UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT DOCKET NO. 50-263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE DPR-22

LICENSE AMENDMENT REQUEST DATED June 22, 1995

Northern States Power Company, a Minnesota corporation, requests authorization for changes to Appendix A of the Monticello Operating License as shown on the attachments labeled Exhibits A, B and C. Exhibit A describes the proposed changes, describes the reasons for the changes, and contains a Safety Evaluation, a Determination of Significant Hazards Consideration and an Environmental Assessment. Exhibit B contains current Technical Specification pages marked up with the proposed changes. Exhibit C is a copy of the Monticello Technical Specifications incorporating the proposed changes.

This letter contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By William J. Hill
William J Hill
Plant Manager
Monticello Nuclear Generating Plant

On this 23 day of June 1995 before me a notary public in and for said County, personally appeared, William J Hill, Plant Manager, Monticello Nuclear Generating Plant, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true and that it is not interposed for delay.

Colleen A Hannon

COLLEEN A. HANNON
NOTARY PUBLIC—MINNESOTA
HENNEPIN COUNTY
My Commission Expires Aug. 6, 1996

General Electric Company

AFFIDAVIT

I, George B. Stramback, being duly sworn, depose and state as follows:

(1) I am Project Manager, Licensing Services, General Electric Company ("GE") 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 GE proprietary report GENE-637-043-0295, *Application of the "Regional Exclusion With Flow-Biased APRM Neutron Flux Scram" Stability Solution (Option I-D) to the Monticello Nuclear Power Plant*, Class III (GE Proprietary Information), dated February 1995. The proprietary information is delineated by bars marked in the margin adjacent to the specific material.

(3) In making this application for withholding of proprietary information of which it is the owner, GE 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), 2.790(a)(4), and 2.790(d)(1) 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 General Electric's competitors without license from General Electric 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 General Electric, its customers, or its suppliers;

d. Information which reveals aspects of past, present, or future General Electric customer-funded development plans and programs, of potential commercial value to General Electric;

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 both paragraphs (4)b. and (4)d., 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 GE, 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 GE, 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. Access to such documents within GE 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 GE 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 of analytical models, methods and processes, including computer codes, which GE has developed, obtained NRC approval of, and applied to perform thermal hydraulic stability performance evaluations for the BWR.

The development and approval of the stability analysis computer codes used in this analysis was achieved at a significant cost, in excess of one-half million dollars, to GE.

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 GE asset.

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

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.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE 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 GE 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 GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

STATE OF CALIFORNIA)
) ss:
COUNTY OF SANTA CLARA)

George B. Stramback, 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 San Jose, California, this 28th day of February 1995.

George B. Stramback

George B. Stramback
General Electric Company

Subscribed and sworn before me this 28th day of February 1995.

PAULA F. HUSSEY
COMM. #1046120
Notary Public – California
SANTA CLARA COUNTY
My Comm. Expires DEC 1,1998

Paula F. Hussey

Notary Public, State of California

EXHIBIT A

Monticello Nuclear Generating Plant

License Amendment Request Dated June 22, 1995

Evaluation of Proposed Changes to the Technical Specifications
for Operating License DPR-22

Pursuant to 10 CFR Part 50, Section 50.59 and 50.90, the holders of Operating License DPR-22 hereby propose the following changes:

Proposed Changes

Section 2.3.A, page 15, of the Technical Specification Bases states that the Average Power Range Monitoring (APRM) system 120% scram trip limiting safety setting specified in Technical Specification 2.3.A protects against fuel damage for the analyzed abnormal operational transients. This discussion has been changed to reflect the additional analysis that has been performed to address BWR thermal-hydraulic instability. Analyses have been performed which shows that fuel damage does not occur in the unlikely event of a thermal-hydraulic instability, due to the protection provided by the APRM flow biased scram.

