



October 10, 2001

10 CFR Part 2  
Section 2.790

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

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

Response to NRC Request For Additional Information  
Regarding Request to Withhold Information from Public Disclosure

Reference 1: Nuclear Management Company, LLC letter, "License Amendment Request for Monticello Cycle 21 Safety Limit Minimum Critical Power Ratio," dated August 30, 2001

Reference 2: Nuclear Regulatory Commission letter, " Monticello Nuclear Generating Plant – Request For Additional Information Regarding Request To Withhold Information From Public Disclosure (TAC No. MB2855), " dated September 27, 2001

By letter dated August 30, 2001, Nuclear Management company, LLC (NMC) provided the NRC with a request for a "License Amendment Request for Monticello Safety Limit Minimum Critical Power Ratio," (Reference 1). By letter dated September 27, 2001, the NRC provided NMC with a letter "Monticello Nuclear Generating Plant – Request for Additional Information Regarding Request to Withhold Information from Public Disclosure," (Reference 2).

This letter provides NMC's response to Reference 2. Reference 2 determined that our previously submitted affidavit did not conform with the requirements of 10 CFR 2.790 in that it failed to address, with sufficient specificity, the considerations of paragraph (b)(4). To resolve the concerns in Reference 2, this response provides a replacement for the original Exhibit D that was submitted with the license amendment request in Reference 1 with a new revised Exhibit D attached to this letter. Also, NMC hereby request, pursuant to 10 CFR 2.790(c), that the original Exhibit D submitted in Reference 1 be returned to the Monticello Nuclear Generating Plant.

The attached revised Exhibit D contains several Global Nuclear Fuels documents which contain information about the proposed change.

AP01

Exhibit D-1 contains a new Affidavit for Additional Information Regarding the Cycle Specific Safety Limit Minimum Critical Power Ratio (SLMCPR) for Monticello Cycle 21.

Exhibit D-2 contains the revised Proprietary Version of Additional Information Regarding the Cycle Specific SLMCPR for Monticello Cycle 21.

Exhibit D-3 contains the revised Non-Proprietary Version of Additional Information Regarding the Cycle Specific SLMCPR for Monticello Cycle 21.

This response does not have any impact on the No Significant Hazards Consideration or Environmental Assessment submitted by the original letter dated August 30, 2001. Therefore, it is still applicable including the revision provided by this letter.

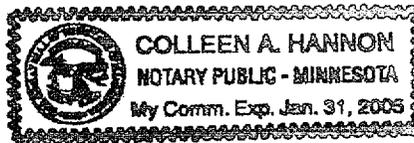
Please contact Mr. Doug Neve, Licensing Project Manager (interim) at 763-295-1353 if you require additional information related to this submittal.

by   
Jeffrey S. Forbes  
Vice President  
Monticello Nuclear Generating Plant

Subscribed to and sworn before me this 10<sup>th</sup> day of October, 2001

  
Notary

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



Attachments: Exhibit D-1: Affidavit for Additional Information Regarding the Cycle Specific Safety Limit Minimum Critical Power Ratio (SLMCPR) for Monticello Cycle 21.

Exhibit D-2: Proprietary Version of Additional Information Regarding the Cycle Specific SLMCPR for Monticello Cycle 21.

Exhibit D-3: Non-Proprietary Version of Additional Information Regarding the Cycle Specific SLMCPR for Monticello Cycle 21.

MONTICELLO NUCLEAR GENERATING PLANT

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# **Affidavit**

(three pages attached)



**Affidavit**

**I, Glen A. Watford**, being duly sworn, depose and state as follows:

- (1) I am Manager, Fuel Engineering Services, Global Nuclear Fuel – Americas, L.L.C. (“GNF-A”) and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in the attachment, “Additional Information Regarding the Cycle Specific SLMCPR for Monticello Cycle 21,” October 2, 2001.
- (3) In making this application for withholding of proprietary information of which it is the owner or licensee, GNF-A relies upon the exemption from disclosure set forth in the Freedom of Information Act (“FOIA”), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4) and 2.790(a)(4) for “trade secrets and commercial or financial information obtained from a person and privileged or confidential” (Exemption 4). The material for which exemption from disclosure is here sought is all “confidential commercial information,” and some portions also qualify under the narrower definition of “trade secret,” within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
  - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GNF-A’s competitors without license from GNF-A constitutes a competitive economic advantage over other companies;
  - b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
  - c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of GNF-A, its customers, or its suppliers;
  - d. Information which reveals aspects of past, present, or future GNF-A customer-funded development plans and programs, of potential commercial value to GNF-A;
  - e. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b., above.

