NMC
Committed to Nuclear Excellence

Palisades Nuclear Plant
Operated by Nuclear Management Company, LLC

February 21, 2002

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

DOCKET 50-255 - LICENSE DPR-20 - PALISADES NUCLEAR PLANT
REQUEST FOR RELIEF FROM ASME CODE REQUIREMENTS FOR CONTAINMENT INSERVICE INSPECTION - Containment Relief Requests CRR-08 and CRR-09

Nuclear Management Company, LLC (NMC), requests approval for use at the Palisades Plant an alternative to the requirements of ASME Boiler & Pressure Vessel Code, Section XI, 1992 Edition with the 1992 Addendum, Subsection IWE, for the inservice inspection of Class MC pressure retaining components and their integral attachments, and of metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments. A discussion of the proposed alternative is provided in Attachment 1 as containment relief request CRR-08.

NMC also requests approval for use of an alternative to the requirements of ASME Boiler & Pressure Vessel code, Section XI, 1992 Edition with the 1992 Addendum, Subsection IWL, for the inservice inspection of Class CC components at the Palisades Plant. A discussion of the proposed alternative is provided in Attachment 2 as containment relief request CRR-09.

Nuclear Regulatory Commission (NRC) approval of relief requests CRR-08 and CRR-09 would authorize the use of Subsections IWE and IWL from the 1998 Edition and Addendum of Section XI for the balance of the current 10-year inspection interval. The 1998 version resolves implementation problems inherent in previous editions of these subsections, and is the preferred revision to use for containment inspections. Relief requests CRR-08 and CRR-09 would supersede previous relief requests CRR-01, -02, -03, -05, and -07 submitted in Consumers Energy Company[1] Letter dated October 8, 1998, and approved (in whole or in part) by NRC in a letter dated July 26, 1999.

1 On May 15, 2001, the Nuclear Management Company, LLC, succeeded Consumers Energy Company as the licensed operator of the Palisades Nuclear Plant.

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A significant portion of the Inservice Inspection of the Palisades containment is scheduled to be performed during the next refueling outage. Therefore, in order to provide time to incorporate associated programmatic changes to support the refueling outage, NRC is requested to approve these relief requests by October 1, 2002.

SUMMARY OF COMMITMENTS

This letter contains no new commitments and no revisions to existing commitments.

Paul A. Harden
Director, Engineering

CC Regional Administrator, USNRC, Region III
Project Manager, USNRC, NRR
NRC Resident Inspector, Palisades

Attachments

ATTACHMENT 1

NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255

February 21, 2002

CONTAINMENT RELIEF REQUEST CRR-08

6 Pages

ATTACHMENT 1
PALISADES NUCLEAR PLANT
CONTAINMENT RELIEF REQUEST CRR-08

COMPONENT IDENTIFICATION

Code Class:	MC and Metallic Liners of Class CC Components
Examination Category:	All
Item Numbers:	All
Description:	Alternative Requirements for Inservice Inspection of Class MC and Metallic Shell and Penetration Liners of Class CC Pressure Retaining Components and Their Integral Attachments

CODE REQUIREMENTS

ASME Boiler & Pressure Vessel Code, Section XI (Section XI), 1992 Edition with 1992 Addendum, Subsection IWE, provides the requirements for inservice inspection (ISI), repair and replacement of Class MC pressure retaining components and their integral attachments, and of metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments in light-water cooled plants.

BASIS FOR RELIEF

On August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) changed 10 CFR 50.55a to incorporate by reference the 1992 Edition with the 1992 Addendum of Section XI, Subsection IWE, for examination of containments. On September 22, 1999 (64 FR 51370), 10 CFR 50.55a was changed to incorporate by reference the 1995 Edition with the 1996 Addendum of Section XI. This change, in 10 CFR 50.55a(b)(2)(vi), allowed licensees to implement either the previously required 1992 Edition with 1992 Addendum, or the 1995 Edition with 1996 Addendum, as modified and supplemented by the requirements of 10 CFR 50.55a(b)(2)(ix).

