



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

July 23, 1992

Docket No. 50-220

Mr. B. Ralph Sylvia
Executive Vice President, Nuclear
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Sylvia:

SUBJECT: ISSUANCE OF AMENDMENT FOR NINE MILE POINT NUCLEAR STATION UNIT NO. 1
(TAC NO. M81951)

The Commission has issued the enclosed Amendment No. 130 to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station Unit No. 1 (NMP-1). The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated October 22, 1991, as supplemented November 19, 1991.

The amendment revises Technical Specification Table 3.6.2g to establish specific setpoints for the Recirculation Flow Unit Comparator and Recirculation Flow Unit Upscale Control Rod Block functions and to revise the operational condition (Reactor Mode Switch Position) applicability to be consistent with the NRC's Standard Technical Specifications for General Electric Boiling Water Reactors (NUREG-0123). The amendment also revises Technical Specification Table 4.6.2g to make the Instrument Channel Calibration surveillance frequency for the Recirculation Flow Unit Comparator, Flow Unit Inoperative, and Flow Unit Upscale Control Rod Withdrawal Block consistent with NUREG-0123.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Donald S. Brinkman, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 130 to DPR-63
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. B. Ralph Sylvia
Niagara Mohawk Power Corporation

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DATED: July 23, 1992

AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-63-NINE MILE POINT
UNIT 1

Docket File

NRC & Local PDRs

PDI-1 Reading

S. Varga, 14/E/4

J. Calvo, 14/A/4

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C. Vogan

D. Brinkman

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G. Hill (4), P-137

Wanda Jones, P-130A

C. Grimes, 11/F/23

E. Kendrick, 8/E/23

R. Jones, 8/E/23

ACRS (10)

OPA

OC/LFMB

PD plant-specific file

C. Cowgill, Region I

cc: Plant Service list

July 23, 1992

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A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:

Donald S. Brinkman, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 130 to DPR-63
2. Safety Evaluation

cc w/enclosures:

See next page

OFFICE	LA:PDI-1	PM:PDI-1 <i>DJB</i>	<i>OGS</i>	D:PDI-1	
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DATE	<i>7/13/92</i>	<i>7/13/92</i>	<i>7/20/92</i>	<i>7/23/92</i>	

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

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 130
License No. DPR-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated October 22, 1991, as supplemented November 19, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-63 is hereby amended to read as follows:

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Revise Appendix A as follows:

Remove Pages

218
221
236

Insert Pages

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 130, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 23, 1992

Table 3.6.2g (cont'd)

INSTRUMENTATION THAT INITIATES CONTROL ROD WITHDRAWAL BLOCKLimiting Condition for Operation

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels per Operable Trip System</u>	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				<u>Shutdown</u>	<u>Refuel</u>	<u>Startup</u>	<u>Run</u>
(4) Recirculation Flow							
a. Comparator Off Normal	2	1	≤6.8%				X
b. Flow Unit Inoperative	2	1	--				X
c. Flow Unit Upscale	2	1	≤103.7%				X
(5) Refuel Platform and Hoists	2 (f)	1	--		X		
(6) Mode Switch in Shutdown	1	1	--	X			

Table 4.6.2g (cont'd)

INSTRUMENTATION THAT INITIATES CONTROL ROD WITHDRAWAL BLOCKSurveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
(3) APRM			
a. Inoperative	None	Once per month	None
b. Upscale (Biased by Recirculation Flow)	None	Once per month	Once per 3 months
c. Downscale	None	Once per month	Once per 3 months
(4) Recirculation Flow			
a. Comparator Off Normal	None	Once per month	Once per 3 months
b. Flow Unit Inoperative	None	Once per month	Once per 3 months
c. Flow Unit Upscale	None	Once per month	Once per 3 months

BASES FOR 3.6.2 AND 4.6.2 PROTECTIVE INSTRUMENTATION

The set points on the generator load rejection and turbine stop valve closure scram trips are set to anticipate and minimize the consequences of turbine trip with failure of the turbine bypass system as described in the bases for Specification 2.1.2. Since the severity of the transients is dependent on the reactor operating power level, bypassing of the scrams below the specified power level is permissible.

Although the operator will set the setpoints at the values indicated in Tables 3.6.2.a-1, the actual values of the various set points can differ appreciably from the value the operator is attempting to set. The deviations include inherent instrument error, operator setting error and drift of the set point. These errors are compensated for in the transient analyses by conservatism in the controlling parameter assumptions as discussed in the bases for Specification 2.1.2. The deviations associated with the set points for the safety systems used to mitigate accidents have negligible effect on the initiation of these systems. These safety systems have initiation times which are orders of magnitude greater than the difference in time between reaching the nominal set point and the worst set point due to error. The maximum allowable set point deviations are listed below:

Neutron Flux

- APRM Scram, $\pm 2.3\%$ of rated neutron flux (analytical limit is 120% of rated flux)
- APRM Rod Block, $\pm 2.3\%$ of rated neutron flux (analytical limit is 110% of rated flux)
- IRM, $\pm 2.5\%$ of rated neutron flux

Recirculation Flow Upscale, $\pm 1.6\%$ of rated recirculation flow (analytical limit is 107.1% of rated flow)
Recirculation Flow Comparator, $\pm 2.09\%$ of rated recirculation flow (analytical limit is 10% flow differential)

Reactor Pressure, ± 15.8 psig

Containment Pressure ± 0.053 psig

Reactor Water Level, ± 2.6 inches of water

Main Steam Line Isolation Valve Position, $\pm 2.5\%$ of stem position

Scram Discharge Volume, +0 and -1 gallon

Condenser Low Vacuum, ± 0.5 inches of mercury



UNITED STATES
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WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 130 TO FACILITY OPERATING LICENSE NO. DPR-63