- (5) The information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GNF-A, and is in fact so held. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in (6) and (7) following. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GNF-A, no public disclosure

has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.

- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or subject to the terms under which it was licensed to GNF-A. Access to such documents within GNF-A is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GNF-A are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2) is classified as proprietary because it contains details of GNF-A's fuel design and licensing methodology.

The development of the methods used in these analyses, along with the testing, development and approval of the supporting methodology was achieved at a significant cost, on the order of several million dollars, to GNF-A or its licensor.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GNF-A's competitive position and foreclose or reduce the availability of profit-making opportunities. The fuel design and licensing methodology is part of GNF-A's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical, and NRC review costs comprise a substantial investment of time and money by GNF-A or its licensor.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GNF-A's competitive advantage will be lost if its competitors are able to use the results of the GNF-A experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GNF-A would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GNF-A of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

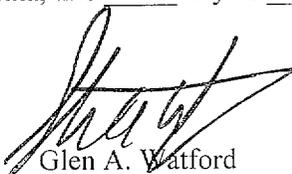
Affidavit

State of North Carolina )  
County of New Hanover ) SS:

Glen A. Watford, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Wilmington, North Carolina, this 4<sup>th</sup> day of October, 2001



Glen A. Watford  
Global Nuclear Fuel – Americas, LLC

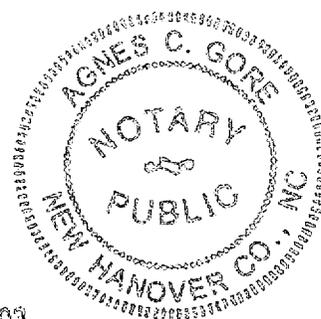
Subscribed and sworn before me this 4 day of October, 2001



Notary Public, State of North Carolina

Commission Expires October 13, 2003

My Commission Expires \_\_\_\_\_



MONTICELLO NUCLEAR GENERATING PLANT

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Regarding Request to Withhold Information from Public Disclosure

# **Non-Proprietary Version**

**“Additional Information Regarding the  
Cycle Specific SLMCPR for Monticello Cycle 21”**

(Five pages attached)

**References**

- [1] Letter, Frank Akstulewicz (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, *Methodology and Uncertainties for Safety Limit MCPR Evaluations*; NEDC-32694P, *Power Distribution Uncertainties for Safety Limit MCPR Evaluation*; and Amendment 25 to NEDE-24011-P-A on Cycle Specific Safety Limit MCPR," (TAC Nos. M97490, M99069 and M97491), March 11, 1999.
- [2] Letter, Thomas H. Essig (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Report NEDC-32505P, Revision 1, *R-Factor Calculation Method for GE11, GE12 and GE13 Fuel*," (TAC No. M99070 and M95081), January 11, 1999.
- [3] *General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application*, NEDO-10958-A, January 1977.
- [4] Letter, Glen A. Watford (GNF-A) to U. S. Nuclear Regulatory Commission Document Control Desk with attention to R. Pulsifer (NRC), "Confirmation of 10x10 Fuel Design Applicability to Improved SLMCPR, Power Distribution and R-Factor Methodologies", FLN-2001-016, September 14, 2001.
- [5] Letter, Glen A. Watford (GNF-A) to U. S. Nuclear Regulatory Commission Document Control Desk with attention to J. Donoghue (NRC), "Confirmation of Applicability of the GEXL14 Correlation and Associated R-Factor Methodology for Calculating SLMCPR Values in Cores Containing GE14 Fuel", FLN-2001-017, October 1, 2001.

**Comparison of Monticello CYCLE 21 SLMCPR Value**

Table 1 summarizes the relevant input parameters and results of the SLMCPR determination for the Monticello Cycle 21 and 20 cores. The SLMCPR evaluations were performed using NRC approved methods and uncertainties<sup>[1]</sup>. These evaluations yield different calculated SLMCPR values because different inputs were used. The quantities that have been shown to have some impact on the determination of the safety limit MCPR (SLMCPR) are provided.