Since that time several changes have been made by the ASME to Subsection IWE. These changes were published in the 1998 Edition of Section XI. These changes resolved several implementation difficulties with the earlier editions and addenda of Subsection IWE, and have made the 1998 Edition the preferred edition to use for containment inservice inspection.

The proposed Palisades alternative uses the 1998 Edition of Subsection IWE of Section XI in its entirety, supplemented with the applicable requirements of 10 CFR 50.55a(b)(2)(ix). The 1998 Edition of Subsection IWE provides a more cohesive approach than could be achieved by requesting relief on multiple, individual issues, and is the preferred revision to use for containment inspections. These

requirements were developed in accordance with the ASME Code committee process with input from interested parties, including other licensees, manufacturers, engineering organizations, Authorized Nuclear Inservice Inspection (ANII) Agencies, Electric Power Research Institute (EPRI) and the NRC. The updating of Subsection IWE requirements by this consensus process is intended to ensure the continued safe operation of nuclear power plants and the continued leak-tight structural integrity of metallic containment components.

In a letter and Safety Evaluation (SE) dated April 21, 2000, issued to Northeast Nuclear Energy Company for Millstone Units 2 and 3, the NRC staff concluded that the 1998 Edition of Subsection IWE, as supplemented by the licensee's commitments in responses to the NRC staff's Requests for Additional Information, provided an acceptable level of quality and safety for ensuring the pressure boundary integrity of the Millstone containments. This position was also reached in NRC letters dated July 23, 1999 and October 17, 2000, providing similar relief for Comanche Peak Units 1 and 2, and Wolf Creek, respectively. The NRC Safety Evaluation issued by the April 21, 2000 letter to Northeast Nuclear Energy Company included a report prepared for NRC by the Idaho National Engineering and Environmental Laboratory entitled "Technical Evaluation Report on the Proposed Alternative To IWE/IWL Containment Inspections Northeast Nuclear Energy Company, Millstone Nuclear Power Station, Unit Nos. 2 and 3, Docket Numbers 50-336 and 50-423", INEEL/EXT-2000-00359 (TER). This report contained a comparison of Subsection IWE and IWL requirements from the 1998 Edition and Addendum with those from the 1992 Edition and Addendum, and summarized (in Appendix C) the actions proposed by Millstone to supplement the requirements of the 1998 Edition and Addendum. The generic code comparison information provided in the TER is considered valid for Palisades and is not repeated here. The SE and TER concluded that the proposed use of Subsections IWE and IWL from the 1998 Edition and Addendum of Section XI was acceptable when certain provisions were supplemented with specific identified actions. NMC has addressed these provisions by including compensating actions similar to those approved for Millstone in the Proposed Alternative Provisions section of this relief request .

PROPOSED ALTERNATIVE PROVISIONS

NMC proposes to perform inservice inspection (ISI) of Class MC and metallic shell and penetration liners of Class CC pressure retaining components and their integral attachments in accordance with Subsection IWE of the 1998 Edition and Addendum of the ASME Boiler & Pressure Vessel Code, Section XI, supplemented with the requirements of 10 CFR 50.55a(b)(2)(ix) and the following additional actions related to the identified Section XI articles:

ATTACHMENT 1
PALISADES NUCLEAR PLANT
CONTAINMENT RELIEF REQUEST CRR-08

1) IWE-2300: The 1992 Edition and Addendum (Table IWE-2500-1) uses IWA-2200 and IWA-2300 for visual, surface, and volumetric examination methods, and for qualification of personnel. IWE-2300 (1998) requires the owner (i.e., licensee) to define requirements for visual examination of containment surfaces, and for qualifying the personnel performing visual examinations. Additionally, IWE-2320 requires the owner to designate a responsible individual (RI) for activities related to the containment surface visual examinations and personnel qualification. The following provisions define the general and detailed visual examinations to be performed as part of the proposed Palisades Containment ISI Program, as well as the personnel qualification requirements:

a) The qualification program for personnel performing the general and detailed visual examinations will meet the applicable requirements of IWA-2210 of the 1992 Edition and Addendum of Section XI.

