March 21, 2008

L-MT-08-017
10 CFR 50.55a

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

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

Response to Request for Additional Information Regarding 10 CFR 50.55a Request No. 15 (RR-15): Relief from Impractical Examination Coverage Requirements Pursuant to 10 CFR 50.55a(g)(5)(iii) for the Fourth Ten-Year Inservice Inspection Interval (TAC MD6854)

References:

1) Letter from TJ O'Connor (NMC) to Document Control Desk (NRC), "10 CFR 50.55a Request No. 15: Relief from Impractical Examination Coverage Requirements Pursuant to 10 CFR 50.55a(g)(5)(iii) for the Fourth Ten-Year Inservice Inspection Interval," dated September 26, 2007 (ML072710119)

2) Electronic mail from Peter Tam (NRC) to NMC, "Monticello – Draft RAI for Relief Request No. 15 (TAC MD6854)," dated December 3, 2007 (ML073381315)

3) Electronic mail from Peter Tam (NRC) to NMC, "Monticello – Revised Questions for Relief Request No. 15 (TAC MD6854)," dated December 13, 2007 (ML073480419)

By letter dated September 26, 2007 (Reference 1), and pursuant to 10 CFR 50.55a(g)(5)(iii), Nuclear Management Company, LLC, (NMC) requested Nuclear Regulatory Commission (NRC) review and approval of 10 CFR 50.55a Request No. 15 (RR-15). Request RR-15 requests relief for the Monticello Nuclear Generating Plant (MNGP) from certain examination coverage requirements imposed by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." Request RR-15 is for weld examinations performed during the 2007 refueling outage where the required coverage of "essentially 100 percent" could not be obtained when examined to the extent practical. The basis for the 10 CFR 50.55a request is that compliance with the specified requirements is impractical due to plant design.

On December 3, 2007, the NRC staff notified NMC by electronic mail (Reference 2) that additional information was necessary for the staff to complete the review. A conference call between NMC and NRC staff was held on December 13, 2007, to clarify the requests for additional information (RAI). Following the conference call, the NRC staff sent revised RAIs to NMC by electronic mail on December 13, 2007 (Reference 3). The NMC responses to the NRC RAIs are included in Enclosure 1. As requested in NRC RAI 6.0, NMC is including a worksheet used to determine code coverage for one of the subject welds. The worksheet is included in Enclosure 2.

NMC submitted 10 CFR 50.55a Request RR-15 for the Fourth Ten-Year Inservice Inspection Interval scheduled to end on May 31, 2012. If you have questions regarding this request, please contact Lynne Gunderson at 715-377-3430.

Summary of Commitments

This letter contains no new commitments and does not revise any existing commitments.

Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosures (2)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce

ENCLOSURE 1
Responses to Requests for Additional Information Regarding
10 CFR 50.55a Request No. 15 (RR-15)

By letter dated September 26, 2007, and pursuant to 10 CFR 50.55a(g)(5)(iii), Nuclear Management Company, LLC, (NMC) requested Nuclear Regulatory Commission (NRC) review and approval of 10 CFR 50.55a Request RR-15 (Reference 1). Request RR-15 requests relief for the Monticello Nuclear Generating Plant (MNGP) from certain examination coverage requirements imposed by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." On December 3, 2007, the NRC staff notified NMC by electronic mail (Reference 2) that additional information was necessary for the staff to complete the review. A conference call between NMC and NRC staff was held on December 13, 2007, to clarify the requests for additional information (RAI). Following the conference call, the NRC staff sent revised RAIs to NMC by electronic mail on December 13, 2007 (Reference 3). NRC RAIs are repeated below with the NMC response following each RAI:

1.0 Discuss the applicable edition or addenda of the ASME Code, Section XI, Appendix VIII, for the ultrasonic examination of the subject welds during the 2007 refueling outage and for the remaining fourth 10-year inservice inspection (ISI) interval.

NMC Response:

As stated in Section 2 of RR-15 (Reference 1), Attachment 1, the applicable Code Edition and Addenda for the Fourth Ten-Year Inservice Inspection (ISI) Interval is the 1995 Edition with the 1996 Addenda. ASME BPV Code, Section XI, Appendix VIII requirements are implemented as required by, and as modified by, 10CFR50.55a. Procedures and personnel are qualified to the Performance Demonstration Initiative (PDI). The PDI Program document meets the requirements of 10CFR50.55a up through the 2001 Edition of Section XI.

2.0 [Deleted following a conference call with licensee, which clarified information submitted.]

