpoint for initiation of main steam line isolation on high radiation has been clarified to accurately describe the setpoint as $\leq$ 5 times normal background at rated power. The requirement that main steam line isolation on high radiation-main steam line, low-low-low condenser vacuum, and high temperature main steam line tunnel signal be operable in the SHUTDOWN and REFUEL modes has been deleted. This is consistent with the requirements of Specification 3.2.7.

<u>Page 199</u>

The requirement that containment isolation on low-low reactor water level signal be operable in the REFUEL mode has been deleted. A new footnote (c) has been added to the SHUTDOWN column. This footnote which appears on Page 204 allows bypassing the containment

[1] Nine Mile Point Unit 1 Pipe Whip Analysis Transmitted June 29, 1973, P. D. Raymond to A. Giambusso.

isolation initiation in the SHUTDOWN mode whenever the reactor coolant system temperature is less than 215°F. These changes are consistent with the requirements of Specification 3.3.4.

Page 200

The requirement that containment isolation on high drywell pressure signal be operable in the REFUEL mode has been deleted. Footnote (c) has been deleted from the SHUTDOWN and REFUEL columns for containment isolation on high drywell pressure. New footnote (c) has been added to the SHUTDOWN column. This footnote which appears on Page 204 allows bypassing the containment isolation initiation in the SHUTDOWN mode, whenever the reactor coolant system temperature is less than 215°F. These changes are consistent with the requirements of Specification 3.3.4.

Page 201

Footnote (d) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (1) and (5). The footnote is explained with the changes on Page 204.

Page 203

Footnote (d) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (10) and (11). The footnote is explained with the changes on Page 204.

Page 204

Footnote (c) has been changed to allow bypassing containment isolation initiation in the SHUTDOWN mode, whenever the reactor coolant system temperature is less than 215°F.

Footnote (d) has been added which indicates that only the trip circuit will be calibrated once per three months, and tested once per month, while the primary sensor will be calibrated and tested once per operating cycle. The reason for this change is the same as for footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Page 205

Emergency Cooling initiation has been changed from High-High Reactor Pressure to High Reactor Pressure. This is the correct initiating signal at the same setpoint of 1080 psig. Nine Mile Point Unit 1 presently does not have a high-high reactor pressure set point.

The old footnote (b) has been replaced by a new footnote (b) in the SHUTDOWN column for Emergency Cooling Initiation and Isolation. The requirement for the Emergency Cooling System Initiation and Isolation

to be operable in the REFUEL mode has been deleted. The reason for these changes are explained with the changes on Page 207.

Page 206 — The Emergency Cooling initiation parameter has been changed to High Reactor Pressure for the same reason as indicated on Page 205.

Footnote (c) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (1) and (2). The footnote is explained on Page 207.

Page 207 — The old footnote (b) has been replaced by a footnote which indicates that the Emergency Cooling initiation can be bypassed in the cold shutdown condition. This is consistent with Specification 3.1.3 on Page 47 which indicates that the Emergency Cooling System is only required to be operable whenever the reactor coolant temperature is greater than 212°F. Therefore, initiation of the Emergency Cooling System is not required in the COLD SHUTDOWN or REFUEL modes.

Footnote (c) has been added which indicates that only the trip circuit will be calibrated once per three months, and tested once per month, while the primary sensor will be calibrated and tested once per operating cycle. The reason for this change is the same as footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Page 208 — Footnote (d) has been added to the SHUTDOWN column for the start of the core spray pumps on High Drywell Pressure. The footnote is explained with the changes on Page 210.

Footnote (e) which appears on Page 210 has been added. This footnote allows the instruments that initiate core spray to be inoperable, if there is no fuel in the reactor vessel. This change is consistent with Specification 3.1.4 which requires the core spray system to be operable whenever there is irradiated fuel in the reactor vessel.

Page 209 — Footnote (c) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (1), (2) and (3). The footnote is explained with the changes on Page 210.

Page 210 — Footnote (c) has been added to indicate that only the trip circuit will be calibrated once per three months,

and tested once per month, while the primary sensor will be calibrated and tested once per operating cycle. The reason for this change is the same as for footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Footnote (d) has been added to indicate that the start of core spray pumps on High Drywell Pressure may be bypassed in the SHUTDOWN mode when necessary for integrated leak rate testing. The reason for this change is that integrated leak rate testing requires pressurizing the primary containment to 22 psig, well above the high drywell pressure scram set point.

Footnote (e) has been added as indicated in the changes for Page 208.

Page 211 — Footnote (a) has been added to the SHUTDOWN column for parameters (1)a and b. The requirement for the Containment Spray System initiation to be operable in the REFUEL mode has been deleted. The reason for these changes are explained with the changes on Page 212a.

Page 212 — Footnote (b) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (1)a and b. The footnote is explained with the changes on Page 212a.

