



L-PI-04-044  
10 CFR 50.55a

**MAR 30 2004**

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

Prairie Island Nuclear Generating Plant  
Docket Nos. 50-282 and 50-306  
License Nos. DPR-42 and DPR-60

**Request for Relief No. 20, Revision 0, for Units 1 and 2 3rd Ten Year Inservice Inspection Interval**

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Pursuant to 10 CFR 50.55a(a)(3)(i), Prairie Island Nuclear Generating Plant requests NRC approval of the attached request for the 3<sup>rd</sup> Ten-Year In-Service Inspection Interval. These requirements are associated with the performance of Reactor Vessel Automated Examinations including compliance with ASME Boiler and Pressure Vessel Code Section XI Appendix VIII Qualification of Nondestructive Examination Personnel For Ultrasonic Examination.

Relief Request No. 20 addresses the use of 0.189" root mean square error (RMSE) depth sizing requirements in lieu of 0.125" RMSE sizing requirements as required per American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section XI, Appendix VIII Supplement 10 Paragraph 3.2(b). This relief request provides requests to use an alternative examination requirement to a previously NRC-approved relief request submitted by the Nuclear Management Company (NMC) on September 17, 2003. Prairie Island Nuclear Generating Plant, as part of the NMC, submitted a Relief Request For an "Alternative to ASME Section XI, Appendix VIII, Supplement 10." On February 26, 2004, the Nuclear Regulatory Commission approved the Request for Relief for Appendix VIII Supplement 10 for the Prairie Island Nuclear Generating Plant, 3<sup>rd</sup> Ten Year Interval (TAC Nos. MC0820 and MC0821). The attached request only addresses the use of a 0.189 RMSE value in lieu of 0.125 RMSE. All other provisions of the previously approved relief request for alternatives to Appendix VIII, Supplement 10 will be followed during the examinations.

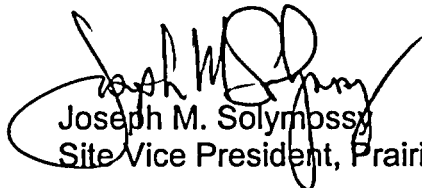
The details of the 10 CFR 50.55a(a)(3)(i) request are enclosed in the attached relief request for Prairie Island Unit 1 and Unit 2 (contained in one document). Nuclear Management Company requests approval by September 1, 2004 to support the

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refueling outage on Unit 1. The proposed alternative was approved for the Virgil C. Summer Nuclear Station by NRC letter dated February 3, 2004 (TAC No. MC0108).

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

Please contact Jack Leveille (651-388-1121, Ext. 4142) if you have any questions related to this letter.



Joseph M. Solymossy  
Site Vice President, Prairie Island Nuclear Generating Plant

cc: Regional Administrator, USNRC, Region III  
Project Manager, Prairie Island Nuclear Generating Plant, USNRC, NRR  
NRC Resident Inspector – Prairie Island Nuclear Generating Plant  
Chief Boiler Inspector, State of Minnesota  
P. Fisher, Hartford Insurance

Attachment: (one document)

Prairie Island Unit 1 – RELIEF REQUEST NUMBER: 20 (Rev. 0)  
Prairie Island Unit 2 – RELIEF REQUEST NUMBER: 20 (Rev. 0)

**Prairie Island Unit 1 - RELIEF REQUEST NUMBER: 20 (Addendum 1)**  
**Prairie Island Unit 2 - RELIEF REQUEST NUMBER: 20 (Addendum 1)**

**Alternative to Appendix VIII - Supplement 10**

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

Code Class:	Class 1
Reference:	ASME, Section XI, 1989 Edition with no Addenda
Examination Category:	B-F
Item Number:	B5.10
Description:	Dissimilar Metal Pressure Retaining Piping Welds subject to examination using procedures, personnel, and equipment qualified to ASME Section XI, Appendix VIII, Supplement 10 criteria.
Component Numbers:	See Table 1

**CODE REQUIREMENTS:**

A volumetric examination of dissimilar metal pressure retaining piping welds is required per 1989 Edition per ASME Section XI Table IWB-2500-1, Examination Categories B-F, Item No. B5.10. In addition, 10 CFR 50.55a requires these examinations be performed using procedures, personnel, and equipment qualified to the criteria of ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 10.

