October 17, 2001

10 CFR Part 50
Section 50.90

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

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

License Amendment Request
Average Planar Linear Heat Generation Rate Reflecting Use of GE14 Fuel

Attached is a request for a change to the Technical Specifications (TS), Appendix A of Operating License DPR-22, for the Monticello Nuclear Generating Plant. Nuclear Management Company, LLC (NMC) is submitting this request pursuant to and in accordance with the provisions of 10 CFR Part 50, Section 50.90 and Section 50.91.

The purpose of this License Amendment Request is to revise Monticello TS 3.11.A.a to update the multiplier values for single loop operation Average Planar Linear Heat Generation Rate (APLHGR). These changes are required because Monticello will no longer be using General Electric (GE)10 fuel and will begin using GE14 fuel after the current cycle. Therefore, the proposed changes reflect deletion of the GE10 single loop operation APLHGR multiplier value, and the addition of a new single loop operation APLHGR multiplier value for the GE14 fuel.

Exhibit A contains a description of the proposed changes, the reason for requesting the changes, a Safety Evaluation, a Determination of No Significant Hazards Consideration, and an Environmental Assessment. Exhibit B contains the current Technical Specification page marked up with the proposed changes. Exhibit C contains the revised Monticello Technical Specification page. Exhibit D is a GE Nuclear Energy document containing information about the proposed change.

The new single loop operation APLHGR multiplier value for GE14 fuel will be effective upon startup from the upcoming Monticello refueling outage, currently scheduled for mid December 2001. This new single loop operation APLHGR multiplier value will be implemented and maintained by administrative controls, pursuant to the guidance of NRC Administrative Letter 98-10, until the NRC has the opportunity to review and approve this license amendment request.

This submittal contains no new NRC commitments, nor does it modify any prior commitments.

The Monticello Operations Committee has reviewed this application. A copy of this submittal, along with the evaluation of No Significant Hazards Consideration, is being forwarded to our appointed state official pursuant to 10 CFR 50.91.

Nuclear Management Company, LLC requests a period of up to 60 days following receipt of this license amendment to implement the changes.

Please contact Mr. Doug Neve, Licensing Project Manager (interim) at 763-295-1353 if you require additional information related to this request.

by _____

Jeffrey S. Forbes
Vice President
Monticello Nuclear Generating Plant

Subscribed to and sworn before me this 17th day of October, 2001

Kathryn I Kleine
Notary

KATHRYN I. KLEINE
NOTARY PUBLIC - MINNESOTA
My Comm. Exp. Jan. 31, 2005

cc: Regional Administrator-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
Minnesota Department of Commerce

Attachments: Exhibit A – Evaluation of Proposed Changes to the Technical Specifications

Exhibit B – Current Technical Specification Page Marked Up with Proposed Changes

Exhibit C – Revised Technical Specification Page

Exhibit D – Letter from GE Nuclear Energy titled, "Monticello Nuclear Plant GE14 New Fuel Introduction SLO MAPLHGR multiplier for GE14 Fuel." August 20, 2001

EXHIBIT A

Evaluation of Proposed Changes to the Technical Specifications

License Amendment Request
Average Planar Linear Heat Generation Rate Reflecting Use of GE14 Fuel

Pursuant to 10 CFR Part 50, Section 50.90 and Section 50.91, Nuclear Management Company, LLC (NMC) hereby proposes the following changes to Appendix A, of facility operating license DPR-22, Technical Specifications and Bases for Monticello Nuclear Generating Plant.

Proposed Changes

Revise Monticello TS 3.11.A.a to update the Average Planar Linear Heat Generation Rate (APLHGR) multiplier values by deleting reference to GE10 fuel, and by adding a new multiplier value of "0.90" for the GE14 fuel.

Reason for Changes

For Cycle 21, all GE10 fuel will be removed from the Monticello core, and the reload will include GE14 fuel for the first time at Monticello. Therefore, the reference to the single loop operation (SLO) APLHGR multiplier value for the GE10 fuel is being deleted, and a new SLO APLHGR multiplier of 0.90 is being added for the GE14 fuel.