In comparing the Monticello Cycle 21 and Cycle 20 SLMCPR values it is important to note the impact of the differences in the core and bundle designs. These differences are summarized in Table 1.

In general, the calculated safety limit is dominated by two key parameters: (1) flatness of the core bundle-by-bundle MCPR distributions and (2) flatness of the bundle pin-by-pin power/R-factor distributions. Greater flatness in either parameter yields more rods susceptible to boiling transition and thus a higher calculated SLMCPR.

[[[]]]the Cycle 21 core MCPR distribution is flatter than the distribution evaluated for Cycle 20.

The uncontrolled bundle pin-by-pin power distributions were compared between the Monticello Cycle 21 bundles and the Cycle 20 bundles. Pin-by-pin power distributions are characterized in terms of R-factors using the NRC approved methodology<sup>[2]</sup>. For the Monticello Cycle 21 limiting case analyzed at MOC, [[[]]] the Monticello Cycle 20 bundles are flatter than the bundles used for the Cycle 21 SLMCPR analysis.

**Summary**

[[ ]] have been used to compare quantities that impact the calculated SLMCPR value. Based on these comparisons, the conclusion is reached that the Monticello Cycle 21 core/cycle has a flatter core MCPR distribution [[ ]] than what was used to perform the Cycle 20 SLMCPR evaluation; and the Monticello Cycle 20 core/cycle has a flatter in-bundle power distributions [[ ]] than what was used to perform the Cycle 21 SLMCPR evaluation.

The calculated 1.10 Monte Carlo SLMCPR for Monticello Cycle 21 is consistent with what one would expect [[ ]] the 1.10 SLMCPR value is appropriate.

Based on all of the facts, observations and arguments presented above, it is concluded that the calculated SLMCPR value of 1.10 for the Monticello Cycle 21 core is appropriate. It is reasonable that this value is smaller than the 1.11 value calculated for the previous cycle.

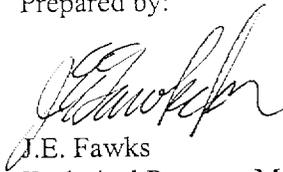
For single loop operations (SLO) the calculated safety limit MCPR for the limiting case is 1.12 as determined by specific calculations for Monticello Cycle 21.

**Supporting Information**

The following information is provided in response to NRC questions on similar submittals regarding changes in Technical Specification values of SLMCPR. NRC questions pertaining to how GE14 applications satisfy the conditions of the NRC SER<sup>(1)</sup> have been addressed in Reference [4]. Other generically applicable questions related to application of the GEXL14 correlation and the applicable range for the R-factor methodology are addressed in Reference [5]. Only those items that require a plant/cycle specific response are presented below since all the others are contained in the references that have already been provided to the NRC.

The core loading information for Monticello Cycles 20 and 21 is provided in Figures 1 and 2, respectively. The impact of the fuel loading pattern differences on the calculated SLMCPR is correlated to the values of [[ ]] The power and non-power distribution uncertainties that are used in the analyses are indicated in Table 1.

Prepared by:



J.E. Fawks  
Technical Program Manager  
Monticello Project

Verified by:



