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UNDER 10 CFR 2.390 and 9.17

April 22, 2009

L-MT-09-025
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: Response to NRC Reactor Systems Branch and Nuclear Performance & Code Review Branch Request for Additional Information (RAI) dated February 23, 2009 (TAC No. MD9990)

References: 1. NSPM letter to NRC, License Amendment Request: Extended Power Uprate (L-MT-08-052) dated November 5, 2008 (TAC No. MD9990) Accession No. ML083230111

2. Email P. Tam (NRC) to G. Salamon, K. Pointer (NSPM) dated February 23, 2009, Monticello - Second portion of draft RAI on reactor systems for proposed EPU amendment (TAC MD9990)

Pursuant to 10 CFR 50.90, the Northern States Power Company, a Minnesota corporation (NSPM), requested in Reference 1 an amendment to the Monticello Nuclear Generating Plant (MNGP) Renewed Operating License (OL) and Technical Specifications (TS) to increase the maximum authorized power level from 1775 megawatts thermal (MWt) to 2004 MWt.

The U. S. Nuclear Regulatory Commission (NRC) Reactor Systems Branch initially provided six RAIs as described in Reference 2. RAI 2.8.5.6-6 was withdrawn during a subsequent conference call on March 11, 2009. Enclosure 1 provides the non-proprietary version of the NSPM response. The proprietary version of the NSPM response is provided as Enclosure 3. This enclosure contains information which is proprietary to GE Hitachi (GEH). GEH requests this proprietary information be withheld from public disclosure in accordance with 10 CFR 2.390(a)4 and 9.17(a)4. An affidavit supporting this request is provided in Enclosure 2.

GEH, as the owner of the proprietary information, has executed the enclosed affidavit, which identifies that the enclosed proprietary information has been handled and classified as proprietary, is customarily held in confidence, and has been withheld from public disclosure.

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

Summary of Commitments

There are no new commitments contained in this letter and no existing commitments revised by this letter.

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

Executed on April 22, 2009.

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

Enclosures (3)

cc: Administrator, Region III, USNRC
Project Manager, Monticello, USNRC
Resident Inspector, Monticello, USNRC
Minnesota Department of Commerce (w/o proprietary Enclosure 3)

ENCLOSURE 1

NSPM RESPONSE TO REACTOR SYSTEMS BRANCH RAIs
DATED FEBRUARY 23, 2009

(Non-Proprietary)

NRC RAI 2.8.5.6-1

As published in Rev. 24 of the MNGP FSAR, the Licensing Basis PCT for the large-break LOCA evaluation is 1975F. The PUSAR states, on Page 2-294, [[ ]] While this conclusion may be true, it suggests that analytic model changes have been made that affect the LBPCT separate from the plant changes necessary to implement the requested uprate. Please compare all differences in the LOCA model considering (1) the current licensing basis, (2) the CLTP case evaluated and described in the PUSAR, and (3) the EPU case evaluated in the PUSAR. Please provide the comparison in tabular format.

NSPM Response

Table 2.8.5.6-1 provides the key differences in the LOCA model when comparing (1) the current licensing basis, (2) the CLTP case evaluated in the PUSAR, and (3) the EPU case evaluated in the PUSAR. (Note, the cases listed in Table 2.8.5.6-1 reflected the limiting Appendix K cases).

Table 2.8.5.6-1

Parameter	Current Licensing Basis*	CLTP Case Evaluated in the PUSAR	EPU Case Evaluated in the PUSAR
Nominal Thermal Power (MWt)	1775	1775	2004
[[			

Parameter	Current Licensing Basis*	CLTP Case Evaluated in the PUSAR	EPU Case Evaluated in the PUSAR
			]]
Licensing Basis PCT (°F)	< 1970** (< 1990, Ref. 2)	< 2140	< 2140

* Taken from Reference 1 unless notes in parenthesis.

** Shown is the LBPCT from the current DBA analysis basis (Ref. 1). The PCT of 1975°F referred in the RAI text accounts for changes in PCT annotated in 10CFR50.46 annual report (Ref. 3).

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References

2.8.5.6-1-1. GE-NE-J1103878-09-02P, *Monticello ECCS-LOCA Evaluation for GE14*, August 2001.

