

February 9, 2001

Mr. John H. Mueller
Chief Nuclear Officer
Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Operations Building, Second Floor
P. O. Box 63
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SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT NO. 1 - ALTERNATIVE TO
AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE
VESSEL CODE (ASME CODE) MINIMUM WELD INSPECTION PERCENTAGE
(TAC NO. MB0175)

Dear Mr. Mueller:

By letter dated September 21, 2000, Niagara Mohawk Power Corporation (NMPC) stated that it plans to implement in the second period of the third 10-year inservice inspection (ISI) interval a risk-informed ISI program (RI-ISI) as an alternative to the current ISI program for Class 1 and 2 piping, and requested relief regarding the requirements of the ASME Code, Section XI. Pursuant to 10 CFR 50.55a(a)(3)(i), NMPC seeks relief from meeting the first period minimum percentage of examination required by the ASME Code during the upcoming refueling outage (RFO-16, in March 2001) of that period. NMPC provided additional information in support of the relief request by a letter dated November 30, 2000.

The NRC staff's safety evaluation (SE) for authorizing the requested alternative is enclosed. The request was reviewed against the requirements of the 1989 Edition of the ASME Code, Section XI, and 10 CFR 50.55a(a)(3)(i), and guidelines provided in NRC Information Notice 98-44. NMPC's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the third 10-year interval. This SE authorizes a delay of 2 years from December 26, 1999, or through RFO-16, whichever is later, for conforming to the piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI. The staff notes that augmented ISI programs are not covered by this authorization.

The staff acknowledges that NMPC plans to submit its RI-ISI program by February 2002. While this schedule is acceptable for completion of the staff review before RFO-17, NMPC is urged to ensure that this submission schedule is not delayed.

J. Mueller

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This completes the staff's efforts on NMPC's submittals cited above. If you have any questions, please contact the project manager, Mr. Peter Tam, at 301-415-1451.

Sincerely,

/RA by P. Milano/

Marsha Gamberoni, 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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This completes the staff's efforts on NMPC's submittals cited above. If you have any questions, please contact the project manager, Mr. Peter Tam, at 301-415-1451.

Sincerely,

/RA by P. Milano/

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*safety evaluation in memo of 1/11/01 used essentially as-is **Signed & concurred by P Milano

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

ALTERNATIVE TO THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

BOILER AND PRESSURE VESSEL CODE

THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

1.0 INTRODUCTION

Inservice inspection of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME Code and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(6)(g)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the pre-service examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. For Nine Mile Point Nuclear Station, Unit 1 (NMP-1), the applicable edition of Section XI of the ASME Code for the third 10-year inservice inspection (ISI) interval, which began on December 26, 1999, is the 1989 edition.

Currently, NMP-1 is in the middle of its first period of the third ISI interval. By letter dated September 21, 2000, the licensee, Niagara Mohawk Power Corporation (NMPC) stated that it plans to implement in the second period a risk-informed inservice inspection program (RI-ISI) as an alternative to the current ISI program for Class 1 and 2 piping, and submitted a relief request (ISI-13) regarding the requirements of the ASME Code, Section XI. Pursuant to

Enclosure

10 CFR 50.55a(a)(3)(i), the licensee seeks relief from meeting the first period minimum percentage of examination required by the ASME Code during the upcoming refueling outage (RFO-16, in March 2001) of that period. The licensee provided additional information in support of the relief request by letter dated November 30, 2000. The following sections delineate the NRC staff's review of the licensee's request for relief pursuant to 10 CFR 50.55a(a)(3)(i).

2.0 EVALUATION

The licensee's request, ISI-13, involves examination categories B-F, B-J, C-F-1, and C-F-2 welds pertaining to ASME Class 1 and 2 piping. The information provided by the licensee, and the NRC staff's disposition of that information are presented below.

2.1 Code Requirement

The 1989 Edition of the ASME Code, Section XI, requires that for Class 1 and 2 piping, a minimum percentage of examinations in each category of welds be completed during each successive inspection period and inspection interval in accordance with Program B, Tables IWB-2412-1 and IWC-2412-1, respectively. For the first period of each inspection interval, the minimum examination requirement is 16 percent.

2.2 Licensee's Request for Relief

Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee requested approval of a relief from the minimum examination percentages required by the ASME Code, Section XI, for the first period (December 26, 1999 to December 25, 2002) of the third inspection interval (December 26, 1999 to December 25, 2009) for Class 1 and 2 piping Examination Categories B-F, B-J, C-F-1, and C-F-2 welds.

According to the ASME Code, Section XI, Tables IWB-2412-1 and IWC-2412-1, completion of a minimum of 16 percent is required in the first inspection period for each category of weld. There is only one refueling outage (i.e., RFO-16) within the first period of the third inspection interval. NMPC requested not to perform the examinations needed for meeting the Code-required 16 percent during the outage, RFO-16, scheduled to begin in March 2001, based on the intent to develop and implement an alternative ISI program using a risk-informed approach.

2.3 Licensee's Basis for Relief Request

In its November 30, 2000, letter, the licensee states:

The first NMP1 refueling outage of the third interval (RFO-16) is scheduled to begin in March 2001. This request for relief would provide for the elimination of ASME Code Class 1 and 2 piping weld examinations that may no longer be required once NMP1's Risk-Informed Inservice Inspection (RI-ISI) Program for piping is implemented.

