

April 5, 1990

Docket No. 50-220

Mr. Lawrence Burkhardt III  
Executive Vice President, Nuclear Operations  
Niagara Mohawk Power Corporation  
301 Plainfield Road  
Syracuse, New York 13212

Dear Mr. Burkhardt:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 73405)

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The Commission has issued the enclosed Amendment No. 114 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 June 1, 1989, as amended on August 8, 1989 and February 20, 1990.

This amendment revises Technical Specification Table 4.6.2g "Instrumentation that Initiates Control Rod Withdrawal Block - Surveillance Requirement" and Table 4.6.2g, Note g, to 1) delete the calibration requirement for the SRM and IRM Detector Not in Startup Position and inoperative instrument channels, 2) delete the sensor check requirement on all SRM and IRM instrumentation channels (that initiates a control rod withdrawal block), and 3) revise Table 4.6.2g, Note g, to reflect the changes made to Table 4.6.2g.

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

Sincerely,

Original signed by

Robert E. Martin, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 114 to DPR-63
2. Safety Evaluation

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

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Sincerely,

*Robert E. Martin*  
Robert E. Martin, Senior Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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1. Amendment No. 114 to DPR-63
2. Safety Evaluation

cc: w/enclosures  
See next page

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Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station,  
Unit No. 1

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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 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 114  
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 June 1, 1989, as amended August 8, 1989 and February 20, 1990, 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:

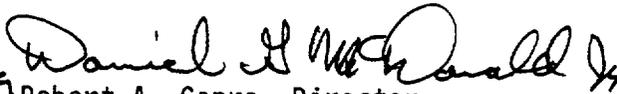
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 114, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

*Active for*  
  
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: April 5, 1990

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Revise Appendix A as follows:

Remove Pages

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Insert Pages

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Table 4.6.2g

INSTRUMENTATION THAT INITIATES CONTROL ROD WITHDRAWAL BLOCK

Surveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
(1) SRM			
a. Detector Not in Startup Position	N/A	(g)	N/A
b. Inoperative	N/A	(g)	N/A
c. Upscale	N/A	(g)	(g)
(2) IRM			
a. Detector not in Startup Position	N/A	(g)	N/A
b. Inoperative	N/A	(g)	N/A
c. Downscale	N/A	(g)	(g)
d. Upscale	N/A	(g)	(g)

NOTES FOR TABLES 3.6.2g and 4.6.2g

- (a) No more than one of the four SRM inputs to the single trip system shall be bypassed.
- (b) No more than one of the four IRM inputs to each instrument channel shall be bypassed. These signals may be bypassed when the APRM's are onscale.
- (c) No more than one of the four APRM inputs to each instrument channel shall be bypassed provided that the APRM in the other instrument channel in the same core quadrant is not bypassed. No more than two C or D level LPRM inputs to an APRM shall be bypassed and only four LPRM inputs to only one APRM shall be bypassed in order for the APRM to be considered operable. In the Run mode of operation, bypass of two chambers from one radial core location in any one APRM shall cause that APRM to be considered inoperative. 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. If one APRM in a quadrant is bypassed and meets all requirements for operability with the exception of the requirement of at least one operable chamber at each radial location, it may be returned to service and the other APRM in that quadrant may be removed from service for test and/or calibration only if no control rod is withdrawn during the calibration and/or test.
- (d) May be bypassed in the startup and refuel positions of the reactor mode switch when the IRM's are onscale.
- (e) This function may be bypassed when the count rate is  $\geq 100$  cps.
- (f) One sensor provides input to each of two instrument channels. Each instrument channel is in a separate trip system.
- (g) Calibrate and/or test prior to startup and normal shutdown. Thereafter test once per week until no longer required.
- (h) The actuation of either or both trip systems will result in a rod block.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 114 TO FACILITY OPERATING LICENSE NO. DPR-63

