INEL-95/0564
November 1995

Idaho National Engineering Laboratory

Technical Evaluation Report on the Third 10-year Interval Inservice Inspection Program Plan: Northern States Power Company, Prairie Island Nuclear Generating Plant, Unit 1, Docket Number 50-282

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Attachment to
NRC SE dated:
February 22, 1996

INEL-95/0564

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Prepared for the
Division of Engineering
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Under DOE Idaho Operations Office
Contract DE-AC07-94ID13223
FIN No. L2556 (Task Order 57)

ABSTRACT

This report presents the results of the evaluation of the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, including the requests for relief from the *American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code*, Section XI requirements that the licensee has determined to be impractical. The *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan* is evaluated in Section 2 of this report. The Inservice Inspection (ISI) Program Plan is evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during previous Nuclear Regulatory Commission (NRC) reviews. The requests for relief are evaluated in Section 3 of this report.

This work was funded under:

U.S. Nuclear Regulatory Commission
FIN No. L2556, Task Order 57
Technical Assistance in Support
of the NRC Inservice Inspection Program

SUMMARY

The licensee, Northern States Power Company, has prepared the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 0, to meet the requirements of the 1989 Edition of the *American Society of Mechanical Engineers Boiler and Pressure Vessel Code*, Section XI. The third 10-year interval began December 17, 1993 and ends December 16, 2003.

The information in the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 0, submitted August 5 1994, was reviewed. Included in the review were the requests for relief from the ASME Code Section XI requirements that the licensee has determined to be impractical. As a result of this review, a request for additional information (RAI) was prepared describing the information and/or clarification required from the licensee in order to complete the review. The licensee provided the requested information in a submittal dated March 28, 1995. As a result of a telephone conversation with the licensee on May 30, 1995, the licensee submitted *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, dated July 6, 1995. As a result of the review of Revision 1, a conference call was held August 21, 1995, to discuss the information required from the licensee in order to complete the review. This information was provided in a letter dated October 5, 1995.

Based on the review of the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, the licensee's response to the Nuclear Regulatory Commission's RAI, and the recommendations for granting relief from the ISI examinations that cannot be performed to the extent required by Section XI of the ASME Code, no deviations from regulatory requirements or commitments were identified in the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1.

CONTENTS

TECHNICAL EVALUATION REPORT ON THE THIRD 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN: NORTHERN STATES POWER COMPANY, PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT 1 DOCKET NUMBER 50-282

1. INTRODUCTION

Throughout the service life of a water-cooled nuclear power facility, 10 CFR 50.55a(g)(4) (Reference 1) requires that components (including supports) that are classified as American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Class 1, Class 2, and Class 3 meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components* (Reference 2), to the extent practical within the limitations of design, geometry, and materials of construction of the components. This section of the regulations also requires that inservice examinations of components and system pressure tests conducted during successive 120-month inspection intervals shall comply with the requirements in the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed therein. The components (including supports) may meet requirements set forth in subsequent editions and addenda of this Code that are incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein, and subject to Nuclear Regulatory Commission (NRC) approval. The licensee, Northern States Power Company, has prepared the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 0 (Reference 3), to meet the requirements of the 1989 Edition, except that the extent of examination for Class 1, Examination Category B-J has been determined by the requirements of the 1974 Edition through Summer 1975 Addenda (74S75) as permitted by 10 CFR 50.55a(b). The third 10-year interval began December 17, 1993 and ends December 16, 2003.

As required by 10 CFR 50.55a(g)(5), if the licensee determines that certain Code examination requirements are impractical and requests relief from them,

the licensee shall submit information and justification to the NRC to support that determination.

Pursuant to 10 CFR 50.55a(g)(6), the NRC will evaluate the licensee's determination that Code requirements are impractical to implement. The NRC may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

Alternatively, pursuant to 10 CFR 50.55a(a)(3), the NRC will evaluate the licensee's determination that either (i) the proposed alternatives provide an acceptable level of quality and safety, or (ii) Code compliance would result in hardship or unusual difficulty without a compensating increase in safety. Proposed alternatives may be used when authorized by the NRC.