Section 3.5/4.5.F (pages 107, 108, and 109) of the Monticello Technical Specifications specifies Limiting Conditions for Operation and Surveillance Requirements for the Reactor Recirculation system. These requirements were established in the Monticello Technical Specifications via License Amendment 47 issued by letter from John A Zwolinski to D M Musolf, dated October 22, 1986. Amendment 47 revised the Monticello Technical Specifications to permit operation of the plant with only one recirculation loop in operation and provided requirements to detect and suppress thermal-hydraulic instability during potential plant operations at high power and low flow while in a single loop condition.

We propose to delete the following technical specifications contained on pages 107, 108, and 109 which provide requirements for monitoring for thermal-hydraulic instability during single loop operation:

Limiting Conditions for Operation

3.5.F.1.b	Establishes single loop power-flow limits.
3.5.F.1.c	Prescribes establishing core plate differential pressure, APRM neutron flux, and Local Power Range Monitor (LPRM) noise levels for single loop operation upon entry to a single loop condition.
3.5.F.1.d	Prescribes the necessary action to be taken if core plate pressure differential noise levels exceed baseline values during single loop operation.

3.5.F.1.e Prescribes the necessary action to be taken if APRM and/or LPRM noise levels exceed baseline values during single loop operation.

Surveillance Requirements

4.5.F.2 Surveillance requirements for establishing baseline core plate differential pressure, APRM neutron flux, and Local Power Range Monitor (LPRM) noise levels for single loop operation.

4.5.F.3 Surveillance requirements for periodically monitoring core plate differential pressure, APRM neutron flux, and Local Power Range Monitor (LPRM) noise levels for single loop operation.

Figure

3.5-1 Identifies the single loop operation surveillance region of the power-flow map.

Limiting Conditions for Operation are proposed for addition to section 3.5.F to exclude normal plant operation in the analytically defined exclusion region to be specified in the Core Operating Limits Report. The existing requirements specified in section 3.5.F.1 concerning single loop operation setpoint changes and safety limit setting changes are proposed to be changed such that the section is renumbered as section 3.5.F.3. The requirements specified in existing section 3.5.F.1.a.2 to modify the MAPLHGR limit for single loop operation is proposed to be changed such that the MAPLHGR limit is modified per Specification 3.11.A vs. Table 3.11.1 and is to be renumbered as specification 3.5.F.3.a.2. Limiting conditions for operation as well as action statements are proposed to be added to replace the above deleted specifications. The proposed revised specifications 3.5.F would state:

3.5.F Recirculation System

1. Intentional entry into the stability exclusion region of the power-flow map defined in the Core Operating Limits Report (COLR) is prohibited. If entry into the stability exclusion region does occur, immediately perform one or more of the following until the stability exclusion region has been exited:

   a. Insert control rods,

   b. Increase the speed of an operating recirculation pump.

2. Entry into the stability buffer region of the power-flow map as defined in the COLR is prohibited unless the power distribution controls as defined in the COLR are in effect. If the power distribution controls are not in effect and entry into the stability buffer region does occur, immediately perform one or more of the following until the stability buffer region has been exited:

a. Insert control rods,

b. Increase the speed of an operating recirculation pump.

3. The reactor may be started and operated, or operation may continue with only one recirculation loop in operation provided that:

   a. The following changes to setpoints and safety limit settings will be made within 24 hours after initiating operation with only one recirculation loop in operation.

      1. The Operating Limit MCPR (MCPR) will be changed per Specification 3.11.C.

      2. The Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) will be changed per Specification 3.11.A.

      3. The APRM Neutron Flux Scram and APRM Rod Block setpoints will be changed as noted in Specification 2.3.A and Table 3.2.3.

   b. Technical Specification 3.5.F.1 and 3.5.F.2 are met.

4. With no reactor coolant system recirculation loops in operation:

   a. Comply with Technical Specifications 3.5.F.1 and 3.5.F.2 by inserting control rods and then comply with specifications 3.6.A.2 and 3.5.F.3 for operation with only one recirculation loop in operation, or

   b. The reactor shall be placed in Hot Shutdown within 12 hours.

Section 3.5/4.5, page 114 of the Technical Specification Bases, have been revised to reflect the current approach for avoiding and protecting the fuel from thermal-hydraulic instabilities.