Exhibit D provides information from GE Nuclear Energy (GE) supporting this change. In evaluating the Emergency Core Cooling System – Loss Of Coolant Accident (ECCS-LOCA), performance of GE14 fuel for Monticello, the SLO APLHGR multiplier was found to be 0.90 for GE14 fuel. The SLO APLHGR multiplier for the existing GE11 and GE12 fuel remains unchanged at 0.80.

The SLO multiplier value is determined by keeping the SLO LOCA analysis nominal peak cladding temperature (PCT) result under the two-loop LOCA analysis nominal PCT result. This way the SLO LOCA analysis results are bounded by the two-loop case, which is the basis for the licensing PCT. Both GE11 and GE14 fuel types are APLHGR limited at 1600°F. The primary reason the multiplier value for GE14 fuel is different from GE11 and GE12 fuel is that GE14 has the benefit of the latest upper bound PCT calculation improvements, which allows the nominal PCT to go higher. The higher nominal PCT results in a larger SLO APLHGR multiplier for GE14 fuel.

The methodology used to calculate the SLO APLHGR multiplier value for GE14 fuel for Monticello has been reviewed and approved by the NRC. The methodology is described in GE report NEDE-23785-PA Rev. 1, "The GESTR-LOCA and SAFER Models for Evaluation of the Loss-of-Coolant Accident (Volume III), SAFER/GESTR Application Methodology," October 1984. This methodology was approved by the NRC in a Safety

Evaluation Report sent from Cecil O. Thomas (NRC) to J. F. Quirk (GE), "Acceptance for Referencing of Licensing Topical Report NEDE-23785 Revision 1, Volume III (P), 'The GESTR-LOCA and SAFER Models for Evaluation of the Loss-of-Coolant Accident,'" June 1, 1984.

Safety Evaluation

The purpose of the APLHGR limits is to assure that the fuel will not exceed a peak cladding temperature (PCT) of 2200°F during a Loss of Coolant Accident (LOCA), as required by 10 CFR 50.46. Specifying appropriate APLHGR multipliers ensures that a LOCA in SLO will not produce a PCT any greater than the PCT produced by a LOCA in dual loop operation. This change ensures that the appropriate SLO APLHGR multiplier value, required for GE14 fuel, is incorporated into the Monticello TS. No plant hardware or operational changes are required with this proposed change.

Determination of No Significant Hazards Considerations

Nuclear Management Company, LLC (NMC) proposes changes to the Technical Specifications (TS), Appendix A of the Operating License for the Monticello Nuclear Generating Plant. The proposed changes to the TS updates the limiting values for single loop operation (SLO) Average Planar Linear Heat Generation Rate (APLHGR) multipliers. These changes are required because of an upgrade in General Electric (GE) fuel type planned for the Monticello Nuclear Generating Plant during the upcoming refueling outage. The proposed changes reflect deletion of the GE10 fuel APLHGR multiplier, and addition of a new APLHGR multiplier for GE14 fuel. The proposed changes to the Operating License have been evaluated to determine whether they constitute a significant hazards consideration as required by 10 CFR Part 50, Section 50.91 using standards provided in Section 50.92. This analysis is provided below:

1. *The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The proposed APLHGR multipliers, and their use to determine the Cycle 21 thermal limits, have been derived using NRC approved methods and uncertainties. These methods do not change operation of the plant, and have no effect on the probability of an accident initiating event or transient. The purpose of the APLHGR limit is to assure that the fuel will not exceed a peak cladding temperature (PCT) of 2200°F during a Loss of Coolant Accident, as required by 10 CFR 50.46. Specifying appropriate APLHGR multipliers ensures that a LOCA in SLO will not produce a PCT any greater than the PCT produced by a LOCA in dual loop operation. These changes ensure that the appropriate SLO APLHGR multiplier, required for GE14 fuel, is incorporated into the Monticello TS. These changes do not alter the method of operating the plant.

Therefore, the proposed TS changes do not involve an increase in the probability or consequences of an accident previously evaluated.

2. *The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.*

The proposed changes result only from different inputs, including use of GE14 fuel, for the Cycle 21 core reload. These methods and uncertainties have been reviewed and approved by the NRC, and do not involve any new or unapproved methods for operating the facility. No new initiating events or transients result from these changes, and no system relationships are altered.