The information in the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 0, submitted August 5, 1994, was reviewed, including the requests for relief from the ASME Code Section XI requirements that the licensee has determined to be impractical. The review of the Inservice Inspection (ISI) Program Plan was performed using the Standard Review Plans of NUREG-0800 (Reference 4), Section 5.2.4, "Reactor Coolant Boundary Inservice Inspections and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components."

In a letter dated January 20, 1995 (Reference 5), the NRC requested additional information that was required in order to complete the review of the ISI Program Plan. The requested information was provided by the licensee in the "Response to Request for Additional Information on the 3rd 10-year Interval Inservice Inspection Program and Associated Request for Relief (TAC No. M90186)" dated March 28, 1995 (Reference 6). In this response, the licensee, Northern States Power Company, withdrew 2 requests for relief, revised 2 requests for relief, and committed to revise the plan to include small bore High Pressure Injection piping. As a result of a telephone convers on with the licensee on May 30, 1995, Request for Relief No. 3 was withdrawn, No. 5 was revised, No. 6 was submitted, and small bore High Pressure Injection

piping was included in the re-submittal by the licensee of the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, on July 6, 1995, (Reference 7). A conference call was held August 21, 1995 to request clarification on information in Request for Relief No. 6. This clarification was provided by the licensee in a letter dated October 5, 1995 (Reference 8).

The *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, is evaluated in Section 2 of this report. The ISI Program Plan is evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during the NRC's previous reviews.

The requests for relief are evaluated in Section 3 of this report. Unless otherwise stated, references to the Code refer to the ASME Code, Section XI, 1989 Edition. Specific inservice test (IST) programs for pumps and valves are being evaluated in other reports.

2. EVALUATION OF INSERVICE INSPECTION PROGRAM PLAN

This evaluation consists of a review of the applicable program documents to determine whether they are in compliance with the Code requirements and any previous license conditions pertinent to ISI activities. This section describes the submittals reviewed and the results of the review.

2.1 Documents Evaluated

Review has been completed on the following information from the licensee:

(a) *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Examination Plan*, Revision 0 (Reference 3);

(b) Response to Request for Additional Information on the 3rd 10-year Interval Inservice Inspection Program and Associated Request for Relief (TAC No. M90186) dated March 28, 1995 (Reference 6):

(c) *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1 (Reference 7): and

(d) *Request for Relief for the 3rd 10-Year Interval Inservice Inspection Programs* dated October 5, 1995 (Reference 8).

2.2 Compliance with Code Requirements

2.2.1 Compliance with Applicable Code Editions

The Inservice Inspection Program Plan shall be based on the Code editions defined in 10 CFR 50.55a(g)(4) and 10 CFR 50.55a(b). Based on the starting date of December 15, 1993, the Code applicable to the third interval ISI program is the 1989 Edition. As stated in Section 1 of this report, the licensee has prepared the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Inservice Inspection Program Plan*, Revision 1, to meet the requirements of 1989 Edition, except that the extent of examination for Class 1, examination category B-J has been determined by the requirements of the 1974 Edition through Summer 1975 Addenda (74S75) as permitted by 10 CFR 50.55a(b).

2.2.2 Acceptability of the Examination Sample

Inservice volumetric, surface, and visual examinations shall be performed on ASME Code Class 1, 2, and 3 components and their supports using sampling schedules described in Section XI of the ASME Code and 10 CFR 50.55a(b). Sample size and weld selection have been implemented in accordance with the Code and 10 CFR 50.55a(b) and appear to be correct.

2.2.3 Exemption Criteria

The criteria used to exempt components from examination shall be consistent with Paragraphs IWB-1220, IWC-1220, IWC-1230, IWD-1220, and 10 CFR 50.55a(b). The exemption criteria have been applied by the licensee in accordance with the Code as discussed in the ISI Program Plan, and appear to be correct.

