



Monticello Nuclear Generating Plant
2807 W County Rd 75
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February 28, 2012

L-MT-12-017
10 CFR 50.55a(g)

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

Monticello Nuclear Generating Plant
Docket 50-263
Renewed License No. DPR-22

Subject: 10 CFR 50.55a Requests Associated with the Fifth Ten-Year Inservice Inspection Interval

Pursuant to 10 CFR 50.55a(a)(3)(i) and 10 CFR 50.55a(a)(3)(ii), the Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, the licensee for the Monticello Nuclear Generating Plant (MNGP), hereby requests NRC authorization of the enclosed 10CFR50.55a requests associated with the Fifth Inservice Inspection (ISI) Interval for MNGP. The fifth interval of the MNGP ISI program will comply with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2007 Edition with the 2008 Addenda pursuant to 10 CFR 50.55a(g)(4) and 10 CFR 50.55a(b)(2).

10 CFR 50.55a Request No. RR-004 (Enclosure 1) proposes to use the alternative requirements in ASME Code Case N-661-2, "Alternative Requirements for Wall Thickness Restoration of Class 2 and 3 Carbon Steel Piping for Raw Water Service, Section XI, Division 1," in lieu of the required defect removal requirements of IWA-4420 of the 2007 Edition with the 2008 Addenda. The proposed alternative will provide an acceptable level of quality and safety.

10 CFR 50.55a Request No. RR-005 (Enclosure 2) proposes to perform the system leakage testing and associated VT-2 examination following repair/replacement activities in accordance with ASME Code Case N-795, "Alternative Requirements for BWR Class 1 System Leakage Test Pressure Following Repair/Replacement Activities, Section XI, Division 1," however using longer hold times than specified in Code Case N-795. ASME Code Case N-795 is intended to provide alternative test pressure for certain

Class 1 pressure tests. The Code Case would be used following repair/replacement activities (excluding those on the reactor vessel) which occur subsequent to periodic Class 1 pressure tests. This proposed alternative will provide an acceptable verification of the leak integrity of the locations having repair/replacement activities performed without putting the plant in a non-conservative operational condition and without unnecessary radiation exposure and safety challenges to personnel while providing an acceptable level of quality and safety which otherwise would result in hardship or unusual difficulty without a compensating increase in the level of quality or safety.

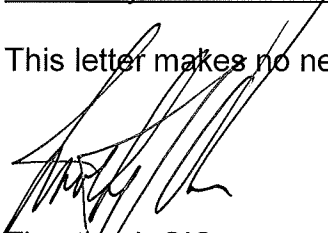
10 CFR 50.55a Request No. RR-006 (Enclosure 3) proposes to use ASME Code Case N-532-5, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission, Section XI, Division 1" as an alternative to all cases where completion of Forms NIS-1 and NIS-2 or an inservice inspection summary report is required in ASME Section XI (2007 Edition with the 2008 Addenda) or applied Code Cases. The proposed alternative requirement will provide an acceptable level of quality and safety.

NSPM requests the NRC authorize these 10 CFR 50.55a requests by March 1, 2013, to support implementation of the ISI fifth ten-year interval. These 10 CFR 50.55a requests are proposed for the duration of the ISI fifth ten-year interval.

Should you have questions regarding this letter, please contact Mr. Randy Rippey at (612) 330-6911.

Summary of Commitments

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



Timothy J. O'Connor
Site Vice-President
Monticello Nuclear Generating Plant
Northern States Power Company-Minnesota

Enclosures (3)

cc: Administrator, Region III, USNRC
Project Manager, Monticello Nuclear Generating Plant, USNRC
Resident Inspector, Monticello Nuclear Generating Plant, USNRC

