

December 23, 1998

Mr. Roger O. Anderson, Director
Nuclear Energy Engineering
Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT - ISSUANCE OF
AMENDMENT RE: SURVEILLANCE TEST INTERVAL/ALLOWED OUTAGE
TIME EXTENSION PROGRAM - PART 2 (TAC NO. M92948)

Dear Mr. Anderson:

The Commission has issued the enclosed Amendment No. 103 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. The amendment consists of changes to the Technical Specifications in response to your application dated July 5, 1995, as supplemented October 9, 1998.

The amendment extends surveillance test intervals and allowable out-of-service times for instrumentation in the Emergency Core Cooling (ECCS), Rod Block, Isolation Group 4 (High Pressure Coolant Injection, or HPCI) and Isolation Group 5 (Reactor Core Isolation Cooling, or RCIC), Reactor Building Ventilation & Standby Gas Treatment, Recirculation Pump Trip and Alternate Rod Injection, and Shutdown Cooling Supply Isolation Systems.

A copy of our related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

ORIGINAL SIGNED BY

Carl F. Lyon, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-263

Enclosures: 1. Amendment No. 103 to DPR-22
2. Safety Evaluation

cc w/encl: See next page

DISTRIBUTION: See attached page

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Mr. Roger O. Anderson, Director
Northern States Power Company

Monticello Nuclear Generating Plant

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DATED: December 23, 1998

AMENDMENT NO. 103 TO FACILITY OPERATING LICENSE NO. DPR-22 - MONTICELLO

Docket File (50-263)

PUBLIC

PD31-1 Reading

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 103
License No. DPR-22

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated July 5, 1995, as supplemented October 9, 1998, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2 of Facility Operating License No. DPR-22 is hereby amended to read as follows:

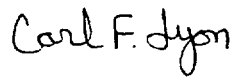
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Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 103 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, with full implementation within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Carl F. Lyon, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: December 23, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 103

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

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Table 3.1.1 - Continued

6. Deleted.
7. Trips upon loss of oil pressure to the acceleration relay.
8. Limited trip setting refers to the volume of water in the discharge volume receiver tank and does not include the volume in the lines to the level switches.
9. High reactor pressure is not required to be operable when the reactor vessel head is unbolted.

* Required Conditions when minimum conditions for operation are not satisfied. (ref. 3.1.B)

- A. All operable control rods fully inserted.
- B. Power on IRM range or below and reactor in Startup, Refuel, or Shutdown mode.
- C. Reactor in Startup or Refuel mode and pressure below 600 psig.
- D. Reactor power less than 45% (798.75 MWt.).

** Allowable Bypass Conditions

It is permissible to bypass:

- a. The scram discharge volume High Water Level scram function in the refuel mode to allow reactor protection system reset. A rod block shall be applied while the bypass is in effect.
- b. The Low Condenser vacuum and MSIV closure scram function in the Refuel and Startup modes if reactor pressure is below 600 psig.
- c. Deleted.
- d. The turbine stop valve closure and fast control valve closure scram functions when the reactor thermal power is $\leq 45\%$ (798.75 MWt).

3.1/4.1

TABLE 4.1.1

SCRAM INSTRUMENT FUNCTIONAL TESTS

MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION AND CONTROL CIRCUITS

<u>INSTRUMENTATION CHANNEL</u>	<u>FUNCTIONAL TEST</u>	<u>MINIMUM FREQUENCY (4)</u>
High Reactor Pressure	Trip Channel and Alarm	Quarterly
High Drywell Pressure	Trip Channel and Alarm	Quarterly
Low Reactor Water Level (2, 5)	Trip Channel and Alarm	Quarterly
High Water Level in Scram Discharge Volume	Trip Channel and Alarm	Quarterly
Condenser Low Vac	Trip Channel and Alarm	Once each month
Main Steam Line Isolation Valve Closure	Trip Channel and Alarm	Quarterly
Turbine Stop Valve Closure	Trip Channel and Alarm	Quarterly
Manual Scram	Trip Channel and Alarm	Weekly
Turbine Control Valve Fast Closure	Trip Channel and Alarm	Quarterly
APRM/Flow Reference (5)	Trip Output Relays	Quarterly
IRM (5)	Trip Channel and Alarm	Note 3
Mode Switch in Shutdown	Place mode switch in shutdown	Every Operating Cycle

TABLE 4.1.1 (Continued)

- Note 1: Deleted.
- Note 2: A sensor check shall be performed on low reactor water level once per day.
- Note 3: Perform functional test prior to every startup, and demonstrate that the IRM and APRM channels overlap at least 1/2 decade prior to every normal shutdown.
- Note 4: Functional tests are not required when the systems are not required to be operable or are tripped. If tests are missed, they shall be performed prior to returning the systems to an operable status.
- Note 5: A functional test of this instrument means the injection of a simulated signal into the instrument (not primary sensor) to verify the proper instrument channel response, alarm, and/or initiating action.

