ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
LICENSE NPF-69
DOCKET NO. 50-410

Proposed Changes to Technical Specifications

Replace existing pages 3/4 3-32, 3-37, 3-38, 3-42, 3-55, 3-57, 3-58, B3/4 3-2 and 3-4 with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate the change.

TABLE 3.3.3-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION(a)	APPLICABLE OPERATIONAL CONDITIONS	ACTION
C. Division III Trip System			
1. HPCS SYSTEM			
a. Reactor Vessel Water Level - Low, Low, Level 2	4(b)	1, 2, 3, 4*, 5*	36
b. Drywell Pressure - High (d)	4(b)	1, 2, 3	36
c. Reactor Vessel Water Level - High, Level 8	4(e)	1, 2, 3, 4*, 5*	32
d. Pump Suction Pressure - Low (Transfer)	2(f)	1, 2, 3, 4*, 5*	37
e. Suppression Pool Water Level - High	2(f)	1, 2, 3, 4*, 5*	37
f. HPCS System Flow Rate - Low (Bypass)	1	1, 2, 3, 4*, 5*	31
g. Pump Discharge Pressure - High (Bypass)	1	1, 2, 3, 4*, 5*	31
h. Manual Initiation (d)	1/System	1, 2, 3, 4*, 5*	35

	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE OPERATIONAL CONDITIONS	ACTION
D. Loss of Power (Divisions I & II)					
1. 4.16-kV Emergency Bus Under-voltage - Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4**, 5**	39
2. 4.16-kV Emergency Bus Under-voltage - Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4**, 5**	39
E. Loss of Power, Division III					
1. 4.16-kV Emergency Bus Under-voltage - Loss of Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4**, 5**	39
2. 4.16-kV Emergency Bus Under-voltage - Degraded Voltage	3/Bus	2/Bus	2/Bus	1, 2, 3, 4**, 5**	39

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
C. Division III Trip System		
1. HPCS SYSTEM		
a. Reactor Vessel Water Level - Low, Low, Level 2	≥108.8 in.*	≥101.8 in.
b. Drywell Pressure - High	≤1.68 psig	≤1.88 psig
c. Reactor Vessel Water Level - High, Level 8	≤202.3 in.*	≤209.3 in.
d. Pump Suction Pressure - Low (Transfer)	≥97 in. H_2O	≥94.5 in. H_2O
e. Suppression Pool Water Level - High	≤201.0 ft. el	≤201.1 ft. el
f. HPCS System Flow Rate - Low (Bypass)	≥825 gpm	≥750 gpm
g. Pump Discharge Pressure - High (Bypass)	≥240 psig	≥220 psig
h. Manual Initiation	NA	NA
D. Loss of Power (Divisions I & II)		
1. 4.16-kV Emergency Bus Undervoltage - Loss of Voltage	a. 4.16-kV basis - ≥3148	≥3051 volts
	b. ≤3.06-sec time delay	≤3.12-sec time delay
2. 4.16-kV Emergency Bus Undervoltage - Degraded Voltage	a. 4.16-kV basis - ≥3847 volts	≥3770 volts
	b. ≤8.16-sec time delay**	≤8.32-sec time delay **
	c. ≤30.6-sec time delay	≤31.2-sec time delay

TABLE 3.3.3-2 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
E. Loss of Power (Division III)		
1. 4.16-kV Emergency Bus Undervoltage - Loss of Voltage	a. 4.16-kV basis - ≥3148 volts	≥3051 volts
	b. ≤3.06-sec time delay	≤3.12-sec time delay
2. 4.16-kV Emergency Bus Undervoltage - Degraded Voltage	a. 4.16-kV basis - ≥3847 volts	≥3770 volts
	b. ≤12.24-sec time delay	≤12.48-sec time delay

* See Bases Figure B3/4 3-1.

** Alarm only without LOCA signal present; Alarm and trip with LOCA signal present.

TABLE 4.3.3.1-1 (Continued)

EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE IS REQUIRED
B. Division II Trip System (Continued)				
2. Automatic Depressurization System Trip System "B"** (Continued)				
a. Reactor Vessel Water Level - Low, Low, Low, Level 1	S	M	R(c)	1, 2, 3
b. ADS Timer	NA	M	Q	1, 2, 3
c. Reactor Vessel Water Level - Low, Level 3 (Permissive)	S	M	R(c)	1, 2, 3
d. LPCI Pump (B and C) Discharge Pressure - High (Permissive)	S	M	R(c)	1, 2, 3
e. Manual Inhibit	NA	M	NA	1, 2, 3
f. Manual Initiation	NA	M(a)	NA	1, 2, 3
C. Division III Trip System				
1. HPCS System				
a. Reactor Vessel Water Level - Low, Low, Level 2	S	M	R(c)	1, 2, 3, 4*, 5*
b. Drywell Pressure - High(b)	S	M	R(c)	1, 2, 3
c. Reactor Vessel Water Level - High, Level 8	S	M	R(c)	1, 2, 3, 4*, 5*
d. Pump Suction Pressure - Low (Transfer)	S	M	R(c)	1, 2, 3, 4*, 5*
e. Suppression Pool Water Level - High	S	M	R(c)	1, 2, 3, 4*, 5*
f. HPCS System Flow Rate - Low (Bypass)	S	M	R(c)	1, 2, 3, 4*, 5*
g. Pump Discharge Pressure - High (Bypass)	S	M	R(c)	1, 2, 3, 4*, 5*
h. Manual Initiation(b)	NA	M(a)	NA	1, 2, 3, 4*, 5*