2.2.4 Augmented Examination Commitments

In addition to the requirements specified in Section XI of the ASME Code, the licensee has committed to perform the following augmented examinations:

(a) Reactor vessel examinations in accordance with the requirements of NRC Regulatory Guide 1.150, *Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations*, Revision 1, (Reference 9);

(b) Volumetric examination of the reactor coolant pump flywheels satisfying NRC Regulatory Guide 1.14, *Reactor Coolant Pump Flywheel Integrity*, (Reference 10); and

(c) Examination of the portions of high energy lines specified in *Supplemental Reply to a Notice of Deviation, NRC inspection Report Nos. 282/92008 and 306/92008 Final Safety Analysis Report Commitment for Inservice Examination of High Energy Line Piping*, (Reference 11).

2.3 Conclusion

Based on the review of the documents listed above, no deviations from regulatory requirements or commitments were identified in the *Prairie Island Nuclear Generating Plant, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1.

3. EVALUATION OF RELIEF REQUESTS

The requests for relief from the ASME Code requirements that the licensee has determined to be impractical for the third 10-year inspection interval are evaluated in the following sections.

3.1 Class 1 Components

3.1.1 Reactor Pressure Vessel (No requests for relief)

3.1.2 Pressurizer (No requests for relief)

3.1.3 Heat Exchangers and Steam Generators

3.1.3.1 Request for Relief No. 05, Rev. 2, (Part 1), Examination Category B-B, Item B2.51, Regenerative Heat Exchanger Circumferential Head Weld

Code Requirement: Examination Category B-B, Item B2.51 requires a volumetric examination of heat exchanger circumferential head welds as defined in Figure IWB-2500-2C(f), using acceptance standard IWB-3510.

Licensee's Code Relief Request: The licensee requested relief from using acceptance standard IWB-3510 for the Regenerative Heat Exchanger Circumferential Head Weld.

Licensee's Basis for Requesting Relief (as stated):
"The acceptance standard is for ferritic vessels; the regenerative heat exchanger is austenitic.

"The regenerative heat exchanger is more pipe like than vessel like. The head is a 6 inch pipe cap; made of cast stainless; 0.375 inches thick. The integral tubesheet is a 6 inch forging; stainless; 0.500 inches thick at the weld."

Licensee's Proposed Alternative Examination (as stated):

"The acceptance standard used for limited volumetric examination of the regenerative heat exchanger circumferential head weld will be IWB-3514.1, IWB-3514.3 and Table-3514-2 for austenitic piping."

Evaluation: The Code requires volumetric examination of heat exchanger circumferential head welds using IWB-3510 for acceptance criteria. However, the licensee proposed to use the acceptance standards IWB-3514.1, IWB-3514.3 and Table-3514-2 for austenitic piping welds.

The required acceptance standard uses several tables which are explicitly for ferritic steels. However, the regenerative heat exchanger is not constructed of ferritic steel. The regenerative heat exchanger head consists of a cast stainless pipe cap and an integral tubesheet stainless forging. Therefore, the acceptance standards used for this component should be designated for stainless steels. Furthermore, the design of the heat exchanger, being fabricated of piping components, suggests the use of the acceptance standards for piping. IWB-3514.1, IWB-3514.3 and Table-3514-2 are required to be used by Examination Category B-J piping welds and are identified for use with austenitic steel components. Use of these acceptance standards, as requested by the licensee, will provide an acceptable level of quality and safety.

Conclusion: For welds on the regenerative heat exchanger, the proposed use of IWB-3514.1, IWB-3514.3 and Table-3514-2 in lieu of acceptance standard IWB-3510 will provide an acceptable level of quality and safety. Therefore, it is recommended that the proposed alternative be authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.1.3.1 Request for Relief No. 05, Rev. 2, (Part 2), Examination Category B-D, Item B3.160, Regenerative Heat Exchanger Nozzle Inner Radius Sections

Code Requirement: Examination Category B-D, Item B3.160 requires a volumetric examination of heat exchanger nozzle inside radius sections as defined in Figure IWB-2500-7(a) through (d), as applicable.