Bases 4.1:

The instrumentation in this section will be functionally tested and calibrated at regularly scheduled intervals. Specific surveillance intervals and surveillance and maintenance outage times have been determined in accordance with NEDC-30851P, "Technical Specification Improvement Analysis for BWR Reactor Protection System," as approved by the NRC and documented in the SER dated July 15, 1987 (letter to T A Pickens from A Thadani).

Calibration frequency of the instrument channel is divided into two groups as defined on Table 4.1.2.

Experience with passive type instruments indicates that a yearly calibration is adequate. Where possible, however, quarterly calibration is performed. For those devices which employ amplifiers etc., drift specifications call for drift to be less than 0.5%/month; i.e., in the period of a month a drift of 0.5% would occur and thus provide for adequate margin. For the APRM system, drift of electronic apparatus is not the only consideration in determining a calibration frequency. Change in power distribution and loss of chamber sensitivity dictate a calibration every three days. Calibration on this frequency assures plant operation at or below thermal limits.

Table 3.2.1 (Continued)

Function	Trip Settings	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (1, 2)	Required Conditions
b. High Drywell Pressure (5)	≤ 2 psig	2	2	D
3. <u>Reactor Cleanup System (Group 3)</u>				
a. Low Reactor Water Level	≥ 7" (annulus)	2	2	E
b. High Drywell Pressure	≤ 2 psig	2	2	E
4. <u>HPCI Steam Lines (Group 4)</u>				
a. HPCI High Steam Flow	≤ 150,000 lb/hr with ≤ 60 second time delay	2(4)	2	F
b. HPCI High Steam Flow	≤ 300,000 lb/hr	2(4)	2	F
c. HPCI Steam Line Area High Temp.	≤ 200°F	16(4)	16	F
5. <u>RCIC Steam Lines (Group 5)</u>				
a. RCIC High Steam Flow	≤ 45,000 lb/hr with 5 ± 2 sec time delay	2(4)	2	G
b. RCIC Steam Line Area	≤ 200°F	16(4)	16	G
6. <u>Shutdown Cooling Supply Isolation</u>				
a. Reactor Pressure Interlock	≤ 75 psig at the reactor steam dome	2(4)	2	C

Table 3.2.1 (Continued)

NOTES:

- (1) There shall be two operable or tripped trip systems for each function. A channel (a shared channel is considered one channel) may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter.
 - (2) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated as follows:
 - (a) With one required instrument channel inoperable in one or more trip functions, place the inoperable channel(s) or trip system in the tripped condition within 12 hours, or
 - (b) With more than one instrument channel inoperable for one or more trip functions, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or
 - (c) Place the plant under the specified required conditions using normal operating procedures.
 - (3) Low pressure in main steam line only need to be available in the RUN position.
 - (4) All instrument channels are shared by both trip systems.
 - (5) May be bypassed when necessary only by closing the manual containment isolation valves during purging for containment inerting or de-inerting. Verification of the bypass condition shall be noted in the control room log. Also, need not be operable when primary containment integrity is not required.
- * Required conditions when minimum conditions for operation are not satisfied.
- A. Group 1 isolation valves closed.
 - B. Reactor Power on IRM range or below and reactor in startup, refuel, or shutdown mode.
 - C. Isolation Valves closed for: Shutdown Cooling System, and Reactor Head Cooling Line.
 - D. Comply with Condition C. above.
 - E. Isolation Valves closed for: Reactor Cleanup System.
 - F. HPCI steam line isolated. (See specification 3.5 for additional requirements.)
 - G. RCIC steam line isolated.