ENCLOSURE 1

MONTICELLO NUCLEAR GENERATING PLANT

**PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RELIEF REQUEST RR-004**

5 pages follow

**Monticello Nuclear Generating Plant
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)
Relief Request RR-004**

1.0 ASME Code Component(s) Affected

Code Class:	Class 2 and 3
Component Numbers:	Not Applicable
Examination Category:	Not Applicable
Item Number(s):	Not Applicable
Description:	Alternative to ASME Section XI, IWA-4000, use of Code Case N-661-2 on Carbon Steel Piping for Raw Water Service

2.0 Applicable ASME Code Edition and Addenda

The Monticello Nuclear Generating Plant (MNGP) will start the Fifth 10-year Inservice Inspection (ISI) Program Interval on September 1, 2012 (Reference 1) and is required to follow the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," (ASME Section XI), 2007 Edition with the 2008 Addenda (Reference 2).

3.0 Applicable Code Requirement

ASME Section XI, 2007 Edition with the 2008 Addenda:

IWA-4221(b) requires that items used for repair/replacement activities shall meet the requirements of the Construction Code.

IWA-4420 requires that defects be removed or reduced to an acceptable size.

4.0 Reason for Request

An alternative is requested from replacement or weld repair of wall thinning conditions in Class 2 and 3 carbon steel raw water piping systems to the design specification and the original construction code. Such thinning may be the result of various degradation mechanisms such as erosion, corrosion, cavitation and pitting. To address these conditions, the ASME has provided Code Case N-661, Alternative Requirements for Wall Thickness Restoration of Class 2 and 3 Carbon Steel Piping for Raw Water Service, Section XI Division 1 (Reference 3).

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Code Case N-661 (Reference 3) has been previously approved by the NRC for use at MNGP during the fourth interval (References 4 and 5). Also, the NRC has approved N-661-1 (Reference 6) in Table 2, Regulatory Guide 1.147, Revision 16 (Reference 7), with conditions. However, N-661-1 is applicable through ASME Section XI 2004 Edition with the 2005 Addenda (Reference 2), and the Code of Record for Monticello's fifth interval is the 2007 Edition with the 2008 Addenda. Code Case N-661-2 (Reference 8) is applicable to the 2007 Edition with the 2008 Addenda but not yet included in Regulatory Guide 1.147. The use of Code Case N-661-2 is requested until such time the NRC includes N-661-2 in Regulatory Guide 1.147. The use of Code Case N-661-2 will provide adequate time so that pipe replacement can be planned to reduce impact on system availability including Maintenance Rule applicability of replacement materials.

5.0 Proposed Alternative and Basis for Use

Proposed Alternative:

Pursuant to 10 CFR 50.55a(a)(3)(i) (Reference 9), Northern States Power – Minnesota (NSPM) proposes to use the alternative requirements in Code Case N-661-2 in lieu of the required defect removal requirements of IWA-4420 of the 2007 Edition with the 2008 Addenda. The alternative requirement would result in an acceptable level of quality and safety.

NSPM proposes to implement the requirements of ASME Code Case N-661-2 as an alternative under 10 CFR 50.55a(a)(3)(i) for Class 2 and 3 raw water piping systems to repair degradation resulting from mechanisms such as erosion, corrosion, cavitation, or pitting as an alternative to the requirements of the ASME Section XI code as reference above. These types of defects are typically identified by small leaks in the piping system or by pre-emptive non-code required examinations performed to monitor the degradation mechanisms. The alternative repair technique described in Code Case N-661-2 involves the application of additional weld metal on the exterior of the piping system that restores the wall thickness requirement. The repair technique is utilized whenever engineering evaluation determines that such a repair is suitable for the particular defect or degradation being resolved.

Provisions for implementation of this Code Case will be addressed in the Repair/Replacement Program. The provisions will require that adjacent areas be examined to verify that the repair will encompass the entire flawed area and that no other unacceptable degraded locations exist within a representative area. This will be dependent on the degradation mechanism present. An evaluation of

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the degradation will be performed to determine the re-examination schedule to be conducted over the life of the repair. The repair will be considered to have a maximum service life of two fuel cycles unless the re-examinations conducted during each of the two fuel cycles establish the expected life of the repair. However, the following condition will be applied to the code case:

- 1) If the cause of the degradation is not determined or if a through wall repair is made by welding on surfaces that are wet or exposed to water, the overlay repair is only acceptable until the next refueling outage.