Licensee's Code Relief Request: The licensee requested relief from performing the Code-required volumetric examinations on the nozzle inner radius sections.

Licensee's Basis for Requesting Relief (as stated):

"The integral tubesheet component includes the 2 inch nozzles. The forged nozzle ends are socket welded to the inlet and outlet pipe. This arrangement results in complex geometry and limited accessible scan area. Therefore, a volumetric examination would provide no meaningful information. Since the heat exchangers are in a locked radiation area, ALARA considerations would recommend not performing an examination which provides no significant benefit."

Licensee's Proposed Alternative Examination (as stated):

"When insulation is removed for the regenerative heat exchanger circumferential head weld examination, the nozzle area will be visually inspected."

Evaluation: The Code requires 100% volumetric examination of nozzle inside radius sections of Class 1 heat exchangers. However, as stated by the licensee, the size and geometry of the regenerative heat exchanger nozzles preclude volumetric examination of the inside radius sections. The licensee's drawing[a] confirms that, due to the design of the subject nozzles, ultrasonic examination of the inside radius sections is impractical to perform. To meet the Code requirement, the

[a] Drawing was included in the licensee's response to the NRC's RAI, but, is not included in this report.

regenerative heat exchanger nozzles would have to be redesigned and replaced. This would represent a considerable burden for the licensee.

The volumetric examination is considered impractical to perform on the regenerative heat exchanger nozzle inside radius sections. The visual examination of the subject area offered by the licensee in conjunction with the Code required volumetric examination of the associated vessel-to-head weld should detect any significant inservice degradation that may occur.

Conclusion: Based on the above evaluation, the volumetric examination is considered impractical to perform on the regenerative heat exchanger nozzle inside radius sections. However, the examinations being performed will provide reasonable assurance of operational readiness. Therefore, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

3.1.4 Piping Pressure Boundary (No requests for relief)

3.1.5 Pump Pressure Boundary

3.1.5.1 Request for Relief No. 3, Examination Categories B-L-1 and B-L-2, Items B12.10 and B12.20, Pump Casing Welds and Pump Casing

NOTE: In the July 6, 1995, response to the NRC's conference call, the licensee withdrew Request for Relief No. 3.

3.1.6 Valve Pressure Boundary (No requests for relief)

3.1.7 General (No requests for relief)

3.2 Class 2 Components (No request for relief)

3.3 Class 3 Components (No requests for relief)

3.4 Pressure Tests

3.4.1 Class 1 System Pressure Tests (No requests for relief)

3.4.2 Class 2 System Pressure Tests

3.4.2.1 Request for Relief No. 1 Table IWC-2500, Examination Category C-H, Class 2 Pressure Retaining Piping Non-Isolable from Class 1 Piping

NOTE: In the March 28, 1995, response to the NRC's request for additional information, the licensee withdrew Request for Relief No. 1, based on their decision to use Code Case N-498.

3.4.2.2 Request for Relief No. 4 Table IWC-2500, Examination Category C-H, Class 2 Steam Generator Hydrostatic Testing

NOTE: In the March 28, 1995, response to the NRC's request for additional information, the licensee withdrew Request for Relief No. 4, based on their decision to use Code Case N-498.

3.4.3 Class 3 System Pressure Tests

3.4.3.1 Request for Relief No. 2, Examination Category D-C, Item D3.10, Hydrostatic Testing of Class 3 Pressure Retaining Components in the Cooling Water System

Code Requirement: Table IWD-2500-1, Examination Category D-C, Item D3.10, requires a system hydrostatic test as specified by IWD-5223. IWD-5223 states that the system hydrostatic test pressure shall be at least 1.10 times the system pressure for systems with design temperatures of 200°F or less, and at least 1.25 times the system pressure for systems with design temperatures greater than 200°F.

Licensee's Code Relief Request: The licensee requested relief from performing the Code-required system hydrostatic tests of the Class 3 Cooling Water System.