**Table 3.2.2
Instrumentation That Initiates Emergency Core Cooling Systems**

Function	Trip Setting	Minimum No. of Operable or Operating Trip Systems (3) (6)	Total No. of Instrument Channels Per Trip System	Minimum No. of Operable or Operating Instrument Channels Per Trip System (3) (6)	Required Conditions *
A. Core Spray and LPCI					
1. Pump Start					
a. Low Low Reactor Water Level and	$\geq 6' 6" \leq 6' 10"$	2	4(4)	4	A.
b. i. Reactor Low Pressure Permissive or	≥ 450 psig	2	2(4)	2	A.
ii. Reactor Low Pressure Permissive Bypass Timer	20 ± 1 min	2	1	1	B.
c. High Drywell Pressure (1)	≤ 2 psig	2	4(4)	4	A.
2. Low Reactor Pressure (Valve Permissive)	≥ 450 psig	2	2(4)	2	A.
3. Loss of Auxiliary Power	-----	2	2(2)	2	A.

**Table 3.2.2
Instrumentation That Initiates Emergency Core Cooling Systems**

Function	Trip Setting	Minimum No. of Operable or Operating Trip Systems (3) (6)	Total No. of Instrument Channels Per Trip System	Minimum No. of Operable or Operating Instrument Channels Per Trip System (3) (6)	Required Conditions *
B. <u>HPCI System</u>					
1. High Drywell Pressure (1)	≤ 2 psig	1	4	4	A.
2. Low-Low Reactor Water Level	$\geq 6' 6'' \leq 6' 10''$	1	4	4	A.
C. <u>Automatic Depressurization</u>					
1. Low-Low Reactor Water Level and	$\geq 6' 6'' \leq 6' 10''$	2	2	2	B.
2. Auto Blowdown Timer and	≤ 120 seconds	2	1	1	B.
3. Low Pressure Core Cooling Pumps Discharge Pressure Interlock	≥ 60 psig ≤ 150 psig	2	12(4)	12(4)	B.

Table 3.2.2 - (Continued)
Instrumentation That Initiates Emergency Core Cooling Systems

Function	Trip Setting	Minimum No. of Operable or Operating Trip Systems (3) (6)	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (3) (6)	Required Conditions *
D. Diesel Generator					
1. Degraded or Loss of Voltage Essential Bus (5)					
2. Low Low Reactor Water Level	≥ 6' 6" ≤ 6' 10"	2	4(4)	4	C.
3. High Drywell Press	≤ 2 psig	2	4(4)	4	C.

NOTES:

1. High drywell pressure may be bypassed when necessary only by closing the manual containment isolation valves during purging for containment inerting or de-inerting. Verification of the bypass condition shall be noted in the control room log. Also need not be operable when primary containment integrity is not required.
2. One instrument channel is a circuit breaker contact and the other is an undervoltage relay.

Table 3.2.2 - Continued

Notes:

3. Upon discovery that minimum requirements for the number of operable or operating trip systems, or instrument channels are not satisfied action shall be initiated as follows:
 - (a) With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours or
 - (b) With more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or
 - (c) Place the plant under the specified required conditions using normal operating procedures.
4. All instrument channels are shared by both trip systems.
5. See table 3.2.6.
6. A channel (a shared channel is considered one channel) may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter.
- * Required conditions when minimum conditions for operation are not satisfied.
 - A. Comply with Specification 3.5.A.
 - B. Reactor pressure \leq 150 psig.
 - C. Comply with Specification 3.9.B.

**Table 3.2.4
Instrumentation That Initiates Reactor Building Ventilation Isolation
And Standby Gas Treatment System Initiation**

Function	Trip Settings	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System	Required Conditions *
1. Low Low Reactor Water Level	$\geq 6'-6"$, $\leq 6'-10"$	2	2 (Notes 1, 3, 5, 6)	A. or B.
2. High Drywell Pressure	≤ 2 psig	2	2 (Notes 1, 3, 5, 6)	A. or B.
3. Reactor Building Plenum Radiation Monitors	≤ 100 mR/hr	1	1 (Notes 1, 2, 4)	A. or B.
4. Refueling Floor Radiation Monitors	≤ 100 mR/hr	1	1 (Notes 1, 2, 4)	A. or B.

