November 22, 2005

L-MT-05-115
10 CFR Part 54

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

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

Response to Two Requests for Additional Information Regarding the Monticello Nuclear Generating Plant License Renewal Application (TAC No. MC6440)

References: 1) NMC letter to NRC, "Application for Renewed Operating License," dated March 16, 2005 (ADAMS Accession No. ML050880241)

2) NRC letter to NMC, "Request for Additional Information for the Review of the Monticello Nuclear Generating Plant License Renewal Application (TAC No. MC6440)," October 31, 2005 (ADAMS Accession No. ML053050436)

3) NRC letter to NMC, "Request for Additional Information for the Review of the Monticello Nuclear Generating Plant License Renewal Application (TAC No. MC6440)," November 14, 2005 (ADAMS Accession No. ML053190429)

Pursuant to 10 CFR Part 54, Nuclear Management Company, (NMC) LLC submitted a License Renewal Application (LRA) (Reference 1) to renew the operating license for the Monticello Nuclear Generating Plant (MNGP).

On October 31, 2005, and November 14, 2005, the U.S. Nuclear Regulatory Commission (NRC) issued two requests for additional information (RAI) regarding the LRA for MNGP (References 2 and 3).

The NMC response to References 2 and 3 are provided in Enclosures 1 and 2, respectively.

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Summary of Commitments

This letter contains no new commitments and does not change any previous commitments.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 22, 2005.

John T. Conway
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC.

Enclosures (2)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
License Renewal Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce
Pillsbury, Winthrop, Shaw, Pittman; LLP (David Lewis)

ENCLOSURE 1

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION DATED OCTOBER 31, 2005

1. **NRC RAI 4.1-1**

As stated in the MNGP LRA, the current operational experience with the examination of the high-fluence locations of the top guide grids shows that no evidence of cracking has been detected. Further, MNGP is committed by letter to NRC, dated June 10, 2005, to examinations of 10 percent of these locations within 12 years.

To support NRC staff evaluation of the LRA, please provide the following additional information:

A. Describe MNGP actions, while performing TLAA-related examinations of the high-fluence locations of the top guide grid, upon detecting indications.

B. Describe MNGP TLAA-related actions regarding the top guide grid, when the examination of 10 percent of top guide locations in the 12-year period has been completed, during the remainder of the period of extended operation.

NMC Response

Inspection of a sampling of top guide high fluence locations (i.e. fluence exceeding 5.0×10^{20} n/cm^2) will be performed consistent with lower plenum inspection and flaw evaluation guidelines as described in the Boiling Water Reactor Vessel Internals Program (BWRVIP) document BWRVIP-47. Ten percent (10%) of the total high fluence population will be inspected within 12 years with a minimum of five percent (5%) inspected within the first 6 years. If flaws are found, an inspection of an additional five percent (5%) of the total number of locations in the group exceeding the fluence threshold will be completed. This process will be repeated until no new flaws are found. Nuclear Management Company (NMC) will evaluate flaws exceeding the inspection limits and take necessary corrective actions that may include, but are not limited to the following; accept as-is, accept as-is with required periodic re-inspection, or indication removal by metal removal. All corrective actions will be performed in accordance with approved Monticello Nuclear Generating Plant (MNGP) procedures. Indication mapping and flaw size will be documented for use in industry resolution of this concern.

The inspections described herein are in addition to the current guidelines contained in BWRVIP-26. Re-inspection scope and frequency will be dependent on the MNGP results as well as the results of other industry experience. It is expected that industry experience will be incorporated into BWRVIP-26 for the identification of inspection guidelines. NMC will continue to participate in the evolution of BWRVIP-26 and will incorporate applicable recommendations of the BWRVIP into the MNGP internals inspection program.

2. **NRC RAI # B2.1.5-1**

In the Enhancement Section of B2.1.5, MNGP states that the Buried Piping and Tanks Inspection Program will be revised to specify a 10-year Diesel Fuel Oil Storage Tank, T-44, internal inspection frequency. Please clarify whether the Diesel Fuel Oil Storage Tank internal inspection is in addition to, or in lieu of, the external inspection recommended in the GALL Report.

NMC Response

The Buried Piping and Tanks Inspection Program and the 10-year Diesel Fuel Oil Storage Tank internal inspection will be in addition to the external inspection recommended in the NRC NUREG-1801, "Generic Aging Lessons Learned (GALL) Report," and will include both a visual inspection as well as an ultrasonic inspection. The internal ultrasonic inspection for wall thickness will conservatively yield the same results as a visual inspection of the external tank surface.