TABLE 3.3.5-1

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

FUNCTIONAL UNITS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM(a)	ACTION
1. Reactor Vessel Water Level - Low, Low, Level 2	2	50
2. Reactor Vessel Water Level - High, Level 8(b)	2	50
3. Pump Suction Pressure - Low (Transfer)	2(c)	51
4. Manual Initiation(d)	1/system(e)	52

TABLE NOTATIONS

(a) A channel may be placed in an inoperable status for up to 2 hours for required surveillance without placing the Trip System in the tripped condition provided at least one other OPERABLE channel in the same Trip System is monitoring that parameter.

(b) The RCIC Level 8 trip may be bypassed to perform RCIC 150 psig operational surveillance test in accordance with Specification 4.7.4.c.2.

(c) One Trip System with one-out-of-two logic.

(d) Manual initiation is not required to be OPERABLE with indicated reactor vessel water level on the wide-range instrument greater than the Level 8 setpoint coincident with the vessel pressure less than 600 psig due to the hot calibration/cold operation level error.

(e) One Trip System with one channel.

TABLE 3.3.5-2

REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

FUNCTIONAL UNITS	TRIP SETPOINT	ALLOWABLE VALUE
1. Reactor Vessel Water Level - Low, Low, Level 2	$\geq$108.8 in.*	$\geq$101.8 in.
2. Reactor Vessel Water Level - High, Level 8	$\leq$202.3 in.*	$\leq$209.3 in.
3. Pump Suction Pressure - Low (Transfer)	$\geq$102 in. H_2O	$\geq$101 in. H_2O
4. Manual Initiation	NA	NA

* See Bases Figure B3/4 3-1.

TABLE 4.3.5.1-1

REACTOR CORE ISOLATION COOLING SYSTEM

ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNITS	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1. Reactor Vessel Water Level - Low, Low, Level 2	S	M	R*
2. Reactor Vessel Water Level - High, Level 8	S	M	R*
3. Pump Suction Pressure - Low (Transfer)	S	M	R*
4. Manual Initiation **	NA	M†	NA

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* Perform the calibration procedure for the trip unit setpoint at least once per 31 days.

** Manual initiation is not required to be OPERABLE with indicated reactor vessel water level on the wide range instrument greater than Level 8 setpoint coincident with the vessel pressure less than 600 psig because of the hot calibration/cold operation level error.

† Manual initiation switches shall be tested at least once per 18 months during shutdown. All other circuitry associated with manual initiation shall receive a CHANNEL FUNCTIONAL TEST at least once per 31 days as part of circuitry required to be tested for automatic system actuation.

3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION (Continued)

high or low end of the setting has a direct bearing on safety, are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved.

Except for the MSIVs, the FSAR Chapter 15 safety analysis does not address individual sensor response times or the response times of the logic systems to which the sensors are connected. For AC-operated valves, it is assumed that the AC power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the DC-operated valve is assumed; thus the signal delay (sensor response) is concurrent with the 13-second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 13-second delay. It follows that checking the valve speeds and the 13-second time for establishing emergency power will establish the response time for the isolation functions.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analysis. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION

The emergency core cooling system actuation instrumentation is provided to initiate actions to mitigate the consequences of accidents that are beyond the ability of the operator to control. This specification provides the OPERABILITY requirements, Trip Setpoints, and response times that will ensure effectiveness of the systems to provide the design protection. Although the instruments are listed by system, in some cases the same instrument may be used to send the actuation signal to more than one system at the same time.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analysis. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

The HPCS pump suction pressure-low represents an analytical transfer level in the condensate storage tank of 14 feet at maximum flow and 3.0 feet at minimum flow. This is above the corresponding minimum tank level of 10.2 feet at maximum flow and 2.9 feet at minimum flow required to prevent vortexing.

3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION (Continued)

between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION

The reactor core isolation cooling system actuation instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability.

