

ENCLOSURE 4 CONTAINS PROPRIETARY INFORMATION
WITHHOLD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH 10 CFR 2.390



Monticello Nuclear Generating Plant
2807 W County Rd 75
Monticello, MN 55362

June 27, 2012

L-MT-12-054
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 License No. DPR-22

Subject: Supplement to Maximum Extended Load Line Limit Analysis Plus License
Amendment Request (TAC ME3145)

- References:
- 1) Letter from T J O'Connor (NSPM), to Document Control Desk (NRC), "License Amendment Request: Maximum Extended Load Line Limit Analysis Plus," L-MT-10-003, dated January 21, 2010. (ADAMS Accession No. ML100280558)
 - 2) Letter from T J O'Connor (NSPM) to Document Control Desk (NRC), "Subject: Monticello Extended Power Uprate: Replacement Steam Dryer Supplement (TAC MD9990)," L-MT-10-046, dated June 30, 2010. (ADAMS Accession No. ML102010462)
 - 3) NEDC-33006P-A, Revision 3, "Licensing Topical Report, General Electric Boiling Water Reactor, Maximum Extended Load Line Limit Analysis Plus," dated June 2009. (ADAMS Accession No. ML091800512)
 - 4) Letter from P S Tam (NRC) to T J O'Connor (NSPM), "Subject: Monticello Nuclear Generating Plant – Determination that Submitted Information is Proprietary and Will Be Withheld from Public Disclosure (TAC No. ME3145)," dated February 16, 2010. (ADAMS Accession No. ML100320229)

In Reference 1, Northern States Power Company, a Minnesota corporation (NSPM), doing business as Xcel Energy, requested approval of an amendment to the Monticello Nuclear Generating Plant (MNGP) Renewed Operating License (OL) and Technical

ADD
NRR

Specifications (TS). The proposed change would allow operation in the expanded Maximum Extended Load Line Limit Analysis Plus (MELLLA+) domain.

In Reference 2, NSPM provided analyses for a Replacement Steam Dryer (RSD) for MNGP. A portion of these analyses concern the potential effect of moisture carryover (MCO) on plant operation in conjunction with the MNGP Extended Power Uprate (EPU) license amendment request (LAR). Enclosure 1 to this letter contains an evaluation of the effects of the installation of a RSD on the MELLLA+ LAR. The RSD supplement was provided to the NRC in Reference 2. The evaluation concludes that there are no effects on the MELLLA+ LAR.

Enclosure 2 to this letter contains corrected pages for NEDC-33435P, Revision 1 and NEDO-33435, Revision 1, based on an error discovered on Table 1-1 of these documents. NEDC-33435P, Revision 1 and NEDO-33435, Revision 1 were originally provided to the NRC in Reference 1.

Enclosure 3 to this letter contains a MNGP cycle 26 supplemental reload licensing report (SRLR) that includes MELLLA+ conditions and evaluations. The cycle 26 SRLR is being submitted to the NRC to fulfill the requirements of the MELLLA+ topical report (Reference 3), Limitation and Condition 12.4, which specifies that the SRLR for the initial MELLLA+ implementation cycle shall be submitted for NRC staff confirmation.

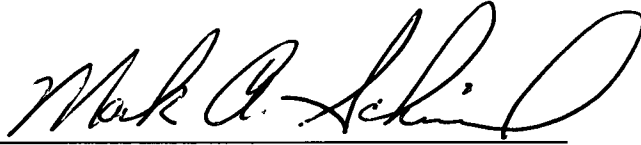
Enclosure 4 to this letter contains a clarification regarding application of administrative controls described in the original MELLLA+ LAR (Reference 1). This clarification forms the basis for a correction to NEDC-33435P, Revision 1.

Information in Enclosure 4 is considered proprietary to General Electric – Hitachi. No new information is being provided; however, to fully describe the clarification required, it was necessary to include excerpts of proprietary information from NEDC-33435P, Revision 1, which was included in Reference 1, Attachment 3. Since this information has been previously accepted by the NRC as proprietary information withheld from public disclosure (Reference 4), no new request for withholding or affidavit has been provided as the original request for withholding and affidavit (provided in Reference 1, Attachment 4) is applicable to this information.