Licensee's Basis for Requesting Relief (as stated):

"The cooling water system is designed such that Unit 1 and Unit 2 safeguards equipment is supported from both sides of the cooling water system header. Consequently, the entire supply and return header must be in operation at all times to meet operating license requirements."

Licensee's Proposed Alternative Examination (as stated):

The cooling water system will be visually examined every one-third interval for conditions adverse to system operation. Additionally, the system is in constant operation and any leaks would be immediately known. Portions that are isolatable from the main headers will be pressure tested in accordance with the applicable requirements.

Evaluation: The Code requires a system hydrostatic pressure test for Class 3 pressure-retaining components. The licensee stated that the subject lines are the only source of cooling water for the Cooling Water Supply and Return headers and would have to be taken out of service to conduct the Code-required hydrostatic test. Since the plant operating license requires cooling water flow during both operation and refueling modes, taking these lines out of service would be a violation of the operating license. Therefore, the Code requirements are impractical for these lines. In lieu of this requirement, the licensee proposed to perform a system inservice test with an associated VT-2 visual examination, providing reasonable assurance of the system's operational readiness.

Conclusion: Based on the above evaluation, it is concluded that the hydrostatic test of the subject portions of the cooling water system is impractical to perform at Prairie Island, Unit 1. The licensee's proposed alternative will provide reasonable assurance of the system's operational readiness. Therefore, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

3.4.4 General (No requests for relief)

3.5 General

3.5.1 Ultrasonic Examination Techniques

3.5.1.1 Request for Relief No. 6, ASME Section XI, Appendix I, Paragraphs I-2100 and -2200, Calibration Block Requirements for Piping Welds

Code Requirement: Paragraph I-2100 requires ultrasonic examination of vessel welds greater than 2-in. thickness to be conducted in accordance with Article 4 of Section V. Section V, Article 4, Paragraph T-441.1.2.1 requires the calibration blocks to be fabricated from one of the following:

(a) Nozzle drop out from the component;
(b) A component prolongation;
(c) Material of the same material specification, product form, and heat treatment condition as of the materials being joined.

Paragraph I-2200 requires ultrasonic examination of vessel welds less than or equal to 2-in. thickness to be conducted in accordance with Appendix III. Appendix III, Paragraph III-3411 requires:

(a) The calibration block for similar metal weld shall be fabricated from one of the material specified for the piping being joined by the weld.
(c) Where examination is to be performed from only one side of the joint, the calibration block material shall be of the same specification as the material on that side of the joint.
(d) If material of the same specification is not available, material of similar chemical analysis, tensile properties, and metallurgical structure may be used.

Licensee's Code Relief Request: Relief is requested from material requirements of Section V, Article 4, Paragraph T-441.1.2.1(a,c,d), and Section XI, Appendix III, Paragraph III-3411 for existing calibration blocks.

Licensee's Basis for Requesting Relief (as stated):

"Documentation requirements existing at the time of fabrication did not require traceability to the material's chemical or physical certifications. Existing calibration blocks certification is verified through appropriate p-number grouping. The P-number grouping provides adequate assurance that the blocks will establish the proper ultrasonic calibration and sensitivity. Using P-number grouping to choose calibration blocks was allowed by the 1971 ASME B&PV Code Section III, Paragraph IX-3431.

"It would be impractical to fabricate a new set of calibration blocks in order to satisfy the documentation requirements of the current Code. Existing records, indicate the appropriate P-number grouping, thereby providing adequate assurance that the blocks will establish the proper ultrasonic calibration and sensitivity."

Licensee's Proposed Alternative Examination (as stated):

"Existing calibration blocks will be used as is.

"Any calibration blocks obtained in the future will be obtained with documentation to demonstrate compliance the material specification requirements of ASME Code Section V Article 4 or Section XI, Appendix III, as applicable."

In a letter dated October 5, 1995, the following alternatives were added.

"Existing calibration blocks greater than 1" thick have been verified to require no correction for attenuation differences.

"Additionally, when using existing calibration blocks less than 1" thick that lack the appropriate documentation and when an indication is detected, a comparison will be made between the attenuation of the calibration block and the material being examined."