b) Palisades' procedures will include the general and detailed visual examinations in the functional task descriptions for the VT-3 and VT-1 methods, respectively. Personnel performing the general and detailed visual examinations will be certified to VT-3 and VT-1, respectively.

c) Performance requirements for general and detailed visual examinations will be included in the visual examination procedure. A performance demonstration will be developed and documented to establish the distances and illumination for which the general and detailed visual examinations are sufficient to detect evidence of degradation that may affect the containment structural integrity or leak tightness. The Palisades visual examination procedure will be prepared by non-destructive examination (NDE) Level III personnel and the RI, and demonstrated to the ANII.

d) The general visual examination acceptance criteria will be included in the Palisades Section XI visual examination procedure. The general visual examination of containment liner surfaces examines for indications of degradation that may affect the containment structural integrity or leak tightness. Indications of flaking, blistering or peeling coating; excessive corrosion; and general deformation, bulges, surface irregularities, or other signs of distress, will be recorded. The general visual examination of pressure retaining bolted connections examines for missing or loose bolting materials, corrosion, bolting deformation, or other indications that may affect the integrity of the bolted connection. Indications will be recorded. The general visual examination of moisture barriers examines for wear, damage, erosion, tears, surface cracks or other defects that would permit intrusion of

moisture into inaccessible areas. Indications will be recorded. Recorded indications will be evaluated in accordance with IWE-3000, 1998 Edition.

e) The detailed visual examinations will also be included in the Palisades Section XI visual examination procedure. The detailed visual examination assesses the initial condition of surfaces requiring augmented examinations, in accordance with IWE-1241, and determines the magnitude and extent of indications of degradation and distress of these containment surfaces. The detailed visual examination also determines the magnitude and extent of indications of degradation and distress of suspect containment surfaces. The detailed visual examination criteria of IWE-2310(e) of the 1998 Edition are used, supplemented by additional criteria for bolted connections and moisture barriers as defined in the general visual examination criteria above.

f) Results of a general visual examination are acceptable for continued service without further evaluation only when there is no evidence of damage or degradation of the inspected component or surface area.

g) For IWE examinations, the Palisades Containment Inspection Program will continue to meet the requirements specified in the 1992 Edition of Section XI (ASNT-SNT-TC-1A, 1984 Edition or ANSI/ASNT CP-189, 1991 Edition) for the qualification of personnel performing examinations. In addition, the inspection and evaluation procedures that are used to perform inspections are reviewed and approved by a certified NDE Level III examiner and the ANII.

2) IWE-2500: The requirement to examine paint or coating prior to removal was deleted in the 1998 Edition. The following actions will assure that coatings will not be applied inappropriately to a degraded surface:

At Palisades, liner plate protective coatings are maintained in accordance with administrative work requests and the work order program. As part of this program, the RI is required to perform a maintenance pre-review of any work order authorizing liner plate work. During this review, the RI enters inspection requirements to ensure the liner plate will continue to meet design bases requirements. These inspection requirements may include detailed inspections, general visual examinations and detailed visual examinations. Items not meeting the acceptance criteria of examination procedures will be evaluated in accordance with the Palisades 10 CFR 50 Appendix B Corrective Action Program and accepted by analysis or repaired or replaced in accordance with Palisades' programs.

3) IWE-3510.1 and IWE-3511.1: These Articles require the Owner to define acceptance criteria for general and detailed visual examination of containment surfaces in performing Category E-A and E-C examinations. The basic requirements for these examinations are provided in IWE-2310 and will be augmented by Palisades as described in 1) above.

