



~~WITHHOLD ENCLOSURE 1 FROM PUBLIC DISCLOSURE  
UNDER 10 CFR 2.390 and 9.17~~

October 1, 2009

L-MT-09-088  
10 CFR 50.90

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

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

Monticello Extended Power Uprate: Revision to Clarify Text in Enclosures 5 and 7 of  
L-MT-08-052 (TAC MD9990)

Reference: NSPM letter to NRC, License Amendment Request: Extended Power Uprate  
(L-MT-08-052) dated November 5, 2008, (TAC MD9990)  
Accession No. ML083230111

Pursuant to 10 CFR 50.90, the Northern States Power Company, a Minnesota corporation (NSPM), requested in the reference an amendment to the Monticello Nuclear Generating Plant (MNGP) Renewed Operating License (OL) and Technical Specifications to increase the maximum authorized power level from 1775 megawatts thermal (MWt) to 2004 MWt.

While performing an extent of condition review associated with another EPU license amendment request, General Electric Hitachi (GEH) discovered that NEDC-33322P, Rev. 3 and NEDC-33322, Rev. 3 (Proprietary and Non-Proprietary PUSAR), which are Enclosures 5 and 7 of the reference, contained the same text inconsistency. The text inconsistency was associated with the change in Rod Worth Minimizer (RWM) Low Power Setpoint (LPSP) from current license thermal power (CLTP) to EPU.

PUSAR Sections 2.4.1.1 and 2.4.1.3 correctly summarize the RWM LPSP in the Technical Specifications. The sections are consistent with PUSAR Table 2.4-1, "Analytical Limits and Allowable Values for Setpoints" on page 2-104. There are, however, two sections in the PUSAR that are inconsistent with the above sections. The summary of the RWM LPSP contained in PUSAR Sections 2.8.5.4.1 and 2.8.5.4.4 is not consistent with that contained in PUSAR Sections 2.4.1.1 and 2.4.1.3 for NEDC-33322P and NEDC-33322.

The source of the inconsistency was determined to be an incorrect transcription between the PUSAR's source document and the RWM summary in PUSAR Sections 2.8.5.4.1 and 2.8.5.4.4. GEH has provided corrected pages for NEDC-33322P and NEDC-33322 for PUSAR Sections 2.8.5.4.1 and 2.8.5.4.4.

Monticello Nuclear Generating Plant  
2807 West County Road 75 • Monticello MN 55362

A001  
NRK

Corrections to PUSAR Sections 2.8.5.4.1 and 2.8.5.4.4 for NEDC-33322P and NEDC-33322 are presented as errata changes and are contained in Enclosures 1 and 2 of this letter. The text changes do not impact the conclusions in the PUSAR.

Enclosure 1 contains the proprietary version of the corrected pages. GEH requests this proprietary information to be withheld from public disclosure in accordance with 10 CFR 2.390(a) 4 and 9.17(A) 4. Enclosure 2 contains the non-proprietary version of Enclosure 1. An affidavit supporting this request is provided in Enclosure 3.

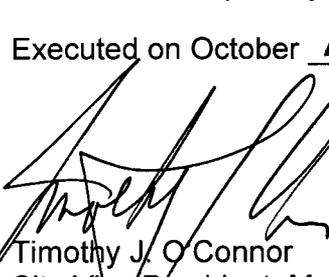
In accordance with 10 CFR 50.91, a copy of this letter is being provided to the designated Minnesota Official without the proprietary version.

Summary of Commitments

This letter makes no new commitments and does not revise any existing commitments.

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

Executed on October 1, 2009.