Page 212a — Footnote (a) has been added which indicates that initiation of the Containment Spray System on high drywell pressure and low-low reactor water level may be bypassed in the SHUTDOWN mode whenever the reactor coolant temperature is less than 215°F. This change is consistent with Specification 3.3.7 on Page 158 which indicates that the Containment Spray System is only required to be operable whenever the reactor coolant temperature is greater than 215°F. Therefore, initiation of Containment Spray System is not required in the COLD SHUTDOWN or REFUEL mode.

Footnote (b) has been added which indicates that only the trip circuit will be calibrated once per three months, and tested once per month, while the primary sensors will be calibrated once per operating cycle. The reason for this change is the same as for footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Page 213

The set point for parameter (1)a has been changed to $\geq$ 3.88 inches (Indicator scale). The reason for this change is that these instruments will be installed so that the indicator scale will be decreasing as the water level decreases. Although the indicator scale set point will be different, the actual water level set point elevation (7'11" below minimum normal water level) will be the same. Therefore, the same margin of safety will be maintained.

Footnote (b) has been added to the STARTUP and SHUTDOWN column for parameters (1)a and (b). The requirement that Auto Depressurization initiation be operable in the COLD SHUTDOWN and REFUEL conditions has been deleted. The reasons for these changes are discussed on Page 215 where footnote (b) is explained.

Page 214

Footnote (c) has been added to the Instrument Channel Calibration and Instrument Channel Test columns for parameters (1)a and b. The footnote is explained with the changes on Page 215.

Page 215

Footnote (b) has been added which indicates that Auto Depressurization initiation may be bypassed when the reactor pressure is less than 110 psig and the reactor coolant temperature is less than the corresponding saturation temperature. This is consistent with Specification 3.1.5 on Page 57, which indicates that the Auto Depressurization system is required to be operable whenever the reactor's coolant pressure is greater than 110 psig and the reactor coolant temperature is greater than the corresponding saturation temperature.

Footnote (c) has been added which indicates that only the trip circuit will be calibrated once per three months, and tested once per month, while the primary sensors will be calibrated once per operating cycle. The reason for this change is the same as for footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Page 231

The set point for the High Pressure Coolant Injection (HPCI) system initiation on low Reactor Water Level has been changed to $\geq$ 53 inches (Indicator scale). This set point is the same as the existing setpoint of 1 foot below minimum normal water level at Elevation 302' 9". This change is being made to be consistent with the other water level set points which are given in indicator scale inches.

The requirement for (HPCI) System initiation on Low Reactor Water Level to be operable in the REFUEL mode has been deleted. Added a new footnote (a) in the STARTUP and SHUTDOWN column for HPCI initiation on Low Reactor Water Level and Automatic Turbine Trip. These changes are explained with the changes on Page 232a.

Page 232 — Added footnote (b) to the Instrument Channel Calibration and Instrument Channel Test columns of parameter (1). This footnote is explained with the changes on Page 232a.

Page 232a — A new footnote (a) has been added which indicates that HPCI initiation on Low Reactor Water Level and Automatic Turbine Trip may be bypassed when the reactor pressure is less than 110 psig and the reactor coolant temperature is less than the corresponding saturation temperature. This is consistent with Specification 3.1.8 on Page 71. Therefore, HPCI initiation is also not required in the COLD SHUTDOWN or REFUEL modes.

The previous footnote (a) has been deleted, because it is no longer necessary to bypass HPCI initiation in the COLD SHUTDOWN mode to perform maintenance as specified in Specification 2.1.1e.

Footnote (b) has been added which indicates that only the trip circuit will be calibrated once per three months, and tested once per month, while the primary sensors will be calibrated and tested once per operating cycle. The reason for this change is the same as for footnote (1) on Page 196, that the electronic sensors replacing the existing primary sensors are more reliable and maintain their accuracy for longer periods of time than mechanical switches.

Page 233 — A typographical error was corrected in the fourth sentence of the second paragraph. The wording "...in two-out-of-two" was changed to "...is two-out-of-two".

The reference in the second paragraph to the low condenser vacuum trip was deleted. This trip is not a safety related function and is only provided for protection of equipment as indicated for the changes on Page 192.

Page 237a — The last sentence on the page has been revised to indicate that the IRM and APRM downscale rod blocks are set at 5 and 2 percent of full scale respectively. This is consistent with Table 3.1.2g.

[illegible]

ATTACHMENT C

NIAGARA MOHAWK POWER CORPORATION

License No. DPR-63

Docket No. 50-220

AMENDMENT CLASSIFICATION

The proposed amendment to the Operating License has been evaluated and determined to fall within the definition of Class III of 10CFR170.22, thereby requiring a fee of four thousand dollars ($4,000.00).

The proposed amendment includes some changes to the Nine Mile Point Unit 1 Technical Specifications which are administrative in nature. Other changes have clearly been identified by the Commission as acceptable in its review and acceptance of General Electric Topical Report NEDO-21617.