October 2, 1984

Docket No. 50-220

Mr. B. G. Hooten
Executive Director, Nuclear Operations
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Dear Mr. Hooten:

The Commission has issued the enclosed Amendment No. 64 to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit No. 1. The amendment changes the Technical Specifications in response to your request dated May 22, 1980 as supplemented and clarified in your April 2, 1984 letter.

The revision to the Technical Specifications changes the Limiting Conditions for Operation and bases for the triple low water level setpoint.

The staff, as a part of this review, noted that differences between actual and measured vessel levels could be affected in other level measuring systems. You are requested, within 45 days of receipt of this letter, to provide justification why changes to the setpoints are not necessary for other level instrumentation (i.e. low and low-low level) or submit Technical Specification changes if necessary.

A copy of the Safety Evaluation is also enclosed.

Sincerely,

8410240116 841002
PDR ADOCK 05000220
P PDR

Original signed by:
Robert A. Hermann, Project Manager
Operating Reactors Branch #2
Division of Licensing

Enclosures:
1. Amendment No. 64 to
   License No. DPR-63
2. Safety Evaluation

cc w/enclosures:
See next page

DISTRIBUTION

Docket File	SNorris	JNGrace	OPA, CMiles
NRC PDR	RHermann	TBarnhart (4)	RDiggs
Local PDR	OELD	WJones	Gray File
ORB#2 Reading	LJHarmon	DBrinkman	Extra - 5
DEisenhut	ELJordan	ACRS (10)	KDesai

DL:ORB#2	DL:ORB#2	DL:ORB#2	OELD	DL:AD-OR
SNorris:jk	RHermann	DVassallo	B.n.Bordenick	GLainas
09/13/84	09/19/84	09/19/84	09/21/84	09/25/84

Mr. B. G. Hooten
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station, Unit No. 1

cc:

Troy B. Conner, Jr., Esquire
Conner & Wetterhahn
Suite 1050
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Robert P. Jones, Supervisor
Town of Scriba
R. D. #4
Oswego, New York 13126

Niagara Mohawk Power Corporation
ATTN: Mr. Thomas Perkins
Plant Superintendent
Nine Mile Point Nuclear Station
Post Office Box 32
Lycoming, New York 13093

U. S. Environmental Protection Agency
Region II Office
Regional Radiation Representative
26 Federal Plaza
New York, New York 10007

Resident Inspector
U. S. Nuclear Regulatory Commission
Post Office Box 126
Lycoming, New York 13093

John W. Keib, Esquire
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Thomas A. Murley
Regional Administrator
Region I Office
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Mr. Jay Dunkleberger
Division of Policy Analysis and Planning
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

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. 64
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 May 22, 1980 as supplemented April 2, 1984, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 64 , 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

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 2, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 64

FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Revise the Appendix A Technical Specifications by removing and inserting the following pages:

EXISTING PAGE	REVISED PAGE
6	6
13	13
20	20
52	52
53a	53a
59	59
159	159
213	213

The revised areas are indicated by marginal lines.

SAFETY LIMIT

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 6 feet, 3 inches (-10 inches indicator scale) below minimum normal water level (Elevation 302'9") except as specifed in "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 setpoint redundant instrumentation will be provided to monitor the reactor water level.

LIMITING SAFETY SYSTEM SETTING

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 reactor water level can normally be monitored is approximately 7 feet 11 inches below minimum normal water level or 4 feet 8 inches above the top of the active fuel. This is the location of the reactor vessel tap for the low-low-low water level instrumentation. The actual low-low-low water level trip point is 6 feet 3 inches (-10 inches indicator scale) below minimum normal water level (Elevation 302'-9"). The 20 inch difference resulted from an evaluation of the recommendations contained in General Electric Service Information Letter 299 "High Drywell Temperature Effect on Reactor Vessel Water Level Instrumentation." The low-low-low water level trip point was raised 20 inches to conservatively account for possible differences in actual to indicated water level due to potentially high drywell temperatures. 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 points 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.

(1) General Electric BWR Thermal Analysis Basis (GETAB) Data, Correlation and Design Application, NEDO-10958 and NEDE-10958.

(2) Linford, R. B., "Analytical Methods of Plant Transient Evaluations for the General Electric Boiling Water Reactor," NEDO-10801, February 1973.

(3) FSAR, Volume II, Appendix E.

(4) FSAR, Second Supplement.