Section 3.11.A, page 211 of the Technical Specifications, has been revised to clarify the Average Planar Linear Heat Generation Rate (APLHGR) correction applied during single loop operation.

Section 6.7.A.7, page 249b of the Technical Specifications, establishes the approved methodologies to be utilized to establish the Core Operating Limits Reports. This section is proposed to be revised by adding reference to the specifications which establish limiting conditions based on the stability exclusion region and the approved methodology for establishing the stability exclusion region. In addition we propose to correct a typographical error in that specification 6.7.A.7.b incorrectly identifies Siemens Power Corporation report ANF-91-048(P)(A) as report number ANF-91-0481(P)(A).

Reason for Changes

The BWROG has pursued resolution to concerns over reactor fuel performance during instability events since the 1988 LaSalle incident. Several solutions to ensure compliance with the GDC's have been developed and approved by the NRC.

The proposed changes modify the facility requirements for thermal-hydraulic instability avoidance and protection to be consistent with the NRC approved BWR Owners' Group solution options. Monticello has participated in the development of each option and has chosen to pursue Option 1-D and has enclosed with this submittal a plant-specific assessment demonstrating suitability of this option for review. Option 1-D utilizes the flow biased Average Power Range Monitor high neutron flux scram, a power-flow map exclusion region, and modifies the bases of the Technical Specifications to describe the option. The implementation of these changes will ensure Monticello has addressed all concerns associated the stability issue.

A clarification of the requirements contained in specification 3.11.A concerning the application of corrections to the APLHGR during single loop operation is also proposed. Amendment 47 to the Monticello Technical Specifications was issued on October 22, 1986 to permit operation of the plant with only one recirculation loop in operation. This amendment was in response to our submittals dated March 24 and July 22, 1986. Our submittals were based on the topical report NEDO-24271, "Monticello Nuclear Generating Plant Single-Loop Operation-June 1980." Amendment 29 to the Monticello Technical Specification was issued on November 16, 1984 to implement the Average Power Range Monitor/Rod Block Monitor Technical Specifications (ARTS). This amendment was in response to our request dated May 30, 1984, as supplemented by submittals dated May 31, 1984, September 6, 1984 and October 17, 1984. The ARTS license amendment was based largely on the topical report NEDC-30492, "Average Power Range Monitor, Rod Block Monitor and Technical Specification Improvement (ARTS) Program for Monticello Nuclear Generating Plant - April 1984".

Topical report NEDC-30492, section 3.3.5 states:

> For Single-Loop Operation (SLO), the most restrictive of the SLO or ARTS MAPLHGRs will define the limiting condition of operation.

Thus the single loop operation MAPLHGR limit is not obtained by application of the single loop reduction factor to the most limiting of the power corrected MAPLHGR ($MAPLHGR_P$) or the flow corrected MAPLHGR ($MAPLHGR_F$), as reflected in the current specification. Rather the MAPLHGR limit is established as the most limiting of the single loop MAPLHGR (85% of the fuel type and exposure dependent MAPLHGR), or $MAPLHGR_F$, or $MAPLHGR_P$. Our submittal to implement single loop operation Technical Specifications did not properly incorporate information contained in the ARTS program pertaining to single loop operation.

An administrative changes is also proposed in conjunction with the proposed changes for implementation of stability solution Option 1-D. This changes corrects a typographical error contained in specification 6.7.A.7.b.

Safety Evaluation

The proposed changes to the conditions of operation provide for avoidance and protection from thermal-hydraulic oscillations to resolve this generic issue. The proposed changes are based on a Monticello specific engineering assessment of oscillations using NRC approved BWROG methodologies for long-term solution Option 1-D performed in Licensing Topical Report GENE-673-043-0295, Application of the "Regional Exclusion with Flow-Biased APRM Neutron Flux Scram" Stability Solution (Option I-D) to the Monticello Nuclear Power Plant. The assessment consisted of a two part analysis to derive the necessary plant operating restrictions. The analysis consisted of:

Determination of power and flow operation limits based on conditions potentially leading to an instability.

