



Monticello Nuclear Generating Plant  
2807 West County Road 75  
Monticello, MN 55362-9637

Operated by Nuclear Management  
Company LLC

January 10, 2001

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

10 CFR Part 50  
Section 50.90

**MONTICELLO NUCLEAR GENERATING PLANT**  
Docket No. 50-63 License No. DPR-22

License Amendment Request Dated January 9, 2001  
Revision of Standby Liquid Control System  
Surveillance Requirements

Attached is a request for a change to the Technical Specifications (TS), Appendix A of the Operating License for the Monticello Nuclear Generating Plant. This request is submitted in accordance with the provisions of 10 CFR Part 50, Section 50.90.

The purpose of this License Amendment Request is to change the Standby Liquid Control (SLC) pump flow surveillance test requirements to remove the requirement to recirculate the test tank on a monthly basis.

Exhibit A contains the Proposed Change, Reasons for Change, a Safety Evaluation, a Determination of No Significant Hazards Consideration and an Environmental Assessment. Exhibit B contains current Technical Specification pages marked up with the proposed change. Exhibit C contains revised Monticello Technical Specification pages.

This submittal does not contain any new NRC commitments and does not modify any prior commitments. Please contact Sam Shirey, Sr. Licensing Engineer, at (763) 295-1449 if you require additional information related to this request.

This letter contains no restricted or other defense information.

NMC requests a period of up to 30 days following receipt of this license amendment to implement the changes.

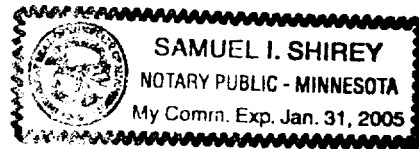
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To the best of my knowledge, information, and belief, the statements made in this document are true and correct.

by Byron D. Day  
Byron D. Day  
Plant Manager  
Monticello Nuclear Generating Plant

Signed before me on this 10<sup>th</sup> day of January, 2001 by Byron D. Day, Plant Manager, Monticello Nuclear Generating Plant, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of the Nuclear Management Company (NMC).

Samuel I. Shirey  
Notary



c: Regional Administrator-III, NRC  
NRR Project Manager, NRC  
Sr. Resident Inspector, NRC  
Minnesota Department of Commerce  
J Silberg, Esq.

Attachments: Exhibit A – Evaluation of Proposed Change to the Monticello Technical Specifications  
Exhibit B – Current Monticello Technical Specification Pages Marked Up With Proposed Change  
Exhibit C – Revised Monticello Technical Specification Pages

**License Amendment Request Dated January 9, 2001  
Revision of Standby Liquid Control System  
Surveillance Requirements**

**Evaluation of Proposed Change to the Monticello Technical Specifications**

Pursuant to 10 CFR Part 50, Section 50.90, Nuclear Management Company (NMC) hereby proposes the following changes to Appendix A, of facility operating license DPR-22, Technical Specification (TS) and Bases for the Monticello Nuclear Generating Plant.

Standby Liquid Control (SLC) Testing, Surveillance Requirement 4.4.A.1, page 93

Description of Proposed Changes and Reasons for Changes

Delete the sentence: "Demineralized water shall be recycled to the test tank."

Change the second sentence to read as follows.

Pump minimum flow rate of 24 gpm shall be verified against a system head of 1275 psig when tested pursuant to Specification 4.15.B.

Change the testing frequency to read as follows.

1. At least once per quarter -

Safety Evaluation

*Test Tank Recycle Requirement*

The proposed change removes the requirement to recycle the test tank from Technical Specification Surveillance Requirement 4.4.A.1 and requests explicit credit for the inservice testing for satisfaction of the SLC pump capacity test. The change does not significantly affect SLC pump reliability and does not adversely affect plant safety.

It is not necessary to recycle the test tank on a monthly basis to obtain the SLC pump flow rate or to determine pump operability. The pump flow rate is determined by the volumetric change in test tank level with a suction source from the demineralized water system. The test tank is not used as the suction source in this test. The NRC staff previously approved this testing method for MNGP by SER dated July 6, 1993 (Ref. 1).

The monthly test tank recycle requirement was part of the original licensing of MNGP.

SLC system testing has changed since original licensing, and the documentation, especially for the early years, is not sufficiently detailed in all cases. A comprehensive examination of the written MNGP licensing and design record did not determine the basis for this requirement. In addition, the requirement is not typical for BWRs with similar SLC systems.

Although explicit written documentation was not identified, the MNGP staff determined that the test tank recirculation requirement periodically demonstrates the ability of the SLC pumps to successfully draw from a vented suction source like the SLC boron tank. In light of the current SLC design and testing methodology, NMC believes that the vented draw demonstration helps to more firmly establish SLC system operability and that it is prudent to continue the demonstration - but on a frequency that is more commensurate with the safety benefit derived. Because of other existing surveillance requirements, the proposed change would not eliminate the vented draw demonstration, but the periodicity will change to once per operating cycle as discussed below. The design and operation of the SLC system is such that changing the frequency of the drawdown demonstration to once per operating cycle will not result in a significant degradation of SLC pump reliability.