3.0 On page 4 of Request No. 15, the licensee discussed the UT inspection of the subject welds during the 2007 outage without providing the previous history of the ultrasonic examinations. Discuss the history of volumetric examinations of the subject welds, including specific year and during which ISI interval, inspection results, and examination coverage. Discuss whether relief was requested for the examination coverage of the subject welds in the previous 10-year ISI intervals.

NMC Response:

Per 10 CFR 50.55a(g)(1) and (4), each of the subject welds were examined to the extent practical during the First, Second and Third Ten-Year ISI Intervals. Prior to 1997, the MNGP did not perform examination coverage determinations

or submit relief requests pursuant to 10 CFR 50.55a(g)(5) for limited examinations. This was due to MNGP's misinterpretation of 10 CFR 50.55a(g)(4):

> *10 CFR 50.55a(g)(4) Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2 and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI...to the extent practical within the limitations of design, geometry and materials of construction of the components."*

The MNGP interpreted this section to mean that interferences inherent in the design constituted impracticality, and were therefore exempted. When the misinterpretation was identified (during the Third-Ten Year ISI Interval), the MNGP reported the lack of limited examination relief requests to the NRC in Licensee Event Report (LER) 97-004, "Failure to Submit Relief Requests for Limited Inservice Inspection Examinations." This was reported pursuant to 10 CFR Part 50, Section 50.73(a)(2)(i)(B) since, at that time, MNGP Technical Specification 3.15.A.1 contained the ISI program. In 1997, the failure to submit relief requests for examinations with inspection limitations constituted a non-compliance with Technical Specification 3.15.A.1.

Corrective actions from the LER included a review of all Third Ten-Year ISI Interval examinations to determine limitations. Corrective actions indicate that limited examinations discovered during this review would be submitted to the NRC in a subsequent relief request. Although a review was completed, only the limited examinations going forward from 1998 were submitted in a relief request to the NRC. The Third Ten-Year ISI Interval ended May 31, 2003. Pursuant to 10 CFR 50.55a(g)(5)(iv), relief requests for limited examinations from the third ten-year interval should have been submitted and approved by May 31, 2004. Therefore, there is no means of regaining compliance with the Third Ten-Year ISI Interval and retroactive 10 CFR 50.55a requests for the Third Ten-Year ISI Interval examination will no longer be submitted to the NRC. This issue has been entered into the NMC corrective action program.

The MNGP has taken corrective action to prevent recurrence of the issues described in LER 97-004. Actions taken include creation of procedures to determine code coverage for limited exams and to submit relief requests for impractical Code requirements pursuant to 10 CFR 50.55a(g)(5)(iv) when examination coverage is limited and Code examination requirements cannot be met.

Based on the above discussion, MNGP provides Table 1 on the following page for history of the subject welds.

ENCLOSURE 1
Responses to Requests for Additional Information Regarding
10 CFR 50.55a Request No. 15 (RR-15)

Table 1 - Historical Examination Information

Weld	Interval / Exam Year	Results for Limited Exam	Relief Request	NRC Approval
N-2B	1st / 1978	*, no flaw indications	**	**
	2nd / 1993	*, no flaw indications	**	**
	3rd / 2001	62% coverage, no flaw indications	3rd, ISI RR-16	TAC No. MB5487, May 19, 2003
N-2G	1st / 1975	*, no flaw indications	**	**
	2nd / 1989	*, no flaw indications	**	**
	3rd / 1998	51% coverage, no flaw indications	3rd, ISI RR-10	TAC No. MA3397, August 4, 1999
N-4A	1st / 1974	*, no flaw indications	**	**
	2nd / 1986	*, no flaw indications	**	**
	3rd / 1996	*, no flaw indications	**	**
N-6A	1st / 1973	*, no flaw indications	**	**
	2nd / 1987	*, no flaw indications	**	**
	3rd / 1996	*, no flaw indications	**	**
N-9	1st / 1974	*, no flaw indications	**	**
	2nd / 1984	*, no flaw indications	**	**
	3rd / 1996	*, no flaw indications	**	**

* Code Coverage was not determined for limited exams prior to 1997
** Relief was not requested for limited exams prior to 1997

4.0 On page 5 of Request No.15, the licensee stated that the materials for subject components are A508 Class II nozzle forgings welded to A533, Class I vessel shell plate. However, the material specifications of the welds and associated piping were not provided. Discuss material specifications for the following components: welds, pipes, safe ends, and butter (if applicable).

NMC Response:

The weld filler material for the subject joint was E8018NM. Inner diameter cladding materials are E309-15 for the base layer, and ER308L or E308L-15 for

subsequent layers. There are no pipe, safe end, or butter materials applicable to the nozzle-to-vessel shell welds.

