Mr. B. Ralph Sylvia Executive Vice President and Chief Nuclear Officer Niagara Mohawk Power Corporation Generation Business Group D-2 300 Erie Boulevard West Syracuse, NY 13202

SUBJECT: ISSUANCE OF AMENDMENT FOR NINE MILE POINT NUCLEAR STATION, UNIT 2 (TAC NO. M95082)

Dear Mr. Sylvia:

The Commission has issued the enclosed Amendment No. 76 to Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station, Unit 2 (NMP-2). The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated March 20, 1996.

The amendment revises TS 3/4.3.1 "Reactor Protection System Instrumentation" to modify operability requirements for the Average Power Range Monitor for operational conditions 3, 4, and 5.

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

Sincerely,

/S/

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

Docket No. 50-410

Enclosures: 1. Amendment No. 76 to NPF-69 2. Safety Evaluation

cc w/encls: See next page

DOCUMENT NAME: G:\NMP2\NM295082.AMD

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UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555-0001

August 28, 1996

Mr. B. Ralph Sylvia
Executive Vice President and Chief Nuclear Officer
Niagara Mohawk Power Corporation
Generation Business Group D-2
300 Erie Boulevard West
Syracuse, NY 13202

SUBJECT: ISSUANCE OF AMENDMENT FOR NINE MILE POINT NUCLEAR STATION, UNIT 2 (TAC NO. M95082)

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Darl & Hord

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

Docket No. 50-410

Enclosures: 1. Amendment No. ⁷⁶ to NPF-69 2. Safety Evaluation

cc w/encls: See next page

B. Ralph Sylvia Niagara Mohawk Power Corporation

cc:

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3

Mr. Jim Rettberg New York State Electric & Gas Corporation Corporate Drive Kirkwood Industrial Park P.O. Box 5224 Binghamton, NY 13902-5224 Nine Mile Point Nuclear Station Unit 2

DATED: ______August 28, 1996

AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. NPF-69-NINE MILE POINT UNIT 2

INERSTATING.

PUBLIC PDI-1 Reading S. Varga, 14/E/4 J. Mitchell S. Little D. Hood OGC G. Hill (2), T-5 C3 C. Grimes, 11/E/22 ACRS L. Doerflein, Region I M. Waterman J. Mauck J. Wermiel

cc: Plant Service list



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UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-410

NINE MILE POINT NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. ⁷⁶ License No. NPF-69

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated March 20, 1996, 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 1;
 - 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.
- 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. NPF-69 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. ⁷⁶ are hereby incorporated into this license. Niagara Mohawk Power Corporation shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Jocelyn A. Mitchell, Acting Director

Jocelyn A. Mitchell, Acting 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: August 28, 1996

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 76 TO FACILITY OPERATING LICENSE NO. NPF-69

DOCKET NO. 50-410

Revise Appendix A as follows:

Remove Pages	<u>Insert Pages</u>
3/4 3-2	3/4 3-2
3/4 3-4	3/4 3-4
3/4 3-7	3/4 3-7
3/4 3-9	3/4 3-9

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

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APPLICABLE **MINIMUM OPERABLE OPERATIONAL CHANNELS PER TRIP** CONDITIONS SYSTEM (a) FUNCTIONAL UNIT **ACTION** Intermediate Range Monitors: 1. 2 **Neutron Flux - High** 3 1 а. 3, 4 3 2 5(b) 3 3 2 3 b. Inoperative 1 3, 4 3 2 3 5 3 2. Average Power Range Monitor(c): Neutron Flux - Upscale, a. 2 Setdown 2 1 5(b)(k) 2 3 Flow Biased Simulated b. **Thermal Power - Upscale** 1 2 4 Fixed Neutron Flux -2 1 4 c. Upscale 1, 2 Inoperative 2 1 d. 5(k) 2 3 3. **Reactor Vessel Steam Dome** Pressure - High 1, 2(d) 2 1 **Reactor Vessel Water Level -**4. 1, 2 Low, Level 3 2 1 76