The vented draw demonstration will continue to be performed once each operating cycle by virtue of the vessel injection test (Surveillance Requirement 4.4.A.2). The vessel injection test is a more representative test of pump capability than the subject recirculation test. The injection test demonstrates that the pumps can be successfully operated from the vented test tank and that the pumps can simultaneously provide rated flow to the ultimate discharge point. The SLC system is normally in a standby condition, and hydraulic degradation of the pump or the suction piping is not expected between successive performances of the injection test. Daily temperature surveillances are conducted to prevent precipitation of the boron solution, and frequent pump capacity testing provides trending and verification of pump design parameters within the injection test interval. No significant suction piping hydraulic degradation has been identified over thirty years of SLC system testing at MNGP, and tests have been conducted that successfully verified adequate SLC boron tank NPSH at more representative hydraulic conditions than that demonstrated during test tank recirculation testing.

Given the above, the removal of the monthly test tank recirculation requirement will not adversely affect SLC system reliability. The pump flow test is unaffected by this change, and the SLC pump's ability to draw from a vented source will continue to be demonstrated by a required surveillance test at a frequency that is more consistent with SLC system design and operation.

*SLC Pump Capacity Test and Associated Testing Frequency*

The second proposed change requests credit for the inservice testing for satisfaction of the SLC pump capacity test. Section 4.15.B of the MNGP Technical Specifications contains the requirement for inservice testing of the SLC pumps. The staff has previously accepted the quarterly SLC pump inservice testing as a sufficient and adequate means of demonstrating flow rate at system pressure for BWRs. As stated in Section 3.1.7.7 (SLC) of the BWR-4 Standard TS Bases (Ref. 2), "The inservice test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance."

This change does not require any significant changes to plant operation because the current MNGP capacity test procedure uses the same steps to demonstrate pump flow rate for the monthly technical specification requirement as the quarterly inservice testing requirement. There is no significant change to the testing methodology. In effect, the only consequence of this action will be to change the required surveillance testing frequency from monthly to quarterly.

A quarterly SLC pump capacity surveillance is specified in the BWR-4 Standard Technical Specifications. A quarterly test frequency is consistent with Section XI of the ASME Boiler and Pressure Code and is also consistent with that typically required to demonstrate the operability of safety related pumps at nuclear power plants. Since quarterly SLC pump surveillance testing is standard practice for most BWRs, there is a large body of trending and performance data that supports the adequacy of this testing frequency.

The SLC system is normally in a static standby mode with the pumps off, and the SLC system is not normally subject to any significant pump or hydraulic degradation between quarterly test intervals that would justify a more frequent pump capacity test. The boron solution is checked on daily and monthly intervals in accordance with Surveillance Requirement 4.4 to prevent precipitation. Because of the significant system transient associated with testing, it is likely that monthly pump flow testing could cause accelerated equipment wear without a commensurate improvement in failure detection or performance trending.

Given the above, the change in testing frequency from monthly to quarterly is consistent with standard industry practice and with NRC requirements and will not have an adverse affect on SLC system reliability or performance. In addition, the proposed changes are restricted to the frequency of SLC pump surveillance requirements, and these changes have no effect on the mitigation of any postulated accident or event at MNGP.

## **No Significant Hazards Consideration**

Nuclear Management Company (NMC) proposes to revise the Monticello Nuclear Generating Plant (MNGP) Technical Specifications (TS), Appendix A to the Operating License. The changes remove the surveillance requirement for the Standby Liquid Control (SLC) System to recycle the test tank and take credit for the existing inservice testing requirement for satisfaction of the SLC pump capacity test as a quarterly surveillance. The change does not significantly affect SLC pump reliability and does not adversely affect plant safety.

The proposed amendment has been evaluated to determine whether it involves 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.

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

The only significant consequence of these changes compared to present plant operation will be to change the test frequency of the MNGP SLC pump capacity test to quarterly, which has been previously reviewed and approved by the NRC staff for similar boiling water reactors (BWRs). There are no changes to equipment performance or postulated failure modes. The change does not affect the assumptions or methods of accident mitigation previously evaluated. The proposed amendment will have no impact on the probability or consequences of an accident.

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

The only significant consequence of these changes compared to present plant operation will be to change the test frequency of the MNGP SLC capacity flow test to quarterly, which has been previously reviewed and approved by the NRC staff for similar BWRs. The change does not affect or introduce any new plant operating modes. The changes do not alter any existing system interaction and do not introduce any new failure modes. The proposed amendment will not create the possibility for any new or different accidents for those previously analyzed.