Timothy J. O'Connor  
Site Vice President, Monticello Nuclear Generating Plant  
Northern States Power Company - Minnesota

Enclosure

cc: Administrator, Region III, USNRC  
Project Manager, Monticello, USNRC  
Resident Inspector, Monticello, USNRC  
Minnesota Department of Commerce

**ENCLOSURE 2**

**NEDC-33322, Rev. 3 : SAFETY ANALYSIS REPORT  
FOR MONTICELLO CONSTANT PRESSURE POWER UPRATE**

**CLARIFICATION OF RWM LPSP FROM CLTP TO EPU FOR PUSAR  
SECTIONS 2.8.5.4.1 and 2.8.5.4.4**

**Non - Proprietary**

group of criteria. Following a restatement of each of the proposed criteria is a list of references to locations in the Monticello USAR where there is subject matter relating to the intent of that particular criteria.

While Monticello is not generally licensed to the current GDC or the 1967 AEC proposed General Design Criteria, a comparison of the current GDC to the applicable AEC proposed General Design Criteria can usually be made. For the current GDC listed in the Regulatory Evaluation above, the Monticello comparative evaluation of the comparable 1967 AEC proposed General Design Criteria (referred to here as “draft GDC”) is contained in Monticello USAR Appendix E: draft GDC-6, draft GDC-14, draft GDC-15, and draft GDC-31. Current GDC-10, current GDC-20, and current GDC-25 are applicable to Monticello as described in USAR Section 14.4.

The analysis of a rod withdrawal error transient is described in Monticello USAR Section 14.4.3, “Rod Withdrawal Error.”

### **Technical Evaluation**

The evaluation of the Uncontrolled Control Rod Assembly Withdrawal from a Subcritical or Low Power Startup Conditions event for Monticello is a comparison of the expected maximum increase in peak fuel enthalpy for a 20% EPU with the acceptance criterion of 170 cal/gram. The CLTP RWE analysis for Monticello is based on Reference 30. The Monticello EPU core consists only of GEH fuel assemblies and the EPU is limited to 120% of OLTP. There is also no change to the Monticello reactor manual control system or control rod hydraulic control units for EPU. [[

]] No change in peak fuel enthalpy is expected due to EPU because an RWE is a localized low-power event. If the peak fuel rod enthalpy is conservatively increased by a factor of 1.2, the RWE peak fuel enthalpy at EPU will be 72 cal/gram. This enthalpy is well below the acceptance criterion of 170 cal/gram.

### **Conclusion**

NSPM has evaluated the uncontrolled control rod assembly withdrawal from a subcritical or low power startup condition and accounted for the core design changes necessary for operation of the plant at the proposed power level. NSPM has completed a generic assessment and found Monticello is consistent with the approach described in the CLTR. NSPM will perform plant specific reload analyses to confirm that fuel design limits and RCPB pressure limits will not be exceeded under EPU conditions. Based on this, the plant will continue to meet the requirements of the current licensing basis following implementation of the proposed EPU. Therefore, the proposed EPU is acceptable with respect to an uncontrolled control rod assembly withdrawal from a subcritical or low power startup condition event.

explicitly licensed to the AEC proposed General Design Criteria published in 1967, Northern States Power Company (NSP), the predecessor to NSPM, performed a comparative evaluation of the design basis of the Monticello, Unit 1, with the AEC proposed General Design Criteria of 1967. The Monticello USAR, Appendix E, “Plant Comparative Evaluation with the Proposed AEC 70 Design Criteria,” contains this comparative evaluation. USAR Appendix E provides a comparative evaluation with each of the groups of criteria sent out in the July 1967 AEC release. As to each group of criteria, there is a statement of NSP’s understanding of the intent of the criteria in that group and a discussion of the plant design conformance with the intent of the group of criteria. Following a restatement of each of the proposed criteria is a list of references to locations in the Monticello USAR where there is subject matter relating to the intent of that particular criteria.

While Monticello is not generally licensed to the current GDC or the 1967 AEC proposed General Design Criteria, a comparison of the current GDC to the applicable AEC proposed General Design Criteria can usually be made. For the current GDC listed in the Regulatory Evaluation above, the Monticello comparative evaluation of the comparable 1967 AEC proposed General Design Criteria (referred to here as “draft GDC”) is contained in Monticello USAR Appendix E: draft GDC-32.