This letter makes no new commitments and no revisions to existing commitments.

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

Executed on: June 27, 2012

A handwritten signature in black ink, appearing to read 'Mark A. Schimmel', written over a horizontal line.

Mark A. Schimmel
Site Vice-President
Monticello Nuclear Generating Plant
Northern States Power Company-Minnesota

Enclosures (4)

cc: Regional Administrator, Region III, USNRC (w/o enclosures)
 Project Manager, Monticello Nuclear Generating Plant, USNRC
 Resident Inspector, Monticello Nuclear Generating Plant, USNRC (w/o
 enclosures)
 Minnesota Department of Commerce (w/o enclosures)

ENCLOSURE 1

**EVALUATION OF REPLACEMENT STEAM DRYER ON
MELLLA+ LICENSE AMENDMENT REQUEST**

6 pages follow

The purpose of this table is to demonstrate that installation of the replacement steam dryer (RSD) does not impact the analyses provided in the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) application for Monticello Nuclear Generating Plant (MNGP). Reference E1-1, Attachment 3 indicated that the MELLLA+ analysis determined that the moisture content of the steam leaving the vessel may increase up to 0.5 wt% at times while operating near the minimum core flow in the MELLLA+ operating domain. Operation at this point in the MELLLA+ domain would be experienced infrequently. As the table below indicates, 0.5 wt% is the level of moisture carryover (MCO) that has been evaluated for MELLLA+.

The first two columns in the table below list the MELLLA+ submittal and text location that describes the previously installed steam dryer (PISD) or analyses that used PISD parameters. The third column describes the contents (text) that are under review. The final column dispositions the text under review and determines that no actions or resolutions are required.

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
|---------------------------------------|---|--|---|
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, Executive. Summary pg xii | The 4 th paragraph has the statement: <i>"There is a potential increase in the steam moisture content at certain times while operating in the MELLLA+ operating domain. The effects of the potential increase in moisture content on plant hardware have been evaluated and determined to be acceptable."</i> | The MCO assumed for Extended Power Uprate (EPU) and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S1.0 pg 1-1 | The 3 rd paragraph has the statement: <i>"There is a potential increase in the steam moisture content at certain times while operating in the MELLLA+ operating domain. The effects of the potential increase in moisture content on plant hardware have been evaluated and determined to be acceptable."</i> | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
|---------------------------------------|--|---|---|
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S1.1.4 pg 1-4 | Section 1.1.4, when referring to Section 8.0 states: <i>"However, slightly higher loading of the condensate demineralizers is possible if the moisture carryover (MCO) in the reactor steam increases. The radiological consequences are evaluated to show that applicable regulations are met."</i> | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S3.3.6 pg 3-8 | Section 3.3.6 addresses <i>"Steam Separator and Dryer Performance"</i> and states: <i>"The evaluation of steam separator and dryer performance at MELLLA+ conditions indicates an increase in MCO will occur. The effect of increasing steam moisture content has been analyzed and is discussed in the following sections of this report:</i> <ul style="list-style-type: none"> <i>a. 3.5.1 Reactor Coolant Pressure Boundary Piping</i> <i>b. 8.1 Liquid and Solid Waste Management</i> <i>c. 8.4.2 Fission and Activation Corrosion Products</i> <i>d. 8.5 Radiation Levels</i> <i>e. 10.4 Testing</i> <i>f. 10.7.2 Flow Accelerated Corrosion</i> <i>The effect of increased MCO on plant operation has been analyzed to verify acceptable steam separator-dryer performance under MELLLA+ operating conditions. MCO is monitored during operation to ensure adequate operating limitations are implemented as required to maintain MCO within analyzed conditions."</i> | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
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| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S3.4.2 pg 3-10 | Section 3.4.2 addresses <i>"FIV Influence on Reactor Internals,"</i> and lists the steam dryer as one of the reviewed components. | The conclusion that MELLLA+ does not increase the steam flow is not changed by the introduction of the RSD. Thus, the RSD does not affect the Flow Induced Vibration (FIV) evaluation for MELLLA+. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S3.5.1.1 pgs 3-12, 3-13 | <p>Section 3.5.1.1 addresses <i>"Main Steam and Feedwater Piping Inside Containment."</i></p> <p>The 3rd paragraph has the statement: <i>"...as discussed in Section 3.3.6, the MCO may increase for a period of time during the cycle when a plant is operating at or near the MELLLA+ minimum core flow rate. The time that a plant spends in this flow condition is not excessive. The generic disposition concludes that the change in erosion/corrosion rates as a result of increased carryover is adequately managed by the existing programs discussed in Section 10.7."</i></p> <p>The 4th paragraph has the statement: <i>"...the MCO for Monticello may increase to a maximum of 0.5 wt% for a period of time during the cycle when Monticello is operating at or near the MELLLA+ minimum core flow rate. Monticello implements programs adequate to manage this change in the erosion/corrosion rate as described in Section 10.7."</i></p> | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
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| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S8.1.2 pg 8-1 | Section 8.1.2 addresses " <i>Waste Volumes</i> ," and the effects of potentially higher MCO. The MELLLA+ SAR's MCO related evaluations and conclusions are based on a MCO of 0.5%. | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S8.4.2 pg 8-4 | Section 8.4.2 addresses " <i>Fission and Activation Corrosion Products</i> ," which could increase with increased MCO. The Section's evaluation and conclusion are based on a MCO of 0.5%. | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S8.5.1, S8.5.2 pgs 8-5, 8-6 | Section 8.5.1 addresses " <i>Normal Operational Radiation Levels</i> ," and Section 8.5.2 addresses " <i>Post-Shutdown Radiation Levels</i> " both of which could increase with increased MCO. These evaluations and conclusions in these sections are based on a MCO of 0.5%. | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S10.4.1 pg 10-4 | Section 10.4.1 addresses " <i>Steam Separator-Dryer Performance</i> " testing. | The information in Section 10.4.1 is applicable to any steam dryer, and does not conflict with any information regarding the RSD. Therefore, this section does not require change. |