External inspections will also be performed as inspections of opportunity. Should the Diesel Fuel Oil Storage Tank (T-44) be excavated during maintenance activities, an external inspection would be performed. Additionally, any other components of the same material in the same environment would yield the same aging effects. Consequently, the results of inspections of the external surfaces of other buried carbon steel components would also be indicative of the external surface condition of the Diesel Fuel Oil Storage Tank.

Also, MNGP has a benign (alkaline) pH for both ground water and river water as evidenced by the analyses performed to date. Plant-specific operating experience supports the fact that loss of material for carbon steel in a buried environment is not significant at MNGP based on the results of these previous inspections.

3. **NRC RAI 3.3.2.2.5-1**

In lieu of crediting the MNGP Aging Management Program (AMP) for selective leaching of materials in Section 3.3 of the LRA, MNGP has credited the Fire Protection Program (MNGP AMP B2.1.17/GALL AMP XI.M26), the Fire Water System Program (MNGP AMP B2.1.18/GALL AMP XI.27) or the Buried Piping and Tanks Inspection Program (MNGP AMP B2.1.5/GALL AMP XI.M34) to

manage the effects of loss of material due to selective leaching for certain Fire System components (copper alloy and gray cast iron materials in a raw water environment or buried in ground environments) in Table 3.3.2-9. For other systems in a raw water environment in Section 3.3, MNGP has credited its Selective Leaching of Materials Program to manage the aging effects of loss of material due to selective leaching.

To support NRC staff evaluation of the LRA, please provide the following additional information:

A. Describe details of the Fire Protection Program, the Fire Water System Program, and the Buried Piping and Tanks Inspection Program that demonstrate that these programs adequately manage the effect of loss of material due to selective leaching. As currently written in LRA Appendix B, it appears that these programs will not manage this aging effect/aging mechanism combination.

B. Describe inspections or examinations, if any, of the components that are (will be) performed by the Fire Protection Program, the Fire Water System Program, and the Buried Piping and Tanks Inspection Program to detect selective leaching.

C. If MNGP is planning on a future enhancement of these programs, please provide a commitment for this future enhancement.

NMC Response

The MNGP Fire Protection AMP, the Fire Water System AMP, and the Buried Piping and Tanks Inspection AMP are credited for managing the effects of loss of material due to selective leaching for certain Fire System components (copper alloy and gray cast iron materials in a raw water or buried in ground environment) in Table 3.3.2-9 of the MNGP License Renewal Application (LRA). These AMPs, in turn, credit (invoke) the Selective Leaching of Materials AMP for the actual management of loss of material due to selective leaching. However, the Fire System was inadvertently omitted from the applicable MNGP systems table in Section B2.1.30 (under "Scope of Program") for the Selective Leaching of Materials Program in Appendix B of the LRA and was intended to be included in this table.

Sections B2.1.5 for the Buried Piping and Tanks Inspection Program, B2.1.17 for the Fire Protection Program, and B2.1.18 for the Fire Water System Program, under "Scope of Program" in Appendix B of the LRA, although not specifically stated, credit the Selective Leaching of Materials Program for managing loss of material due to selective leaching and the program was intended to be included in these sections also. Although loss of material due to selective leaching is addressed in the Program Basis Documents for the Buried Piping and Tanks Inspection Program, Fire Protection Program, and Fire Water System Program, it

was inadvertently omitted from the corresponding Appendix B sections of the LRA and was intended to be included.

The inspections or examinations of the components that will be performed by the Selective Leaching of Materials AMP are addressed in Section B2.1.30 of the LRA. This logic was utilized since the Fire System is unique in that the majority of the aging effects requiring management are managed by either the Fire Protection or Fire Water System AMPs. As a result, the aforementioned AMPs for the Fire System will invoke the Selective Leaching of Materials AMP to manage the effects of loss of material due to selective leaching. The Selective Leaching of Materials Program, as addressed in Section B2.1.30 of the LRA, will adequately manage the effect of loss of material due to selective leaching for these components in the Fire System.