4) IWE-3511.3: In this Article of the 1998 Edition and Addendum, examination of Class CC metallic liners has been excluded from the acceptance criterion, which requires disposition of areas where material loss exceeds 10% of the nominal wall thickness. NMC shall apply acceptance standards determined by an engineering analysis completed in accordance with Plant administrative procedures. This engineering analysis will document the minimum required thickness for specific areas on the containment liner plate.

The 1998 Edition applies the criteria in IWE-3511.3 to Class MC pressure retaining components, and not to metallic liners of Class CC components. NMC will apply the ultrasonic examination criteria in IWE-3511.3 to both Class MC components and the metallic liners of Class CC components,

5) Examination Categories E-D and E-G Examination Category E-D, Seals, Gaskets, and Moisture Barriers, and Examination Category E-G, Pressure Retaining Bolting, have been eliminated from the 1998 Edition and Addendum. The examination of pressure-retaining bolting and moisture barriers is now included in Examination Category E-A, footnote (1)(d) and Item E1.30, respectively.

With respect to Category E-G, Bolting, accessible bolted connections will be visually examined each inspection period per the requirements of the Subsection IWE of the 1998 Edition and Addendum, Table IWE-2500-1, Category E-A. This Code provision requires an examination of all bolted connections three times per inspection interval. NMC proposes performing a general visual examination (VT-3 or equivalent) on the exposed portions of the connection. If the general visual examination indicates suspect areas of degradation or damage, a detailed visual examination (VT-1 or equivalent) is required. If assembled, the suspect bolted connection will be disassembled as required to facilitate the detailed examination. Bolted connections need not be disassembled solely for the performance of VT-3 examinations. Furthermore, if a bolted connection is disassembled at the time of scheduled inspections, all accessible surface areas of the connection will be visually examined (VT-3 or VT-1 if necessary). If a bolted connection is disassembled at times other than scheduled inspections, written maintenance procedures will be followed to ensure the integrity of reassembled bolted connections is maintained.

ATTACHMENT 1
PALISADES NUCLEAR PLANT
CONTAINMENT RELIEF REQUEST CRR-08

The general visual examination of moisture barriers examines for wear, damage, erosion, tears, surface cracks or other defects that would permit intrusion of moisture into inaccessible areas. Indications will be recorded. Recorded indications will be evaluated in accordance with IWE-3000, 1998 Edition.

CONCLUSION:

In summary, the proposed Palisades alternative uses the 1998 Edition and Addendum of Subsection IWE of Section XI in its entirety, supplemented with: 1) additional actions to address selected NRC concerns with changes in the 1998 Edition of Subsection IWE, as identified in the SE for Millstone; and 2) the applicable requirements of 10 CFR 50.55a(b)(2)(ix). Based on the information presented, and pursuant to 10 CFR 50.55a(a)(3)(i), NMC requests approval for the proposed alternative inspection program using the 1998 Edition and Addendum of Section XI, Subsection IWE, on the basis that the proposed alternative provides an acceptable level of quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the portion of the first ten-year inspection interval of the Palisades Containment Inservice Inspection Program remaining after NRC approval.

ATTACHMENT 2

NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255

February 21, 2002

CONTAINMENT RELIEF REQUEST CRR-09

4 Pages

ATTACHMENT 2
PALISADES NUCLEAR PLANT
CONTAINMENT RELIEF REQUEST CRR-09

COMPONENT IDENTIFICATION

Code Class:	CC
Examination Category:	All
Item Numbers:	All
Description:	Alternative Requirements for Inservice Inspection of Class CC Components

CODE REQUIREMENTS

ASME Boiler & Pressure Vessel Code, Section XI, 1992 Edition with 1992 Addendum, Subsection IWL, provides the requirements for preservice examination, inservice inspection and repair of the reinforced concrete and the post-tensioning systems of Class CC components.