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
|---------------------------------------|--|--|---|
| L-MT-10-003, M+ LAR ML100280558 | Attachment 3, NEDC-33435P, S10.7.2 pgs 10- 8, 10-9 | Section 10.7.2 includes addressing the MCO effects on <i>"Flow Accelerated Corrosion."</i> | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 5, NEDO-33435 | Attachment 5 is a nonproprietary version of Attachment 3. | This document does not require reissue as no proprietary changes have been made. No changes are proposed for Attachment 3, therefore, no changes to Attachment 5 are required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 6, Risk Assessment, Table 3-1, T0304, pg 3-10 | Item T0304 addresses <i>"Reactor Internal Pressure Differences & Fuel Lift Evaluation."</i> | MELLLA+ does not involve increased flows, and thus, the T0304 is not affected. The Reactor Internal Pressure Differential (RIPD) methodology was discussed in enclosure 8 of L-MT-10-046 and no change to the MELLLA+ evaluation is required. |
| L-MT-10-003, M+ LAR ML100280558 | Attachment 6, Risk Assessment, Tab. 3-1, T0306, pg 3-10 | Item T0306 addresses <i>"Steam Dryer/Separator Performance,"</i> and discusses the effects of MCO. | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |

| Letter No. ADAMS No. | Locations Evaluated | Applicable Contents/Issues | Required Actions or Resolution |
|--|--|--|---|
| L-MT-10-017, M+ Supplement for Acceptance Review ML100710445 | Attachment 1, NRC Acceptance Review RAI 2, pgs 2, 3 | RAI 2 requests MCO information, which is based on the PISD. | The MCO assumed for EPU and MELLLA+ is 0.5% by weight, while the estimated MCO for the RSD is $\leq 0.14\%$ by weight. Thus, the MELLLA+ SAR basis and evaluation results bound MELLLA+ operation with the RSD. Therefore, no change is required. |

Conclusion

Based on the reviews provided above, no changes to any MELLLA+ documentation are required based on the installation of a replacement steam dryer.