Simulation of fuel performance during an anticipated operational occurrence resulting in an instability with the flow-biased APRM neutron flux scram system used to automatically suppress the oscillation.

The analysis has determined that the flow biased scram will function to suppress oscillations prior to exceeding the fuel safety limit of Minimum Critical Power Ration (MCPR) for core-wide oscillations and has confirmed that regional mode oscillations are not anticipated to occur. Although the flow biased scram provides automatic fuel protection, Option 1-D also includes the use of a power-flow map exclusion region to prevent the occurrence of an oscillation during normal operation. The exclusion region, which is to be defined in the Core Operating Limits Report (COLR), provides the boundary for normal operation or operator actions. Normal operation occurs outside of the exclusion region. Inadvertent entries into the region by flow decreases and/or power increases require immediate action to exit by flow increase and/or control rod insertion. Exiting the region by starting a tripped recirculation pump is not allowed.

The APRM flow biased scram system at Monticello has a design which prevents exceeding the MCPR fuel safety limit during an oscillation event. This scram system has been analyzed in Licensing Topical Report GENE-673-043-0295 and will automatically suppress the oscillation. This analysis addressed all abnormal operational occurrences and operating conditions which may result in an instability and challenge the flow biased scram and fuel safety limit.

Operation outside the power and flow exclusion region provides a high level of confidence that an instability will not occur. The exclusion region has been determined with a plant specific application, using cycle 15 parameters, of the approved BWROG methods in Licensing Topical Report GENE-673-043-0295. Directions to exit the exclusion region for an inadvertent entry provide additional assurance of safe operation.

Determination of Significant Hazards Considerations

The proposed change to the Operating License has been evaluated to determine whether it constitutes 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:

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

The implementation of BWR Owner's Group long term stability solution Option 1-D at Monticello does not modify the assumptions contained in the existing accident analysis. The use of an exclusion region and the operator actions required to avoid and minimize operation inside the region do not increase the possibility of an accident. Conditions of operation outside of the exclusion region are within the analytical envelope of the existing safety analysis. The operator action requirement to exit the exclusion region upon entry minimizes the probability of an oscillation occurring. The actions to drive control rods and/or to increase recirculation flow to exit the region are maneuvers within the envelope of normal plant evolutions. The flow biased scram has been analyzed and will provide automatic fuel protection in the event of a core wide instability. Thus, each proposed operating requirement provides defense in depth for protection from an instability event while maintaining the existing assumptions of the accident analysis. The proposed change to the method by which the MAPLHGR is obtained for single loop operation is consistent with the analysis performed for the Average Power Range Monitor/Rod Block Monitor Technical Specifications (ARTS) program. The analysis performed in support of the ARTS program demonstrated that the limits established assure compliance with fuel limits. Therefore, this amendment will not cause a significant increase in the probability or consequences of an accident previously evaluated for the Monticello plant.

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

As stated above, the proposed operating requirements either mandate operation within the envelope of existing plant operating conditions or force specific operating maneuvers within those carried out in normal operation. Since operation of the plant with all of the proposed requirements is within the existing operating basis, an unanalyzed accident will not be created through implementation of the proposed change. Therefore, the proposed amendment will not create the possibility of a new or different kind of accident.

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

Each of the proposed requirements for plant thermal-hydraulic stability provides a means for fuel protection. The combination of avoiding possible unstable conditions and the automatic flow biased reactor scram provides an in-depth means for fuel protection. Therefore, the individual or combination of means to avoid and suppress an instability

supplements the margin of safety. The operating limits established for the single loop operation MAPLHGR provide an acceptable margin of safety as demonstrated in NEDC-30492, "Average Power Range Monitor, Rod Block Monitor and Technical Specification Improvement (ARTS) Program for Monticello Nuclear Generating Plant - April 1984". The proposed amendment will not involve a reduction in the margin of safety.

Environmental Assessment

Northern States Power has evaluated the proposed changes and determined that:

1. The change does not involve a significant hazards consideration,

2 The changes do not involve a significant change in the type or significant increase in the amounts of any effluent that may be released offsite, nor

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

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