Basis for Use:

The basis for the use of the repair techniques described in Code Case N-661-2 is that the ASME Section XI Standards Committee determined that this repair technique provides an acceptable alternative to the requirements of IWA-4000 and provides an acceptable level of quality and safety. Therefore, the proposed alternative is justified per 10 CFR 50.55a(a)(3)(i).

The NRC has approved Code Case N-661-1 in Regulatory Guide 1.147 Revision 16 with conditions. Code Case N-661-2 is very similar to N-661-1 with the following differences:

- It is applicable to the 2007 Edition including the 2008 Addenda.
- The term "overlay" was used in place of reinforcement, restoration, and repair throughout the case to be consistent.
- A footnote 6 was added which states "Testing has shown that piping with areas of wall thickness less than the diameter of the electrode may burn-through during application of a water-backed weld overlay"
- Clarification was made for the requirements of performing volumetric examinations on Class 3 weld overlays. If the Construction Code did not require volumetric on a full-penetration weld in the same location, the weld overlay does not require a volumetric examination.
- Under Section 7.0 "Inservice Examination" a requirement was added that states "Examinations shall be performed to characterize the thinning of the underlying pipe wall as a benchmark for subsequent examinations of the overlay."
- Other minor editorial changes were made.

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Code Case N-661-2 was approved by the ASME on March 22, 2007, however, it has not been incorporated into the NRC Regulatory Guide 1.147 "Inservice Inspection Code Case Acceptability, ASME Section XI Division 1." Therefore, MNGP requests use of the alternative repair technique described herein. A copy of the ASME Section XI Code Case N-661-2 is provided as Enclosure 2 for reference.

6.0 Duration of Proposed Alternative

The proposed alternative will be used for the Fifth 10-Year Inservice Inspection Interval of the Inservice Inspection Program for the MNGP that is scheduled to end on May 31, 2022 or until Code Case N-661-2 is incorporated into Regulatory Guide 1.147.

7.0 Precedents

None

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Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)
Relief Request RR-004**

8.0 References

1. Monticello Nuclear Generating Plant Inservice Inspection (ISI) Plan, Revision 0, Fifth Ten-Year Inspection Interval, September 1, 2012 through May 31, 2022.
2. ASME Boiler and Pressure Vessel Code, Section XI, 2005 Edition and 2007 Edition with the 2008 Addenda.
3. ASME Section XI Code Case N-661, "Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service."
4. Monticello Nuclear Generating Plant 4th Interval ISI Relief Request No. 11, NMC Letter to NRC, "10 CFR 50.55a Request GR-04-01; Request for Authorization to Utilize Code Case N-661," dated July 28, 2004, (ADAMS Accession No. ML042100484).
5. NRC Safety Evaluation, NRC Letter to NMC, "Monticello – Fourth 10-Year Inservice Inspection Interval Request For Relief To Use Code Case N-661," (TAC No. MC3879), dated March 8, 2005, (ADAMS Accession No. ML050560049).
6. ASME Section XI Code Case N-661-1, "Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service."
7. Regulatory Guide (RG) 1.147, Rev. 16 "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," October 2010.
8. ASME Section XI Code Case N-661-2, "Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service."
9. 10 CFR 50.55a, "Codes and Standards", effective date July 21, 2011.

ENCLOSURE 2

**MONTICELLO NUCLEAR GENERATING PLANT
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(ii)
RELIEF REQUEST RR-005**

7 pages follow

**Monticello Nuclear Generating Plant
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(ii)
Relief Request RR-005**

1.0 ASME Code Component(s) Affected

Code Class:	1
Component Numbers:	Not Applicable
Examination Category:	Not Applicable
Item Number(s):	Not Applicable
Description:	Alternative to ASME Section XI, IWB-5221(a), use of Code Case N-795

2.0 Applicable ASME Code Edition and Addenda

The Monticello Nuclear Generating Plant (MNGP) will start the Fifth 10-year Inservice Inspection (ISI) Program Interval on September 1, 2012 (Reference 1) and is committed to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," (ASME Section XI), 2007 Edition with the 2008 Addenda (Reference 2).