Evaluation: Section XI, Appendix I, Paragraphs I-2100 and I-2200 require that calibration blocks be of the same material or a material of similar chemical, tensile, and metallurgical properties. However, the calibration blocks at Prairie Island were constructed to the 1971 Edition of Section III which only required that they be of the same P-number grouping.

When using the existing calibration blocks that lack the appropriate documentation a comparison should be made between the acoustical properties (i.e., velocity and attenuation) of the calibration block and the material being examined. This comparison should be done once, prior to the use of the calibration block, to ensure that the sensitivity is sufficient to find existing flaws in corresponding examination volumes.

The use of existing calibration blocks, fabricated as required by the original construction Code, will provide an acceptable method of establishing the proper ultrasonic calibration and sensitivity, provided the acoustical properties are similar to those of the examination volume. Furthermore, requiring the licensee to replace all calibration blocks would impose a considerable burden.

The existing blocks have been proven satisfactory for performing calibrations. Therefore, any increase in plant safety that might occur with new blocks would not compensate for the burden placed on the licensee to fabricate new calibration blocks to satisfy the current Code requirements.

Conclusion: Requiring the licensee to fabricate new calibration blocks would result in a burden without a compensating increase in the level of quality and safety. The existing calibration blocks will provide an acceptable examination sensitivity provided the acoustical properties are verified to be similar to the examination area being examined. Therefore, it is recommended that the proposed alternative be authorized with the above condition, pursuant to 10 CFR 50.55a(a)(3)(ii).

3.5.2 Exempted Components

3.5.3 Other

4. CONCLUSION

Pursuant to 10 CFR 50.55a(g)(6)(i), it has been determined that certain inservice examinations cannot be performed to the extent required by Section XI of the ASME Code. In the cases of Requests for Relief Nos. 02 and 05, Rev 2, (Part 2), the licensee has demonstrated that specific Section XI requirements are impractical; it is therefore recommended that relief be granted as requested. The granting of relief will not endanger life, property, or the common defense and security and is otherwise in the public interest, giving due consideration to the burden upon the licensee, that could result if the requirements were imposed on the facility.

Pursuant to 10 CFR 50.55a(a)(3)(i), it is concluded that for Request for Relief No. 05, Rev 2, (Part 1), the licensee's proposed alternative will provide an acceptable level of quality and safety in lieu of the Code-required acceptance standard. In this case, it is recommended that the proposed alternative be authorized.

Pursuant to 10 CFR 50.55a(a)(3)(ii), it is concluded that for Request for Relief No. 06 the licensee has demonstrated that specific Section XI requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. In this case, it is recommended that the proposed alternative be authorized, only if the licensee satisfy the conditions stated in the above request for relief evaluation.

Requests for Relief Nos. 01, 03, Rev 1, and 04 were withdrawn by the licensee, and deleted from the ISI Program Plan by letter dated March 28, 1995, in response to the NRC's request for additional information, and by letter dated July 6, 1995, in response to the NRC's conference call.

This technical evaluation has not identified any practical method by which the licensee can meet all the specific inservice inspection requirements of Section XI of the ASME Code for the existing Prairie Island Nuclear Generating Plant, Unit 1. Compliance with all of the Section XI examination requirements would necessitate redesign of a significant number of plant systems, procurement of replacement components, installation of the new components, and performance of baseline examination for these components. Even after the

redesign efforts, complete compliance with the Section XI examination requirements probably could not be achieved. Therefore, it is concluded that the public interest is not served by imposing certain provisions of Section XI of the ASME Code that have been determined to be impractical.

The licensee should continue to monitor the development of new or improved examination techniques. As improvements in these areas are achieved, the licensee should incorporate these techniques in the ISI program plan examination requirements.

Based on the review of the *Prairie Island Nuclear Generating Plant, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, the licensee's response to the NRC's request for additional information, and the recommendations for granting relief from the ISI examinations that cannot be performed to the extent required by Section XI of the ASME Code, no deviations from regulatory requirements or commitments were identified.

