

March 20, 2003

Mr. Douglas E. Cooper
Site Vice President
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

SUBJECT: PALISADES PLANT - EVALUATION OF RELIEF REQUEST ASSOCIATED
WITH AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE
SECTION XI INSERVICE INSPECTION (ISI) REQUIREMENTS
(TAC NO. MB7728)

Dear Mr. Cooper:

By letter dated February 13, 2003, the Nuclear Management Company, LLC (the licensee), submitted a request for relief from the ASME Code Section XI requirements. Pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.55a(a)(3)(ii), you requested that the Palisades Plant ISI program (non-destructive, Categories B-F, B-J, C-F-1, and C-F-2) for the third inspection interval, be suspended for the remainder of the third interval.

We have evaluated your request against the requirements of the 1989 Edition of the ASME Code, Section XI for piping component welds, 10 CFR 50.55a(a)(3)(ii), and the guidelines provided in Nuclear Regulatory Commission (NRC) Information Notice 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees That Intend to Implement Risk-Informed ISI of Piping." The staff concludes that performing Class 1 and 2 piping weld examinations during the next refueling outage (March 2003) as required by the ASME Code to meet the minimum percentage of examination would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), your proposed alternative is authorized for 2 years from February 13, 2003, or through the remainder of the third ISI interval, whichever is sooner, for conforming to the Class 1 and 2 piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI.

The NRC staff's safety evaluation authorizing the requested alternative is enclosed. Please contact the NRC Project Manager, Johnny Eads at (301) 415-1471 if you have any questions.

Sincerely,

/RA/

L. Raghavan, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosure: Safety Evaluation

cc w/encl: See next page

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Docket No. 50-255
Enclosure: Safety Evaluation
cc w/encl: See next page

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Palisades Plant

cc:

Mr. Robert A. Fenech, Senior Vice President
Nuclear, Fossil, and Hydro Operations
Consumers Energy Company
212 West Michigan Avenue
Jackson, MI 49201

Arunas T. Udry, Esquire
Consumers Energy Company
212 West Michigan Avenue
Jackson, MI 49201

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Supervisor
Covert Township
P. O. Box 35
Covert, MI 49043

Office of the Governor
P. O. Box 30013
Lansing, MI 48909

U.S. Nuclear Regulatory Commission
Resident Inspector's Office
Palisades Plant
27782 Blue Star Memorial Highway
Covert, MI 49043

Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
Hazardous Waste and Radiological
Protection Section
Nuclear Facilities Unit
Constitution Hall, Lower-Level North
525 West Allegan Street
P.O. Box 30241
Lansing, MI 48909-7741

Michigan Department of Attorney General
Special Litigation Division
630 Law Building
P.O. Box 30212
Lansing, MI 48909

Mr. Roy A. Anderson
Executive Vice President and
Chief Nuclear Officer
Nuclear Management Company, LLC
700 First Street
Hudson, WI 54016

Laurie A. Lahti
Manager - Licensing
Nuclear Management Company, LLC
27780 Blue Star Memorial Highway
Covert, MI 49043

Steven T. Wawro
Nuclear Asset Director
Consumers Energy Company
Palisades Plant
27780 Blue Star Memorial Highway
Covert, MI 49043

Mr. John Paul Cowan
Senior Vice President
Palisades Plant
Nuclear Management Company, LLC
27780 Blue Star Memorial Highway
Covert, MI 49043

December 2002

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
ASSOCIATED WITH REQUEST FOR RELIEF FROM AMERICAN
SOCIETY OF MECHANICAL ENGINEERS (ASME) CODE SECTION XI INSERVICE
INSPECTION (ISI) REQUIREMENTS
NUCLEAR MANAGEMENT COMPANY, LLC
PALISADES PLANT
DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated February 13, 2003, the Nuclear Management Company, LLC (the licensee) submitted a request for relief from the ASME Code Section XI requirements. Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(a)(3)(ii), the licensee requested that the Palisades Plant ISI program (non-destructive, Categories B-F, B-J, C-F-1, and C-F-2) for the third inspection interval, be suspended for the remainder of the third interval.

2.0 BACKGROUND

ISI of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel (B&PV) 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). Title 10 of the *Code of Federal Regulations* Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (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

ENCLOSURE

reference in 10 CFR 50.55a(b), 12 months before the start of the 120-month interval, subject to the limitations and modifications listed therein. For the Palisades Plant, the applicable edition of Section XI of the ASME Code for the third 10-year ISI interval is the 1989 Edition.