3.0 Applicable Code Requirement

Mechanical Joints

10 CFR 50.55a(b)(2)(xxvi) (Reference 3) requires the use of the 1998 Edition, IWA-4540(c) for pressure testing of Class 1, 2, & 3 mechanical joints

The 1998 Edition of ASME Section XI (Reference 2), IWA-4540(c) states: "Mechanical joints made in installation of pressure retaining items shall be pressure tested in accordance with IWA-5211(a). Mechanical joints for component connections, piping, tubing (except heat exchanger tubing), valves, and fittings, NPS-1 and smaller, are exempt from the pressure test." MGNP understands that this means a pressure test is required for a mechanical joint when a new valve or flange greater than NPS-1 is installed as part of the repair/replacement activity, and does not include those items covered by IWA-4132 "Items Rotated From Stock."

Note that the 1998 Edition, IWA-5211(a) states "a system leakage test conducted during operation at nominal operating pressure, or when pressurized to nominal

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Relief Request RR-005**

operating pressure and temperature.” Northern States Power – Minnesota (NSPM) has defined this to be within the range of 1000 to 1010 psig for components within the Reactor Coolant Pressure Boundary (RCPB) at MNGP.

The applicability for Code Case N-795 (Reference 4) begins with the 1998 Edition with the 1999 Addenda (Reference 2) and includes applicability to the 2007 Edition with the 2008 Addenda; although the 1998 Edition specified by 10 CFR 50.55a(b)(2)(xxvi) is not included in the published ASME Code Applicability Index for Section XI Cases, NSPM compared IWA-5211(a) from the 1998 Edition and IWB-5221(a) from the 2007 Edition with the 2008 Addenda and believes that they are compatible when the pressure has been specifically defined for the MNGP as described above. Therefore, for the post repair/replacement circumstances described in Code Case N-795, NSPM concludes that Code Case N-795 may be used for the 1998 Edition specified by the NRC condition in 10 CFR 50.55a(b)(2)(xxvi).

Welded or Brazed Joints

ASME Section XI, 2007 Edition with the 2008 Addenda

The 2007 Edition with the 2008 Addenda, IWA-4540(a) states: “Unless exempted by IWA-4540(b), repair/replacement activities performed by welding or brazing on pressure-retaining boundary shall include a hydrostatic or system leakage test in accordance with IWA-5000, prior to, or as part of, returning to service. Only brazed joints and welds made in the course of a repair/replacement activity require pressurization and VT-2 visual examination during the test.”

Pressure Testing Requirements

ASME Section XI, 2007 Edition with the 2008 Addenda

The 2007 Edition with the 2008 Addenda, IWB-5211(a) states: “The system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.”

4.0 Reason for Request

At the MNGP, Class 1 pressure tests for repair/replacement activities in accordance with IWA-4540 at pressures corresponding to 100% rated reactor

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power, when performed after Table IWB-2500-1 Category B-P testing has been completed, requires abnormal plant conditions/alignments. Testing at these abnormal plant conditions/alignments results in additional risks and delays while providing little added benefit beyond tests which could be performed at slightly reduced pressures under normal plant conditions.

Code Case N-795 is intended to provide alternative test pressure for certain Class 1 pressure tests. The Code Case would be used following repair/replacement activities (excluding those on the reactor vessel) which occur subsequent to the periodic Class 1 pressure test required by Table IWB-2500-1, Category B-P and prior to the next refueling outage.

