

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 8, 1994

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.

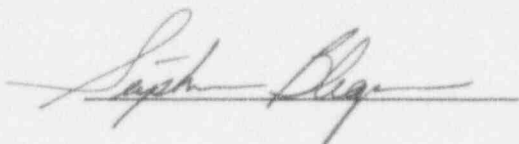
NORTHERN STATES POWER COMPANY

By


Roger O Anderson
Director

Licensing and Management Issues

On this 8th day of June 1994 before me a notary public in and for said County, personally appeared Roger O Anderson, Director Licensing and Management Issues, 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.



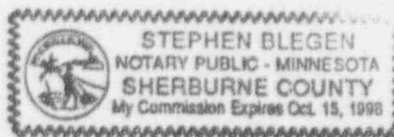


EXHIBIT A

Monticello Nuclear Generating Plant

License Amendment Request Dated June 8, 1994

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:

1. Concerning Standby Gas Treatment System Surveillance Requirements
4.7.B.1

Proposed Changes

The Bases for Technical Specification 4.7 (page 188 of the Monticello Technical Specifications) state: "[r]edundant heaters in the standby gas treatment system room prevent moisture buildup on the adsorbent". Monticello Technical Specification Surveillance Requirement 4.7.B.1 specifies to operate each SGTS train once per month at a flow rate of 3500 cfm. We propose to delete the above bases statement and the 3500 cfm surveillance requirement such that Surveillance Requirement 4.7.B.1 states:

"Once per month, operate each train of the standby gas treatment system for ≥ 10 continuous hours with the inline heaters operating."

Above changes identified as change 1 of Exhibit B.

Reason for Changes

Operating each Standby Gas Treatment System (SGTS) train on a monthly basis with the heaters on is to be performed to reduce the buildup of moisture on the charcoal adsorber and HEPA filters and thus maintain filter efficiency. The current technical specifications credit the SGTS room heaters for this function.

Licensee Event Report 93-001, "Potential Single Failure of Standby Gas Treatment Room Heater Could Cause Temperatures Above Equipment Ratings for Both Standby Gas Treatment Trains," reported the identification of a single failure which could affect both trains of the SGTS. The Monticello SGTS consists of two redundant trains of filter adsorber/fan units. The two filter adsorber units are physically separated within the SGTS room by vertical and horizontal concrete walls (Reference Monticello USAR, Section 5.3.4.1). The Monticello SGTS design includes two 12 KW heaters located in the main SGTS

room and one 1.5 KW heater located in the B train cubicle. The room heaters are thermostatically controlled and prevent condensation and the resulting loss of efficiency of the adsorbers. Due to this design feature, periodic operation of the SGTS trains with a specified duration had not been included in the Monticello Technical Specifications. The postulated single failure which could adversely affect both SGTS trains is a failure of an electric room heater to de-energize. Failure of the SGTS room heater to de-energize could cause SGTS room temperatures for both trains to be elevated above equipment ratings. Long term corrective action to address the postulated single failure consists of disconnecting the room heaters electrically and abandoning the room heaters in place.

The requirement to demonstrate fan operation at a flow of 3500 cfm has been deleted. Fan flow is a function of Secondary Containment leakage rate and is verified once per cycle per Technical Specification Surveillance Requirements 4.7.B.2.b(1) and 4.7.C.1.a. Operation of the system to achieve the 3500 cfm flow requires special ventilation line-ups which can have an adverse affect on plant operations if required to be maintained for the 10 hour duration to ensure adequate moisture removal from the HEPA filters and charcoal adsorber. The proposed change provides surveillance requirements to ensure the operability of the SGTS and is consistent with NUREG-1433, "Standard Technical Specifications, General Electric Plant, BWR/4".

2. Concerning the Deletion of the 18 Month Surveillance Frequency From Surveillance Requirements 4.7.B.2.b

Proposed Changes

Surveillance Requirement 4.7.B.2.b specifies testing requirements to demonstrate the operational readiness of the SGTS. Surveillance 4.7.B.2.b specifies testing for each train of the SGTS to be performed at least once per operating cycle, but not to exceed 18 months. We propose to delete the 18 month frequency requirement such that Surveillance Requirements 4.7.B.2.b states:

- b. At least once per operating cycle, the following conditions shall be demonstrated for each standby gas treatment system:
 - (1) Pressure drop across the combined filters of each standby gas treatment system circuit shall be measured at 3500 cfm ($\pm 10\%$) flow rate.
 - (2) Operability of inlet heater at nominal rated power shall be verified.
 - (3) Automatic initiation of each standby gas treatment system circuit.

