



February 28, 2003

L-MT-03-016

10 CFR Part 50,
Section 50.90

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

MONTICELLO NUCLEAR GENERATING PLANT
DOCKET 50-263
LICENSE No. DPR-22

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING
INTEGRATED VESSEL SURVEILLANCE PROGRAM (TAC NO. MB6460)**

Reference 1: Nuclear Management Company, LLC, Monticello Nuclear Generating Plant - Submittal of License Amendment Request for Relocation of a Technical Specification Surveillance Requirement to a Licensee Controlled Program and Implementation of the Boiling Water Reactor Vessel and Internals Project (BWRVIP) Integrated Surveillance Program (ISP), dated September 19, 2002

Reference 2: NRC Request For Additional Information Regarding Integrated Vessel Surveillance Program (TAC NO. MB6460), dated January 31, 2003

Reference 1 proposed Technical Specifications changes to Appendix A of Operating License DPR-22, for the Monticello Nuclear Generating Plant. The purpose of the License Amendment Request was to revise the Monticello Technical Specifications (TS) to relocate a Technical Specification (TS) Surveillance Requirement to the Monticello Nuclear Generating Plant (MNGP) Updated Safety Analysis Report (USAR).

Reference 2 requested Nuclear Management Company, LLC (NMC) to provide additional information in support of the license amendment request submitted by Reference 1.

Exhibit A provides NMC's response to the NRC's request for additional information for the previously submitted License Amendment Request. In the response the NMC makes the following new commitments:

1. The NMC commits to performing fluence calculations using methodology in accordance with the Regulatory Guide (RG) 1.190 within 12 months following the final approval by the NRC for use of the RAMA Code.

2. The NMC commits to revise the MNGP USAR to state that fluence calculations will be performed in accordance with RG 1.190 for matters regarding fluence on the vessel and internals. The USAR will be revised during the next scheduled update after a RG 1.190 calculation is completed.

Additionally, the NMC is revising the USAR to reflect the current approved guidance for the ISP, which is BWRVIP-86-A.

The original changes were evaluated in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92(c), and were determined not to involve any significant hazards consideration. The attached information does not impact that determination; therefore, the Determination of No Significant Hazards Consideration submitted by the original letter dated September 19, 2002, is also applicable to this submittal.

Additionally, the original changes were evaluated and determined to meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9) and pursuant to 10 CFR 51.22(b) an Environmental Assessment was not required. The attached information does not impact that determination; therefore, the Environmental Assessment submitted by the original letter dated September 19, 2002, is also applicable to this submittal.

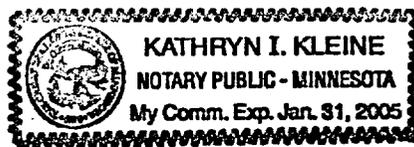
If you have any questions regarding this response to Request for Additional Information please contact John Fields, Senior Licensing Engineer, at (763) 295-1663.



David L. Wilson
Site Vice President
Monticello Nuclear Generating Plant

Subscribed to and sworn before me this 28 day of February 2003


Notary



Attachments: Exhibit A – Response to Request for Additional Information Related to License Amendment Request Regarding Integrated Vessel Surveillance Program

cc: Regional Administrator-III, NRC
NRR Project Manager, NRC
Sr. Resident Inspector, NRC
Minnesota Department of Commerce
J. Silberg, Esq.

Exhibit A

Response to Request for Additional Information Related to License Amendment Request Regarding Integrated Vessel Surveillance Program

NRC RAI Discussion:

"On January 8, 2003, the NRC staff participated in a telephone discussion with Mr. G. Park and others of your organization regarding your application for amendment dated September 19, 2002, to implement the Boiling Water Reactor Vessel and Internals Project (BWRVIP) Integrated Surveillance Program (ISP). During this call, the NRC staff stated its understanding that, contrary to the schedule stated in the application, the topical report on the BWRVIP RAMA code would not be submitted to the NRC until well after December 2002. Therefore, it is highly unlikely that the NRC staff can complete its review of this code consistent with Monticello's refueling outage in the spring of 2003. The NRC staff requested that you clarify your proposed plans until such time as the RAMA code is approved. The NRC staff also requested that you specify your schedule for performing revised fluence calculations using NRC-approved methods. The NRC staff stated that use of Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," is acceptable and requested that you identify in the proposed Updated Safety Analysis Report (USAR) your commitment to use a methodology consistent with RG 1.190.