ENCLOSURE 2

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION DATED NOVEMBER 14, 2005

1. **NRC RAI 3.3.2.1.9-3**

In License Renewal Application (LRA) Table 3.3.2-9 for fire systems, the Fire Protection Program has been credited to manage loss of material due to general, pitting, crevice, galvanic corrosion, and microbiologically influenced corrosion (MIC) for copper alloy filters and strainers, and gray cast iron in heat exchangers in a raw water environment. Generic Aging Lessons Learned (GALL) Report Item VII.G.6-b is referenced, which evaluates filter, fire hydrant, mulsifier, pump casing, sprinkler, strainer, and valve bodies from a variety of materials including cast iron, bronze and copper. The GALL Report also recommends the Fire Water System Program for managing this aging effect. Note E has also been referenced for these line items in the LRA, which indicates a different aging management program, Fire Protection Program, is used. The discussion section of Table 3.3-1, Item 3.3.1-21 indicates that the Fire Protection Program is applied to non-water based fire protection systems, which appears to conflict with the line items in Table 3.3.2-9. Furthermore, the LRA does not identify in the program description how the Fire Protection Program will manage this aging effect in water based systems.

Please clarify how the Fire Protection Program will manage loss of material due to general, pitting, crevice, and galvanic corrosion in water based fire protection systems

NMC Response

The Fire Water System Aging Management Program (AMP) provides for aging management of water-based Fire System piping and components in accordance with applicable NFPA recommendations. The Fire Protection AMP provides for aging management of fire barriers, the diesel fire pump, and the halon fire suppression system. This is consistent with NUREG-1801, which states in XI.M26 for the Fire Protection AMP that, "For operating plants, the fire protection aging management program (AMP) includes a fire barrier inspection program and a diesel fire pump inspection program." As a result, both the Fire Water System and Fire Protection AMPs are credited for line items such as filter/strainers, manifolds, pump casings and valve bodies in Table 3.3.2-9 (Fire System), since these line items are applicable to both the diesel fire pump (Fire Protection AMP) as well as the remainder of the water-based components (Fire Water System AMP). For copper alloy filters and strainers in a raw water environment, both the Fire Water System AMP and Fire Protection AMP are credited since this component/material/environment combination exists for both the diesel fire pump (Fire Protection AMP) as well as water-based components (Fire Water System AMP) such as P-110, Electric Fire Pump. Although the Fire Water System AMP is credited in the license renewal database for managing the

aging effect of loss of material for copper alloy filters and strainers in a raw water environment, it was inadvertently omitted from Table 3.3.2-9 of the LRA. The Fire Water System AMP is credited for managing these components in the water-based portion of the Fire System. It should be noted, however, that general corrosion is not applicable to copper alloys.

Concerning the gray cast iron heat exchanger (radiator) in a raw water environment, the Fire Protection Program and not the Fire Water System AMP is credited with managing the aging effects for this component which is an integral part of the diesel fire pump and is specifically addressed in the Fire Protection AMP. It should also be noted that this is the only heat exchanger in the Fire System. The GALL report, line item VII.G.6-b was utilized as it was the most applicable line item in the GALL report for this component/material/environment combination. Since the GALL report lists the Fire Water System AMP for managing the aging effects for this line item, Note E was added to indicate that a different aging management program was credited at MNGP. This was done since, as stated above, the Fire Protection Program AMP and not the Fire Water System AMP manages the aging effect of a loss of material for this gray cast iron heat exchanger (radiator) in a raw water environment for the diesel fire pump. This is defined in more detail below.

The discussion section of Table 3.3-1, Item 3.3.1-21 states the following:

> The Fire Protection Program is applied to those components in the fire system associated with the diesel fire pump with the exception of the diesel fire pump diesel engine fuel oil supply. In addition, the Fire Protection Program is applied to non-water-based fire protection subsystems such as Halon.

This is not in conflict with the line items in Table 3.3.2-9 for the diesel fire pump because the Fire Protection Program AMP is credited and not the Fire Water Program AMP for managing the aging effects for this gray cast iron heat exchanger (radiator) for the diesel fire pump in a raw water environment.

Although the LRA does not expressly identify how the Fire Protection Program will manage loss of material in water-based subsystems (i.e., diesel fire pump) in the Program Description of Appendix B, this is specifically addressed in the Fire Protection AMP Program Basis Document (PBD). Under the heading "Diesel-Driven Fire Pump," the PBD states that the water initiated aging effects will be managed by the Fire Water System AMP. Therefore, the Fire Protection Program invokes the Fire Water System Program to manage loss of material due to crevice, galvanic, general and pitting corrosion in the water-based subsystem for the diesel fire pump. This is confirmed in the Fire Water System PBD.

As a result, the Fire Protection AMP will adequately manage the effect of loss of material due to crevice, galvanic, general and pitting corrosion for these components in the Fire System by invoking the Fire Water System AMP for the water initiated aging effects related to the diesel fire pump water-based subsystem.