5. REFERENCES

1. Code of Federal Regulations, Title 10, Part 50.

2. American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components*, Division 1:

   1989 Edition
   1974 Edition Summer 1975 Addenda

3. *Prairie Island Nuclear Generating Plant, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 0, dated August 5, 1995.

4. NUREG-0800, *Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants*, Section 5.2.4, "Reactor Coolant Boundary Inservice Inspection and Testing," and Section 6.6, "Inservice Inspection of Class 2 and 3 Components," July 1981.

5. Letter, dated January 20, 1995, Charles R. Thomas (NRC) to Roger O. Anderson (Northern States Power), containing request for additional information on the third 10-year interval ISI program plan.

6. Letter, dated March 28, 1995, Roger O. Anderson (Northern States Power) to Document Control Desk (NRC), containing the response to NRC request for additional information.

7. *Prairie Island Nuclear Generating Plant, Third 10-Year Interval Inservice Inspection Program Plan*, Revision 1, dated July 6, 1995.

8. *Request for Relief for the 3rd 10-Year Interval Inservice Inspection Programs* dated October 5, 1995.

9. NRC Regulatory Guide 1.150, *Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations*, Revision 1, February 1983.

10. NRC Regulatory Guide 1.14, *Reactor Coolant Pump Flywheel Integrity*, Revision 1, August 1975.

11. *Supplemental Reply to a Notice of Deviation NRC inspection Report Nos. 282/92008 and 306/92008 Final Safety Analysis Report Commitment for Inservice Examination of High Energy Line Piping*, dated February 10, 1993.

NRC FORM 335 (2-89) NRCM 1102, 3201, 3202

U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

(See instructions on the reverse)

1. REPORT NUMBER (Assigned by NRC, Add Vol., Supp., Rev., and Addendum Numbers, if any.)
INEL-95/0547

2. TITLE AND SUBTITLE
Technical Evaluation Report on the Third 10-Year Interval Inservice Inspection Program Plan: Northern States Power Company Prairie Island Nuclear Generating Plant, Unit 2 Docket Number 50-282

3. DATE REPORT PUBLISHED
MONTH: November YEAR: 1994

4. FIN OR GRANT NUMBER
FIN-L2556 (TO 77)

5. AUTHOR(S)
M. T. Anderson, K. W. Hall, A. M. Porter

6. TYPE OF REPORT
Technical

7. PERIOD COVERED *(Inclusive Dates)*

8. PERFORMING ORGANIZATION — NAME AND ADDRESS *(If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address; if contractor, provide name and mailing address.)*
INEL/LITCO
P.O. Box 1625
Idaho Falls, ID 83415-2209

9. SPONSORING ORGANIZATION — NAME AND ADDRESS *(If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.)*
Civil and Geosciences Branch
Office of Nuclear Regulatory Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

10. SUPPLEMENTARY NOTES

11. ABSTRACT *(200 words or less)*

This report presents the results of the evaluation of the *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, submitted August 5, 1994 including the requests for relief from the American Society of Mechanical Engineers Boiler and Pressure Vessel Code Section XI requirements that the licensee has determined to be impractical. The *Prairie Island Nuclear Generating Plant, Unit 1, Third 10-Year Interval Inservice Inspection Program Plan*, is evaluated in Section 2 of this report. The Inservice Inspection (ISI) Program Plan is evaluated for (a) compliance with the appropriate edition/addenda of Section XI, (b) acceptability of examination sample, (c) correctness of the application of system or component examination exclusion criteria, and (d) compliance with ISI-related commitments identified during previous Nuclear Regulatory Commission reviews. The requests for relief are evaluated in Section 3 of this report.

12. KEY WORDS/DESCRIPTORS *(List words or phrases that will assist researchers in locating the report.)*

13. AVAILABILITY STATEMENT
Unlimited

14. SECURITY CLASSIFICATION
(This Page) Unclassified
(This Report) Unclassified

15. NUMBER OF PAGES

16. PRICE

NRC FORM 335 (2-89)