Performance of the Category B-P pressure test each refueling outage, places MNGP in a position of significantly reduced margin, approaching the fracture toughness limits defined in the Technical Specification Pressure Temperature (P-T) Curves. To violate these curves would place the vessel in a cold over pressure condition. With strict operational control procedures, specific component alignment, and operations staff training regarding cold overpressure events, this may be considered acceptable to be at reduced margin conditions for the purpose of verifying the leakage status/integrity of the primary system in order to fulfill the ASME Section XI Category B-P requirements prior to startup from a refueling outage. However, to perform this evolution more frequently would increase the overall risks to the plant.

5.0 Proposed Alternative and Basis for Use

Proposed Alternative:

Pursuant to 10 CFR 50.55a(a)(3)(ii), compliance with the required system leakage test under IWA-4540(c) of the 1998 Edition of the ASME Section XI Code and compliance with IWA-4540(a) of the 2007 Edition with the 2008 Addenda would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety after Table IWB-2500-1 Category B-P testing has been completed during a refueling outage, or during scheduled maintenance or forced outages.

MNGP proposes to perform the system leakage testing and associated VT-2 examination following repair/replacement activities in accordance with ASME Code Case N-795, however using longer hold times than specified in Code Case N-795. The system leakage test will be performed during the normal operational

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start-up sequence at a minimum of 900 psig (90% of the pressure required by IWB-5211(a)) following a one hour hold time (for uninsulated components) and a eight hour hold time (for insulated components) in lieu of the nominal operating pressure associated with 100% reactor power of approximately 1000 psig. Note that this code case is not applicable to Class 1 pressure tests performed to satisfy the periodic requirement of Table IWB-2500-1, Category B-P and is not applicable to pressure tests required following repair/replacement activities on the reactor vessel. NSPM will continue to conduct the periodic system leakage tests required by IWB-2500-1, Category B-P at the end of each refueling outage at a pressure corresponding to 100% rated reactor power.

Basis for Use:

By the end of a normal refueling outage the core decay heat has had time to decrease and some spent fuel has been removed and some new fuel has been added. The result is a much lower decay heat load and much lower heatup rates. At the end of a normal refueling outage, the rate of temperature increase is able to be tolerated during the system leakage test. During normal performance of this system leakage test, the pressurization phase of the test is taken at a slow and very controlled pace. The pressurization phase normally takes several hours to reach test conditions.

However, following a maintenance or forced outage, there is a much larger decay heat load from the reactor core. That heat load is difficult to control once shutdown cooling (SDC) has been removed from service. Once SDC is removed from service, heatup starts immediately. During a short term mid-cycle shutdown, the projected heatup rate could be in the order of 0.5°F per minute. Under those conditions, the time available to pressurize up to test conditions, perform the VT-2 exam and return to SDC will be greatly reduced. The hurried time frames may create a more error-likely environment.

During short mid-cycle outages, the core does have a large decay heat load. Considering only the actions of isolating SDC from the vessel under high decay heat loads, there is some inherent risk. There would be some probability that once isolated, mechanical, control or operational problems could occur which could delay return to SDC.

The required VT-2 examinations performed following repair/replacement activities are limited to the areas affected by the work thereby allowing for a focused exam. The VT-2 exams, therefore, have a much smaller examination boundary than the periodic test.

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Indication of leakage identified through the VT-2 examinations during a test at either the 100% rated reactor power level or at 90% of that value will not be significantly different between the two tests. Higher pressure under the otherwise same conditions will produce a higher flow rate but the difference is not significant. Code Case N-795 proposes increased hold times, as compared to a test performed at normal operating pressure, to allow for more leakage from the pressure boundary if a through-wall or mechanical joint leakage condition exists; Further, NSPM proposes to implement even longer hold times than specified by the Code Case. NSPM believes these longer hold times are justified to allow for additional leakage to accumulate at the area of interest so as to be more evident during the VT-2 examination, should a through-wall or mechanical joint leakage condition exist. This alternate test pressure, when combined with longer hold times, is still adequate to provide evidence of leakage, should a leak exist.