5.0 [Deleted following a conference call with licensee, which clarified information submitted.]

6.0 In Enclosure 2, Table A, of the September 26, 2007, submittal, the licensee calculated various percentages of examination coverage obtained for each of the five welds. The staff calculated the percentages of examination coverage of the subject welds using the diagrams in Enclosure 3 of the submittal. However, the staff was not able to verify the percentages of coverage as shown in Table A.

(a) Provide the worksheet for one of the subject welds showing how the percentage of coverage is determined.

(b) It is not clear from the diagrams in Enclosure 3 of the September 26, 2007, submittal whether the unexamined volume is in the reactor vessel nozzles, the welds, butter, or safe ends. Please provide the axial dimensions for the weld, piping, and safe end. Also, identify the interface line among the weld, nozzle, safe end, and pipe.

NMC Response:

The method NMC used to determine coverage is based on field measurements applied to a two dimensional plot. This allows an informed approximation to be made of the coverage achieved. This is appropriate to the application in that the limitations are physical and the methods applied to the examination are established by the qualified techniques. Variations in the percent coverage obtained in previous examinations are the result of changes in examination technique and/or required coverage. The current coverage determinations are different from past examinations due to the use of PDI qualified techniques and a reduced volume obtained by use of Code Case N-613-1.

The coverage drawings included in Enclosure 3 of Reference 1 include a representation of the examination volume and the weld interface line in the same manner as the figure included in Code Case N-613-1. The area of coverage is identified by the shaded or cross-hatched areas on the drawings and the remaining areas with no shading or cross-hatching indicate no coverage. The coverage drawings indicate the nozzle side of the weld by the location of the blend radius. The area on the opposite side of the weld from the nozzle represents the reactor vessel shell. Though there is variation, most of the limited coverage is in the nozzle base material with a lesser amount in the weld and base material on the vessel shell side. A worksheet from weld N-2B NV is provided as Enclosure 2 of the letter.

Pipe, safe end, and butter material are not applicable to the subject welds included in this relief request.

ENCLOSURE 1
Responses to Requests for Additional Information Regarding
10 CFR 50.55a Request No. 15 (RR-15)

References:

1. Letter from TJ O'Connor (NMC) to Document Control Desk (NRC), "10 CFR 50.55a Request No. 15: Relief from Impractical Examination Coverage Requirements Pursuant to 10 CFR 50.55a(g)(5)(iii) for the Fourth Ten-Year Inservice Inspection Interval," dated September 26, 2007 (ML072710119)

2. Electronic mail from Peter Tam (NRC) to NMC, "Monticello – Draft RAI for Relief Request No. 15 (TAC MD6854)," dated December 3, 2007 (ML073381315)

3. Electronic mail from Peter Tam (NRC) to NMC, "Monticello – Revised Questions for Relief Request No. 15 (TAC MD6854)," dated December 13, 2007 (ML073480419)

4. LER 97-004, "Failure to Submit Relief Requests for Limited Inservice Inspection Examinations," dated March 24, 1997

ENCLOSURE 2
Responses to Requests for Additional Information Regarding
10 CFR 50.55a Request No. 15 (RR-15)

Determination of Code Coverage

Worksheet for Weld N-2B NV from Supplemental

Examination Report Number 2007UT058

One (1) Page to Follow

Enclosure 2 to L-MT-08-017

Nozzle to RPV Coverage Calculation Sheet

Coverage calculated to requirements of Code Case N-613
Note: calculations performed using 2D plot only

Nozzle ID N2

Area required to be examined

Axial scan direction: Height x width

5.25 inches x 3.057 inches equals 16.0493 square inches

Parallel scan direction: Height x width

5.25 inches x 3.057 inches equals 16.0493 square inches

Total area required to be examined 32.0985 square inches required for complete exam

Actual area examined

60 degree R.L. Axial scan direction: Height x width

5.25 inches x 3.057 inches equals 16.0493 square inches

Triangular area not examined (if applies) 1.29 1/2 base x 2.25 height equals 1.45125 square inches

Axial scan direction area examined 14.598 square inches

60 degree R.L. Parallel scan direction: Height x width

4.46 inches x 1.82 inches equals 8.1172 square inches

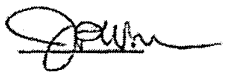
Additional inner 15% area achieved using 40 & 45 degree shear techniques: Height x width

0.7875 inches x 3.057 inches equals 2.40739 square inches

Combining all scan directions: 25.1226 square inches for total exam

Divide area examined by required area: equals coverage achieved 78.27 % coverage for total exam

Calculations performed by: Jeremy Timm Level III

Monticello review  Level III