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

The only significant consequence of these changes compared to present plant operation will be to change the test frequency of the MNGP SLC pump capacity test to quarterly, which has been previously reviewed and approved by the NRC staff for similar BWRs. There is no change in the reliability or performance of the SLC system. Other surveillance requirements assure that SLC hydraulic conditions will not degrade between quarterly surveillances. The proposed changes have no effect on the

mitigation of any postulated accident or event at MNGP. The proposed Technical Specification changes do not involve a significant reduction in the margin of safety.

### **Environmental Assessment**

Nuclear Management Company has evaluated the proposed change and determined that:

1. The change does not involve a significant hazards consideration.
2. The change does not involve a significant change in the type or significant increase in the amounts of any effluent that may be released offsite.
3. The change does not involve a significant increase in individual or cumulative occupational radiation exposure.

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

### **References**

- 1) Letter from W.M. Dean (NRC), to R.O. Anderson (NSP), "Monticello Nuclear Generating Plant Approval of Third Ten-Year Inservice Testing Program (TAC No. M82638)," July 6, 1993
- 2) NUREG-1433, Standard Technical Specifications, General Electric Plants, BWR/4, Rev. 1, 04/07/95

**Exhibit B**

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**Current Monticello Technical Specification Pages Marked Up  
With Proposed Change**

This exhibit consists of current Technical Specification pages marked up with the proposed change. The pages included in this exhibit are as listed below:

Page

93



### 3.0 LIMITING CONDITIONS FOR OPERATION

#### 3.4 STANDBY LIQUID CONTROL SYSTEM

Applicability:

Applies to the operating status of the standby liquid control system.

Objective:

To assure the availability of an independent reactivity control mechanism.

Specification:

A. System Operation

1. The standby liquid control system shall be operable at all times when fuel is in the reactor and the reactor is not shut down by control rods, except as specified in 3.4.A.2.
2. From and after the date that a redundant component is made or found to be inoperable, reactor operation is permissible only during the following 7 days provided that the redundant component is operable.

### 4.0 SURVEILLANCE REQUIREMENTS

#### 4.4 STANDBY LIQUID CONTROL SYSTEM

Applicability:

Applies to the periodic testing requirements for the standby liquid control system.

Objective:

To verify the operability of the standby liquid control system.

Specification:

A. The operability of the standby liquid control system shall be verified by performance of the following tests:

1. At least once per <sup>quarter</sup> month -

*when tested pursuant to Specification 4.15.B.*  
~~Demineralized water shall be recycled to the test tank.~~ Pump minimum flow rate of 24 gpm shall be verified against a system head of 1275 psig. Comparison of the measured pump flow rate against equation 2 of paragraph 3.4.B.1 shall be made to demonstrate operability of the system in accordance with the ATWS Design Basis.

2. At least once during each operating cycle -

a. Manually initiate one of the two standby liquid control systems and pump demineralized water into the reactor vessel. This test checks explosion of the charge associated with the tested system, proper operation of the valves and pump capacity. Both systems shall be tested and inspected, including each explosion valve in the course of two operating cycles.

**Revised Monticello Technical Specification Pages**

This exhibit consists of revised Technical Specification pages that incorporate the proposed change. The pages included in this exhibit are as listed below:

Page

93

### 3.0 LIMITING CONDITIONS FOR OPERATION

#### 3.4 STANDBY LIQUID CONTROL SYSTEM

Applicability:

Applies to the operating status of the standby liquid control system.

Objective:

To assure the availability of an independent reactivity control mechanism.

Specification:

A. System Operation

1. The standby liquid control system shall be operable at all times when fuel is in the reactor and the reactor is not shut down by control rods, except as specified in 3.4.A.2.
2. From and after the date that a redundant component is made or found to be inoperable, reactor operation is permissible only during the following 7 days provided that the redundant component is operable.

3.4/4.4

### 4.0 SURVEILLANCE REQUIREMENTS

#### 4.4 STANDBY LIQUID CONTROL SYSTEM

Applicability:

Applies to the periodic testing requirements for the standby liquid control system.

Objective:

To verify the operability of the standby liquid control system.

Specification:

- A. The operability of the standby liquid control system shall be verified by performance of the following tests:
1. At least once per quarter -  
Pump minimum flow rate of 24 gpm shall be verified against a system head of 1275 psig when tested pursuant to Specification 4.15.B. Comparison of the measured pump flow rate against equation 2 of paragraph 3.4.B.1 shall be made to demonstrate operability of the system in accordance with the ATWS Design Basis.
  2. At least once during each operating cycle -
    - a. Manually initiate one of the two standby liquid control systems and pump demineralized water into the reactor vessel. This test checks explosion of the charge associated with the tested system, proper operation of the valves and pump capacity. Both systems shall be tested and inspected, including each explosion valve in the course of two operating cycles.