The single loop operation APLHGR multiplier values are designed to ensure that the PCT resulting from a LOCA while operating in SLO are bounded by the PCT from a LOCA while operating in dual loop operation. This multiplier update results from application of GE Nuclear Energy's (GE's) current standard methodology for this analysis.

Therefore, the proposed TS changes do not create the possibility of a new or different kind of accident, from any accident previously evaluated.

3. *The proposed amendment will not involve a significant reduction in the margin of safety.*

The APLHGR limits are set appropriately below the value where significant fuel damage could occur in a Loss of Coolant Accident (LOCA). Application of new SLO APLHGR multiplier values ensure that SLO LOCA results are bounded by those for dual loop operation and thus maintain or improve the margin of safety for LOCA analyses.

Therefore, the proposed TS changes do not involve a reduction in a margin of safety.

Environmental Assessment

Nuclear Management Company LLC has evaluated the proposed changes and determined that:

1. The changes do not involve a significant hazards consideration.

2. The changes do not involve a significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

3. The changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR Part 51, Section 51.22(c)(9). Therefore, pursuant to 10 CFR Part 51, Section 51.22(b), an environmental assessment of the proposed changes is not required.

Exhibit B

MONTICELLO NUCLEAR GENERATING PLANT

License Amendment Request
Average Planar Linear Heat Generation Rate Reflecting Use of GE14 Fuel

Current Technical Specification Pages Marked Up with Proposed Changes

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3.0 LIMITING CONDITIONS FOR OPERATION

3.11 REACTOR FUEL ASSEMBLIES

Applicability :

The Limiting Conditions for Operation associated with the fuel rods apply to those parameters which monitor the fuel rod operating conditions.

Objective :

The objective of the Limiting Conditions for Operation is to assure the performance of the fuel rods.

Specifications :

A. Average Planar Linear Heat Generation Rate (APLHGR)

During two recirculation loop power operation, the APLHGR for each type of fuel as a function of average planar exposure shall not exceed the applicable limiting values specified in the Core Operating Limits Report. When hand calculations are required, the APLHGR for each type of fuel as a function of average planar exposure shall not exceed the limiting value for the most limiting lattice (excluding natural uranium) provided in the Core Operating Limits Report.

During one recirculation loop power operation, the APLHGR limiting condition for operation for each type of fuel shall not exceed the most limiting of:

a. The above values multiplied by ~~0.78 for GE10 fuel and~~ 0.80 for GE11 and GE12 fuel **and 0.90 for GE14 fuel**, or

b. The above values multiplied by the appropriate flow and power dependent correction factors provided in the Core Operating Limits Report.

4.0 SURVEILLANCE REQUIREMENTS

4.11 REACTOR FUEL ASSEMBLIES

Applicability :

The Surveillance Requirements apply to the parameters which monitor the fuel rod operating conditions.

Objective :

The objective of the Surveillance Requirements is to specify the type and frequency of surveillance to be applied to the fuel rods.

Specifications :

A. Average Planar Linear Heat Generation Rate (APLHGR)

The APLHGR for each type of fuel as a function of average planar exposure shall be determined daily during reactor operation at $\geq$ 25% rated thermal power.

Exhibit C

MONTICELLO NUCLEAR GENERATING PLANT

License Amendment Request
Average Planar Linear Heat Generation Rate Reflecting Use of GE14 Fuel

Revised Technical Specification Pages

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211

3.0 LIMITING CONDITIONS FOR OPERATION

3.11 REACTOR FUEL ASSEMBLIES

Applicability:

The Limiting Conditions for Operation associated with the fuel rods apply to those parameters which monitor the fuel rod operating conditions.

Objective:

The objective of the Limiting Conditions for Operation is to assure the performance of the fuel rods.

Specifications:

A. Average Planar Linear Heat Generation Rate (APLHGR)

During two recirculation loop power operation, the APLHGR for each type of fuel as a function of average planar exposure shall not exceed the applicable limiting values specified in the Core Operating Limits Report. When hand calculations are required, the APLHGR for each type of fuel as a function of average planar exposure shall not exceed the limiting value for the most limiting lattice (excluding natural uranium) provided in the Core Operating Limits Report.

