

Docket No. 50-220

February 27, 1985

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. 70 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 July 11, 1984 and clarified October 24, 1984.

The revision to the Technical Specifications modifies the definition limiting conditions for operation, surveillance requirements and bases for the reactor coolant leakage limits.

A copy of the Safety Evaluation is also enclosed.

Sincerely,

Original signed by/

Robert A. Hermann, Project Manager
Operating Reactors Branch #2
Division of Licensing

Enclosures:

1. Amendment No. 70 to License No. DPR-63
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. B. G. Hooten
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 NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 70
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 July 11, 1984 as clarified October 24, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 70, 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: February 27, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 70

FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

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

<u>Existing Page</u>	<u>Revised Page</u>
4a	4a
89	89
--	89a
90	90
91	91

The revised areas are indicated by marginal lines.

1.16 Fire Suppression Water System

A Fire Suppression Water System shall consist of: a water supply system, fixed extinguishing systems of both automatic sprinklers and sprays, and manual fire fighting equipment consisting of standpipe risers with hose connections and hose reels.

1.17 Fire Watch Patrol

At least each hour an area with inoperable Fire Protection Equipment shall be inspected for abnormal conditions.

1.18 Reactor Coolant Leakage

a. Identified Leakage

- (1) Leakage into closed systems, such as pump seal or valve packing leaks that are captured, flow metered and conducted to a sump or collecting tank, or
- (2) Leakage into the primary containment atmosphere from sources that are both specifically located and known not to be from a through-wall crack in the piping within the reactor coolant pressure boundary.

b. Unidentified Leakage

All other leakage of reactor coolant into the primary containment area.

LIMITING CONDITION FOR OPERATION

3.2.5 REACTOR COOLANT SYSTEM LEAKAGE

Applicability:

Applies to the limits on reactor coolant system leakage rate and leakage detection systems.

Objective:

To assure that the makeup capability provided by the control rod drive pump is not exceeded.

Specification:

- a. Any time irradiated fuel is in the reactor vessel and the reactor temperature is above 212°F, reactor coolant leakage into the primary containment shall be limited to:
 1. Five gallons per minute unidentified leakage.
 2. A two gallon per minute increase in unidentified leakage within any period of 24 hours or less.
 3. Twenty-five gallons per minute total leakage (identified plus unidentified) averaged over any 24 hour period.

SURVEILLANCE REQUIREMENT

4.2.5 REACTOR COOLANT SYSTEM LEAKAGE

Applicability:

Applies to the monitoring of reactor coolant system leakage.

Objective:

To determine the reactor coolant system leakage rate and assure that the leakage limits are not exceeded.

Specification:

- a. A check of the reactor coolant leakage shall be made every four hours.

LIMITING CONDITION FOR OPERATION

- b. Any time irradiated fuel is in the reactor vessel and reactor coolant temperature is above 212°F, at least one of the leakage measurement channels associated with each sump (one for the drywell floor drain and one for the equipment drain) shall be operable.

If conditions a or b cannot be met, the reactor will be placed in the cold shutdown condition within 24 hours.

SURVEILLANCE REQUIREMENT

- b. The following surveillance shall be performed on each leakage detection system:
 - 1. An instrument calibration once each refueling outage.
 - 2. An instrument functional test once every three months.

BASES FOR 3.2.5 AND 4.2.5 REACTOR COOLANT SYSTEM LEAKAGE RATE

Allowable leakage rates of coolant from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes and on the ability to makeup coolant system leakage in the event of loss of offsite a-c power. The normally expected background leakage due to equipment design and the detection capability for determining coolant system leakage were also considered in establishing the limits. The behavior of cracks in piping systems has been experimentally and analytically investigated as part of the USAEC sponsored Reactor Primary Coolant System Rupture Study (the Pipe Rupture Study). Work utilizing the data obtained in this study indicates that leakage from a crack can be detected before the crack grows to a dangerous or critical size by mechanically or thermally induced cyclic loading, or stress corrosion cracking or some other mechanism characterized by gradual crack growth. This evidence suggests that for leakage somewhat greater than the limit specified for unidentified leakage, the probability is small that imperfections or cracks associated with such leakage would grow rapidly. However, the establishment of allowable unidentified leakage greater than that given in 3.2.5 on the basis of the data presently available would be premature because of uncertainties associated with the data. For leakage of the order of 5 gpm as specified in 3.2.5, the experimental and analytical data suggest a reasonable margin of safety that such leakage magnitude would not result from a crack approaching the critical size for rapid propagation. Leakage of the magnitude specified can be detected reasonably in a matter of a few hours utilizing the available leakage detection schemes, and if the origin cannot be determined in a reasonably short time, the plant should be shut down to allow further investigation and corrective action.