The RCIC pump suction pressure-low represents an analytical transfer level in the condensate storage tank of 13.1 feet at maximum flow and 2.53 feet at minimum flow. This is above the corresponding minimum tank level of 5.0 feet at maximum flow and 2.5 feet at minimum flow required to prevent vortexing.

3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION

The control rod block functions are provided consistent with the requirements of the specifications in Section 3/4.1.4, Control Rod Program Controls, and Section 3/4.2, Power Distribution Limits. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is an allowance for instrument drift specifically allocated for each trip in the safety analyses. The Trip Setpoint and Allowable Value also contain additional margin for instrument accuracy and calibration capability. The scram discharge volume water level-high setpoint is referenced to a scram discharge volume instrument zero level at elevation 263 feet 10 inches.

3/4.3.7 MONITORING INSTRUMENTATION

3/4.3.7.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring instrumentation ensures that: (1) the radiation levels are continually measured in the areas served by the individual channels; (2) the alarm or automatic action is initiated when the radiation level Trip Setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with 10 CFR 50, Appendix A, General Design Criteria (GDC) 19, 41, 60, 61, 63 and 64.

ATTACHMENT B

NIAGARA MOHAWK POWER CORPORATION
LICENSE NPF-69
DOCKET NO. 50-410

Supporting Information and Significant Hazards

Introduction

In a submittal dated February 1, 1988, Niagara Mohawk committed to revising the Bases of the Nine Mile Point Unit 2 Technical Specifications regarding HPCS and RCIC pump suction transfer from the condensate storage tanks to the suppression pool. Further review by Niagara Mohawk has indicated that the Nominal Trip Setpoint and Allowable Values addressing pump suction transfer require revision as well.

Discussion

The existing Technical Specifications for condensate storage tank level, Item C.1.d on Table 3.3.3.2 for HPCS and Item 3 on Table 3.3.5-2 for RCIC, do not accurately reflect the level at which transfer should occur. Suction transfer setpoints derived from the Condensate Storage Tank levels specified in the Technical Specifications, assuming high flow conditions, would be less conservative than the calculated analytical limit. The plant instrumentation systems controlling suction transfer are set to actuate at levels considerably higher than those specified in the Technical Specifications. Therefore, the suction transfer setpoints in the plant do provide protection against vortexing under all flow conditions and are conservative with respect to design analyses.

Since the condensate storage tanks are non-safety related, suction transfer is controlled by pressure switches located on safety-related portions of the respective pump suction lines. The actual transfer level in the tank at a given pressure switch setpoint will vary as a function of flow rate due to the effects of resistance and velocity head losses in the suction piping. In order to provide a parameter with a constant value and to reduce potential confusion over what the tank level in the Technical Specifications actually represents, the setpoints for the pressure switches will be specified in the Technical Specifications in lieu of tank level.

HPCS

The required minimum submergence level to prevent vortexing in the HPCS system varies from a maximum of 10.2 feet above the bottom of the tank at high flow (7175 gpm) to a minimum of 2.9 feet at low flow (1500 gpm). The Allowable Value of 12.25 feet in the Technical Specifications was specified for the high flow condition and, based on the original design calculations, corresponded to an actuation pressure at the pressure switch of 101 in. H_2O. At low flow conditions actuation would occur at a water level of 3.6 feet.

During a review of the design calculations, Niagara Mohawk personnel recognized that the calculations did not take into account velocity head. Under low flow conditions, the velocity head component is less than two inches. However, at maximum pump flow, velocity head equals approximately 2.5 feet. Consequently, the Technical Specifications Allowable Value should specify 14.2 feet for the maximum flow condition, which corresponds to 3.1 feet at minimum flow. The Nominal Trip Setpoint (NTSP) used in the field, 106.5" H_2O, and the corresponding Allowable Value, 104" H_2O, provided actuation at over 14.9 feet and over 3.9 feet at maximum and minimum flow, respectively.

In the revised calculations, taking into account velocity head, the actuation pressures are 47" H_2O for maximum flow and 91.2" H_2O for minimum flow. If 92" H_2O is used as an analytical limit to cover both the minimum and maximum flow conditions, then transfer will occur above 14 feet under high flow and above 3 feet under low flow. To address both flow conditions, the analytical limit for tank level should be greater than 14 feet.

The current Technical Specification values are non-conservative in that, if transfer occurred at 13 feet under high flow conditions, the actuation pressure would be too low to protect against vortexing at minimum flow. However, the Shift Supervisor would not realize actuation pressure was too low since Technical Specification 3/4.3.3 would be met.

To avoid a Technical Specification setpoint that only represents one flow condition, this change replaces condensate tank level with the corresponding actuation pressure for the pressure switch. An analytical actuation setpoint of 92 in. H_2O corresponds to a water level of 14 feet at maximum flow and 3 feet at minimum flow. This is above the required corresponding minimum submergence level of 10.2 and 2.9 feet, respectively. Allowing for instrument and calibration accuracies results in an Allowable Value of 94.5 in. H_2O, and with the addition of drift a Nominal Trip Setpoint of 97 in. H_2O.