During one recirculation loop power operation, the APLHGR limiting condition for operation for each type of fuel shall not exceed the most limiting of:

a. The above values multiplied by 0.80 for GE11 and GE12 fuel and 0.90 for GE14 fuel, or

b. The above values multiplied by the appropriate flow and power dependent correction factors provided in the Core Operating Limits Report.

4.0 SURVEILLANCE REQUIREMENTS

4.11 REACTOR FUEL ASSEMBLIES

Applicability:

The Surveillance Requirements apply to the parameters which monitor the fuel rod operating conditions.

Objective:

The objective of the Surveillance Requirements is to specify the type and frequency of surveillance to be applied to the fuel rods.

Specifications:

A. Average Planar Linear Heat Generation Rate (APLHGR)

The APLHGR for each type of fuel as a function of average planar exposure shall be determined daily during reactor operation at $\geq$25% rated thermal power.

MONTICELLO NUCLEAR GENERATING PLANT

License Amendment Request
Average Planar Linear Heat Generation Rate Reflecting Use of GE14 Fuel

GE Nuclear Energy letter dated August 20, 2001
Titled:

"Monticello Nuclear Plant GE14 New Fuel Introduction
SLO MAPLHGR multiplier for GE14 Fuel"

Note: In GE's letter they use the term MAPLHGR, which means "Maximum APLHGR". For the present purpose of establishing APLHGR limits, "APLHGR" and "MAPLHGR" may be used interchangeably.

g

GE Nuclear Energy

Technical Projects
175 Curtner Avenue, M/C 782, San Jose, CA 95125-1088

August 20, 2001

Richard Rohrer
Nuclear Management Company
Monticello Nuclear Generating Plant
2807 West Highway 75
Monticello, MN 55362-0637

cc: **NSP**

SUBJECT: Monticello Nuclear Plant
GE14 New Fuel Introduction
SLO MAPLHGR multiplier for GE14 Fuel

GE
Frank Paradiso
Stephan Moen

Dear Mr. Rohrer,

GE Nuclear Energy (GE) is pleased to provide the requested information for the SLO MAPLHGR multiplier for GE14 new fuel introduction at Monticello Nuclear Generating Station. The multiplier has been verified as part of the LOCA analysis performed by ENUSA for the GE14 project under DRF J11-03878-09. The SLO MAPLHGR multiplier for GE14 is 0.90 from the verified ECCS-LOCA analysis reload report for Monticello Cycle 21 currently under review by GNF. The SLO MAPLHGR multiplier for GE11 and GE12 are 0.80.

The SLO multiplier is determined by keeping the SLO LOCA analysis nominal PCT result under the two-loop LOCA analysis nominal PCT result. In this way the SLO LOCA analysis results are bounded by the two-loop case, which is the basis for the licensing PCT. Both GE11 and GE14 are MAPLHGR limited at 1600F. The difference is that GE14 has the benefit of the latest upper bound PCT calculation improvements, which lets the nominal PCT go up higher. The higher nominal PCT results in a larger SLO MAPLHGR multiplier for GE14.

The SAFER LTR and NRC SER[1] are silent on the SLO methodology. We performed a review of the SLO methodology with the NRC during Duane Arnold EPU review in Wilmington

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earlier this year. Tony Browning of DAEC received the documentation and status of the NRC RAI.

If you have any questions or wish to discuss this assessment in greater detail, please call GE at your convenience.

Sincerely,

Gon E. Maxwell
Technical Projects Manager
(408) 925-5220
gon.Maxwell@gene.ge.com

[1] LTR:
NEDE-23785-1-PA Rev. 1, "The GESTR-LOCA and SAFER Models for Evaluation of the Loss-of-Coolant Accident (Volume III), SAFER/GESTR Application Methodology," October 1984.

SER:
Cecil O. Thomas (NRC) to J.F. Quirk (GE), "Acceptance for Referencing of Licensing Topical Report NEDE-23785 Revision 1, Volume III (P), 'The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident,'" June 1, 1988.