May 31, 2001

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

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 - INSERVICE INSPECTION RELIEF REQUEST ISI-12 (TAC NO. MA9662)

Dear Mr. Mueller:

By letter dated October 30, 1999, as supplemented by letter dated May 12, 2000, Niagara Mohawk Power Corporation (NMPC) requested relief for Nine Mile Point Nuclear Station, Unit No. 1, from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI, 1989 Edition, Article IWF-5000, for the third 10-year inservice inspection (ISI) interval. By letter dated October 5, 2000, the NRC staff authorized a number of reliefs, but stated that Relief Request ISI-12 was still under review. By letter dated September 28, 2000, NMPC submitted a revised Relief Request ISI-12. Additional information was provided in a letter dated April 23, 2001. Relief Request ISI-12 is concerned with relief from augmented inspection of twenty-one (21) austenitic stainless steel welds which are susceptible to intergranular stress-corrosion cracking.

Based on the conclusion set forth in the enclosed supplemental safety evaluation, the staff determines that the Code requirements are impractical and NMPC's proposed alternatives provide reasonable assurance of structural integrity of the subject welds. Therefore, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i) for the third interval. The staff has determined that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that would result if the requirements were imposed on the facility.

Please contact the project manager, Mr. Peter Tam (301-415-1451, electronic mail at pst@nrc.gov) if you have any questions.

Sincerely,

/RA/

Richard P. Correia, Acting Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosure: Safety Evaluation

cc w/encl: See next page

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Docket No. 50-220
Enclosure: Safety Evaluation
cc w/encl: See next page
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Official Record Copy

*Memo of 5/3/01 used essentially as-is.

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Unit No. 1

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SUPPLEMENTAL SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

THIRD 10-YEAR INTERVAL INSERVICE INSPECTION (ISI)

REQUEST FOR RELIEF ISI-12

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

NIAGARA MOHAWK POWER CORPORATION

DOCKET NUMBER 50-220

1.0 INTRODUCTION

By letter dated October 30, 1999, as supplemented by letter dated May 12, 2000, Niagara Mohawk Power Corporation (NMPC) requested relief for Nine Mile Point Nuclear Station, Unit No. 1, from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI, 1989 Edition, Article IWF-5000, for the third 10-year inservice inspection (ISI) interval. By letter dated October 5, 2000, the NRC staff authorized a number of reliefs, but stated that Relief Request ISI-12 was still undergoing review.

By letter dated September 28, 2000, NMPC submitted a revised Relief Request ISI-12. Additional information was provided in a letter dated April 23, 2001. ISI-12 is concerned with relief from augmented inspection of twenty-one (21) austenitic stainless steel welds which are susceptible to intergranular stress-corrosion cracking (IGSCC).

2.0 EVALUATION

2.3 Relief Request ISI-12

Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50), paragraph 55a(g)(6)(ii)(C) requires accelerated implementation of the ASME Code, Section XI, 1995 Edition with 1996 Addenda, Appendix VIII, “Performance Demonstration for Ultrasonic Examination Systems.” 10 CFR 50.55a(b)(2)(xv)(A), 10 CFR 50.55a(b)(2)(xv)(G) and 10 CFR 50.55a(b)(2)(xvi) define new requirements for examination coverage and qualification demonstration. These requirements affect austenitic steel piping. Generic Letter (GL) 88-01, “NRC Position on Intergranular Stress Corrosion Cracking in Boiling Water Reactor Austenitic Stainless Steel Piping,” provides guidance regarding augmented volumetric examination of nonconforming service-sensitive piping welds. The welds covered by NMPC’s ISI-12 consist of five (5) Category D welds(40-WD-005, 40-WD-006, 40-WD-011, 40-WD-051, and 37-WD-003)

and sixteen (16) Category G welds (40-WD-050-A, 40-WD-010-A, 39-09R-WD-001, 39-10R-WD-001, 39-WD-194, 39-WD-194A, 39-WD-226, 39-WD-226A, 38-WD-007, 38-WD-008, 38-WD-087, 38-WD-088, 33-WD-014, 33-WD-036, 33-WD-035 and 33-WE-015). Category D welds are welds made of non-resistant materials and are required to be inspected every two refueling cycles. Category G welds are welds made of non-resistant materials and are not ultrasonically inspected. These welds are located in the reactor core spray system (six welds), emergency condenser system (six welds), shutdown cooling system (four welds), reactor clean-up system (4 welds), and the reactor drain line (one weld).

The sixteen Category G welds are located inside penetrations and, therefore, are inaccessible for ultrasonic inspection. For the five Category D welds, only partial ultrasonic inspection can be performed since access to these welds is either obstructed by the presence of permanent pipe hanger or limited by component configuration. Due to these access limitations, the full ultrasonic inspection of these welds cannot be achieved. Therefore, in lieu of the full ultrasonic inspection, the NMPC proposed to perform the following alternate examinations:

(1) Perform ultrasonic examination to the extent practical on the five Category D welds with a frequency of once every other refueling outage and,

(2) Perform a visual (VT-2) examination on all twenty-one welds every refueling outage for evidence of leakage.

NMPC indicated that similar inspection relief for the subject Category G welds was granted by NRC in the previous ISI program for the second 10-year interval (reference letter, R. A. Capra of NRC to B. R. Sylvia of NMPC, April 6, 1994). In the current relief request, in addition to the sixteen Category G welds, NMPC added the five Category D welds. This is due to the consideration that the requirement of full ultrasonic inspection (100 percent volume of the weld) based on the Performance Demonstration Initiative (PDI) pertaining to Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems" of ASME Code, Section XI cannot be implemented on these Category D welds. As stated above in the first paragraph of this safety evaluation, Appendix VIII was incorporated into the ASME Code, Section XI.

The staff has reviewed the GL 88-01 guidelines that are applicable to IGSCC inspection. The staff notes that note (3) to Table 1, "Summary of Inspection Schedules for BWR [Boiling-Water Reactor] Piping Weldments" of GL 88-01 provides some mitigation and inspection guidelines for welds that are not ultrasonic-inspectable. The subject note stated that these welds should be replaced, "sleeved", or local leak detection applied. In addition, radiographic testing (RT) or visual inspection for leakage may also be considered.

For these 21 welds, NMPC proposed to perform ultrasonic testing and/or surface examinations to the extent practical. Based on review of NMPC's submittal, the staff finds NMPC's ISI Relief Request ISI-12 acceptable because the proposed alternate examinations of the subject welds meet the guidelines in GL 88-01.

3.0 CONCLUSION

The staff concludes that for Request for Relief ISI-12, the Code requirements are impractical and NMPC's proposed alternatives provide reasonable assurance of structural integrity of the subject welds. Therefore, relief is granted pursuant to 10 CFR 50.55a(g)(6)(i). The staff has

determined that granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and willnot endanger life or property, or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee that would result if the requirements were imposed on the facility.

Principal Contributor: W. Koo

Date: May 31, 2001