NINE MILE POINT - UNIT 2 3/4 3-2

REACTOR PROTECTION SYSTEM INSTRUMENTATION

TABLE NOTATIONS

- (a) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the Trip System in the tripped condition provided at least one OPERABLE channel in the same Trip System is monitoring that parameter.
- (b) Unless adequate shutdown margin has been demonstrated per Specification 3.1.1, and the Refuel position one-rod-out interlock is OPERABLE per Specification 3.9.1, the shorting links shall be removed from the RPS circuitry prior to and during the time any control rod is withdrawn.*
- (c) An APRM channel is inoperable if there are less than 2 LPRM inputs per level or less than 14 LPRM inputs to an APRM channel.
- (d) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
- (e) This function shall be automatically bypassed when the reactor mode switch is not in the Run position.
- (f) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required.
- (g) Also actuates the standby gas treatment system.
- (h) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
- This function shall be automatically bypassed when turbine first stage pressure is less than or equal to 136.4** psig, equivalent to THERMAL POWER less than 30% of RATED THERMAL POWER.
- (j) Also actuates the EOC-RPT system.
- (k) Required to be OPERABLE only during shutdown margin demonstrations performed per Specification 3.10.3.

^{*} Not required for control rods removed per Specification 3.9.10.1 or 3.9.10.2.

^{**} To allow for instrument accuracy, calibration and drift, a setpoint of less than or equal to 125.8 psig turbine first stage pressure shall be used.

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

OPERATIONAL CHANNEL CONDITIONS FOR FUNCTIONAL CHANNEL **CHANNEL** WHICH SURVEILLANCE FUNCTIONAL UNIT CHECK TEST **CALIBRATION(a)** REQUIRED Intermediate Range Monitors: 1. **Neutron Flux - High** S/U, S,(b) S/U(c), W, R(d) R а. 2 S 3.4,5 W R b. Inoperative NA W NA 2, 3, 4, 5 Average Power Range Monitor(e): 2. Neutron Flux - Upscale, S/U, S,(b) S/U(c), W SA a. 2 · Setdown S W SA 5(n) Flow-Biased Simulated Thermal S, D(f) S/U(c), Qb. W(g)(h), SA, R(i) 1 **Power - Upscale Fixed Neutron Flux - Upscale** S S/U(c), QW(g), SAc. 1 Inoperative d. NA Q NA 1, 2, 5(n) Reactor Vessel Steam Dome Pressure -3. S Q R(k) 1,2 High Reactor Vessel Water Level - Low, S Q 4. R(k) 1, 2 Level 3 Main Steam Line Isolation Valve -Ó 5. NA R 1 Closure Main Steam Line Radiation - High Q 6. S R 1, 2(j) 7. **Drywell Pressure - High** S Q R(k) 1, 2(1)

NINE MILE POINT - UNIT 2

3/4 3-7

AMENDMENT NO. 41,76

TABLE 4.3.1.1-1 (Continued)

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

- (a) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (b) The IRM and SRM channels shall be determined to overlap for at least 1/2 decade during each startup after entering OPERATIONAL CONDITION 2, and the IRM and APRM channels shall be determined to overlap for at least 1/2 decade during each controlled shutdown, if not performed within the previous 7 days.
- (c) Within 24 hours before startup, if not performed within the previous 7 days.
- (d) Perform a CHANNEL FUNCTIONAL TEST with the mode switch in Startup/Hot Standby and the plant in the COLD SHUTDOWN or REFUEL Condition.
- (e) The LPRMs shall be calibrated at least once per 1000 effective full-power hours (EFPH) using the TIP system.
- (f) Verify measured core flow (total core flow) to be in the range of established core flow at the existing loop flow (APRM%).
- (g) This calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER ≥25% of RATED THERMAL POWER. Adjust the APRM channel if the absolute difference is greater than 2% of RATED THERMAL POWER. Any APRM channel gain adjustment made in compliance with Specification 3.2.2 shall not be included in determining the absolute difference.
- (h) This calibration shall consist of the adjustment of the APRM flow-biased channel to conform to a calibrated flow signal.
- (i) This calibration shall consist of verifying the 6 ± 0.6 seconds simulated thermal power time constant.
- (j) This function is not required to be OPERABLE when the reactor pressure vessel head is removed per Specification 3.10.1.
- (k) Perform the calibration procedure for the trip unit setpoint at least once per 92 days.
- (I) This function is not required to be OPERABLE when PRIMARY CONTAINMENT INTEGRITY is not required to be OPERABLE per Special Test Exception 3.10.1.
- (m) With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.
- (n) Required to be OPERABLE only during shutdown margin demonstrations performed per Specification 3.10.3.