2.8.5.6-1-2. GE-NE-0000-0052-3113-P-R0, *Monticello Nuclear Generating Plant SAFER/GESTR ECCS-LOCA Analysis – LPCI Loop Selection Detectable Break Area*, September 2006.

2.8.5.6-1-3. *2006 Report of Changes and Errors in ECCS Evaluation Models*, December 30, 2006.

2.8.5.6-1-4. *General Electric BWR Licensing Report: Average Power Range Monitor, Rod Block Monitor and Technical Specification Improvement (ARTS) Program for Monticello Nuclear Generating Plant*, NEDC-30492-P, April 1984.

NRC RAI 2.8.5.6-2

The generic disposition for EPU LOCA relies on the fact that the break spectrum response is determined by the ECCS network design and is common to all BWRs. However, a license amendment request currently under staff review for MNGP provides LOCA analysis results that challenge this assertion. Licensing basis PCTs in the concurrent request are higher for different break sizes and locations than for the break size and location set forth in the generic disposition. In light of this information, please justify the generic disposition, accounting for the changes requested in the concurrent license amendment request and how they impact the break spectrum response, and how those changes are affected by EPU implementation.

NSPM Response

The change for minimum detectable break area of LPCI Loop Select (Ref. 2.8.5.6-2-2) was recently approved by the NRC for MNGP.

The EPU new analysis was performed based on the changes described in Table 2.8.5.6-1. [[

]]. The limiting break location and limiting single failure is discussed in the response to RAI 2.8.5.6-3.

The EPU LOCA analysis has confirmed the break spectrum response. A large break analysis was performed at various break area sizes [[

]] The small breaks and large break presented in the PUSAR are the limiting breaks.

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Reference

2.8.5.6-2-1. NEDE-23785P-A, Vol. III, Supplement 1, Revision 1, *GESTR-LOCA and SAFER Models for Evaluation of Loss-of-Coolant Accident Volume III, Supplement 1, Additional Information for Upper Bound PCT Calculation*, March 2002.

2.8.5.6-2-2. GE-NE-0000-0052-3113-P-R0, *Monticello Nuclear Generating Plant SAFER/GESTR ECCS-LOCA Analysis – LPCI Loop Selection Detectable Break Area*, September 2006.

NRC RAI 2.8.5.6-3

The PUSAR states, "The Appendix K results confirm that the limiting break is the recirculation suction line DBA and that the LPCI injection valve failure is the limiting single failure." Subsequent sentences suggest that analyses were performed at different statepoints to establish the limiting PCT for the limiting break and single failure identified above.

a. Please confirm whether the Appendix K evaluations discussed in this paragraph (spanning pages 2-295 and 2-296 of the PUSAR) all employed the same break and single failure.

b. Provide additional information to describe how the statement quoted above is confirmed.

NSPM Response

Response to Part a

Confirmed.

Response to Part b

For the generalized modeling in SAFER, [[

]] and the DBA is confirmed to be the limiting large break for Monticello. This result is consistent with the GE14 New Fuel Introduction conclusions (Ref. 2.8.5.6-3-1).

Ref. 2.8.5.6-3-1also shows the PCT results for the different single failure analysis. [[

]] The changes described in response to RAI 2.8.5.6-2 do

not impact the relative severity of the single failure to a degree that would change this conclusion.

Reference

2.8.5.6-3-1. GE-NE-J1103878-09-02P, *Monticello ECCS-LOCA Evaluation for GE14*, August 2001.

2.8.5.6-3-2. NEDC-33004P-A, *Licensing Topical Report Constant Pressure Power Uprate*, Rev. 4, July 2003.

NRC RAI 2.8.5.6-4

The PUSAR states that the increased decay heat associated with EPU results in a longer ADS blowdown and a higher PCT for the small break LOCA. A license amendment request currently under staff review presents small break LOCA results with higher PCT than the EPU small break LOCA results. Please explain.

NSPM Response

The EPU small break analysis was performed based on [[

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Reference:

2.8.5.6-4-1. GE-NE-0000-0052-3113-P-R0, *Monticello Nuclear Generating Plant SAFER/GESTR ECCS-LOCA Analysis – LPCI Loop Selection Detectable Break Area*, September 2006.

