

April 5, 2000

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, Second Floor
P.O. Box 63
Lycoming, NY 13093

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 - CORRECTION OF
AMENDMENT NO. 169 AND ASSOCIATED SAFETY EVALUATION REGARDING
NOBLE METAL CHEMICAL ADDITION (TAC NO. MA6325)

Dear Mr. Mueller:

By letter dated March 8, 2000, I transmitted the subject amendment and associated safety evaluation to you. Subsequently, your staff Messrs. Steve Leonard and Tim Page identified errors in those documents where the unit's operating license number was incorrectly stated as "DRP-63" and "NPF-69." The correct operating license number is "DPR-63." A sentence on page 2 of the safety evaluation which reads "The coolant sampling will be taken every 8 hours instead of every 24 hours" is inaccurate in that it should not exist. Also "TS 3.2.3.a" on the same page had been incorrectly typed as "TS 3.2.2.a."

We verified these alleged errors against documents on file and agree with your staff's observation. Enclosed please find (1) a corrected page 1 of Amendment No. 169; (2) the attachment describing page changes; and (3) the complete associated safety evaluation. The staff's conclusion reached in the uncorrected safety evaluation, and the effectiveness of Amendment No. 169, were not affected by these administrative errors. We apologize for any inconvenience the errors had caused you.

Sincerely,

/RA/

Peter S. Tam, Senior Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosures: As stated

cc w/encls: See next page

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NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 169
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 August 26, 1999, as supplemented by letter dated December 17, 1999, 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 1;
 - 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:

Corrected by letter of 4/5/00

ATTACHMENT TO LICENSE AMENDMENT NO. 169

TO FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change.

Remove

96
97
98
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Insert

96
97
98
98a

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 169 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 letter dated August 26, 1999, as supplemented by letter dated December 17, 1999, Niagara Mohawk Power Corporation (NMPC or the licensee) proposed a license amendment to change the Technical Specifications (TSs) for Nine Mile Point Nuclear Station, Unit No. 1, to support the implementation of the Noble Metal Chemical Addition (NMCA). Specifically, the licensee requested an increase of the reactor water conductivity limits in TS 3.2.3.a and 3.2.3.c.1 to 20.0 umho/cm during NMCA application and, after NMCA application, increase the conductivity limits in TS 3.2.3.a and 3.2.3.b to 2.0 umho/cm for up to a period of five months at power operation. Since the increase of conductivity is expected, the licensee proposed that increased reactor coolant chemistry sampling frequency (from once every 24 hours to every 8 hours) not be required when conductivity exceeds 0.19 umho/cm for up to 5 months. The TS Bases are also revised to support the proposed changes in the TSs. The licensee plans to perform NMCA when the plant is in a hot shutdown condition during a mid-cycle shutdown.

The NMCA process was developed by General Electric Nuclear Energy (GENE) as a measure to enhance the effectiveness of hydrogen water chemistry in mitigating the intergranular stress corrosion cracking (IGSCC) of reactor vessel internals in boiling water reactors (BWRs). The NMCA process will deposit a very thin discontinuous layer of the noble metals (platinum and rhodium) on the component surfaces during the application period. The treated surfaces will behave catalytically and promote oxidant-hydrogen recombination, which will allow the treated components to reach the low electrochemical corrosion potential at low hydrogen injection rates. The low hydrogen injection rate will reduce the plant radiation exposure over the life of the plant. The NMCA process has been successfully applied to a number of operating BWRs in this country.

NMPC's letter dated December 17, 1999, provided additional information in support of the initial application for amendment, and did not change the Commission's finding of no significant hazards consideration published in the Federal Register (64 FR 51347, September 22, 1999).

2.0 EVALUATION

The staff's evaluation of the licensee's proposed TS changes is provided below:

- (i) During NMCA, the licensee proposed to increase the reactor coolant conductivity limits in TS 3.2.3.a and 3.2.3.c.1 to 20.0 umho/cm. The existing conductivity limits in TS 3.2.3.a and 3.2.3.c.1 are 1.0 umho/cm and 5.0 umho/cm, respectively. The application period includes an injection period and post-NMCA injection clean-up activities conducted prior to returning to power operation. During the NMCA injection period, the reactor coolant conductivity is expected to increase due to the presence of residual ionic species from the NMCA process. These ionic species do not have a significant effect on IGSCC in reactor vessel internals or reactor fuel. The results of laboratory testing under a similar environment have shown that there is a negligible effect on crack growth during the entire application period. Following NMCA, conductivity is expected to increase. The expected increase in conductivity is attributed to an increase in soluble iron and pH in the reactor water resulting from the application of the noble metals and its effect on deposits on the fuel. The increased soluble iron concentration and pH would not have significant effects on IGSCC.

The licensee's proposed changes of reactor coolant conductivity limits are based on the recommendations made by GENE who developed this process. The GENE recommendations incorporate industry experience with provisions for adequate operation margins to prevent unnecessary plant shutdown resulting from the increase in conductivity during and following NMCA.

Based on the consideration that the increase in the conductivity resulting from NMCA will not cause a detrimental effect to the components that are susceptible to IGSCC, the staff has determined that the licensee's proposed increase in reactor coolant conductivity limits is acceptable. Furthermore, the unlikely presence of an excessive amount of the aggressive ionic species such as chlorides and sulfates will be detected in a timely fashion by normal coolant sampling for chemical analysis. |

- (ii) Following the NMCA application period, the licensee proposed to increase the reactor coolant conductivity limit in TS 3.2.3.a and 3.2.3.b from 1.0 umho/cm to 2.0 umho/cm for up to a period of 5 months at power operation. The licensee proposed to monitor certain conductivity levels administratively. Specifically, the sampling procedure will require additional monitoring of coolant (i.e., at an 8-hour frequency) each time conductivity exceeds 1 umho/cm during the post-application period of approximately 5 months. This increased sampling will be implemented and controlled administratively. The staff has determined that the licensee's proposed conductivity limit during the post-NMCA period is acceptable since the temporary elevated conductivity after application of NMCA is expected and the proposed sampling frequency for coolant chemistry is considered adequate to confirm that the elevated conductivity is not due to the high level of aggressive ionic species such as chlorides and sulfates in the coolant.
- (iii) To support the implementation of NMCA, the TS Bases Sections 3.2.3 and 4.2.3 are revised to provide the bases for the proposed changes of the reactor coolant conductivity limits and

coolant chemistry monitoring frequency in the TSs. The revised sections are consistent with the proposed TS changes.

The staff concludes that the licensee's proposed TS amendment, as proposed in the licensee's submittals dated August 26, 1999, and supplemented on December 17, 1999, is acceptable for the implementation of NMCA at NMP1. The NMCA process will enhance the resistance of the reactor vessel internals to IGSCC.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official, Mr. Jack Spath, was notified of the proposed issuance of the amendment. The State official had no comment.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 staff has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (64 FR 51347, dated September 22, 1999). Accordingly, the 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 the amendment.

5.0 CONCLUSION

The staff has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: W. Koo

Date: March 8, 2000; reissued with corrections on 4/5/00

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