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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 118 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 27, 1988, supplemented August 28, 1989 and November 17, 1989, the Niagara Mohawk Power Corporation (the licensee) requested an amendment to the Technical Specifications for the Nine Mile Point Nuclear Station, Unit No. 1. The proposed amendment would revise Section 3/4.1.1, Control Rod System and associated Bases to provide testing, Limiting Condition for Operation requirements and Surveillance Requirements for the Scram Discharge Volume (SDV) to demonstrate that no blockage exists in the system's piping and ensure SDV operability. Surveillance Requirement 4.2.7d. would be redesignated in Surveillance Requirement 4.1.1e. This amendment would also revise Table 3.2.7 in Section 3/4.2.7, Reactor Coolant System Isolation Valves, to delete a footnote, correct an administrative error and replace a list of initiating signals with a more concise list.

BACKGROUND

In November 1987, the staff inspected the scram discharge volume design for Nine Mile Point Unit 1 to determine compliance with the June 24, 1983 NRC Confirmatory Order. As a result, the staff identified two areas of deviation from the Confirmatory Order for the Scram Discharge Volume and a concern with respect to hydraulic coupling. The deviations are from Design Criterion 3 and Surveillance Criterion 3 of the Order. At a meeting on March 1, 1988, the licensee presented justifications for its deviations. The deviation from Design Criterion 3, which involved the location of the level instrumentation taps, was resolved as stated in the NRC staff's letter to Niagara Mohawk Power Corporation dated October 12, 1988. The deviation from Surveillance Criterion 3 involved the licensee's lack of a periodic system test which includes a scram from less than 50 percent control rod density.

The justification for deviation from Surveillance Criterion 3 was also found to be acceptable, as stated in the letter dated October 12, 1988, provided specific conditions were met and that the appropriate technical specification changes were proposed by the licensee. Those conditions involve implementing a post scram evaluation and a periodic testing program to demonstrate that no blockage exists in the SDV piping and to ensure continued operability of the SDV.

EVALUATION

In its submittals (December 27, 1988, and supplemented August 28, 1989), the licensee has addressed these conditions by proposing an amendment to Technical Specifications Sections 3.1.1, 4.1.1, and associated Bases that add a requirement to demonstrate Scram Discharge Volume (SDV) operability and that SDV instrument lines are free of blockage.

The licensee has stated that a fill/drain test shall be performed once every refueling outage unless a reactor scram has occurred during that cycle with rod density less than or equal to 50%. This test involved filling the system with a predetermined volume of water and recording the time required to drain the system to a repeatable reference level. The data is compared to historic data to provide assurance that operability of the system as an integrated whole is maintained.

The licensee will perform the test during cold shutdown to ensure that (1) adequate volume exists to accept discharge water from the control rods during a reactor scram; (2) adequate instrumentation response is received; (3) instrument lines are free of blockage; and (4) instrument lines can perform their safety function. Only one demonstration of SDV operability per operating cycle is required. However, as committed by the licensee in Attachment B of the August 28, 1989 submittal, this test shall also be performed as a post-maintenance test to determine operability following a breaching of the SDV pressure boundary.

In addition to the fill/drain test, the following will be performed per Surveillance Requirement 4.1.1e. in order to further demonstrate the operability of the SDV system:

Valves will be verified open at least once per month.

Valves will be full travel cycled at least once per quarter.

Valve closure within 10 seconds after receipt of a signal for control rods to scram will be verified.

Valves will be verified open upon resetting of the scram signal.

In addition, during a telephone conference call between NMPC, (Brian Walken) and NRC (Daniele Oudinot) the licensee stated that the low-level and high-level SDV level instruments calibration is performed monthly per surveillance procedure N1-ISP-044-M005 "High water level Scram Discharge Volume Instrument Channel Functional Calibration." Although beyond the scope of the licensee's application submittal, this continuing calibration requirements will contribute further to the operability of the SDV system.

Surveillance Requirement 4.2.7d. which involves full closure and reopening of the scram discharge system air operated vent and drain valves will be redesignated in Surveillance Requirement 4.1.1e.

We also note that TS 4.1.1c.(1) requires that the control rods be individually scram time tested once per cycle. This results in water being discharged to the instrument volume and demonstrates that the line from each tested hydraulic control unit to the SDV is free of any obstructions.

The staff finds that the combination of the proposed fill/drain test, the vent and drain valve stroke test along with the post-scram evaluation, and the scram time tests provide reasonable assurance of the SDV system operability and that no gross blockage exists in the instrumentation lines. Therefore, the proposed technical specification changes to Sections 3.1.1, 4.1.1, and associated Bases are acceptable. This closes the staff's concerns regarding Surveillance Criterion 3 and hydraulic coupling as discussed in the staff's letter of October 12, 1988.

In addition to the proposed changes to Sections 3.1.1, 4.1.1 and associated Bases evaluated above, Table 3.2.7 would also be changed to (1) delete a footnote, (2) correct a previous administrative error, and replace a list of initiating signals for the scram system vent and drain valves with a more concise list.

1. In its submittal dated November 17, 1989, the licensee proposes to remove the reference to "A.I.P.O." (Automatically Initiated Power Operated) in a footnote for Table 3.2.7. The acronym A.I.P.O. does not appear anywhere in the text, therefore, the footnote "A.I.P.O. - Automatically Initiated Power Operated" no longer applies. This amendment proposes to delete the footnote.

The staff finds this deletion acceptable.

2. Amendment No. 44 was issued without the changes made to Table 3.2.7 per Amendment No. 43 as documented in the Correction Letter dated April 10, 1989. Specifically, the addition of new valves on Table 3.2.7 per Amendment No. 43 did not appear on Table 3.2.7 when Amendment No. 44 was processed. The proposed change would correct this administrative error and combine the changes made per Amendment Nos. 43 and 44.

The staff finds the proposed change acceptable.

3. Current Technical Specification Table 3.2.7 lists in column "Initiating Signals," the parameters which initiate closure of the scram system vent and drain valves. Current Technical Specification Table 3.6.2a lists all the parameters that initiate a reactor scram. Since all reactor scram signals, automatic or manual, initiate closure of the system vent and drain valves, the list in Table 3.2.7 will be replaced by the equivalent "Automatic or manual reactor scram." There is an additional advantage in replacing the list in Table 3.2.7 by a more concise list: There will be no need to modify the initiating signals for the Scram Discharge System Vent and Drain Valves in Table 3.2.7 if changes are made to Table 3.6.2a.

The staff finds the proposed change acceptable.

ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of the facility components located within the restricted areas as defined in 10 CFR 20 and to surveillance requirements. 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) and Sec 51.22(c)(10). 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: July 3, 1990

PRINCIPAL CONTRIBUTOR:

A. Massey