Currently, the Palisades Plant is in the middle of its second period of the third ISI interval. By letter dated March 1, 2002, the licensee stated that it plans to implement, in the second period of the third ISI interval, a full scope risk-informed ISI (RI-ISI) program as an alternative to the current ISI program which includes ASME Class 1, 2, 3 and non-class piping. Staff review of the licensee's proposed RI-ISI program is in progress. By letter dated February 13, 2003, the licensee submitted a relief request regarding the requirements of the ASME Code, Section XI. Pursuant to 10 CFR 50.55a(a)(3)(ii), the request seeks relief for meeting the second period minimum percentage of examination required by the ASME Code. As discussed below, the NRC staff has reviewed and evaluated the licensee's request for relief pursuant to 10 CFR 50.55a(a)(3)(ii).

3.0 EVALUATION

The licensee's request regards examination Categories B-F and B-J for Class 1 piping welds and examination Categories C-F-1 and C-F-2 for Class 2 piping welds. The information provided by the licensee, and the NRC staff's disposition of that information, are presented below.

3.1 Code Requirement

The following paragraph refers to the ASME B&PV Code, Section XI, 1989 Edition, the code currently applicable to the Palisades Inservice Inspection Program.

Tables IWB-2412-1 and IWC-2412-1 require that a minimum of 50 percent of the required ASME Section XI examinations be completed by the end of the second period of an inspection interval.

3.2 Licensee's Request for Relief

The licensee proposes that the RI-ISI program for the Palisades Plant, which is currently under review by the NRC, be implemented during the second period of the third inspection interval. In accordance with this program, NMC proposes to perform 29 ISI pipe weld examinations during the next refueling outage, as an alternative to the requirements of ASME Section XI. Of these 29 examinations, four are augmented Alloy 600 examinations, two are augmented weld overlay examinations and 23 of these examinations are in accordance with Palisades RI-ISI program. These 23 examinations are of piping associated with Palisades proposed full scope RI-ISI Program that includes ASME Class 1, 2, 3, and non-class piping. The RI-ISI Program presently submitted requires that 139 piping examinations be performed during a 10-year interval. NMC is in the process of supplementing their original RI-ISI submittal to include additional examinations of high safety significant segments that contain multiple line sizes. These additional piping examinations will be included in the RI-ISI interval examination requirements once determined.

Additionally, all RI-ISI piping segments that are high safety significant and contain socket welds, receive a VT-2 examination during each refueling outage. The RI-ISI program for the Palisades Plant did not identify any socket weld location subject to external chloride stress corrosion cracking.

In the current third inspection interval, Palisades has completed approximately one third of the Class 1 and 2 piping weld examinations required under the existing ASME Section XI Inservice Inspection Program. This coupled with Palisades commitment to examine at least 66 percent of the examinations associated with the RI-ISI Program by the end of the third interval, constitutes an alternative examination method which will provide an acceptable level of quality and safety. These percentages are comparatively equivalent to the ASME Section XI code interval requirements to perform 100 percent of the required piping examinations by the end of the interval. Since Palisades is implementing a full scope RI-ISI Program, which includes ASME Class 1, 2, 3 and non-class piping, it is not possible to directly correlate the examination categories from the previous ISI Program to those associated with the RI-ISI Program.

Once the RI-ISI program is approved, examinations will be performed such that those required for the second and third period be completed by the end of the third inspection interval. Additionally, if the RI-ISI Program is not approved for any reason, then all examinations of Category B-F, B-J, C-F-1 and C-F-2 welds that would be required under the current ISI program for the third inspection interval, will be completed by the end of the third inspection interval.

3.3 Licensee's Basis for the Relief Request (as stated)

NMC has completed the development of a full scope Risk Informed Inservice Inspection (RI-ISI) Program for the Palisades Plant, using Westinghouse Topical Report, WCAP-14572 "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report," Revision I-NP-A. The Palisades program was submitted to the NRC for their review by letter dated March 1, 2002. This proposed full scope risk informed program includes ASME Class 1, 2, 3 and non-class piping welds. Palisades is presently in the second period, third interval, of the ASME Section XI (1989 Edition) Inservice Inspection Program. The second period of this third inspection interval concludes with the completion of the next refueling outage.

The piping categories that are affected by this relief request include: B-F, B-J, C-F-1 and C-F-2. Details of these categories are as follows:

- * 47 B-F welds - Five are socket welds and 42 are butt welds.
- * 753 B-J welds - 359 are socket welds and 394 are butt welds.
- * 986 C-F-1 welds - 66 are socket welds and 920 are butt welds.
- * 316 C-F-2 welds - Zero are socket welds and 316 are butt welds.

A total of 169 Class 1 and Class 2 welds have been examined to date. Of these 169 weld locations, 132 were examined in the first period and 37 have been examined in the second period. Of these 37 welds, 15 are Class 1 and 22 are Class 2. The following table provides details of the inspections that have been performed thus far in the third interval.