Inspection and corrective action is initiated when unidentified leakage increases at a rate in excess of 2 gpm, within a 24 hour period or less. This minimizes the possibility of excessive propagation of intergranular stress corrosion cracking.

A total leakage of 25 gpm is well within the capacity of the control rod drive system makeup capability (page III-7 of the First Supplement).^{*} As discussed in 3.1.6 above, for leakages within this makeup capability, the core will remain covered and automatic pressure blowdown will not be actuated.

The primary means of determining the reactor coolant leakage rate is by monitoring the rate of rise in the levels of the drywell floor and equipment drain lines. Checks will be made every four hours to verify that no alarms have been actuated due to high leakage. For sump inflows of one gpm, changes on the order of 0.2 gpm can be detected within 40 minutes. At inflows between one and five gpm, changes on the order of 0.5 gpm can be detected in eight minutes.

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BASES FOR 3.2.5 AND 4.2.5 REACTOR COOLANT SYSTEM LEAKAGE RATE

Leakage is detected by having all unidentified leakage routed to the drywell floor drain tank and identified leakage routed directly to the drywell equipment drain tanks. Identified leakage includes such items as recirculation pump seal leakage and recirculation pump suction and discharge valve packing leakoff.

Another method will monitor the time required to fill the tanks between two accurately determined levels. When the level in the tank reaches the low-level switch setting, a timer will start and operate for a preset time interval. If the timer resets before the high-level switch setting is reached indicating a leakage rate within allowable limits, no action will result, and the system resets for the next filling and timing cycle. If the leakage is high enough to cause the level to reach the high level switch setting before the timer resets automatically, an alarm is actuated indicating leak rate above the predetermined limit (First and Fifth Supplements).*

Additional information is available to the operator which can be used for the shift leakage check if the drywell sumps level alarms are out of service. The integrated flow pumped from the sumps to the waste disposal system can be checked.

Qualitative information is also available to the operator in the form of indication of drywell atmospheric conditions. Continuous leakage from the primary coolant system would cause an increase in drywell temperature. Any leakage in excess of 15 gpm of steam would cause a continuing increase in drywell pressure with resulting scram (First Supplement).*

Either the rate of rise leak detection system, the timer leak detection system or the integrated flow can be utilized to satisfy Specification 3.2.5.b.

*FSAR



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 70 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 July 11, 1984 and clarified by letter dated October 24, 1984, Niagara Mohawk Power Corporation (the licensee) requested an amendment to Appendix A of Facility Operating License No. DPR-63 for Nine Mile Point Nuclear Power Station, Unit No. 1. The proposed amendment would modify the definition section, the limiting conditions for operations, surveillance requirements and bases section of the Technical Specifications with regard to the reactor coolant leakage limits. More specifically, initiation of inspection and corrective actions are required when identified leakage increases at a rate of two gallons per minute within a twenty-four hour period or less; the frequency of reactor coolant leakage checks is increased; and operability and surveillance requirements are imposed on the leakage detection systems.

2.0 Evaluation

By letter dated June 6, 1984 the staff issued a safety evaluation of the implementation of NUREG-0313, Rev. 1 for Nine Mile Point Unit 1. At that time the staff requested the licensee to submit a Technical Specification change to incorporate the leakage detection requirements contained in Generic Letter 84-11. Although the licensee replaced the recirculation system and most branch piping, the change was requested since some service sensitive piping remains within the primary containment and cracking had been discovered in the reactor vessel stub tubes. The licensee requested the change as stated above.

The information provided by the licensee in their submittal of October 24, 1984 was clarifying in nature and did not provide substantive change to the amendment request as described in the Federal Register notice.

We have reviewed the changes proposed by the licensee and find they are consistent with the guidance contained in Attachment 1 - Leakage Detection and Leakage Limits of Generic Letter 84-11, Inspection of BWR Stainless Steel Piping dated April 19, 1984. Therefore, we find the requested change acceptable.

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3.0 Environmental Considerations

This amendment involves a change in the installation or use of a facility component located within the restricted area and a change in a surveillance requirement. 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: R. Hermann

Dated: February 27, 1985