In addition we propose to correct a typographical error contained in Surveillance Requirement 4.7.B.2.a. The charcoal adsorbers are incorrectly referred to as charcoal absorbers in requirement 4.7.B.2.a. Above changes

identified as change 2 in Exhibit B.

Reason for Changes

The deletion of the 18 month surveillance requirement for Surveillance Requirements 4.7.B.2.b is to provide enhanced flexibility of surveillance scheduling should the Monticello fuel cycle lengths be extended beyond 18 months and to remove the potential for surveillance performance being required of testing which may have an adverse impact on plant operations. Monticello Technical Specifications, Section 1.0, DEFINITIONS, defines an operating cycle as the interval between the end of one refueling outage and the end of the next subsequent refueling outage. We have reviewed the past surveillance history for this testing and the maintenance history for the SGTS. This review has determined that the testing acceptance criteria has consistently been satisfied and that the SGTS has a high level of reliability.

3. Concerning Standby Gas Treatment System and Secondary Containment Limiting Conditions For Operation

Proposed Changes

The limiting conditions for operation for the SGTS specify per Technical Specification 3.7.B.1.a that if one train of the SGTS is not operable and returned to service within seven days, the plant be placed in a condition for which the SGTS is not required within 36 hours. Specification 3.7.B.1.b specifies that if both trains of SGTS are not operable, to place the plant in a condition for which SGTS is not required within 36 hours. The limiting conditions for operation for secondary containment specify per Technical Specification 3.7.C.4 to place the plant in Cold Shutdown within 24 hours if the secondary containment is not operable during plant conditions for which it is required. We propose to change the completion times for the above limiting conditions from 36 hours for the SGTS and 24 hours for secondary containment to 48 hours. Above change identified as change 3 in Exhibit B.

Reason for Changes

Monticello Technical Specification closely link the operability of the SGTS with the operability of secondary containment. Monticello Technical Specifications, Section 1.0, DEFINITIONS, states:

Secondary Containment Integrity means that the reactor building is closed and the following conditions are met:

1. At least one door in each access opening is closed.
2. The standby gas treatment system is operable.
3. All reactor building ventilation system automatic isolation valves are operable or are secured in the closed position.

Technical Specification 3.7.B.1 requires the SGTS to be operable whenever

secondary containment integrity is required. If SGTS is not operable per the allowed limiting conditions for operation, secondary containment is not operable. Thus the 36 hour completion time per specifications 3.7.B.1.a and 3.7.B.1.b can never be realized, as the more limiting specification for secondary containment (3.7.C.4) of 24 hours must be met. NUREG-1433, "Standard Technical Specifications, General Electric Plant, BWR/4" specifies an equivalent completion time of 48 hours if secondary containment is not operable, if one train of SGTS is inoperable for greater than seven days, or if both trains of SGTS are inoperable. The bases for the Standard Technical Specifications states this allowed completion time is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. Furthermore, this allowed completion time takes into consideration the function these systems perform to mitigate the consequences of a postulated accident, the fact that the systems do not affect core damage frequencies, and the low probability of an accident during the completion time.

4. Concerning Changes to Standby Gas Treatment System Performance Requirements 3.7.B.2.a(3)

Proposed Changes

Technical Specification 3.7.B.2.a(3) states: the results of laboratory carbon sample analysis shall show $\geq 90\%$ methyl iodide removal efficiency when tested at 130°C , 95% R.H. The basis of this requirement is to ensure that the charcoal adsorber units have not been adversely affected by environmental factors such as industrial contaminants and that the filter will perform as necessary under post-accident conditions. We propose to change the 90% value to 94% and the 130°C , 95% R.H. test parameters to 30°C , 95% relative humidity such that performance requirement 3.7.B.2.a(3) states:

The results of laboratory carbon sample analysis shall show $\geq 94\%$ methyl iodide removal efficiency when tested at 30°C , 95% relative humidity."

Above change identified as change 4A in Exhibit B.

We are also proposing changes to the Technical Specification Bases concerning the SGTS HEPA and charcoal adsorber filter testing provided on page 188 of the Monticello Technical Specifications. These changes reflect the use of revised guidance for the testing and qualification of SGTS charcoal adsorbent and HEPA filters. The proposed bases changes are identified as Changes 4B of Exhibit B, page 188.