Notes:

- (1) There shall be two operable or tripped trip systems for each function with two instrument channels per trip system and there shall be one operable or tripped trip system for each function with one instrument channel per trip system.
- (2) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated to:
 - (a) Satisfy the requirements by placing appropriate channels or systems in the tripped condition, or
 - (b) Place the plant under the specified required conditions using normal operating procedures.
- (3) Need not be operable when primary containment integrity is not required.
- (4) One of the two monitors may be bypassed for maintenance and/or testing.

Notes: (cont'd)

- (5) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated as follows:
 - (a) With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours, or
 - (b) With more than one instrument channel trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or
 - (c) Place the plant under the specified required conditions using normal operating procedures.
- (6) A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other OPERABLE channel in the same trip system is monitoring that parameter.
- * Required Conditions when minimum conditions for operation are not satisfied.
 - A. The reactor building ventilation system isolated and the standby gas treatment system operating.
 - B. Establish conditions where secondary containment is not required.

**Table 3.2.8
Other Instrumentation**

Function	Trip Setting	Minimum No. of Operable or Operating Trip System (1) (2)	Total No. of Instrument Channels Per Trip System	Minimum No. of Operable or Operating Instrument Channels Per Trip System (1) (2)	Required Conditions*
A. RCIC Initiation 1. Low-Low Reactor Level	≥ 6' 6" & ≤ 6' 10" above top of active fuel	1	4	4	B
B. HPCI/RCIC Turbine Shutdown a. High Reactor Level	≤ 14' 6" above top of active fuel	1	2	2	A
C. HPCI/RCIC Turbine Suction Transfer a. Condensate Storage Tank Low Level	≥ 2' 0" above tank bottom	1	2	2	C

NOTE:

1. Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied, action shall be initiated as follows:
 - a. With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours, or
 - b. With more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing the appropriate channels or systems in the tripped condition, or
 - c. Place the plant under the specified required condition using normal operating procedures.
 2. A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter.
- * Required conditions when minimum conditions for operation are not satisfied:
- A. Comply with Specification 3.5.A.
 - B. Comply with Specification 3.5.D.
 - C. Align HPCI and RCIC suction to the suppression pool. Restore channels to operable status within 30 days or place the plant in Required Condition A for HPCI, or B for RCIC.

Table 4.2.1 Minimum Test and Calibration Frequency for Core Cooling, Rod Block and Isolation Instrumentation			
Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
<u>ECCS INSTRUMENTATION</u>			
1. Reactor Low-Low Water Level	Once/3 months (Note 5)	Every Operating Cycle - Transmitter Once/3 months - Trip Unit	Once/Shift
2. Drywell High Pressure	Once/3 months	Once/3 months	None
3. Reactor Low Pressure (Pump Start)	Once/3 months	Once/3 months	None
4. Reactor Low Pressure (Valve Permissive)	Once/3 months	Once/3 months	None
5. Undervoltage Emergency Bus	Refueling Outage	Refueling Outage	None
6. Low Pressure Core Cooling Pumps Discharge Pressure Interlock	Once/3 months	Once/3 months	None
7. Loss of Auxiliary Power	Refueling Outage	Refueling Outage	None
8. Condensate Storage Tank Level	Refueling Outage	Refueling Outage	None
9. Reactor High Water Level	Once/3 months (Note 5)	Every Operating Cycle - Transmitter Every 3 months - Trip Unit	Once/Shift
<u>ROD BLOCKS</u>			
1. APRM Downscale	Once/3 months (Note 5)	Once/3 months	None
2. APRM Flow Variable	Once/3 months (Note 5)	Once/3 months	None
3. IRM Upscale	Notes (2,5)	Note 2	Note 2
4. IRM Downscale	Notes (2,5)	Note 2	Note 2
5. RBM Upscale	Once/3 months (Note 5)	Once/3 months	None
6. RBM Downscale	Once/3 months (Note 5)	Once/3 months	None
7. SRM Upscale	Notes (2,5)	Note 2	Note 2
8. SRM Detector Not-Full-In Position	Notes (2,9)	Note 2	None
9. Scram Discharge Volume-High Level	Once/3 months	Refueling Outage	None
<u>MAIN STEAM LINE (GROUP 1) ISOLATION</u>			
1. Steam Tunnel High Temperature	Refueling Outage	Refueling Outage	None
2. Steam Line High Flow	Once/3 months	Once/3 Months	Once/Shift