The analysis of a control rod drop accident is described in Monticello USAR Section 14.7.1, “Control Rod Drop Accident Evaluation.”

#### **Technical Evaluation**

The spectrum of CRDAs does not change with EPU. The evaluation of a CRDA for the Monticello EPU is a comparison of the expected maximum increase in peak fuel enthalpy with 20% EPU with the acceptance criterion of 280 cal/gram. The CLTP CRDA for Monticello is based on Reference 30. The Monticello EPU core consists only of GEH fuel assemblies and the EPU is limited to 120% of OLTP. Control Rod Sequencing at Monticello for CLTP and EPU follows the BPWS. There is also no change to the Monticello reactor manual control system or control rod hydraulic control units for EPU. [[

]] No change in peak fuel enthalpy is expected due to EPU because EPU by itself, does not increase peak fuel enthalpy for this localized low-power event. However, indirectly, EPU fuel and core designs can lead to higher rod worth and therefore higher peak fuel enthalpy at low power. If the peak fuel rod enthalpy is conservatively increased by a factor of 1.2, the CRDA peak fuel enthalpy at EPU will be 162 cal/gram. This enthalpy is well below the acceptance criterion of 280 cal/gram.

#### **Conclusion**

NSPM has evaluated the CRDA and accounted for operation of the plant at the proposed power level. NSPM has found Monticello is consistent with the approach described in the CLTR. NSPM will perform plant specific reload analyses to confirm that fuel design limits and RCPB pressure limits will not be exceeded under EPU conditions. Based on this, the plant will

**ENCLOSURE 3**

**GEH Affidavit**

**(3 Pages Follow)**

## GE-Hitachi Nuclear Energy Americas LLC

### AFFIDAVIT

I, **Edward D. Schrull, PE**, state as follows:

- (1) I am Vice President, Regulatory Affairs, Services Licensing, GE-Hitachi Nuclear Energy Americas LLC (“GEH”), 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 Attachment 1 of GEH’s letter, GE-MNGP-AEP-1461, Ted Draffen, GEH, to Al Williams, Northern States Power – Minnesota (“NSPM”), entitled *Phase 2 Monticello EPU/LCM Project, Clarification of RWM LPSP from CLTP to EPU*, dated September 16, 2009. The GEH proprietary information contained in Attachment 1, which is entitled “Clarifications to Monticello PUSAR, Revision 3, Sections 2.8.5.4.1 and 2.8.5.4.4,” is identified by a dark red dotted underline inside double square brackets [[This sentence is an example.<sup>(3)</sup>]]. In each case, the superscript notation <sup>(3)</sup> refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.
- (3) In making this application for withholding of proprietary information of which it is the owner or licensee, GEH 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 2.390(a)(4) for “trade secrets” (Exemption 4). The material for which exemption from disclosure is here sought 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 GEH's competitors without license from GEH 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 aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;
  - d. 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) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GEH, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, 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. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (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 GEH. Access to such documents within GEH 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 for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH 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) above is classified as proprietary because it contains detailed results and conclusions regarding supporting evaluations of the safety significant changes necessary to demonstrate the regulatory acceptability of the "Safety Analysis Report for Monticello Constant Pressure Power Uprate" (NEDC-33322P) for a GEH Boiling Water Reactor ("BWR"). The analysis utilized analytical models and methods, including computer codes, which GEH has developed, obtained NRC approval of, and applied to perform evaluations for a Constant Pressure Power Uprate analysis of a GEH BWR.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GEH asset.

- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GEH'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 GEH.

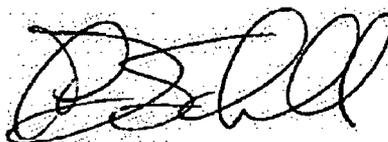
The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH 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 GEH 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 GEH 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.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 16th day of September 2009.



Edward D. Schrull, PE  
Vice President, Regulatory Affairs  
Services Licensing  
GE-Hitachi Nuclear Energy Americas LLC