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-220

INTRODUCTION

By letter dated June 1, 1989, as amended August 8, 1989 and February 20, 1990, Niagara Mohawk Power Corporation (the licensee) requested an amendment to Facility Operating License No. DRP-63 for the Nine Mile Point Nuclear Station Unit No. 1 (NMP-1). The change will revise the calibration frequencies for certain Source Range Monitor (SRM) and the Intermediate Range Monitor (IRM) instrument channels. NMP-1 Technical Specification Table 4.6.2g currently requires the SRM and IRM Detector Not-in-Startup-Position, upscale, downscale and inoperative control rod-withdrawal-block instrument channels to be calibrated prior to startup and normal shutdown. The instrumentation listed in Table 4.6.2g provides a control rod block to assure that no control rod is withdrawn unless the appropriate monitors are in position and available to provide neutron flux information. However, the control rod-withdrawal-blocks are not required during normal shutdown.

The licensee, by letters dated August 8, 1989 and February 20, 1990, provided supplemental information. These supplemental submittals did not affect the proposed TS changes noticed in the Federal Register (54 FR 35105) on August 23, 1989 and did not affect the staff's proposed determination that no significant hazards would result from these changes.

DISCUSSION

The SRM system monitors thermal neutron flux in the core over a range sufficient to observe the core shutdown-source level, the approach to criticality and to provide sufficient overlap into the IRM system. The SRM system provides a control rod-withdrawal-block under conditions of high neutron flux or of certain channel malfunctions. These channel malfunctions are only operable when the reactor is in either the Startup or Refuel mode and are bypassed when the reactor is operating in the Run mode. Specifically, the SRM system provides upscale, detector Not-in-Startup-Position, and inoperative signals to the control rod-withdrawal-block circuitry.

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The IRM system monitors the thermal neutron flux in the core and provides continuity of this flux information by overlapping both the SRM and the APRM systems at the lower end and the upper end of its measuring range. This intermediate range of coverage enables the IRM system to provide flux level information to the operator during plant heatups and low power operations.

In addition to providing neutron flux level information, the IRM system will initiate a rod-withdrawal-block demand signal under conditions of high neutron flux or channel malfunctions. These malfunctions are only operable when the reactor is in either the Startup or Refuel mode and are bypassed when the reactor is operating in the Run mode. Specifically, the IRM system provides upscale, downscale, detector Not-in-Startup Position, and certain inoperative signals to the control rod-withdrawal-block circuitry.

Any instrument channel having a detector Not-in-Startup-Position condition in either the SRM or IRM system initiates a control rod block to assure that no control rod is withdrawn unless the appropriate detectors are properly inserted to provide the operator with neutron flux information. A position switch on the detector retraction mechanism provides the control rod-withdrawal-block signal. The SRM and IRM inoperative instrument channels will initiate a rod block on any of the following: a) low detector voltage, b) electronics drawer internal module unplugged, and c) channel mode switch not in operate position.

The licensee proposes to change Technical Specification Table 4.6.2g "Instrumentation that initiates Control Rod-Withdrawal-Block - Surveillance Requirement" and Table 4.6.2g, Note (g). The proposed changes will 1) delete the calibration requirement for the SRM and IRM Detector Not-in-Startup-Position and inoperative instrument channels, 2) delete the sensor check requirement on all SRM and IRM instrumentation channels and 3) revise Table 4.6.2g, Note (g), to reflect the changes made to Table 4.6.2g.

Table 4.6.2g currently requires the SRM and IRM Detector Not-in-Startup-Position, upscale, downscale and inoperative control rod-withdrawal block instrument channels (the SRM system does not have a downscale channel) to be calibrated prior to startup and normal shutdown. The instrumentation listed in Table 4.6.2g provides a control rod block to assure that no control rod is withdrawn unless the appropriate monitors are in position and available to provide neutron flux information. However, the control rod-withdrawal-blocks are not required during normal shutdown for the SRMs or IRMs in the detector not-in-Startup-Position mode or in the Inoperative mode. Therefore, the requirement to calibrate the SRMs or IRMs in the detector Not-in-Startup-Position mode or in the Inoperative mode prior to shutdown is unnecessary.