Table 4.2.1-Continued			
Minimum Test and Calibration Frequency for Core Cooling, Rod Block and Isolation Instrumentation			
Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
3. Steam Line Low Pressure	Once/3 months	Once/3 months	None
4. Reactor Low Low Water Level	Once/3 months (Note 5)	Every Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/shift
<u>CONTAINMENT ISOLATION (GROUPS 2 & 3)</u>			
1. Reactor Low Water Level (Note 10)	-	-	-
2. Drywell High Pressure (Note 10)	-	-	-
<u>HPCI (GROUP 4) ISOLATION</u>			
1. Steam Line High Flow	Once/3 months	Once/3 months	None
2. Steam Line High Temperature	Once/3 months	Once/3 months	None
<u>RCIC (GROUP 5) ISOLATION</u>			
1. Steam Line High Flow	Once/3 months	Once/3 months	None
2. Steam Line High Temperature	Once/3 months	Once/3 months	None
<u>REACTOR BUILDING VENTILATION & STANDBY GAS TREATMENT</u>			
1. Reactor Low Low Water Level	Once/3 months (Note 5)	Every Operating Cycle - Transmitter Once/3 months - Trip Unit	Once/shift
2. Drywell High Pressure (Note 10)	-	-	-
3. Radiation Monitors (Plenum)	Once/3 months	Once/3 months	Once/day
4. Radiation Monitors (Refueling Floor)	Once/3 months	Once/3 months	Note 4
<u>RECIRCULATION PUMP TRIP AND ALTERNATE ROD INJECTION</u>			
1. Reactor High Pressure	Once/3 months (Note 5)	Once/Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/Day
2. Reactor Low Low Water Level	Once/3 months (Note 5)	Once/Operating Cycle- Transmitter Once/3 Months-Trip Unit	Once/shift
<u>SHUTDOWN COOLING SUPPLY ISOLATION</u>			
1. Reactor Pressure Interlock	Once/3 months	Once/3 Months	None



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 103 TO FACILITY OPERATING LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

1.0 INTRODUCTION

By letter dated July 5, 1995, as supplemented October 9, 1998, the Northern States Power Company (NSP or the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. The proposed amendment would extend surveillance test intervals and allowable out-of-service times for instrumentation in the Emergency Core Cooling (ECCS), Rod Block, Isolation Group 4 (High Pressure Coolant Injection, or HPCI) and Isolation Group 5 (Reactor Core Isolation Cooling, or RCIC), Reactor Building Ventilation & Standby Gas Treatment, Recirculation Pump Trip and Alternate Rod Injection, and Shutdown Cooling Supply Isolation Systems.

The October 9, 1998, letter withdrew a portion of the original request, provided additional clarifying information, and updated TS pages. This information was within the scope of the original *Federal Register* notice and did not change the staff's initial proposed no significant hazards considerations determination.

2.0 EVALUATION

2.1 Background

The amendment is Part 2 of the Monticello Surveillance Test Interval/Allowed Outage Time (STI/AOT) Program to extend surveillance test intervals and allowed outage times for selected instrumentation. The purposes of the proposed changes are to minimize unnecessary testing and remove excessively restrictive out-of-service times that could potentially degrade overall plant safety and availability. Part 1 of the Monticello STI/AOT Program was previously approved by the NRC via Amendment No. 81 to Facility Operating License No. DPR-22, dated April 16, 1992. The changes were based on analyses presented in General Electric Company (GE) topical reports (Refs. 1 through 3) to support the determination that current on-line Reactor Protection System (RPS) test intervals were consistent with the high availability required by Item 4.5.3 of NRC Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events," dated July 8, 1983.

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Following evaluation, the staff found the GE analyses acceptable (Refs. 4 through 6). The staff also approved other GE analyses (Refs. 7 through 10) for extensions to STIs and increases for AOTs for rod block and isolation instrumentation via subsequent safety evaluations (Refs. 11 through 15). The GE methodology for changing instrument functional testing from monthly to quarterly was found to be acceptable provided the generic analyses were shown to be applicable to the specific plant, and instrument drift expected with the extended functional test interval was within the margins of the methodology.