While NSPM does not expect that leakage will occur, any leakage will be related to the differential pressure at the point of leakage, or across the connection. A 10% reduction in the test pressure is not expected to result in the arrest of a leak that would occur at nominal operating pressure. In the unlikely event that leakage would occur at higher pressures associated with 100% rated reactor power subsequent to the VT-2 examination, leakage would be detected by the drywell monitoring systems, which include drywell pressure monitoring, the containment atmosphere particulate radioactivity monitoring system, and the drywell floor drain sumps. Leakage monitoring is required by Technical Specifications.

Code Case N-795 and the NSPM proposed hold times allows for an adequate pressure test to be performed; ensuring the safety margin is not reduced due to VT-2 examination being performed at the slightly reduced pressure. There is no physical benefit withheld by testing at the slightly reduced pressure. The affected pressure boundary will be tested and will be otherwise fully capable of performing its intended safety function as part of the Reactor Coolant Pressure Boundary.

The use of Code Case N-795 will only be applied if the System Leakage Test required by IWB-2500-1, Category B-P has been completed for the cycle and will not be implemented for any repair/replacement activity performed on the reactor pressure vessel.

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Summary:

In summary, the proposed alternative is to perform a post repair/replacement system leakage test and VT-2 examination in accordance with Code Case N-795 at 900 psig during maintenance, forced outages, or following the performance of the periodic pressure test required by Table IWB-2500-1, Category B-P during refueling outages. Code Case N-795 will be supplemented with a minimum hold time of one hour for uninsulated components and eight hours for insulated components.

The provisions of this relief request are *not* applicable to the Examination Category B-P pressure test performed during refueling outages, *nor* to pressure tests of repair/replacement activities on the reactor pressure vessel.

Considering the hardship and unusual difficulty in using the available methods for satisfying the post repair/replacement pressure testing code requirements, and having the ability to detect online leakage in primary containment should it occur, this alternative will provide an acceptable verification of the leak-free integrity at locations subjected to repair/replacement activities without putting the plant in a non-conservative operational condition and without unnecessary radiation exposure and safety challenges to personnel.

6.0 Duration of Proposed Alternative

The proposed alternative will be used for the Fifth 10-Year Inservice Inspection Interval of the Inservice Inspection Program for the MNGP that is scheduled to end on May 31, 2022.

7.0 Precedents

A similar 10 CFR 50.55a request (Reference 5) was approved for the MNGP during the Fourth 10-Year Inservice Inspection Interval as a one-time relief by NRC letter "Monticello Nuclear Generating Plant – One Time Inservice Inspection Program Plan Relief Request No. 8 for Leak Testing the "B" and "G" Main Steam Safety Relief Valves (TAC No. MB96380)", dated June 13, 2003. (Reference 6)

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Relief Request RR-005**

8.0 References

1. Monticello Nuclear Generating Plant Inservice Inspection (ISI) Plan, Revision 0, Fifth Ten-Year Inspection Interval, September 1, 2012 through May 31, 2022.
2. ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition, 1998 Edition with 1999 Addenda, and 2007 Edition with the 2008 Addenda.
3. 10 CFR 50.55a, "Codes and Standards", effective date July 21, 2011.
4. ASME Section XI Code Case N-795, "Alternative Requirements for BWR Class 1 System Leakage Test Pressure Following Repair/Replacement Activities, Section XI, Division 1."
5. Monticello Nuclear Generating Plant 4th Interval ISI Relief Request No. 8, NMC Letter to NRC, "Monticello, Request for Authorization of Inservice Inspection Program Fourth 10-Year Interval Relief Request No. 8", dated June 12, 2003. (ADAMS Accession No. ML031750517).
6. NRC Safety Evaluation, NRC letter to NMC "Monticello Nuclear Generating Plant – One Time Inservice Inspection Program Plan Relief Request No. 8 for Leak Testing the "B" and "G" Main Steam Safety Relief Valves (TAC No. MB96380)", dated June 13, 2003. (ADAMS Accession No. ML031640464).