NRC RAI 2.8.5.6-5

The PUSAR states, "plant specific analyses demonstrate that there is sufficient ADS capacity at EPU conditions with all ADS valves available. With two ADS valves available, an LHGR multiplier is applied to ensure that the small break is not limiting." Please clarify whether this constitutes a conservative analytic assumption, or an operating restriction employed at the plant when operating with two ADS valves available.

NSPM Response

The ECCS-LOCA analysis performed for EPU assumed all three ADS valves available and applied the single failure criterion from that point (Table 2.8.5.6-1). Using this assumption, the EPU analysis does not include an ADS valve inoperable in combination with any other ECCS component. An additional analysis was also provided for the plant to support the potential for operation with two ADS valves available. An extra LHGR multiplier would be required to reduce the peak power profile so that all of the 10CFR50.46 criteria are still satisfied and without the small break being limiting. This would require a license amendment for implementation, which is not being pursued coincident with EPU.

Although unrelated to this RAI, Section 2.8.5.6.2, subsection, Emergency Core Cooling System Performance, states that a SLO multiplier is applied to both the LHGR and MAPLHGR. However, Monticello applies the multiplier to MAPLHGR only.

A revision to PUSAR page 2-296 is attached which clarifies the application of the SLO multiplier.

failure is the limiting single failure. [[

]] For both EPU and CLTP, the GE14 Licensing Basis PCT is 2140°F and is based on the operating conditions at CLTP power and MELLLA core flow. The results of these analyses are provided in Table 2.8-5.

In addition to the large break LOCA analysis, the small break LOCA response was reviewed in order to assure adequate ADS capacity. The increased decay heat associated with EPU results in a longer ADS blowdown and a higher PCT for the small break LOCA. Plant specific analyses demonstrate that there is sufficient ADS capacity at EPU conditions with all ADS valves available. With two ADS valves available, a LHGR multiplier is applied to ensure that the small break is not limiting. Also, the plant performance improvement of three SRVs OOS remains valid with EPU.

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For SLO, a multiplier is applied to the Two-Loop ~~LHGR and~~ MAPLHGR Operation limits. The operating conditions for SLO are not changed with EPU; therefore, the current SLO analysis remains acceptable for EPU.

ARTS limits are unaffected by EPU. Also, the effect of ICF on PCT is negligible with EPU. Thus the ARTS limits, as well as the ICF domain, remain valid with EPU.

Conclusion

NSPM has evaluated the LOCA events and the ECCS. The evaluation concludes that operation of the plant at the proposed power level is acceptable In addition, NSPM will perform cycle specific reload analyses to confirm that the peak cladding temperature, total oxidation of the cladding, total hydrogen generation, and changes in core geometry and long-term cooling will remain within acceptable limits. Based on this, the evaluation concludes that the plant will continue to meet the requirements of the current licensing basis and 10 CFR 50.46 following implementation of the proposed EPU, and is, therefore, acceptable.

ENCLOSURE 2

GE Hitachi Affidavit

(3 pages follow)

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, James F. Harrison, state as follows:

(1) I am Vice President, Fuels Licensing, Regulatory Affairs, 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 GEH letter, GE-MNGP-AEP-1230, *GEH Responses to NRC RAIs 2.8.5.6-1 thru 5*, dated April 14, 2009. The proprietary information in Enclosure 1 entitled, *GEH Responses to NRC RAIs 2.8.5.6-1 thru 5*, is identified by a dotted underline inside double square brackets, [[This sentence is an example.{3}]]. In each case, the superscript notation {3} 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 results of an analysis performed by GEH to support Monticello's Extended Power Uprate license application. This analysis is part of the GEH Extended Power Uprate methodology. Development of the extended power uprate methodology and the supporting analysis techniques and information, and their application to the design, modification, and processes were achieved at a significant cost to GEH.

The development of the evaluation methodology 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 14th day of April 2009.

James F. Harrison
Vice President, Fuels Licensing
GE-Hitachi Nuclear Energy Americas LLC