The licensee states that the instrumentation to be calibrated is located inside containment and that entry of personnel into the drywell at these times is prohibited due to the high temperature, inerted atmosphere and high radiation levels which exist during these operational modes. Also, the licensee states that it is not necessary to calibrate this instrumentation prior to startup since, in accordance with the equipment vendor's recommendation, it is calibrated during the refueling outage as part of the preventive maintenance

realignment program to provide adequate assurance of correct instrumentation alignment. Instrument operability is assured through the preventive maintenance calibration during refueling and instrument channel functional testing during at-power testing. The SRM and IRM inoperative instrument channels do not require a calibration; therefore, the Technical Specification calibration requirement is not applicable. Also, it is further noted that such calibration is not required by the NRC Standard Technical Specification format for the BWR 4 design.

Currently the SRM and IRM instrumentation that initiates control rod-withdrawal-blocks requires a sensor check as part of its surveillance requirements. The rod block instrument position channels are digital/bistable channels, that is, a fixed signal is either present or absent depending on the state of the sensor. Therefore, a comparison of a sensor with other independent sensors measuring the same variable is not as meaningful as it would be for analog channels. Also, it is further noted that a sensor check is not required by the NRC Standard Technical Specification format for the BWR 4 design.

#### SUMMARY

This amendment (1) deletes the requirement for performing sensor checks in accordance with Note g for SRM items a, b and c and for IRM items a, b, c and d in Table 4.6.2g, (2) deletes the requirement for instrument channel calibration in accordance with Note g for SRM items a and b and IRM items a and b in Table 4.6.2g, and (3) revises Note g. There is no change to the instrument channel test requirement column of Table 4.6.2g.

The staff has reviewed the licensee's justification for the proposed changes and finds that the licensee has provided adequate assurance that the calibrations currently performed during each refueling outage as part of the preventive maintenance program are sufficient to establish the setpoints for the SRM and IRM Detector Not-in-Startup-Position limit switches. The proposed changes to Table 4.6.2g to remove the surveillance requirement to 1) calibrate the SRM and IRM Detector Not-in-Startup-Position instrument channels prior to startup and normal shutdown, 2) calibrate the SRM and IRM inoperative instrument channels, and 3) perform sensor checks on all SRM and IRM control rod-withdrawal-block instrumentation are acceptable for the reasons discussed above.

Note g of TS Table 4.6.2g provides the surveillance frequencies for applicable instrumentation in the table. The calibration requirement for SRM items a and b and IRM items a and b and the sensor check are not necessary as addressed in the above discussion. However, Note g remains applicable to other items in Table 4.6.2g. The licensee's initially proposed revision to Note g would have deleted the requirement to calibrate the other items prior to shutdown. This proposed change was noticed by the staff in the Federal Register.

Upon a further detailed review of the proposed Note g revision, the staff found the proposed deletion of the requirement to perform SRM and IRM sensor checks and to perform SRM upscale and IRM upscale and downscale calibration prior to shutdown to be unacceptable. In response the licensee revised the

proposed Note g in its submittal of February 20, 1990, to reinstate the calibration prior to normal shutdown and also to reflect deletion of reference to channel checks. The staff finds this to be acceptable. Since this represents a change in a more conservative direction from that previously discussed in the staff's Federal Register notice, the staff concludes that the previous discussion of no significant hazards consideration determination bounds the changes approved herein and remains applicable.

Accordingly the staff finds the licensee's proposed changes to Table 4.6.2g and Note g as submitted on June 1, and August 8, 1989 and February 20, 1990 to be acceptable.

#### ENVIRONMENTAL CONSIDERATION

This amendment involves a change in a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR 20. The staff has determined that this 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 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 this amendment.

#### CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: April 5, 1990

#### PRINCIPAL CONTRIBUTOR:

S. Rhow