ENCLOSURE 3

**MONTICELLO NUCLEAR GENERATING PLANT
PROPOSED ALTERNATIVE IN ACCORDANCE WITH 10 CFR 50.55a(a)(3)(i)
RELIEF REQUEST RR-006**

5 pages follow

**Monticello Nuclear Generating Plant
Proposed Alternative in Accordance with 10 CFR 50.55a(a)(3)(i)
Relief Request RR-006**

1.0 ASME Code Component(s) Affected

Code Class:	All
Component Numbers:	Not Applicable
Examination Category:	Not Applicable
Item Number(s):	Not Applicable
Description:	Alternative to ASME Section XI, Use of Code Case N-532-5

2.0 Applicable ASME Code Edition and Addenda

The Monticello Nuclear Generating Plant (MNGP) will start the Fifth 10-year Inservice Inspection (ISI) Program Interval on September 1, 2012 (Reference 1) and is committed to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," (ASME Section XI), 2007 Edition with the 2008 Addenda. (Reference 2)

3.0 Applicable Code Requirement

The 2007 Edition with the 2008 Addenda of ASME Section XI contains the following requirements concerning the use of Forms NIS-1 and NIS-2 and the inservice inspection summary report:

IWA-4331(d) requires Form NIS-2 to be completed for rerating, except for rerating component supports.

IWA-6210(c) requires a summary report to be prepared for preservice and inservice of Class 1 and 2 pressure retaining components and their supports.

IWA-6210(d) requires Form NIS-1 to be prepared for preservice and inservice examination of Class 1 and 2 pressure retaining components and their supports.

IWA-6210(e) requires Form NIS-2 to be prepared upon completion of all required activities associated with the Repair/Replacement Plan.

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IWA-6210(f) requires signatures on Forms NIS-1 and NIS-2.

IWA-6220 provides the requirements in the preparation of the abstract for Form NIS-1. The abstract shall include the following items:

1. Component examined or tested
2. Code Class
3. Code Examination Category and Item No.
4. Examination or test method
5. Code Cases
6. Number and percentage of examinations completed when required by IWB-2411, IWC-2411, and IWF-2410
7. Reference to the abstracts of the conditions noted and the corrective actions recommended and taken for flaws detected during examinations or tests performed.

IWA-6230(b) requires an inservice inspection summary report to be prepared following each refueling outage which shall include all examinations, tests, and repair/replacement activities conducted since the preceding summary report.

IWA-6230(c)(2) references Mandatory Appendix II for the Form NIS-1.

IWA-6230(c)(3) references Mandatory Appendix II for the Form NIS-2.

IWA-6230(d) specifies what the summary report cover sheet shall contain:

1. Date of document completion
2. Name and address of Owner
3. Name and address of plant
4. Name or number designation of the unit
5. Commercial service date for the unit

IWA-6240(b) requires the inservice inspection summary report to be submitted within 90 calendar days of the completion of each refueling outage.

IWA-6350(d) identifies the NIS-2 Form as a record of repair/replacement activities that is to be retained.

Mandatory Appendix II includes both Forms NIS-1 and NIS-2. Also included is the guide for completing both forms.

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Mandatory Appendix IX, Article IX-1000(e) requires Form NIS-2 when welding is performed as part of the fabrication and installation of the mechanical clamping devices for Class 2 and 3 pressure boundary piping.

The 2007 Edition with the 2008 Addenda of ASME Section XI contains the following requirements concerning the use of Code Cases:

IWA-2441(b) requires Code Cases being used to be applicable to the Edition and Addenda specified in the Inspection Plan.

IWA-2441(g) requires Code Cases and revisions to previously approved Code Cases to be subject to acceptance by the regulatory and enforcement authorities having jurisdiction at the plant site.