(5) FSAR, Volume II, Appendix E.

(6) FSAR, Second Supplement.

(7) Letters, Peter A. Morris, Director of Reactor Licensing, USAEC, to John E. Logan, Vice-President, Jersey Central Power and Light Company, dated November 22, 1967 and January 9, 1968.

(8) Technical Supplement to Petition to Increase Power Level, dated April 1970.

(9) Letter, T. J. Brosnan, Niagara Mohawk Power Corporation, to Peter A. Morris, Division of Reactor Licensing, USAEC, dated February 28, 1972.

(10) Letter, Philip D. Raymond, Niagara Mohawk Power Corporation, to A. Giambusso, USAEC, dated October 15, 1973.

(11) Nine Mile Point Nuclear Power Station Unit 1 Load Line Limit Analysis, NEDO 24012, May, 1977.

(12) Licensing Topical Report General Electric Boiling Water Reactor Generic Reload Fuel Application, NEDE-24011-P-A, August, 1978.

(13) Nine Mile Point Nuclear Power Station Unit 1, Extended Load Line Limit Analysis, License Amendment Submittal (Cycle 6), NEDO-24185, April 1979.

(14) General Electric SIL 299 "High Drywell Temperature Effect on Reactor Vessel Water Level Instrumentation."

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

c. If a redundant component in each of the core spray systems becomes inoperable, both systems shall be considered operable provided that the component is returned to an operable condition within 7 days and the additional surveillance required is performed.

d. If a core spray system becomes inoperable and all the components are operable in the other system, the reactor may remain in operation for a period not to exceed 7 days.

e. If Specifications a, b, c and d are not met, a normal orderly shutdown shall be initiated within one hour and the reactor shall be in the cold shutdown condition within ten hours.

If both core spray systems become inoperable the reactor shall be in the cold shutdown condition within ten hours and no work (except as specified in "f" and "h" below) shall be performed on the reactor or its connected systems which could result in lowering the reactor water level to more than six feet, three inches below minimum normal water level (-10 inches indicator scale).

d. Core spray header ΔP instrumentation

check	Once/day
calibrate	Once/3 months
test	Once/3 months

e. Surveillance with Inoperable Components

When a component or system becomes inoperable its redundant component or system shall be demonstrated to be operable immediately and daily thereafter.

f. Surveillance during control rod drive maintenance which is simultaneous with the suppression chamber unwatered shall include at least hourly checks that the conditions listed in 3.1.4f are met.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
h. 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 to 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 isntrumentation will be provided to monitor the reactor water level and written procedures will be developed and followed whenever the reactor water level is lowered below the low-low level set point. The procedures will define the valves that will be used to lower the vessel water level. All other vaves that have the potential of lowering the vessel water level will be identified by valve number in the procedures and these valves will be red tagged to preclude their operation during the major maintenance with the water level below the low-low level set point. During the period of major maintenance requiring lowering the water level to more than 6 feet, 3 inches below minimum normal water level (-10 inches indicator scale), either both Core Spray Systems must be operable or, if one Core Spray System is inoperable because of the maintenance, all of the redundant components of the other Core Spray System must be operable.	

Pressure Blowdown

In the event of a small line break, substantial coolant loss could occur from the reactor vessel while it was still at relatively high pressures. A pressure blowdown system is provided which in conjunction with the core spray system will prevent significant fuel damage for all sized line breaks (Appendix E-11.2.0*).

Operation of three solenoid-actuated pressure relief valves is sufficient to depressurize the primary system to 110 psig which will permit full flow of the core spray system within required time limits (Appendix E-11.2*). Requiring all six of the relief valves to be operable, therefore, provides twice the minimum number required. Prior to or following refueling at low reactor pressure, each valve will be manually opened to verify valve operability. The malfunction analysis (Section II.XV, "Technical Supplement to Petition to Increase Power Level," dated April 1970) demonstrates that no serious consequences result if one valve fails to close since the resulting blowdown is well within design limits.

In the event of small line break, considerable time is available for the operator to permit core spray operation by manually depressurizing the vessel using the solenoid-actuated valves. However, to ensure that the depressurization will be accomplished, automatic features are provided. The relief valves shall be capable of automatic initiation from simultaneous low-low-low water level (6 feet, 3 inches below minimum normal water level at Elevation 302' 9", -10 inches indicator scale) and high containment pressure (3.5 psig). The system response to small breaks requiring depressurization is discussed in Section VII-A.3.3* and the time available to take operator action is summarized in Table VII-1*. Additional information is included in the answers to Questions III-1 and III-5 of the First Supplement.