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION RELATED TO AMENDMENT NO.76TO FACILITY OPERATING LICENSE NO. NPF-69 NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION, UNIT 2

DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated March 20, 1996, Niagara Mohawk Power Corporation (the licensee) proposed an amendment to the operating license for Nine Mile Point, Unit 2 (NMP2). The proposed amendment would revise Tables 3.3.1-1 and 4.3.1-1 of Technical Specification (TS) 3/4.3.1 "Reactor Protection System Instrumentation" to delete the operability requirement for the Average Power Range Monitor (APRM) Neutron Flux-Upscale, Setdown and Inoperative functions in Operational Conditions (OCs) 3 (Hot Shutdown) and 4 (Cold Shutdown). These same functions would also be revised for OC 5 (Refueling) to indicate that operability will only be required during shutdown margin demonstrations performed per TS 3.10.3.

2.0 BACKGROUND

2.1 Basis for Request

The licensee notes that the revisions to the APRM functions are proposed to support the planned replacement of the existing APRM system with a digital General Electric (GE) Nuclear Measurement Analysis and Control (NUMAC) power range neutron monitoring system (PRNMS). Specifically, the amendment is intended to support the licensee's plans to replace Local Power Range Monitors (LPRMs) during the outage scheduled for fall 1996, and to install the NUMAC-PRNM System in 1998. The NUMAC-PRNM is designed to replace the existing APRM System and to support the eventual installation of the Oscillation Power Range Monitor (OPRM) system required for the detection of thermal-hydraulic instability conditions in the reactor.

These planned modifications are based upon, and are described in, Report NEDO-31960, "BWR Owners' Group Long-Term Solutions Licensing Methodology," approved by the Commission July 12, 1993; the licensee's response of November 8, 1994, selecting Option III in NEDO-31960 for NMP2; NRC Generic Letter 94-02, "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal-Hydraulic Instabilities in Boiling Water Reactors" dated July 11, 1994; and General Electric Licensing Topical Report, NEDC-32410P-A, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor (NUMAC-PRNM) Retrofit Plus Option III Stability Trip Function," which was approved by the Commission September 5, 1995.

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The existing TS requires certain APRM functions to be operable during refueling outages. If these functions are inoperable, all operations involving core alterations must be suspended. Under the existing TS operability requirements, replacement of LPRMs or installation of the NUMAC-PRNMS could result in suspending core alterations while the associated APRMs are inoperable.

2.2 System Description

The Neutron Monitoring System (NMS) consists of the Source Range Monitors (SRMs), Intermediate Range Monitors (IRMs), LPRMs, APRMs, the Rod Block Monitor (RBM), and the Traversing Incore Probe. The SRMs, IRMs, and APRMs provide trip signals to the Reactor Protection System (RPS) and the control rod block portion of the Reactor Manual Control System (RMCS). The NMS also provides local and core average power information to the reactor operator. The APRM and some portions of the IRM are safety-related subsystems.

The SRM subsystem is composed of four detectors that are inserted into the core during shutdown conditions. Although the SRM subsystem is not safety-related, it is important to safety, and is required by TS to be operational in OC 5. During refueling operations, the plant operators monitor the SRMs to ensure the neutron flux remains within an acceptable range, and to control the approach to reactor criticality.

The IRM subsystem is composed of eight incore neutron flux detectors that provide protection against local criticality events caused by control rod withdrawal errors. The IRMs monitor neutron flux levels from the upper range of the SRMs into the lower range of the APRMs (from 10^{-4} % to 15% full reactor power). The IRMs provide control rod block and scram functions on high neutron flux. The safety design bases of the IRM subsystem is to generate trip signals to prevent fuel damage resulting from anticipated or abnormal operational transients while operating in the intermediate power range.