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT NO. 1

DOCKET NO. 50-220

1.0 INTRODUCTION

By letter dated October 22, 1991, as supplemented November 19, 1991, Niagara Mohawk Power Corporation (the licensee) submitted a request for changes to the Nine Mile Point Nuclear Station Unit No. 1 (NMP-1), Technical Specifications (TS). The requested changes would revise TS Table 3.6.2g to establish specific setpoints for the Recirculation Flow Unit Comparator and Recirculation Flow Unit Upscale Control Rod functions and to revise operational condition (Reactor Mode Switch Position) applicability to be consistent with the NRC's Standard Technical Specifications for General Electric Boiling Water Reactors (GE-STs) (Ref. 1). The amendment would also revise TS Table 4.6.2g to make the Instrument Channel Calibration surveillance frequency for the Recirculation Flow Unit Comparator, Flow Unit Inoperative, and Flow Unit Upscale Control Rod Withdrawal Block consistent with the GE-STs.

2.0 EVALUATION

NMP-1 is a Boiling Water Reactor Type 2 class (BWR/2) non-jet pump plant with five external recirculation pumps, which began commercial operation in December 1969. NMP-1 has a control rod withdrawal block (CRWB) system, which performs a function equivalent to the Rod Block Monitor (RBM) in later generation plants, to mitigate the rod withdrawal error (RWE) at power event. Two separate trains (channels) of flow instrumentation (Recirculation Flow Units) receive signals from the five monitoring elements in the recirculation piping to provide the Average Power Range Monitor (APRM) units with input for flow-biasing the APRM upscale scram and APRM CRWB setpoints. The two flow units also have three internal operability monitoring trip functions which can initiate a CRWB signal: Flow Comparator, Flow Inoperative, and Flow Upscale. These flow unit rod block trips do not perform any safety-related functions since the APRM upscale scram and rod block trip setpoints are clipped at the rated recirculation flow.

The current TS Table 4.6.2g, Items (4)a, b and c, specify an Instrument Channel Calibration frequency of once per month for the Recirculation Flow Unit Comparator, Flow Unit Inoperative, and Flow Unit Upscale CRWB functions. Performance of these surveillances require application of a one-half scram signal through the APRM instruments for a lengthy period of time and can lead to unnecessary equipment cycling and the increased likelihood of inadvertent scrams. The GE-STs require these surveillances to be performed only quarterly in the RUN mode. The observed historical performance of the NMP-1 specific recirculation flow instrumentation has shown the monthly drift to be consistent with the design specification model assumptions; therefore the drift component may be expanded to quarterly drift values as appropriate.

The current TS Table 3.6.2g, Item (4)a, does not specify a Recirculation Flow Unit Comparator Off Normal CRWB trip setpoint. A setpoint value of $\leq 6.8\%$ has been determined by a plant specific calculation using the General Electric (GE) setpoint methodology outlined in NEDC-31336 (Ref. 2), based on an analytical limit of a 10% recirculation flow differential.

The current TS Table 3.6.2g, Item (4)c, does not specify a Recirculation Flow Unit Upscale CRWB trip setpoint but refers to TS Figure 2.1.1. This figure provides a formula for adjusting the flow-biased Average Power Range Monitor (APRM) CRWB and scram setpoints with respect to recirculation flow; however, it does not specify a Flow Unit Upscale setpoint. A setpoint value of $\leq 103.7\%$ has been determined by a plant specific calculation using the same GE methodology, based on an analytical limit of 107.1% of rated recirculation flow, which corresponds to the maximum recirculation pump flow capacity.

Both of the specific setpoint values above were determined so as to be consistent with the standard GE setpoint methodology. The referenced GE topical report is currently still under staff review and is therefore not an approved methodology. However, these setpoint values are not required for safety limit monitoring and since they are determined by plant/cycle specific analyses the reference is deemed acceptable.

The TS 3/4.6.2 Bases provide the maximum allowable setpoint deviations to allow for inherent instrument error, operator setting error, and instrument drift of the setpoint. Since the historical performance of the NMP-1 specific recirculation flow instrumentation drift has been shown to be consistent with the design specification model assumptions, the model has been used to determine quarterly drift values. This has resulted in a Recirculation Flow Comparator Off Normal allowable setpoint deviation of $\pm 2.09\%$ of rated recirculation flow and a Recirculation Flow Unit Upscale allowable setpoint deviation of $\pm 1.6\%$ of rated recirculation flow. The nominal values for the Flow Unit Comparator Off Normal and Upscale trip setpoint deviations proposed above were determined by considering the expected total loop inaccuracy, calibration inaccuracy, and instrument drift over a 3-month period.

Since the APRM scram setpoint is biased by the recirculation flow, the same GE setpoint methodology was also used to determine the plant specific APRM scram and APRM rod block allowable setpoint deviations to be $\pm 2.3\%$ of rated neutron flux, based on the existing TS analytical limits for the APRM scram setpoint of 120% rated flux and the APRM rod block setpoint of 110% rated flux.

The staff has reviewed the licensee's submittal proposing changes to TS 3/4.6.2 to allow consistency with the GE-STs, regarding the required instrument calibration frequency and to establish plant specific trip setpoint values for the Control Rod Withdrawal Block functions. Based on the above safety evaluation, the staff concludes that the requested changes are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 64656). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor:
E. Kendrick

Date: July 23, 1992

6.0 REFERENCES

1. U.S. Nuclear Regulatory Commission, "Standard Technical Specifications for General Electric Boiling Water Reactors," NUREG-0123, Revision 3, December 1980.
2. "General Electric Instrument Setpoint Methodology," General Electric Company topical report NEDC-31336-P, October 1986.