**PROPOSED ALTERNATIVE:**

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested. As discussed below, this will provide an acceptable level of quality and safety. The inspection vendor to be employed by Prairie Island Nuclear Generating Plant for the remote automated Reactor Vessel examinations did not achieve the 0.125" RMS Appendix VIII, Supplement 10 acceptance tolerance during procedure qualification. Prairie Island Nuclear Generating Plant proposes using the vendor (WESDYNE) achieved sizing error of 0.189" RMS.

The proposed procedure to address sizing of the flaws that may be found during the examination is to add to the measured flaw size the difference between the achieved sizing error and the 0.125" RMS Appendix VIII Supplement 10 acceptance criteria.

In addition, as a supplementary examination to the volumetric examination, Prairie Island proposes to perform profilometry measurements of the weld inside diameter (ID) profile and to perform a visual inspection (VT-1) of the ID in those areas where an ultrasonic scanning limitation may be encountered.

The Ultrasonic Weld Profiling is a tool to assist in the evaluation of poor transducer contact as a result of surface roughness and as a method to provide permanent record of the actual surface condition of the nozzle to pipe/elbow dissimilar metal weld joint. The data is taken with focused

immersion transducers mounted on the ends of the examination array. The scan stroke is long enough to allow for a surface profile up to 3 inches on either side of the examination volume at approximately 1 degree increments around the nozzle bore. When translated through software, the profile data is presented on a section view scale showing the weld joint and geometry such as root protrusion and counter-bore. Perhaps the most important feature allows the examiner to transpose transducer position along the scan line to evaluate the effect of the geometry on the exam beam

To support nozzle bore examinations and provide a confirmation mechanism for surface conditions, a remote enhanced visual examination (EVT) is planned for all four primary nozzles. The ROS PT-10 cameras are positioned near the ultrasonic end-effector. Lighting conditions, focus and zoom are adjustable and the angular/radial position data is transposed on the visual screen for interpretation/correlation with other data. The EVT is capable of a 1-mil wire resolution. Visual data will be recorded directly to DVD.

### **BASIS FOR REQUESTING RELIEF**

On September 17, 2003 Prairie Island Nuclear Generating Plant, as part of the Nuclear Management Company, submitted a Relief Request For Alternative to ASME Section XI, Appendix VIII, Supplement 10. On February 26, 2004, the Nuclear Regulatory Commission approved the Request for Relief for Appendix VIII Supplement 10 for the Nuclear Management Company Fleet Relief Request (TAC Nos. MC0820, MC0821, Prairie Island Nuclear Generating Plant, 3<sup>rd</sup> Ten Year Interval).

The 1995 Edition with 1996 Addenda of the ASME Code, Section XI, Appendix VIII Supplement 10, Paragraph 3.2(b), states that the examination procedures, equipment, and personnel are qualified for depth sizing when the RMS (root mean square) error of the flaw depth measurements, as compared to the true flaw depths, is less than or equal to 0.125". An RMS of 0.189" is based on actual vendor demonstrated in-process field qualifications and is the optimum value that could be achieved. Prairie Island Nuclear Generating Plant believes the use of 0.189" RMSE as an adjustment to the measured flaw will ensure a conservative bounding flaw depth value.

**IMPLEMENTATION SCHEDULE:**

The proposed alternative is requested for the remainder of the 3<sup>rd</sup> 10 Year Interval of the Inservice Inspection Program for Prairie Island Unit 1 and Unit 2.

**REFERENCE:**

By letter dated February 3, 2004, the NRC Staff authorized similar relief for Virgil C. Summer Nuclear Station, Docket No. 50-395 (Relief Request RR-II-20 [TAC No. MC0108])

**Table 1, Dissimilar Metal Pressure Retaining Piping Welds Within Scope of Request**

Unit No.	ISI Summary No.	Component Identification	Component Description
1	300518	W-5	Safe End to Nozzle
1	300538	W-5	Safe End to Nozzle
1	300923	W-7	Safe End to Nozzle
2	501130	W- 5	Safe End To Nozzle
2	501151	W- 5	Safe End To Nozzle
2	501484	W-11	Safe End to Nozzle
2	501499	W-11	Safe End To Nozzle