Reason for Changes

The proposed changes to the SGTS performance requirements concerning the test condition of 130°C for the charcoal adsorber sample laboratory analysis revises this specification to be consistent with the revised guidance provided in ASTM D 3803-89, "Standard Test Method for Nuclear-Grade Activated Carbon".

Decreasing the test temperature provides for a more conservative test as the rate of chemical and physical adsorption and isotopic exchange increases with increasing temperature. The 94% efficiency acceptance criteria provides additional margin to allow for weathering of the charcoal between tests. Results of surveillances performed to demonstrate charcoal adsorber efficiency have shown minimal degradation of adsorber efficiency between tests. In the paper "Painting Within BWR Secondary Containment" (A. Ward, 13th Biennial Conference on Reactor Operating Experience/International Meeting on Nuclear Power Plant Operation, Aug. 30 - Sept. 3, 1987), it was shown that the adsorber performance of KI impregnated charcoal could be expected to degrade due to "weathering" from 93.6% to 90% during the period between methyl iodide tests and that TEDA-KI co-impregnated would degrade less than KI impregnated charcoal. Therefore, an acceptance criteria of 94% for the methyl iodide test assures the charcoal performance will be adequate during the period between tests.

5. Concerning Changes to Standby Gas Treatment System Performance Requirements 3.7.B.2.b(2)

Proposed Changes

Technical Specification 3.7.B.2.b(2) specifies a system performance requirement for the SGTS inlet heater power output be greater than or equal to 15 kilowatts for system operability. The basis of this requirement is to ensure that during SGTS operation under post accident conditions, the relative humidity of the flow stream is reduced to less than 70% for optimum gaseous iodine adsorption within the charcoal adsorber units. We propose to change the 15kW value to 18kW such that specification 3.7.B.2.b(2) states:

The system shall be shown to be operable with inlet heater power output \geq 18kW.

Above change identified as change 5 in Exhibit B.

Reason for Changes

A design review of the SGTS has determined that an inlet heater power output of 15 kilowatts is insufficient to satisfy the SGTS performance requirements under the most limiting assumed conditions. The design review determined that the required inlet heater power output should be a minimum of 18 kilowatts to provide assurance that flow stream moisture will not adversely affect adsorber unit efficiency. The installed inlet heaters have a nominal rating of 20 kilowatts and a review of the surveillance test history shows that the installed heaters have consistently exceeded a power output of 18 kilowatts. Changing the minimum inlet heater power output requirement from 15 kilowatts to 18 kilowatts ensures that the SGTS testing requirements are in accordance with original design requirements.

6. Concerning Changes to Standby Gas Treatment System Performance Requirements 3.7.B.2.b(3)

Proposed Changes

Technical Specification 3.7.B.2.b(3) specifies the SGTS to be shown to be operable with automatic initiation upon receipt of inputs from high drywell pressure, high radiation conditions in the Reactor Building Ventilation Plenum, or high radiation in the area of the fuel pool. We propose to change specification 3.7.B.2.b(3) by adding low low reactor water level to the inputs identified which provide automatic initiation of the SGTS. The above change is identified as change 6 in Exhibit B.

Reason for Changes

Addition of the low low reactor water level initiation parameter to specification 3.7.B.2.b(3) is consistent with the instrumentation functions specified in Technical Specification Table 3.2.4 for SGTS initiation and our proposed change to Table 3.2.4 as provided in our license amendment request dated March 28, 1994 with title, "Standby Gas Treatment Instrumentation Technical Specifications".

7. Concerning Secondary Containment Surveillance Requirement 4.7.C.1

Propose Change

Technical Specification Surveillance Requirement 4.7.C.1 establishes periodic testing to demonstrate the secondary containment capable of maintaining at least a 0.25 inch of water vacuum under calm wind conditions with a standby gas treatment system filter train flow rate of less than or equal to 4,000 cfm.

We propose to delete the lower bound defining calm wind conditions, add information concerning the demonstration of secondary containment capability when conditions do not meet the calm wind criteria, and revise the structure of the requirement such that Surveillance Requirement 4.7.C.1 states:

1. Secondary containment surveillance shall be performed as indicated below:
 - a. Secondary containment capability to maintain at least a 1/4 inch of water vacuum under calm wind ($u < 5$ mph) conditions with a filter train flow rate of $\leq 4,000$ scfm, shall be demonstrated at each refueling outage prior to refueling. If calm wind conditions do not exist during this testing, the test data is to be corrected to calm wind conditions.
 - b. Verification that each automatic damper actuates to its isolation position shall be performed:
 - (1) Each refueling outage.