Category	Completed Inspections	Percent Complete
B-F welds	20 of 47	42.60%
B-J welds	48 of 213	22.50%
C-F-1 welds	68 of 173	39.30%
C-F-2 welds	33 of 76	43.40%

ASME Section XI requires that a minimum of 50 percent of the required welds be examined by the end of the second period of the interval. Approximately 57 Class 1 and 24 Class 2 piping locations are required to be inspected to meet the second period requirements under the current program. Meeting ASME Section XI period requirements would require NMC to perform additional examinations not currently scheduled for the next refueling outage. Performing examinations in accordance with the current inspection plan would result in unnecessary personnel exposure.

The NRC previously published Information Notice (IN) 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees That Intend to Implement Risk-Informed ISI of Piping." This document states that, "...the Staff will consider authorizing a delay up to 2 years in implementation of the next 10-year ISI program for piping only to allow licensees to develop and obtain approval for their RI-ISI program at the next available opportunity using the Staff-approved topical reports." Although IN 98-44 does not address programs that may choose to implement a RI-ISI program at mid-interval, NMC will be confronted with a hardship and difficulty since it has submitted an ASME RI-ISI Program mid-interval. This situation creates a condition whereby the provision in 10 CFR 50.55a(a)(3)(ii) is applicable, in that compliance with the requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Furthermore, the intent and provisions established in IN 98-44 allow for delays in performing currently required ISI inspections by recognizing that implementing a RI-ISI program will eliminate many inspections.

These examinations will ensure that 66 percent of the required RI-ISI program examinations are performed during the second and third periods of the third inspection interval. The third interval is expected to conclude on December 12, 2006. Other ASME Section XI code requirements (pressure testing, augmented inspections, repair replacement, etc), would remain unchanged from the current requirements.

3.4 Staff Evaluation

The NRC staff has reviewed the information concerning the ISI program request for relief and the proposed alternative submitted in the licensee's letter dated February 13, 2003, for the remainder of the third 10-year ISI interval pertaining to Examination Category B-F and B-J for Class 1 piping welds and to Examination Category C-F-1 and C-F-2 for Class 2 piping welds. The Code requires that at least 50 percent in each category of the subject welds be examined

by the end of the second period of the interval, which for Palisades, means that the remainder of the 50 percent of welds not examined during the previous outages should be examined in the next outage (March 2003).

NRC Information Notice 98-44, "Ten-Year Inservice Inspection (ISI) Program Update for Licensees that Intend to Implement Risk-Informed ISI of Piping" states that for licensees that intend to implement an 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 Palisades current ISI program for the third 10-year interval will end on December 12, 2006. The Palisades RI-ISI program would be expected to use the same methodology described in Westinghouse Topical Report, WCAP-14572. The licensee submitted an RI-ISI program by letter dated March 1, 2002, and it is currently under staff review.

The licensee performed a large portion of the Code required examination on Class 1 and 2 piping welds during the first period and the first outage of the second period. Thus, the proposal to suspend the current ISI program for Class 1 and 2 piping during the next refueling outage (March 2003), and to start implementation of the RI-ISI program in this March 2003, outage in the second period of the third interval is within the 2-year delay period discussed in IN 98-44 for implementing the alternative program using RI-ISI methodology. The licensee has committed that the RI-ISI program will meet the Code required percentage of inspection in each ISI period. The licensee further indicated that its request for relief and subsequent implementation of the alternative program is only for Class 1 piping welds in Categories B-F and B-J and Class 2 piping welds in Categories C-F-1 and C-F-2; other Code requirements, including Class 3 inspections, pressure testing, repairs and replacements, would remain unchanged from current requirements. The licensee's relief request excludes any existing augmented examination programs. As stated in IN 98-44, the performance of augmented examinations would be unaffected by staff-approved delays in updating the ISI program to accommodate development of a risk-informed ISI program.

It is anticipated that the RI-ISI program, which the licensee submitted to the NRC on March 1, 2002, will result in a substantial reduction in the required number of piping weld examinations. Examination of the reduced number of Class 1 and Class 2 piping welds will be spread over the refueling outages in the second and third periods of the third interval. Therefore, the staff concludes that examination of the remaining welds during the next refueling outage for meeting the Code required sample percentage for the second period would be unnecessary, and would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Furthermore, the RI-ISI program developed by the licensee will be reviewed by the NRC and will require NRC authorization prior to implementation.

4.0 CONCLUSION

Based on information provided in the licensee's request for relief, and timely submission of the alternative RI-ISI program, the staff has determined that performing Class 1 and 2 piping weld examinations during the next refueling outage (March 2003) as required by the ASME Code to meet the minimum percentage of examination, would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii). The staff authorizes a delay of 2 years from February 13, 2003, or through the remainder of the third ISI interval,

whichever is sooner, for conforming to the Class 1 and 2 piping weld examination requirements of the 1989 Edition of the ASME Code, Section XI, for the third 10-year ISI interval at Palisades. This authorization does not apply to any augmented examination requirements.

Principal Contributor: J. Eads

Date: March 20, 2003