HPCS System Parameters:

	Minimum Required Submergence	Minimum Actuation Pressure	Analytical Actuation Pressure	Tank Level @ Actuation Pressure
Low Flow (1550 GPM)	2.9 feet	91.2" H_2O	92" H_2O	3 feet
High Flow (7175 GPM)	10.2 feet	46.9" H_2O	92" H_2O	14 feet

Analytical Limit	92" H_2O
Allowable Value	94.5" H_2O
Nominal Trip Setpoint	97" H_2O

RCIC

The required minimum submergence level to prevent vortexing in the RCIC system varies from 5.0 feet at maximum flow (600 GPM) to 2.5 feet at minimum flow (75 GPM). Based on the original design calculations, the corresponding actuation pressures are 9.6" and 99" H_2O, respectively. Based on the original

calculations, the present Allowable Value of 5.9 feet corresponds to an actuation pressure of 20.6" H_2O at maximum flow and 139.5" H_2O at minimum flow. An allowable value of 144.5" H_2O and a setpoint of 145.5" H_2O were used in the field for conservatism. This setpoint provided actuation at over 16.9 feet and 6.3 feet for the high and low flow condition, respectively.

In the revised calculations, taking into account velocity head, the actuation pressures are 1.5" H_2O for maximum flow and 99" H_2O for minimum flow. If 99" H_2O is to be used as an analytical limit to cover both the minimum and maximum flow conditions, then transfer will occur above 13.1 feet under high flow and above 2.5 feet under low flow. To address both flow conditions, the analytical limit for tank level should be greater than 13.1 feet.

The current Allowable Value of 5.9 feet is not conservative in that a transfer occurring at 7.0 feet, under high flow, indicates an actuation setpoint of approximately 25" H_2O. Thus, the transfer level is above the Allowable Value, but the actuation pressure is below the analytical limit.

To avoid a Technical Specification setpoint that only represents one flow condition, this change replaces condensate tank level with the actuation pressure for the pressure switch. An analytical limit of 99" H_2O will assure actuation above the required minimum submergence level under all flow conditions. Allowing for instrument and calibration accuracies, an Allowable Value of 101" H_2O is used with a corresponding Nominal Trip Setpoint of 102" H_2O.

RCIC System Parameters:

	Minimum Required Submergence	Minimum Actuation Pressure	Analytical Actuation Pressure	Tank Level @ Actuation Pressure
Low Flow (75 GPM)	2.50 feet	98.6" H_2O	99" H_2O	2.53 feet
High Flow (600 GPM)	5 feet	1.5" H_2O	99" H_2O	13.1 feet

Analytical Limit	99" H_2O
Allowable Value	101" H_2O
Nominal Trip Setpoint	102" H_2O

Due to the change to pump suction pressure, the footnote on Table 3.3.3-2 specifying condensate storage tank elevation has been eliminated. The existing footnote for Item D.2.b, Emergency Bus Undervoltage-Degraded Voltage, has been revised from a cross to a double asterisk.

Conclusion

Pump suction pressure provides a better means of addressing suction transfer of the HPCS and RCIC systems than tank level. The actuation pressures remain constant at all flow conditions while the tank levels vary. Incorporating the actuation pressure in the pump suction lines will result in a Technical Specification that is easier to implement and understand.

10 CFR 50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis using the standards in 10 CFR 50.92 concerning the issue of no significant hazards consideration. Therefore, in accordance with 10 CFR 50.91, the following analysis has been performed:

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The minimum required submergence levels to prevent vortexing in the tank have not changed. The Allowable Values and Nominal Trip Setpoints proposed in the amendment will assure actuation occurs above the minimum submergence levels under all flow conditions. As a result, HPCS and RCIC pump performance will not be affected. The response of the HPCS and RCIC systems to previously analyzed accidents is not impacted. Therefore, operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously analyzed.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

Pump suction pressure provides a better means of addressing suction transfer of the HPCS and RCIC systems than specifying a tank level. The design of the HPCS and RCIC systems has not been changed, and the performance of systems and components remains within the bounds of previous assumptions. Therefore, the operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The Analytical Limits specified will assure that actuation occurs above the minimum submergence depth under all flow conditions. The Allowable Values proposed provide sufficient margin between the Analytical Limits and the Allowable Values to account for instrument and calibration accuracies. Drift is accounted for between the Allowable Values and Nominal Trip Setpoints such that the Allowable Values will not be exceeded during a calibration interval. Therefore, operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant reduction in any margin of safety.