"Additionally, the NRC staff stated that the proposed marked-up change of the Monticello USAR does not provide sufficient reference for the technical basis of the ISP. The NRC staff stated that, for this purpose, one acceptable method would be to reference Topical Report BWRVIP-86A, "BWR Vessel and Internals Project Updated BWR Integrated Surveillance Program (ISP) Implementation Plan," as published in October 2002. The NRC staff requested that the proposed marked-up USAR page be revised accordingly."

NRC Request #1:

"During this call, the NRC staff stated its understanding that, contrary to the schedule stated in the application, the topical report on the BWRVIP RAMA code would not be submitted to the NRC until well after December 2002. Therefore, it is highly unlikely that the NRC staff can complete its review of this code consistent with Monticello's refueling outage in the spring of 2003. The NRC staff requested that you clarify your proposed plans until such time as the RAMA code is approved."

NMC Response:

NMC believes that its current fluence methodology is sufficient until an analysis in accordance with Regulatory Guide 1.190 can be generated.

The NRC Safety Evaluation (SE) for Relief Request No. 12 for Monticello's Third 10-year Interval Inservice Inspection Program (Reference 1), stated that the fluence methodology used extrapolated surveillance capsule data at Monticello, which was not in accordance with Regulatory Guide 1.190. The SE indicated that NMC reported the peak inside surface end of life vessel fluence at about 0.4×10^{19} n/cm² from the first surveillance capsule report for the Monticello vessel. NMC proposed using 0.51×10^{19} n/cm² to account for low-leakage-loading practice (since longer core cycles were implemented), which is not taken into account, and a 20 percent increase to account for uncertainties. The NRC independently corroborated the NMC proposed fluence value and found it to be acceptable.

Therefore, until such time as the NMC completes a fluence calculation in accordance with Regulatory Guide 1.190, the NMC will continue to use its previously NRC approved methodology in matters associated with vessel fluence.

NRC Request #2:

"The NRC staff also requested that you specify your schedule for performing revised fluence calculations using NRC-approved methods."

NMC Response:

The NMC commits to performing fluence calculations using methodology in accordance with the RG 1.190 within 12 months following the final approval by the NRC for use of the RAMA Code.

The basis for this commitment is as follows: Monticello Nuclear Generating Plant (MNGP) is considered a host plant per table 4-3 of BWRVIP-86A. As noted in the NRC Safety Evaluation for the BWRVIP ISP (Reference 2) Section 4.2, the NRC staff concluded that:

"Therefore, given that these facility's current surveillance programs have been determined to be adequate, the NRC staff concluded that their access to dosimetry data will continue to be adequate through implementation of the ISP. Finally, the dosimetry data from each surveillance capsule included in the ISP ensures that adequate dosimetry data is available for the determination of surveillance capsule fluences."

In the BWRVIP ISP, fluence calculations are not required for a host plant until a surveillance capsule is removed from the vessel or new directly applicable data becomes available. Currently, MNGP has an acceptable methodology for determining fluence, and a surveillance program that includes dosimetry in the surveillance capsule. MNGP is a host plant in BWRVIP-86-A, and as such will have equal or greater dosimetry information as a result of participating in the ISP. Therefore, Monticello's use of a fluence methodology in accordance with Regulatory Guide 1.190 at the time a directly applicable surveillance capsule is removed meets the intent of BWRVIP-86-A and the associated NRC SE.

During the referenced January 8, 2003 telephone discussion the NRC stated that submitting fluence data generated in accordance with Regulatory Guide 1.190 in 2007 (in accordance with MNGP's next capsule removal) was later than appropriate. Not allowing the use of the ISP would result in Monticello removing a surveillance capsule in 2003.

Although the current surveillance capsule program has been determined to be adequate without requirement to perform calculations in accordance with Regulatory Guide 1.190, NMC commits to performing fluence calculations using methodology in accordance with the RG 1.190 within 12 months following the final approval by the NRC for use of the RAMA Code.

