December 19, 2005

L-HU-05-028
10 CFR 50.55a(a)(3)(i)

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

Prairie Island Nuclear Plant, Units 1 and 2
Dockets 50-282 and 50-306
License Nos. DPR-42 and DPR-60

American Society of Mechanical Engineers (ASME) Section XI, Inservice Inspection (ISI) Programs- Request for Relief 21 and 22. Request to Use ASME Code Case N-700, Alternative Rules for Selection of Classes 1,2 and 3 Vessel Welded Attachments for Examination.

In accordance with 10 CFR 50.55a (a) (3) (i) Nuclear Management Company, LLC (NMC) is requesting relief from certain inservice inspection requirements in Section XI of the ASME Boiler and Pressure Vessel Code. This letter submits Prairie Island Units 1 and 2 requests for relief ISI Relief Request No. 21 and ISI Relief Request No. 22, respectively, for NRC review and approval.

Requests for relief 21 and 22 propose to adopt Code Case N-700, Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination. The Prairie Island Units 1 and 2 current Code of record for the examination of Class 1, 2, and 3 welded attachments for vessels, piping, pumps, and valves is the 1989 Edition. The 1989 Edition currently states in Examination Categories B-H that, "In case of multiple vessels of similar design, size, and service, the examination is limited to the attachment welds of one vessel." There is no criterion for single vessels (e.g. Reactor Pressure Vessel) that must be examined. The 1995 Addenda does specifically address selection criteria for multiple vessels. It states "For multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination". However, the 1995 Addenda does not provide criteria for single vessels. Code Case N-700 requires that for multiple vessels of similar design, function and service, only one welded attachment of only one of the multiple vessels shall be selected for examination. The case also requires that only one welded attachment on a single vessel be examined. However, the Code Case also requires that the attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

NMC believes that the proposed alternatives will provide an adequate level of quality and safety for selection of the Class 1, 2, and 3 vessel welded attachments for examination.

Summary of Commitments

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

Edward J. Weinkam
Director, Nuclear Licensing and Regulatory Services
Nuclear Management Company, LLC

Enclosures (2)

cc: Regional Administrator, Region III, USNRC
Project Manager, Prairie Island Nuclear Plant, USNRC
Resident Inspector, Prairie Island Nuclear Plant, USNRC
Chief Boiler Inspector, State of Minnesota

ENCLOSURE 1

ISI Relief Request No. 22 (Rev. 0), Prairie Island Unit 2, 3rd Interval
ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 1, 3rd Interval

Alternative to Use Code Case N-700

SYSTEM/COMPONENT(S) FOR WHICH RELIEF REQUEST WILL BE USED

Code Class:	Class 1
Reference:	ASME Section XI, 1989 Edition
Examination Category:	B-H
Item Number:	B8.10
Description:	Reactor Vessel Integrally Welded Attachments
Component Numbers:	
Unit 2	Unit 1
Summary No. 501410 Lug @ 90	Summary No. 301096 Lug @ 90
Summary No. 505017 Lug @ 270	Summary No. 301097 Lug @ 270
Summary No. 521409 Lug @ 75	Summary No. 321096 Lug @ 75
Summary No. 521410 Lug @ 195	Summary No. 321097 Lug @ 195
Summary No. 521411 Lug @ 315	Summary No. 321098 Lug @ 315

Applicable Code Requirements:

American Society of Mechanical Engineers (ASME) Section XI (1989 Edition, no addenda) Code requires full examination coverage of inservice inspection (ISI) components per Table IWB-2500-1, Item Number B8.10. Footnote (3) states "In case of multiple vessels of similar design, size, and service, the examination is limited to the attachment welds of one vessel."

Code Case N-509, Footnote (4) states "In the case of multiple vessels of similar design, function and service, only one integrally welded attachment of only one of the multiple vessels shall be selected for examination".

The present wording would permit selection of an integrally welded attachment for examination that does not serve as a support load path during normal operation. In addition, neither of the above addresses if you have a single vessel (e.g. Reactor Vessel). It is not clear how many integrally welded attachments of a single vessel would require examination.