BASIS FOR RELIEF

On August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended 10 CFR 50.55a to incorporate by reference Subsection IWL of Section XI, 1992 Edition with the 1992 Addendum, for examination of containments. On September 22, 1999 (64 FR 51370), the NRC further amended 10 CFR 50.55a to incorporate by reference the 1995 Edition with the 1996 Addendum of Section XI, Subsection IWL. This change, in 10 CFR 50.55a(b)(2)(vi), allowed licensees to implement either the previously required 1992 Edition with 1992 Addendum, or the 1995 Edition with 1996 Addendum, as modified and supplemented by the requirements of 10 CFR 50.55a(b)(2)(ix).

Since that time several changes have been made by the ASME to Subsection IWL. These changes were published in the 1998 Edition of ASME Section XI. These changes resolved several implementation difficulties with the earlier editions and addenda of Subsection IWL, and have made the 1998 Edition the preferred edition to use for containment inspections.

The alternative being proposed by Palisades uses the 1998 Edition and Addendum of Subsection IWL of Section XI in its entirety, supplemented with the requirements of 10 CFR 50.55a(b)(2)(viii). Use of the 1998 Edition of Subsection IWL provides a more cohesive approach to containment inspections than could be achieved by requesting relief on multiple, individual issues. These requirements were developed in accordance with the ASME Code committee process with input from interested parties, including other licensees, manufacturers, engineering organizations, Authorized Nuclear Inservice Inspection (ANII) Agencies, Electric Power Research Institute (EPRI) and the NRC. The updating of Subsection IWL requirements by this consensus process is

intended to ensure the continued safe operation of nuclear power plants and the continued leak-tight structural integrity of metallic containment components.

In a letter and Safety Evaluation (SE) dated April 21, 2000, issued to Northeast Nuclear Energy Company for Millstone Units 1 and 2, the NRC staff found that the use of the 1998 Edition of the Subsection IWL, supplemented by the licensee's commitments in response to the NRC staff's Requests for Additional Information, will provide an acceptable level of quality and safety for ensuring the pressure boundary integrity of the containments at Millstone 1 and 2. This position was also reached in NRC letters dated July 23, 1999 and October 17, 2000, providing similar relief for Comanche Peak Units 1 and 2, and Wolf Creek, respectively. The NRC Safety Evaluation issued by the April 21, 2000 letter to Northeast Nuclear Energy Company included a report prepared for NRC by the Idaho National Engineering and Environmental Laboratory entitled "Technical Evaluation Report on the Proposed Alternative To IWE/IWL Containment Inspections Northeast Nuclear Energy Company, Millstone Nuclear Power Station, Unit Nos. 2 and 3, Docket Numbers 50-336 and 50-423", INEEL/EXT-2000-00359 (TER). This report contained a comparison of Subsection IWE and IWL requirements from the 1998 Edition and Addendum with those from the 1992 Edition and Addendum, and summarized (in Appendix C) the actions proposed by Millstone to supplement the requirements of the 1998 Edition and Addendum. The generic code comparison information provided in the TER is considered valid for Palisades and is not repeated here. The SE and TER concluded that the proposed use of Subsections IWE and IWL from the 1998 Edition and Addendum of Section XI was acceptable when certain provisions were supplemented with specific identified actions. NMC has addressed these provisions by including compensating actions similar to those approved for Millstone in the Proposed Alternative Provisions section of this relief request .

PROPOSED ALTERNATIVE PROVISIONS

NMC proposes to perform inservice inspection (ISI) of Class CC components in accordance with Subsection IWL of the 1998 Edition and Addendum of Section XI, supplemented with the applicable requirements of 10 CFR 50.55a(b)(2)(viii) and the following additional actions related to the identified Section XI Articles:

1) IWL-2510: The 1992 Edition and Addendum require the use of visual examination procedures VT-3C and VT-1C for the examination of concrete. In the 1998 Edition and Addendum, these procedures have been changed to "general visual" and "detailed visual" examinations. The 1998 version requires that the owner define the qualification requirements for personnel performing examinations of concrete and tendon anchorage hardware, wire, and strands, and that the owner define the requirements for visual examination of tendon anchorage hardware, wire, and strands.