In the power range, the LPRMs, which are fixed ion chambers arranged in a uniform pattern throughout the reactor core, monitor neutron flux. The LPRMs cover a range of approximately 1% to 125% of full reactor power. The APRM subsystem averages selected groupings of these LPRM signals for continuous indication of average reactor power. The safety design bases of the APRM subsystem is to prevent fuel damage while the reactor is operating in the power range by generating reactor trip signals in response to average neutron flux increases. Additionally, for low power operating conditions (OC 2), the APRM Neutron Flux-Upscale, Setdown function provides a secondary scram trip signal for the IRM Neutron Flux-High scram function. In OC 5, the APRMs operate in the setdown mode to provide a secondary control rod block and scram function at 12% and 15% core average power, respectively.

3.0 EVALUATION

The NRC staff reviewed the proposed TS changes to determine the affect of the proposed changes on the safety design bases of NMP2. The staff's evaluation is discussed in this section.

The licensee proposes to delete the operability requirements for the APRM Neutron Flux-Upscale, Setdown function in OC 3 and OC 4. The licensee states that during normal operations all control rods are fully inserted into the core, and the reactor mode switch position control rod withdrawal blocks do not allow any control rods to be withdrawn. Consequently, the APRM functions are not required under these conditions. TS 3.9.10, "Control Rod Removal," does allow one control rod to be withdrawn in OC 4 by placing the mode switch in the refuel position. However, in the refuel position, the refueling interlocks are in place, which together with adequate shutdown margin, will preclude unacceptable reactivity excursions. This conclusion is consistent with NUREG-1433, "Standard Technical Specifications General Electric Plants, BWR/4," which require the APRM Neutron Flux-High, Setdown function to be operable during Mode 2 only. The NRC staff, therefore, finds this justification acceptable.

Since the APRM Neutron Flux-Upscale, Setdown function operability would not be required in OC 3 and OC 4, the licensee also requested relief from surveillance requirements for this function while in these operational conditions. Removal of these surveillance requirements is consistent with the operability requirements for these operational conditions. The NRC staff, therefore, finds this removal acceptable.

The APRM Neutron Flux-Upscale, Setdown function is required during shutdown margin demonstrations in OC 5. Consequently, the licensee requested a change to the TSs to allow the APRMs to be inoperable during OC 5 except during shutdown margin demonstrations. This change is consistent with Amendments 41 and 7 for the Limerick Generating Station, Units 1 and 2, that were approved by the NRC July 30, 1990. The licensee acknowledges that, unlike the Limerick IRM subsystem, portions of the NMP2 IRM subsystem are not safety-related. However, the licensee will continue to monitor the performance of the IRM subsystem in accordance with TS to ensure adequate protection against reactivity increases that could lead to a criticality event. The NRC staff, therefore, finds this justification for the TS change to be acceptable.

The NMP2 TS also differs from the Limerick TS in that multiple control rod removals are permitted by NMP2 TS 3.9.10.2. However, TS 3.9.10.2 requires that the fuel assemblies surrounding the affected control rods must first be removed from the surrounding fuel cell. As discussed in the STS, control rods withdrawn from a core fuel cell containing no fuel assemblies do not affect core reactivity. Therefore, these control rods are not required to be inserted to scram the reactor.

The licensee states that the control rod block functions are tested in accordance with the TS, and thereby concludes that sufficient measures are provided to ensure there will be adequate systems and interlocks available without the APRMs to preclude inadvertent reactor criticality or violation of a safety limit during operations in OCs 3, 4, and 5. The NRC staff concurs with this licensee conclusion.

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In summary, from its review of the justifications for changing the NMP-2 TS to allow the APRMs to be out of service during OCs 3, 4, and 5, except during shutdown margin demonstrations, the NRC staff concludes that the requested TS changes are consistent with the applicable BWR STS and the safety design bases for NMP2. Therefore, the proposed TS changes are acceptable.

4.0 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.

5.0 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 and changes surveillance requirements. 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 (61 FR 20852). 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.

6.0 <u>CONCLUSION</u>

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 Contributors: M. Waterman D. Hood Date: August 28, 1996