November 7, 2005

Mr. John T. Conway
Site Vice President
Nuclear Management Company, LLC
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE MONTICELLO NUCLEAR GENERATING PLANT LICENSE RENEWAL APPLICATION (TAC NO. MC6440)

Dear Mr. Conway:

By letter dated March 16, 2005, Nuclear Management Company, LLC, (NMC or the applicant) submitted an application pursuant to Title 10 of the *Code of Federal Regulations* Part 54 (10 CFR Part 54) to renew the operating license for Monticello Nuclear Generating Plant (MNGP), for review by the U.S. Nuclear Regulatory Commission (NRC). The NRC staff is reviewing the information contained in the license renewal application (LRA) and has identified, in the enclosure, areas where additional information is needed to complete the review.

These questions were discussed with your staff, Mr. Patrick Burke, and a mutually agreeable date for this response is within 30 days from the date of this letter. If you have any questions, please contact me by telephone at 301-415-3777 or via e-mail DXM2@nrc.gov.

Sincerely,

/RA/

Daniel J. Merzke, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No.: 50-263

Enclosure: As stated

cc w/encl: See next page

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Monticello Nuclear Generating Plant

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DISTRIBUTION: Memo to J. Conway, re: RAI for review of Monticello LRA, Dated: November 7 , 2005

Adams Accession No.: **ML053120003**

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MONTICELLO NUCLEAR GENERATING PLANT
LICENSE RENEWAL APPLICATION (LRA)
REQUEST FOR ADDITIONAL INFORMATION (RAI)

RAI 2.5.2-2

LRA Section 2.5.2.4 states that the specific path for the 345 kV source is the 4.16 kV Non-segregated Phase Bus ...the 34.5 kV direct buried cable to the Current Limiting Protector in parallel with ... Also, the specific path for the 13.8 kV offsite source is, the buried cables from the ...direct buried cable from the 1AR/10TR Disconnect Switch... Please identify the Aging Management Program (AMP) that will be used to manage the aging effects of these buried cables.

RAI 3.6-1

LRA Table 3.6.2-1, Electrical Penetrations Commodity Group, addresses the components of Non-EQ Electrical and Instrumentation and Controls (I&C) penetration assemblies subject to aging management review (AMR). Please justify why the seal and other insulating material associated with these penetration assemblies do not require an AMP. In addition, identify the AMP that will be used to manage the aging effects of cables and connectors associated with penetrations that are within the scope of license renewal.

RAI 3.6-2

In LRA Table 3.6.2-4, the applicant identified AMR line items for cable connections and stated that no AMP is required for the cable connections. The staff notes that the applicant referenced SAND96-0344, Aging Management Guidelines For Electrical Cable and Terminations, in its justification for not having an AMP. However, this report indicates that several plants identified loosening of terminations and found that the major concern is that failures of a deteriorated cable system (cables, connections including fuse holders, and penetrations) might be induced during accident conditions. Since these connections are not subject to the requirements of 10 CFR 50.49, an AMP is required to manage the aging effects in cable connections.

In addition, operating experience has shown evidence of loosening of metallic parts of cable connections. Several licensees reported in Licensee Event Reports loose connections due to corrosion, vibration, thermal cycling, etc. Based on the above, justify why an AMP is not required for cable connections or provide an AMP.

RAI 3.6-3

In LRA Table 3.6.2-2, the applicant identified AMR line items for fuse holders and stated that no AMP is required for the fuse holders. The staff finds that the justification provided by the applicant is not adequate. For example, thermal cycling due to energizing and de-energizing of circuits is not addressed. Also, it is not clear to the staff how the fuse holders are protected

from exposure to external sources of moisture and chemical contamination. Please justify in detail why the fuse holders at MNGP do not need an AMP by addressing each aging effect included in Generic Aging Lessons Learned Report (GALL) AMP XI.E5, Fuse Holders.

Additionally, identify those fuse holders that perform an intended function to meet the criteria of 10 CFR 54.4(a) (i.e., isolate safety loads from non-safety loads or are used as protective devices to ensure the integrity of containment electrical penetrations). Where are these fuse holders located?