The general visual examinations provide a screening mechanism to locate conditions that may be indicative of damage or distress. Containment surfaces are accepted on the basis of a general visual examination only when there are no indications of damage or distress that are a code concern.

IWL detailed visual examinations are conducted when the criteria for acceptance by general visual examination are not met, or when the surface or component is initially classified as suspect or otherwise requires augmented examination. Suspect areas are defined in Table IWL-2500-1, Categories L1.12 and L2.30. For Subsection IWL detailed visual examinations, surfaces may be accepted for continued service without further evaluation provided one of the following is demonstrated:

a) The Responsible Engineer determines that the flaw or area of degradation is nonstructural in nature or has no unacceptable effect on the structural integrity of the containment, as determined by an evaluation of the magnitude and extent of the relevant indication from ACI 201.1R. Although not required by IWL-2310(a), ACI 349.3R may be used, as appropriate.

b) The Responsible Engineer determines that the flaw or area of degradation is limited to the outermost concrete layer with no rebar exposure, or, if rebar is exposed, the rebar does not exhibit evidence of corrosion.

c) The Responsible Engineer is able to accept the indication based on a review of a previous evaluation from historical records.

2) IWL-2300: IWL-2300, 1998 Edition and Addendum, requires the Owner to define requirements for visual examination and for qualifying personnel performing visual examinations. The following provisions define the general and detailed visual examinations to be performed as part of the Palisades Containment ISI Program, as well as personnel qualification requirements:

a) The qualification program for personnel performing the general and detailed visual examinations will meet the applicable requirements of IWA-2300 of the 1992 Addendum.

b) Palisades' procedures will include the general and detailed visual examinations in the functional task descriptions for the VT-3 and VT-1 methods, respectively. Personnel performing the general and detailed visual examinations will be certified to VT-3 and VT-1, respectively.

c) Performance requirements for general and detailed visual examinations will be included in the Palisades visual examination procedure. The detailed

visual examination will meet the resolution requirements for VT-1 contained in Table IWA-2210-1 in the 1992 Edition and Addendum. A performance demonstration will be developed and documented to establish the distances and illumination for which the general and detailed visual examinations are sufficient to detect evidence of degradation that may affect the containment structural integrity. The Palisades visual examination procedure will be prepared by nondestructive examination (NDE) Level III personnel and the Responsible Engineer and demonstrated to the ANII.

d) The visual examinations will be performed in accordance with the 1998 Edition, Subsections IWL-2310, IWL-2510 and IWL-2524.1. Indications will be recorded, and subsequently evaluated, by the Responsible Engineer in accordance with IWL-2320, IWL-3200 and IWL-3300.

3) Table IWL-2500-1: The 1998 Edition of Table IWL-2500-1, Category L-A, Item L1.12 specifies the examination method as a general visual examination. This appears to be a publication error in Section XI. The correct examination method should be a detailed visual examination. NMC will perform detailed visual examinations of suspect areas addressed in Category L-A, Item L1.12, in Table IWL-2500-1.

CONCLUSION:

In summary, the proposed Palisades alternative uses the 1998 Edition and Addendum of Subsection IWL of Section XI in its entirety, supplemented with: 1) additional actions to address concerns the NRC staff had with changes in the 1998 Edition of Subsection IWL, as identified in the SE for Millstone; and 2) the applicable requirements of 10 CFR 50.55a(b)(2)(viii). Based on the information presented, and pursuant to 10 CFR 50.55a(a)(3)(i), NMC requests approval for the proposed alternative inspection program using the 1998 Edition and Addendum of Section XI, Subsection IWL, on the basis that the proposed alternative provides an acceptable level of quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED

Relief is requested for the portion of the first ten-year inspection interval of the Palisades Containment Inservice Inspection Program remaining after NRC approval.