References

E1-1 Letter from T J O'Connor (NSPM), to Document Control Desk (NRC), "License Amendment Request: Maximum Extended Load Line Limit Analysis Plus," L-MT-10-003, dated January 21, 2010. (ADAMS Accession No. ML100280558)

ENCLOSURE 2

Corrected Pages for NEDC-33435P, Revision 1 and NEDO-33435, Revision 1

In a letter from General Electric-Hitachi (GEH) dated March 24, 2010, GEH described a typographical error discovered in Table 1-1 of NEDC-33435P, Revision 1 and its companion document NEDO-33435, Revision 1 (non-proprietary version of NEDC-33435P). NEDC-33435P, Revision 1 was provided to the NRC as attachment 3 of enclosure 1 of reference E2-1 and NEDO-33435, Revision 1 was provided to the NRC as attachment 5 of enclosure 1 of reference E2-1.

Table 1-1 of NEDC-33435P, Revision 1 identifies computer codes that were used in the production of the Maximum Extended Load Line Limit Analysis Plus (MELLLA+) Safety Analysis Report (SAR). The table incorrectly identified that the computer code ODYN version 09 was used in the production of the MELLLA+ SAR. Rather Table 1-1 should have identified that ODYN version 10 was used in the production of the MELLLA+ SAR.

The corrected pages are attached. The attached corrected pages do not contain GEH proprietary information.

References:

- E2-1 Letter from T J O'Connor (NSPM), to Document Control Desk (NRC), "License Amendment Request: Maximum Extended Load Line Limit Analysis Plus," L-MT-10-003, dated January 21, 2010. (ADAMS Accession No. ML100280558)

NEDC-33435P REVISION 1 – CORRECTED PAGE
GEH PROPRIETARY INFORMATION

Table 1-1 Computer Codes Used in the M+SAR Evaluations

| Task | Computer Code | Version or Revision | NRC Approved | Comments |
|--|--|-----------------------------------|--|---|
| Reactor Heat Balance | ISCOR | 09 | Y(1) | NEDE-24011P Rev. 0 SER |
| Reactor Core and Fuel Performance | TGBLA PANAC ISCOR | 06 11 09 | Y(2) Y(2) Y(1) | NEDE-30130P-A NEDE-30130P-A NEDE-24011P Rev. 0 SER |
| Thermal Hydraulic Stability | ODYSY TRACG TRACG ISCOR PANACEA | 05 02 04 09 11 | Y Y(15) N(15) Y(1) Y(3) | NEDC-33213P-A NEDC-33147P-A Rev. 2 NEDE-24011P Rev. 0 SER NEDE-30130P-A |
| Reactor Internal Pressure Differences | LAMB TRACG ISCOR | 07 02 09 | (4) Y(5) Y(1) | NEDE-20566P-A NEDE-32176P, Rev. 2, Dec. 1999 NEDC-32177P, Rev. 2, Jan. 2000 NRC TAC No. M90270, Sept. 1994 NEDE-24011P Rev. 0 SER |
| Reactor Pressure Vessel (RPV) Fluence | TGBLA DORTG | 06 01 | Y(2) Y (12, 13) | NEDE-30130P-A CCC-543 |
| Annulus Pressurization Loads | ISCOR | 09 | Y(1) | NEDE-24011P Rev. 0 SER |
| Transient Analysis | PANAC ODYN ISCOR TASC | 11 10 09 03 | Y Y Y (1) Y | NEDE-30130P-A (6) NEDE-24154P-A NEDC-24154P-A, Vol 4, Sup 1 NEDE-24011P Rev. 0 SER NEDC-32084P-A Rev. 2 |
| Anticipated Transient Without Scram (ATWS) | ODYN STEMP PANACEA TASC ISCOR TRACG | 10 04 11 03A 09 04 | Y (7) Y(6) Y Y(1) N(14) | NEDC-24154P-A, Vol 4, Sup 1 NEDC-32084P-A Rev. 2 NEDE-24011P Rev. 0 SER |
| Containment System Response | M3CPT LAMB | 05 08 | Y (4) | NEDO-10320, April 1971 NEDE-20566P-A, September 1986 |
| Reactor Recirculation System | BILBO | 04V | (8) | NEDE-23504, Feb. 1977 |
| ECCS-Loss of Coolant Accident (LOCA) | LAMB GESTR SAFER ISCOR TASC | 08 08 04 09 03 | Y Y Y Y(1) Y | NEDE-20566P-A NEDE-23785-1P-A, Rev. 1 (9)(10) (11) NEDE-24011P Rev. 0 SER NEDC-32084P-A |