Steam from the reactor vessel is discharged to the suppression chamber during valve testing. Conducting the tests with the reactor at low pressure such as just prior to or just after refueling minimizes the stress on the reactor coolant system.

The test interval of once per operating cycle results in a system failure probability of 7.0×10^{-7} (Fifth Supplement, p. 115)* and is consistent with practical consideration.

* FSAR

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

c. If a redundant component in each of the containment spray systems or their associated raw water systems become inoperable, both systems shall be considered operable provided that the component is returned to an operable condition within 7 days and that the additional surveillance required is performed.

d. If a containment spray system or its associated raw water system becomes inoperable and all the components are operable in the other systems, the reactor may remain in operation for a period not to exceed 7 days.

e. If Specifications "a" or "b" are not met, shutdown shall begin within one hour and the reactor coolant shall be below 215F within ten hours.

If both containment spray systems become inoperable the reactor shall be in the cold shutdown condition within ten hours and no work (except as specified in "f" below) shall be performed on the reactor which could result in lowering the reactor water level to more than six feet, three inches (-10 inches indicator scale) below minimum normal water level (Elevation 302' 9").

c. Raw Water Cooling Pumps

At least once per quarter manual startup and operability of the raw water cooling pumps shall be demonstrated.

d. Surveillance with Inoperable Components

When a component or system becomes inoperable its redundant component or system shall be demonstrated to be operable immediately and daily thereafter.

e. Surveillance during control rod drive maintenance which is simultaneous with the suppression chamber unwatered shall include at least hourly checks that the conditions listed in 3.3.7.f are met.

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		
INITIATION						
(1) a. Low-Low-Low Reactor Water Level	2 (a)	2 (a)	≥ -10 inches* (Indicator scale)	(b)	(b)	x
and						
b. High Drywell Pressure	2 (a)	2 (a)	≤ 3.5 psig	(b)	(b)	x

* greater than (≥) means less negative

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 64 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 application dated May 22, 1980 as supplemented and clarified in a letter of April 2, 1984, Niagara Mohawk Power Corporation (the licensee) requested an amendment to Appendix A of Operating License No. DPR-63 for Nine Mile Point Nuclear Power Station Unit No. 1 (NMP-1). The amendment request involves changes to the Limiting Conditions for Operation and supporting bases for the triple low reactor water level setpoint. The change reflects the modification to the low-low-low reactor water level trip setpoint to account for the difference in actual to indicated water level due to potentially high drywell temperature effects. The licensee has raised the low-low-low water level setpoint 20 inches above the original setpoint.

2.0 Evaluation

NMP-1 has a two-division reactor water level instrumentation system with a wide range, narrow range and fuel zone range instrument in each division. It has two Yarway reference water level instruments and two cold reference leg water level instruments. The reference leg in the Yarway system is heated by condensing chamber steam. The Yarway temperature compensated reference leg establishes a heated static reference leg of water for the wide range instrumentation. Large vertical drops (approximately 135") of the reference legs are in the drywell and they exit at approximately the same elevation as the variable legs.

Changes in drywell temperature can result in changes in the temperature of the heated reference column of the Yarway instrumentation. This can result in differences between measured and actual reactor vessel water level.

General Electric prepared Service Information Letter (SIL) No. 299 "High Drywell Temperature Effect on Reactor Vessel Water Level Instrumentation" to correct this inaccuracy in reactor water level instrumentation. The purpose of this SIL 299 is to recommend that BWR licensees review the calibration of their reactor water level instrumentation and where necessary increase the Automatic Depressurization System trip setpoints, the main steam isolation valve trip setpoints, the ECCS trip setpoints and other related trip setpoints to mitigate the effects of this potential inaccuracy in reactor vessel water level instrumentation.

For drywell temperatures consistent with a steamline break (340°F) the recommended change in trip setpoint of Yarway instruments was about 12.7% of reference leg length. Based on this information, the licensee has raised the triple low water level to 20 inches higher than the original setpoint. This is conservative because this water level setpoint can initiate emergency core cooling system earlier and maintain adequate core cooling. Therefore, the proposed change is acceptable.

3.0 Environmental Considerations

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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 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 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.

4.0 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.

Principal Contributor: K. Desai

Dated: October 2, 1984