E.W. Gibbs  
Technical Program Manager

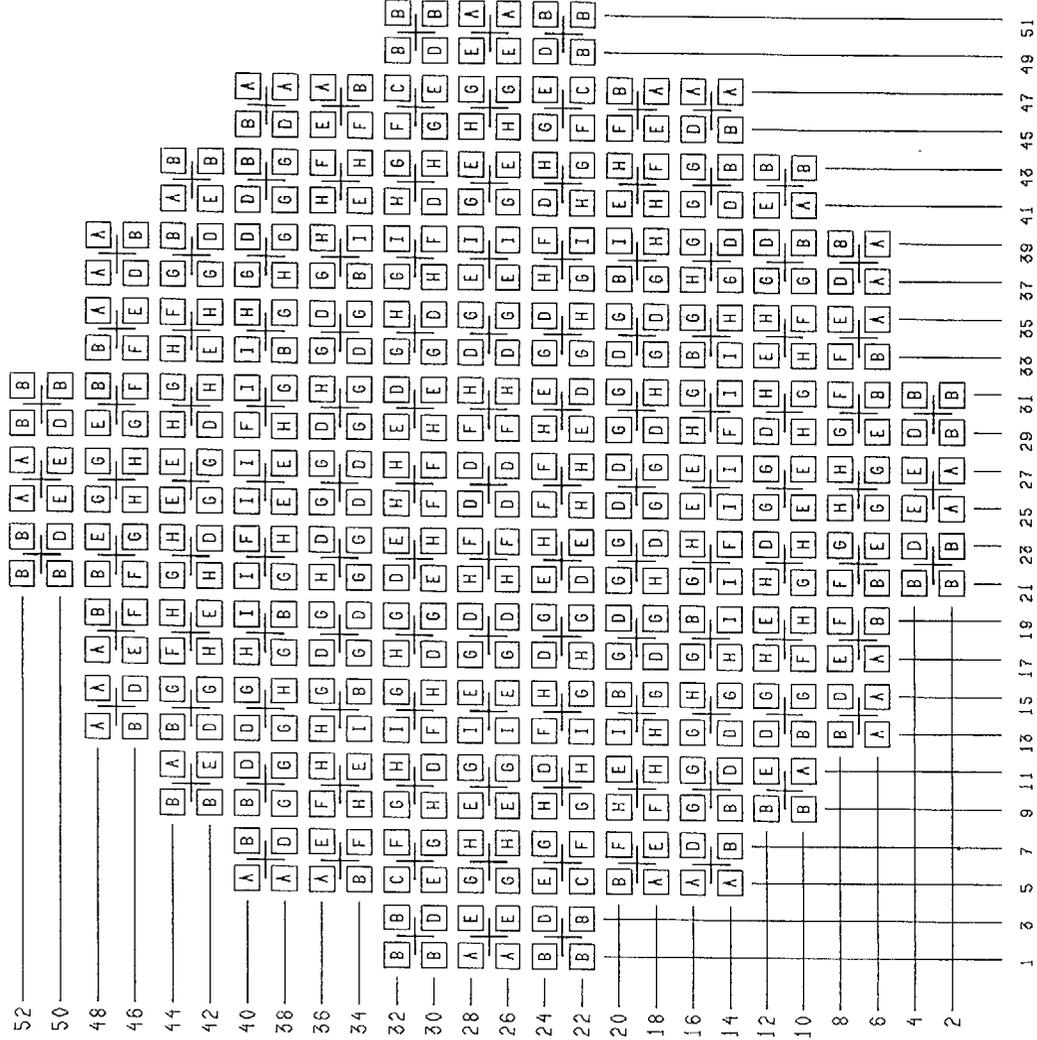
Table 1

## Comparison of the Monticello Cycle 21 and Cycle 20 SLMCPR

QUANTITY, DESCRIPTION	Monticello Cycle 20	Monticello Cycle 21
Number of Bundles in Core	484	484
Limiting Cycle Exposure Point	EOC	MOC
Cycle Exposure at Limiting Point [MWd/STU]	10790	4813
Reload Fuel Type	GE11	GE14
Latest Reload Batch Fraction [%]	29.8%	21.5%
Latest Reload Average Batch Weight % Enrichment	3.80%	3.91%
Batch Fraction for GE14	0.0%	21.5%
Batch Fraction for GE12	0.8%	0.8%
Batch Fraction for GE11	85.1%	77.7%
Batch Fraction for GE10	14.0%	0.0%
Core Average Weight % Enrichment	3.59%	3.71%
Core MCPR (for limiting rod pattern)	1.49	1.56
[[		]]
[[		]]
Power distribution uncertainty	GETAB NEDO-10958-A	GETAB NEDO-10958-A
Non-power distribution uncertainty	Revised NEDC-32694P-A	Revised NEDC-32694P-A
<b>Calculated Safety Limit MCPR</b>	<b>1.11</b>	<b>1.10</b>



Figure 2 Reference Core Loading Pattern – Cycle 21



FUEL TYPE	
A =	6E11-P9DUB347-106Z-100T-141-T
B =	6E11-P9DUB348-106Z-100T-141-T
C =	6E12-P10DSB330-126Z-100T-145-T
D =	6E11-P9DUB366-166Z-100T-141-T
E =	6E11-P9DUB366-176Z-100T-141-T
F =	6E11-P9DUB380-176Z-100T-141-T
G =	6E11-P9DUB380-166Z-100T-141-T
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I =	6E14-P10DNAB391-146Z-100T-145-T-2428