* The application of these codes to the MELLLA+ analyses complies with the limitations, restrictions, and conditions specified in the approving NRC SER where applicable for each code. The application of the codes also complies with the SERs for the extended power uprate programs.

NEDO-33435 REVISION 1 – CORRECTED PAGE
NON-PROPRIETARY INFORMATION

Table 1-1 Computer Codes Used in the M+SAR Evaluations

| Task | Computer Code | Version or Revision | NRC Approved | Comments |
|--|--|-----------------------------------|--|---|
| Reactor Heat Balance | ISCOR | 09 | Y(1) | NEDE-24011P Rev. 0 SER |
| Reactor Core and Fuel Performance | TGBLA PANAC ISCOR | 06 11 09 | Y(2) Y(2) Y(1) | NEDE-30130P-A NEDE-30130P-A NEDE-24011P Rev. 0 SER |
| Thermal Hydraulic Stability | ODYSY TRACG TRACG ISCOR PANACEA | 05 02 04 09 11 | Y Y(15) N(15) Y(1) Y(3) | NEDC-33213P-A NEDC-33147P-A Rev. 2 NEDE-24011P Rev. 0 SER NEDE-30130P-A |
| Reactor Internal Pressure Differences | LAMB TRACG ISCOR | 07 02 09 | (4) Y(5) Y(1) | NEDE-20566P-A NEDE-32176P, Rev. 2, Dec. 1999 NEDC-32177P, Rev. 2, Jan. 2000 NRC TAC No. M90270, Sept. 1994 NEDE-24011P Rev. 0 SER |
| Reactor Pressure Vessel (RPV) Fluence | TGBLA DORTG | 06 01 | Y(2) Y (12, 13) | NEDE-30130P-A CCC-543 |
| Annulus Pressurization Loads | ISCOR | 09 | Y(1) | NEDE-24011P Rev. 0 SER |
| Transient Analysis | PANAC ODYN ISCOR TASC | 11 10 09 03 | Y Y Y (1) Y | NEDE-30130P-A (6) NEDE-24154P-A NEDC-24154P-A, Vol 4, Sup 1 NEDE-24011P Rev. 0 SER NEDC-32084P-A Rev. 2 |
| Anticipated Transient Without Scram (ATWS) | ODYN STEMP PANACEA TASC ISCOR TRACG | 10 04 11 03A 09 04 | Y (7) Y(6) Y Y(1) N(14) | NEDC-24154P-A, Vol 4, Sup 1 NEDC-32084P-A Rev. 2 NEDE-24011P Rev. 0 SER |
| Containment System Response | M3CPT LAMB | 05 08 | Y (4) | NEDO-10320, April 1971 NEDE-20566P-A, September 1986 |
| Reactor Recirculation System | BILBO | 04V | (8) | NEDE-23504, Feb. 1977 |
| ECCS-Loss of Coolant Accident (LOCA) | LAMB GESTR SAFER ISCOR TASC | 08 08 04 09 03 | Y Y Y Y(1) Y | NEDE-20566P-A NEDE-23785-1P-A, Rev. 1 (9)(10) (11) NEDE-24011P Rev. 0 SER NEDC-32084P-A |

* The application of these codes to the MELLLA+ analyses complies with the limitations, restrictions, and conditions specified in the approving NRC SER where applicable for each code. The application of the codes also complies with the SERs for the extended power uprate programs.