All required augmented examinations, as required by GL [Generic Letter] 88-01, will be performed as scheduled during RFO-16.

In Information Notice 98-44, the USNRC Staff stated that the performance of augmented examinations would be unaffected by USNRC approved delays in updating ISI programs to accommodate development of risk-informed ISI Programs. Accordingly augmented examinations are unaffected by this request for relief.

USNRC Information Notice 98-44, titled "Ten Year Inservice Inspection (ISI) Program Update for Licensees that Intend to Implement Risk-Informed ISI of Piping," states that the probabilistic risk assessment technology in USNRC regulatory activities should be increased to the extent supported by state of the art methods and data and in a manner that complements the USNRC's deterministic approach. Basically, this information combined with risk-assessment techniques and associated data, can be used to develop a more effective approach to the ISI program, specifically the piping. This program is practical and provides an acceptable level of quality and safety, as required by 10 CFR 50.55a(a)(3)(i).

2.4 Licensee's Proposed Alternative Examination

In its November 30, 2000, letter the licensee states:

In accordance with 10 CFR 50.55a(a)(3)(i), NMPC proposes an alternative to the examination percentage requirements of Inspection Program B. Specifically, NMPC proposes to develop the RI-ISI program in accordance with ASME Code Case N-578, utilizing the EPRI [Electric Power Research Institute] methodology applied to ASME Code Class 1, 2 and 3 piping and in accordance with EPRI TR 112657 and Regulatory Guide 1.178. When the RI-ISI Program is established, all examinations required by the risk-informed methodology would be accomplished by the end of the Third Ten-Year Inservice Inspection Interval that is scheduled for completion on December 25, 2009.

NMPC plans to develop and implement a RI-ISI methodology for RFO-17 in March-April of 2003.

Third Inservice Inspection Interval, First Inspection Period, [is from] December 26, 1999 to December 25, 2002.

[NMPC plans to] Submit RI-ISI Program no later than February 2002, for implementation in the Second Inservice Inspection Period, RFO-17."

2.5 Staff Evaluation

The NRC staff reviewed the information in the above-cited letters for the first period of the third 10-year ISI interval of NMP-1 pertaining to Class 1 and 2 piping welds. The Code requires that at least 16 percent in each category of the subject welds be examined during the first period of an inspection interval, which for NMP-1 means that the entire 16 percent of welds should be examined in RFO-16 of the period.

NRC Information Notice 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees that Intend to Implement Risk-Informed ISI of Piping" (IN 98-44) states that for licensees who intend to implement a RI-ISI program for piping and follow the guidance provided in IN 98-44, the staff will consider authorizing a delay of up to 2 years in implementation of the ISI program for piping only. The NMP-1 current ISI program for the third 10-year interval started on December 26, 1999, and its first period will end on December 25, 2002. The NMP-1 RI-ISI program is expected to be similar to the RI-ISI programs for plants such as South Texas, ANO-2, and James A. FitzPatrick, using the EPRI risk-informed methodology, which were reviewed and approved recently by the staff. Each of those RI-ISI programs use the same methodology which is described in EPRI TR 112657. The licensee indicated that RFO-6, for which the relief is requested, starts in March 2001. The proposed delay is within the 2-year delay period discussed in IN 98-44 for implementing the alternative program using RI-ISI methodology. The licensee further indicated that the RI-ISI program for NMP-1 will be submitted no later than February 2002 and that implementation of the RI-ISI will be completed by the end of the third ISI interval (December 25, 2009). This proposed alternative excludes augmented examinations as required by GL 88-01, NRC position on intergranular stress corrosion cracking in boiling-water reactor austenitic stainless steel piping, and all other augmented examinations, if any, are unaffected by this request for relief. This is in conformance with the guidance of IN 98-44, which indicates that the performance of augmented examinations would be unaffected by staff-approved delays in updating ISI programs to accommodate development of RI-ISI programs.

The RI-ISI program that will be developed should result in a substantial reduction in the required number of piping weld examinations. Examination of this reduced number of piping weld examinations will be spread over the remaining outages in the interval that began in December 26, 1999. Deferral of the non-augmented examinations scheduled to be conducted in RFO-16 will not have an impact on the licensee's ability to complete the examinations determined to be necessary based on the RI-ISI methodology. Furthermore, the RI-ISI program developed by the licensee will be reviewed by the NRC and will require NRC authorization prior to implementation. On this basis, the staff has determined that the licensee's proposed alternative provides an acceptable level of quality and safety and is, therefore, authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.0 CONCLUSION

Based on information provided in this request for relief, and the target date established by the licensee to submit the alternative RI-ISI program, the staff determined that relief from performing Class 1 and 2 piping weld examinations during RFO-16 to meet the minimum percentage of examination is acceptable. Therefore, Relief Request ISI-13 is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the request provides an acceptable level of quality and safety. This safety evaluation authorizes a delay of 2 years from December 26, 1999, or through RFO-16, whichever is later, for conforming to the piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI, for the third 10-year ISI interval at NMP-1. This authorization does not apply to any augmented examination requirements.

Principal Contributor: S. Hou

Date: February 9, 2001