(2) After maintenance, repair or placement work is performed on the damper or its associated actuator, control circuit, or power circuit.

Above change identified as change 7 in Exhibit B.

Reason for Changes

The proposed change provides clarification of the testing performed to demonstrate secondary containment capability. The intent of the secondary containment capability test is to ensure that the basis for excluding building exfiltration (ground release) effects as assumed in the Monticello 10CFR100 analyses remains valid. The negative internal pressure determines the external wind speed condition at which exfiltration begins, i.e., at 0.25 inches water vacuum exfiltration should not occur for wind speeds of up to 35 mph. The initial negative internal pressure and in-leakage rate under calm wind conditions determine the rate of exfiltration once the 35 mph condition is exceeded. Thus the secondary containment capability test as specified per Surveillance Requirement 4.6.C.1 is ensuring the assumptions utilized in the 10CFR100 analysis remain valid and not necessarily the specific test conditions for this testing. Removal of the lower bound for the range of wind speeds defined as calm, recognizes that secondary containment capability testing performed during wind speeds below 5 mph does not require application of any correction factor as the wind is calm. The Surveillance Requirement has been revised to indicate that testing performed when wind conditions are not calm are corrected to assure the secondary containment negative pressure utilized in the 10CFR100 analysis remains valid. This change is consistent with section 5.3.6 of the Monticello USAR which indicates that data from the testing performed to demonstrate the capability of the secondary containment is corrected to calm wind conditions.

Surveillance Requirements concerning verification of isolation damper automatic operation contained in requirement 4.7.C.1.a have been placed in a separate paragraph for clarity.

Safety Evaluation

The reactor building provides a secondary containment system for the potential releases which may occur within it. This is accomplished by a low leakage building and a standby gas treatment system which has a capacity greater than the building leak rate. The Standby Gas Treatment System purifies air from the reactor building and exhausts it via the offgas stack to the environs at an elevated release point, thus maintaining a negative pressure in the secondary containment and assuring that leakage flows into containment, and that no significant exfiltration of untreated gases exist. The secondary containment and Standby Gas Treatment System perform this function to ensure that radioactive releases to the environment resulting from a loss of coolant accident or refueling accident do not exceed the limits established by 10CFR100 or 10CFR50, Appendix A, GDC 19. The above proposed changes to the Monticello Technical Specifications have no adverse impact on the capability of these system to perform this function.

Concerning Standby Gas Treatment System Surveillance Requirements 4.7.B.1, the proposed changes concerning monthly operation of each SGTS train, specifies periodic testing during normal plant operation to ensure that each subsystem is operable and that all associated controls are functioning properly. This testing also ensures that blockage, fan or motor failure, or other system abnormality can be detected for corrective action. Operation with the heaters on for greater than or equal to 10 continuous hours minimizes moisture in the adsorbers and HEPA filters, and thus assures that the system will not be adversely affected by moisture buildup in the filter units.

With deletion of the requirement to operate the SGTS monthly at flow rates of 3500 cfm, adequate assurance of system capability to meet design flow rates is provided by existing specifications contained in the Monticello Technical Specifications. Periodic testing per specification 4.7.C.1.a provides confidence of reactor building integrity and standby gas treatment system operational capability. Periodic testing per specification 4.7.B.2.a and 4.7.B.2.b(1) provide confidence that the system remains capable of meeting the required design flows. The frequency of once per cycle for this testing is based on the need to perform these surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance were performed with the reactor at power.

Concerning the deletion of the 18 month surveillance frequency from Surveillance Requirement 4.7.B.2.b, removal of the 18 month surveillance frequency has no adverse impact on overall plant safety. The Standby Gas Treatment System consists of two separate and redundant trains which have demonstrated excellent reliability during the operating history of the Monticello plant. Monthly testing is performed on each train to assure operational readiness of the system.