RAI 4.7-1

The environmental qualification of electrical equipment results described in Section 4.7 indicate that the aging effects of the environmental qualification (EQ) of electrical equipment identified in the Time-Limited Aging Analysis (TLAA) will be managed during the extended period of operation under 10 CFR 54.21(c)(1)(iii). The important attributes of a re-analysis include analytical methods, data collection and reduction methods, underlying assumptions, acceptance criteria and corrective actions. Please discuss how the important attributes for re-analysis of an aging evaluation of electrical equipment identified in the TLAA to extend the qualification under 10 CFR 50.49(e) will be implemented at MNGP (e.g., how the temperature data used in an aging evaluation is collected at MNGP).

RAI B2.1.6-1

The applicant states in AMP B2.1.6, for the Detection of Aging Effects program element, that this program will visually inspect internal portions of bus ducts, the bus insulating system, and bus supports. In addition, a torque test or resistance test of a sample of accessible bolted connections will be performed. However, the staff notes that vendors do not typically recommend re-torquing of bolted connections unless the joint requires service or the bolted connections are clearly loose. The torque required to turn the fastener in the tightening direction (restart torque) is not a good indication of the pre-load once the fastener is in service. Due to relaxation of the parts of the joint, the final loads are likely to be lower than the installed loads. Provide a technical justification detailing how re-torque of bolted connections is a good indicator of the pre-load once the fastener is in service. Please modify the acceptance criteria accordingly. Also, please clarify if there are any bolted connections covered with heat sink tape, sleeving, insulating boots, etc., that are accessible and are not covered by this activity.

RAI B2.1.6-2

With regard to the Corrective Action element for the Bus Duct Inspection Program, it is stated that requirements of 10 CFR 50, Appendix B, Quality Assurance Criteria for Nuclear Power Plants and Fuel Processing Plants, is applicable to MNGP. However, the staff notes that GALL AMP XI.E4, Metal Enclosed Bus, the Corrective Actions element states that further investigation and evaluation are performed when the acceptance criteria are not met. Corrective actions may include but are not limited to cleaning, drying, increased inspection frequency, replacement, or repair of the affected metal enclosed bus components. If an unacceptable condition or situation is identified, a determination is made as to whether the same condition or situation is applicable to other accessible or inaccessible metal enclosed bus. Please revise corrective actions in B2.1.6 to add specific requirements or provide justification why these corrective actions are not necessary.

RAI B3.1-1

In Section B3.1 under the Scope of Program element, it is stated that an equipment master list is maintained at MNGP that has been developed to encompass the requirements of

10 CFR 50.49(b). This master list includes safety-related electrical equipment and non-safety-related equipment whose failure could prevent accomplishment of safety functions. Please identify the non-safety-related electrical equipment that is needed to be qualified to meet the requirements of 10 CFR 50.49.

RAI B3.1-2

In Section B3.1 under the Detection of Aging, Monitoring and Trending, and Parameters Monitored or Inspected elements, it is not clear how, without monitoring or inspection of certain environmental conditions or component parameters, the aging effects of electrical equipment can be managed, to assure that the component is within the bounds of its qualified life, or as a means to modify the qualification. Please justify why the EQ program at MNGP without the above attributes is acceptable for managing the effects of aging.

RAI B3.1-3

In Section B3.1, the Corrective Actions element refers to 10 CFR Part 50, Appendix B. In GALL AMP X.E1, Environmental Qualification of Electrical Components, the Corrective Actions element states that when unexpected adverse conditions are identified during operational or maintenance activities that affect the environment of a qualified component, the affected component is evaluated and appropriate corrective actions are taken, which may include changes to the qualification bases and conclusions. When an emerging industry aging issue that affects the qualification of an EQ component is identified, the affected component is evaluated and appropriate corrective actions are taken, which may include changes to the qualification bases and conclusions. Please revise corrective actions in B2.1.6 to add specific requirements or provide justification why these corrective actions are not necessary.

RAI B2.1.21-1

In AMP B2.1.21, Inaccessible Medium Voltage (2kV to 34.5 kV) Cables Not Subject to 10 CFR 50.49 EQ Requirements, the applicant described under the Preventive Action element that periodic actions are taken to prevent medium voltage cables from being subject to prolonged exposure to significant moisture, such as inspecting for water collection in cable manholes and conduit, and draining water, as needed. The staff requests the applicant to state the inspection frequency and its basis.

In addition, because it is the staff position that inaccessible medium voltage cables be tested and inspected, the staff requests the applicant remove the following line from the Preventive Action element, Medium-voltage cables, for which such actions are taken, are not required to be tested since operating experience indicates that prolonged exposure to significant moisture and being energized for significant periods of time are required to induce this effect.