Code Case N-532-4 (Reference 3) has been included in Table 1 of Regulatory Guide (RG) 1.147, Revision 16 (Reference 4). RG 1.147, Revision 16 has been accepted by the NRC for incorporation by reference of RG 1.147, Revision 16 in 10 CFR 50.55a(b) (Reference 5). Table 1 of RG 1.147 lists code cases that are acceptable to the NRC for implementation in the ISI of light-water-cooled nuclear power plant. However, IWA-2441(b) requires code cases being used to be applicable to the Edition and Addenda specified in the Inspection Plan. Code Case N-532-4 has applicability from the 1981 Edition with the Winter 1983 Addenda to the 2004 Edition with the 2005 Addenda (Reference 2). Therefore, Code Case N-532-4 does not meet the requirement contained in IWA-2441(b), and cannot be used by NSPM for the Fifth ISI Interval code of record, the 2007 Edition, 2008 Addenda.

4.0 Reason for Request

Code Case N-532-4 has been accepted for use in Regulatory Guide 1.147, Rev. 16; however the code case is not applicable to the 2007 Edition with the 2008 Addenda of ASME Section XI. Therefore, it does not meet IWA-2441(b). The applicability is limited to the 2005 Addenda because of Table 3 in the code case which lists the paragraph number cross reference for the use of the code case with earlier editions and addenda. This table only goes to the 2004 Edition with the 2005 Addenda.

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5.0 Proposed Alternative and Basis for Use

Proposed Alternative:

MNGP requests the use of Code Case N-532-5 (Reference 6) as permitted by 10 CFR 50.55a(a)(3)(i). The proposed alternative will provide an acceptable level of quality and safety.

Basis for Use:

Code Case N-532-4 has been published and approved by the NRC in Regulatory Guide 1.147, Rev. 16, however, the applicability does not extend to the 2007 Edition with the 2008 Addenda. Code Case N-532-5 was published in Supplement 5 to the 2010 Edition of the Nuclear Code Case Book, and is applicable through the 2010 Edition of the Code (Reference 2). MNGP requests the use of Code Case N-532-5, as discussed above, as an alternative to all cases where completion of Forms NIS-1 and NIS-2 or an inservice inspection summary report is required in ASME Section XI (2007 Edition with the 2008 Addenda) or applied Code Cases. The changes made between N-532-4 and N-532-5 are summarized below:

1. The scope of the code case was revised to allow the use of NIS-2A whenever the completion of Form NIS-2 is required in Section XI or other Section XI code cases (including rerating).
2. Form NIS-2A is completed after satisfying all Section XI requirements necessary to place the item in service and prior to inclusion in the Owner's Activity Report.
3. The completed Form NIS-2A is to be maintained as required by Section XI for the Form NIS-2.
4. Forms OAR-1 and NIS-2A (Reference 7) were revised to specify those code cases that have been modified by Code Case N-532 and later revisions. This means if a code case was used for a repair/replacement activity, and that code case required the completion of Form NIS-2, then that specific code case would be listed on Form NIS-2A. Code cases used for inspection and evaluation are listed on Form OAR-1.

6.0 Duration of Proposed Alternative

The proposed alternative will be used for the Fifth 10-Year Inservice Inspection Interval of the Inservice Inspection Program for the MNGP that is scheduled to end on May 31, 2022.

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7.0 Precedents

None

8.0 References

1. Monticello Nuclear Generating Plant Inservice Inspection (ISI) Plan, Revision 0, Fifth Ten-Year Inspection Interval, September 1, 2012 through May 31, 2022.
2. ASME Boiler and Pressure Vessel Code, Section XI, 2004 Edition with the 2005 Addenda, 2007 Edition with the 2008 Addenda, and 2010 Edition.
3. ASME Section XI Code Case N-532-4, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission", ASME approval date April 19, 2006.
4. NRC Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1", Revision 16, dated October 2010.
5. 10 CFR 50.55a, "Codes and Standards", effective date July 21, 2011.
6. ASME Section XI Code Case N-532-5, "Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission", ASME approval date January 4, 2011.
7. Forms OAR-1 and NIS-2A from ASME Section XI Code Cases N-532-4 and N-532-5.