NRC Request #3:

"The NRC staff stated that use of Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," is acceptable and requested that you identify in the proposed Updated Safety Analysis Report (USAR) your commitment to use a methodology consistent with RG 1.190."

NMC Response:

The NMC commits to revise the MNGP USAR to state that fluence calculations will be performed in accordance with RG 1.190 for matters regarding fluence on the vessel and internals. The USAR will be revised during the next scheduled update after a RG 1.190 calculation is completed.

Making a commitment in the USAR prior to implementation of RG 1.190 could lead to confusion and a misunderstanding of the timing for implementation of our commitment. Therefore, the USAR will be updated after a RG 1.190 calculation is performed.

Exhibit A

NRC Request #4:

“Additionally, the NRC staff stated that the proposed marked-up change of the Monticello USAR does not provide sufficient reference for the technical basis of the ISP. The NRC staff stated that, for this purpose, one acceptable method would be to reference Topical Report BWRVIP-86A, “BWR Vessel and Internals Project Updated BWR Integrated Surveillance Program (ISP) Implementation Plan,” as published in October 2002. The NRC staff requested that the proposed marked-up USAR page be revised accordingly.”

NMC Response:

The NMC is revising the USAR to reflect the current approved guidance for the ISP, which is BWRVIP-86-A.

See Attachment 1 to Exhibit A for the applicable marked-up USAR page.

Attachments:

Attachment 1 - Revised Markup of USAR reflecting BWRVIP ISP Commitment

References:

1. Letter, Dated July 27, 2001, From: Claudia M. Craig, Office of Nuclear Reactor Regulation, To: James R. Morris, Site Vice President Monticello Nuclear Generating Plant. Subject: Monticello Nuclear Generating Plant-Evaluation of Relief Request Number 12 for the Third 10-Year Interval Inservice Inspection Program (TAC NO. MB0261)

2. Letter, Dated February 1, 2002, From: William H. Bateman, Office of Nuclear Reactor Regulation, To: Carl Terry, BWRVIP Chairman. Subject: Safety Evaluation Regarding EPRI Proprietary Reports "BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78)" and "BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan"

Revised Markup of USAR reflecting BWRVIP ISP Commitment

of License Amendment 106 (Reference 107). This amendment approved revised Monticello RPV pressure-temperature limit curves which are contained in the Monticello Technical Specifications. Additional surveillance specimens will be removed from the Monticello RPV ~~for testing during the 2003 refueling outage unless the results of the Integrated Surveillance Program (ISP) Focus Group determines that removal is unnecessary.~~ [in accordance with the Boiling Water Reactor Vessel Internals Project (BWRVIP) Integrated Surveillance Program (ISP). The removal schedule developed by the BWRVIP ISP is included in the BWRVIP-86-A document. The technical basis for the ISP is discussed in the BWRVIP-78.]

4.2.3.3 Thermal Shock Effects on Reactor Vessel Components

Several high stress points on the reactor vessel have been analyzed approximately and conservatively to determine the effect of LPCI cold water injection. The points examined were the mid-core inside of the reactor vessel wall, the control rod drive penetration and the recirculation inlet nozzle. The results at the mid-core inside of the vessel indicate a peak stress of 67,500 psi.

The results of the control rod penetration analysis are:

Amplitude of alternating stress	560,000 psi
Allowable ASME III cycles	14
Maximum strain range	3.7%

The recirculation inlet nozzle analysis resulted in a nozzle design with a thermal sleeve to reduce thermal shock effects. In 1984, reactor recirculation inlet safe ends were replaced in conjunction with recirculation piping replacement. The results reported in the GE Stress Report, 23A1627 Rev. 1, dated September 14, 1984 (Reference 65), show that replacement safe ends and thermal sleeves, including the attachment weld to the recirculation inlet nozzle, meet all the requirements of Article NB-3000.

The most recent calculations concerning thermal shock effects on reactor components continue to indicate that thermal stresses are well within established guideline values and, therefore, do not jeopardize the integrity or the function of either the reactor pressure vessel or the reactor internal components. A comprehensive discussion of the brittle fracture analysis performed for the BWR pressure vessel is contained in a General Electric topical report (Reference 1). This report shows that the reactor pressure vessel functions in a safe and reliable manner during and after all the postulated thermal shock conditions.