Reason for Request:

The Prairie Island Units 1 and 2 Reactor Pressure Vessels have two integrally welded attachments per vessel. One located at 90 degrees and the other located at 270 degrees. These attachments are strengthened by gusset plates consisting of a base plate (SA 533 Grade B, Class 1), Upper Plate (SA 533 Grade B, Class 1), and Side Plate (SA 533 Grade B, Class 1) and welded to the nozzle shell course. These attachments are loaded during normal operation. In addition, there are three welded attachments on the Reactor Vessel Head used for lifting during refueling operations. Only one of these welded attachments per unit was examined during the third interval.

There is no clear guidance within Section XI for single vessels and what welded attachment should be selected for examination. As discussed below, NMC believes that a welded attachment that is loaded is the appropriate one to select for examination.

Proposed Alternative and Basis for Use:

The Prairie Island Units 1 and 2 Third Interval ISI Program is based on the1989 Edition with no addenda of ASME Section XI.

Code Case N-509, "Alternative Rules for the Selection and Examination of Class 1, 2, and 3 Integrally Welded Attachments" was incorporated into the 1995 Edition, 1995 Addenda. The technical basis for development of Code Case N-509 concluded that operational transients/water hammers to be the major potential for welded attachment failures (possibility exists for corrosion related failures). The technical basis of Code Case N-509 also concluded that welded attachment failures have been identified as a result of connected support member deformation and had not been identified by the Section XI examinations. That is the basis for Code Case N-509 and the 1995 Edition, and later addenda, which requires welded attachments to be examined whenever component support deformation is identified. In addition, a sampling plan for welded attachments was maintained.

Code Case N-509 and the 1995 Addenda state in Examination Categories B-K, C-C, and D-A that, "For multiple vessels of similar design, function, and service, only one welded attachment of only one of the multiple vessels shall be selected for examination." There is no criterion for selection of the one welded attachment that must be examined. Code Case N-509 and the 1995 Addenda do not specifically address selection criteria for a single vessel.

Code Case N-700 utilizes the basis for development of Code Case N-509 to provide criteria for selection of Class 1, 2, and 3 vessel welded attachments for examination. Code Case N-700 requires that for multiple vessels of similar design, function and service, only one welded attachment of only one of the multiple vessels shall be selected for examination. The code case also requires that only one welded attachment on a single vessel be examined. However, the case also requires that the attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, to be an attachment under continuous load during operation if such an attachment exists.

Proposed Alternative and Basis for Use:

In accordance with 10CFR50.55a(a)(3)(i), in lieu of the requirements specified in the 1989 Edition of Section XI, Code Case N-700 will be used for the selection of the Class 1, welded attachments for the Reactor Pressure Vessel of Units 1 and 2. Code Case N-700 was approved by the ASME Code Committee on November 18, 2003.

ENCLOSURE 1

ISI Relief Request No. 22 (Rev. 0), Prairie Island Unit 2, 3rd Interval
ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 1, 3rd Interval

Duration of Proposed Alternative
Prairie Island, Units 1 and 2 Third Ten Year Interval

Precedents:

1. Browns Ferry Units 2 and 3 – Safety Evaluation for Request for Relief Regarding Use of ASME Code Case N-700 (TAC NOS. MC6437 and MC6438) dated July 18, 2005.

ENCLOSURE 2

ISI Relief Request No. 22 (Rev. 0), Prairie Island Unit 2, 3rd Interval
ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 1, 3rd Interval

CASE N-700

Approval Date: November 18, 2003

See Numeric Index for expiration and any reaffirmation dates.

Case N-700
Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination
Section XI, Division 1

Inquiry: What alternative rules may be used in lieu of those required by Table IWB-2501-1, Table IWC-2500-1, and Table IWD-2500-1, Examination Categories B-K and C-C, footnote 4, and Examination Category D-A, footnote 3, for selection of vessel welded attachments for examination?

Reply: It is the opinion of the Committee that for multiple vessels of similar design, function and service, only one welded attachment of only one of the multiple vessels shall be selected for examination. For single vessels, only one welded attachment shall be selected for examination. The attachment selected for examination on one of the multiple vessels or the single vessel, as applicable, shall be an attachment under continuous load during normal system operation, or an attachment subject to a potential intermittent load (seismic, water hammer, etc.) during normal system operation if an attachment under continuous load does not exist.