

Docket No. 50-220

April 25, 1990

DISTRIBUTION:

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Executive Vice President, Nuclear Operations  
Niagara Mohawk Power Corporation  
301 Plainfield Road  
Syracuse, New York 13212

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Dear Mr. Burkhardt:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 75494)

The Commission has issued the enclosed Amendment No. 115 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 December 8, 1989.

This amendment revises Technical Specification Appendix A, Section 3.3.1 and associated Bases so that oxygen concentration in the primary containment atmosphere is expressed in percent by volume rather than percent by weight. It also deletes a reference to the initial startup test program.

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. 115 to DPR-63
- 2. Safety Evaluation

cc: w/enclosures  
See next page

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DOCUMENT NAME: ISSUANCE OF AMENDMENT 75494

\*OGC  
Concurrence  
subject to  
Amendment  
not to  
Issue  
prior to  
expiration  
of 30 day  
study notice  
period (4/23)

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Mr. L. Burkhardt III  
Niagara Mohawk Power Corporation

Nine Mile Point Nuclear Station,  
Unit No. 1

cc:

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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. 115  
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 December 8, 1989, 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. 115, 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



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 25, 1990

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 115 TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Revise Apperfix A as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
126	126
127	127
128	128

LIMITING CONDITION FOR OPERATION

3.3.1 OXYGEN CONCENTRATION

Applicability:

Applies to the limit on oxygen concentration within the primary containment system.

Objective:

To assure that in the event of a loss-of-coolant accident any hydrogen generation will not result in a combustible mixture within the primary containment system.

Specification:

- a. The primary containment atmosphere shall be reduced to less than four percent by volume oxygen concentration with nitrogen gas whenever the reactor coolant pressure is greater than 110 psig and the reactor is in the power operating condition, except as specified in "b" below.

SURVEILLANCE REQUIREMENT

4.3.1 OXYGEN CONCENTRATION

Applicability:

Applies to the periodic testing requirement for the primary containment system oxygen concentration.

Objective:

To assure that the oxygen concentration within the primary containment system is within required limits.

Specification:

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

- b. Within the 24-hour period subsequent to the reactor being placed in the run mode for the power operating condition, the containment atmosphere oxygen concentration shall be reduced to less than four percent by volume, and maintained in this condition. Deinerting may commence 24 hours prior to a major refueling outage or other scheduled shutdown.
- c. If Specifications "a" or "b" above are not met, the reactor coolant pressure shall be reduced to 110 psig or less within ten hours.

#### BASES FOR 3.3.1 AND 4.3.1 OXYGEN CONCENTRATION

The four percent by volume oxygen concentration eliminates the possibility of hydrogen combustion following a loss-of-coolant accident (Section VII-G.2.0 and Appendix E-11.5.2)\*. The only way that significant quantities of hydrogen could be generated would be if all core spray systems failed to sufficiently cool the core. As discussed in Section VII-A.2.0 and illustrated in Figure VII-2,\* the core spray system is capable of design flow of 3400 gpm at a reactor pressure of 113 psig. In addition to hydrogen generated by metal-water reaction, significant quantities can be generated by radiolysis. (Technical Specification to Petition for Conversion from Provisional Operating License to Full Term Operating License).

At reactor pressures of 110 psig or less, the reactor will have been shutdown for more than an hour and the decay heat will be at sufficiently low values so that fuel rods will be completely wetted by core spray. The fuel clad temperatures would not exceed the core spray water saturation temperature of about 344F.

The occurrence of primary system leakage following a major refueling outage or other scheduled shutdown is much more probable than the occurrence of the loss-of-coolant accident upon which the specified oxygen concentration limit is based. Permitting access to the drywell for leak inspections during a startup is judged prudent in terms of the added plant safety offered without significantly reducing the margin of safety. Thus to preclude the possibility of starting the reactor and operating for extended periods of time with significant leaks in the primary system, leak inspections are scheduled during startup periods when the primary system is at or near rated operating temperature and pressure. The 24-hour period to provide inerting is judged to be reasonable to perform the leak inspection and establish the required oxygen concentration.

The primary containment is normally slightly pressurized during periods of reactor operation. Nitrogen used for inerting could leak out of the containment but air could not leak in to increase the oxygen concentration. Once the containment is filled with nitrogen to the required concentration, no monitoring of oxygen concentration is necessary. However, at least once a week, the oxygen concentration will be determined as added assurance that Specification 3.3.1 is being met.

\*FSAR





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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 115 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 December 8, 1989, Niagara Mohawk Power Corporation (the licensee) submitted an application to amend the Nine Mile Point Unit No. 1 Technical Specifications Appendix A, Section 3.3.1, Oxygen Concentration and the associated Bases. By this amendment, the oxygen concentration in the primary containment atmosphere would be expressed in percent by volume rather than percent by weight. The proposed amendment would also delete in section 3.3.1a. a reference to the startup test program which no longer applies.

DISCUSSION

Technical Specifications Appendix A, Section 3.3.1 and associated Bases provide the requirements for oxygen concentration within the primary containment system. Oxygen concentration limits assure that in the event of a loss of coolant accident any hydrogen generation will not result in a combustible mixture within the primary containment system. As stated in Nine Mile Point 1 Updated Final Safety Analysis Report (UFSAR), Section VII G.1.0, Combustible Gas Control System:

The combustible gas control system is designed to prevent a combustible hydrogen-oxygen concentration from accumulating in the primary containment atmosphere immediately following or during a loss-of-coolant accident.

The system is capable of reducing and maintaining the oxygen content of the primary containment atmosphere below 4.0 percent by volume to preclude the possibility of hydrogen combustion regardless of the amount of hydrogen available.

In Section 3.3.1a and associated Bases of Nine Mile Point Unit 1 current Technical Specification the oxygen concentration is expressed in percent. This terminology differs from the UFSAR chapter quoted above in that it fails to specify the units of quantity. In Section 3.3.1b. the oxygen concentration is expressed in percent by weight. This terminology represents an error. It is clear from the UFSAR chapter above that the requirement is to maintain the primary containment oxygen concentration below four percent by volume during power operation. The Standard Technical Specifications applicable to NMP-1 design support this assertion.

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The proposed amendment would also remove in Section 3.3.1a. a reference to the startup test program. This reference is not applicable to the current or future operation condition since it applies to the initial startup test program already completed. Therefore, the deletion of "After completion of the startup test program and demonstration of plant electrical output" in Section 3.3.1a is warranted. On the basis that the proposed amendment does not affect safe operation at Nine Mile Point Unit 1 and maintains the plant within the design basis, the staff finds the proposed amendment acceptable.

#### ENVIRONMENTAL CONSIDERATION

This amendment involves a change in 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 consideration 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: April 25, 1990

#### PRINCIPAL CONTRIBUTOR:

D. Oudinot