The testing performed per Surveillance Requirement 4.7.B.2.b has shown no adverse trends in system reliability. Filter unit differential pressure drop has not demonstrated any adverse trends or degradation. The inlet heaters have been reliable and have consistently satisfied the test requirements. Added assurance of automatic initiation capability is provided by the additional testing performed on this instrumentation per the Protective Instrumentation Surveillance Requirements. The testing specified per Specification 4.7.B.2.b has a more adverse impact on plant safety should it be required to be performed during plant operation. Special ventilation line-ups are required to establish the required system flow conditions which can result in elevated temperatures in areas such as the steam chase, resulting in reduced margin to Main Steam Isolation Valve closure on high steam chase temperatures. The testing frequency proposed for Surveillance Requirement 4.7.B.2.b(3) concerning verification of automatic initiation of the SGTS on an operating cycle basis is consistent with existing Surveillance Requirement frequencies for equipment which receive automatic initiation from Reactor Protective Instrumentation such as primary containment isolation valves, emergency core cooling systems, and emergency diesel generators.

Concerning changes to the Standby Gas Treatment System and Secondary Containment Limiting Conditions For Operation, the proposed change to allow 48

hours to establish the plant in a cold shutdown condition if the Standby Gas Treatment System or secondary containment operability can not be maintained per the limiting conditions is consistent with the importance of the system in mitigating the consequences of postulated accidents. The revised action time to comply with this limiting condition for operation is consistent with the Standard Technical Specification and is consistent with the time frame specified in the existing Monticello Technical Specifications.

Concerning Changes to Standby Gas Treatment System Performance Requirement 3.7.B.2.a(3), the proposed changes provide for improved assurance that the system will be capable of performing its required function. The proposed change to the SGTS performance requirements concerning the test condition of 130°C for the charcoal adsorber sample laboratory analysis revises this specification to be consistent with the revised guidance provided in ASTM D 3803-89, "Standard Test Method for Nuclear-Grade Activated Carbon". Decreasing the test temperature provides for a more conservative test as the rate of chemical and physical adsorption and isotopic exchange increases with increasing temperature. The 94% efficiency acceptance criteria for the charcoal adsorbent laboratory carbon sample analysis provides margin to assure the adsorber efficiency remains above the limiting value of 90% with consideration for potential degradation of the charcoal between tests. The NRC Safety Evaluation Report for the Monticello Provisional Operating License, dated March 18, 1970, credited a 90% halogen removal efficiency for the Monticello Standby Gas Treatment System (refer to section 4.1 of the NRC SER). The revised performance requirement provides added assurance that the Standby Gas Treatment System will meet or exceed this value.

Concerning Changes to Standby Gas Treatment System Performance Requirement 3.7.B.2.b(2), changing the minimum inlet heater power output requirement from 15 kilowatts to 18 kilowatts ensures that the SGTS will function as designed to maintain releases of radioactivity within limits satisfying 10CFR100 and 10CFR 50, Appendix A, GDC 19. Similarly, concerning changes to Standby Gas Treatment System Performance Requirement 3.7.B.2.b(3), the addition of the reactor water level signal to the parameters which provide automatic initiation of the Standby Gas Treatment System establishes consistency with the actuation parameters specified in the Protective Instrumentation section of the Monticello Technical Specifications.

Concerning the proposed change to Secondary Containment Surveillance Requirement 4.7.C.1, the proposed change provides for the necessary testing to ensure that the secondary containment will perform its required function during a refueling accident or loss of coolant accident. Initiating reactor building isolation and operation of the standby gas treatment system to maintain the design negative pressure within the secondary containment provides an adequate test of the reactor building isolation valves and the standby gas treatment system. Periodic testing gives sufficient confidence of reactor building integrity and standby gas treatment system operational capability.

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 function of the SGTS and secondary containment is to mitigate the consequences of a loss of coolant accident and fuel handling accidents. The proposed changes maintain or improve this capability. 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.

The proposed changes to Technical Specifications for the standby gas treatment system and secondary containment do not alter the function of the systems or its interrelationships with other systems. The proposed changes provide requirements to ensure the systems are capable of performing the required functions or that actions are taken to minimize the potential for its function being required consistent with regulatory guidance; therefore, this amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

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

Improvements in the margin of safety are provided via the permanent elimination of a potential single failure which could adversely affect both standby gas treatment systems by deleting the reference to the standby gas system room heaters in the technical specification bases and providing appropriate surveillance requirements to assure system operability. A review of the performance history of the Standby Gas Treatment System and licensing basis assumptions has determined that the proposed changes do not adversely affect plant safety. Changes to the SGTS performance requirements provide greater assurance of SGTS operability. The proposed change for the completion time to place the plant in a cold shutdown condition if limiting conditions for operation can not be satisfied is consistent with the time frame specified in the current specification and is consistent with Standard Technical Specifications. The proposed amendment will not involve a significant 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, or
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.