2.2 Applicability of Topical Reports

As stated in its application, the licensee confirmed that it had reviewed the GE generic and plant-specific analyses and concluded that they were applicable to Monticello Nuclear Generating Plant. To address the instrument setpoint drift issue, the licensee performed a drift analysis on each instrument channel whose surveillance interval is being extended. The analysis was done in accordance with guidance provided by letter from C. Rossi (NRC) to R. Janecek (BWR Owners' Group), "Staff Guidance for Licensee Determination that the Drift Characteristics for Instrumentation Used in RPS Channels are Bounded by NEDC-30851P Assumptions when the Functional Test Interval is Extended from Monthly to Quarterly," dated April 27, 1988. To address the setpoint drift in the amendment proposal, the licensee analyzed plant-specific drift that could be expected. Drift was shown to remain within required allowance for all instruments with the exception of PS 2-3-52A, "Low Reactor Pressure ECCS Valve Permissive." The licensee replaced PS 2-3-52A to address the additional drift, as confirmed by the October 9, 1998, supplement.

Based on the above, the findings of the GE topical reports and the conclusions of the subsequent staff safety evaluations are applicable to Monticello.

2.3 Evaluation of Proposed Changes

a. The licensee proposes to revise the note associated with the column labeled "Required Conditions when minimum conditions for operation are not satisfied," referenced in TS Table 3.1.1, "Reactor Protection System (Scram) Instrument Requirements," by adding a reference to TS 3.1.B. TS 3.1.B specifies actions to be taken upon discovery that the requirements for the number of operable or operating trip systems or instrument channels are not satisfied, as follows: with one required instrument channel inoperable in one or more trip functions, place the inoperable channel(s) or trip system in the tripped condition within 12 hours, or with more than one instrument channel inoperable for one or more trip functions, immediately satisfy the minimum requirements by placing appropriate channel(s), or trip system(s) in the tripped condition, or place and maintain the plant under the specified required conditions using normal operating procedures. The revision of the note does not change the requirements of the TS and is acceptable to the staff.

The licensee also proposes to remove the time "within 8 hours" for Required Condition A so that it reads, "All operable control rods fully inserted." As a result, control rods would be required to be inserted in accordance with TS 3.1.B.3, allowing a time frame defined by normal operating procedures, instead of within 8 hours. The changes eliminate a potential conflict between TS 3.1.B.3 and Table 3.1.1 Required Condition A and allow for a controlled plant shutdown in

accordance with normal operating procedures if required by plant conditions. These changes are acceptable to the staff.

b. The licensee proposes to change the wording for instrument channel, "Mode Switch in Shutdown," in Table 4.1.1, "Scram Instrument Functional Tests - Minimum Functional Test Frequencies for Safety Instrumentation and Control Circuits," from "Each refueling outage" to "Every operating cycle," to be consistent with the wording elsewhere in the TS, such as in Table 4.1.2, "Scram Instrument Calibration - Minimum Calibration Frequencies for Reactor Protection Instrument Channels." The change does not affect the frequency of the test and is acceptable to the staff.

c. The licensee proposes to remove the wording "and on high steam line radiation once per shift" from Note 2 of Table 4.1.1. The wording should have been removed as part of Amendment No. 83 to Facility Operating License No. DPR-22, dated August 18, 1992, which deleted the main steam line high radiation scram and associated reactor vessel isolation function from the TS. The change is editorial and is acceptable to the staff.

d. The licensee proposes to add border lines to Tables 3.2.1, 3.2.2, 3.2.4, 3.2.8, and 4.2.1. The changes are editorial and are acceptable to the staff.

e. The licensee proposes to correct a typographical error in Bases Section 4.1 by changing "amplifies" to "amplifiers." The corrected sentence will read, "For those devices which employ amplifiers etc., drift specifications call for drift to be less than 0.5%/month; i.e., in the period of a month a drift of 0.5% would occur and thus provide an adequate margin." The change is editorial and is acceptable to the staff.

f. In Table 3.2.1, "Instrumentation That Initiates Primary Containment Isolation Functions," the licensee proposes to add the designations "Group 4" to Item 4, "HPCI Steam Lines," and "Group 5" to Item 5, "RCIC Steam Lines." The change provides additional descriptive information and makes the wording of these two titles consistent with the titles listed earlier in the same table. The addition does not change the meaning or requirements of the sections. The change is editorial and is acceptable to the staff.

g. The licensee proposes to modify Notes 1 and 2 to Table 3.2.1, "Instrumentation That Initiates Primary Containment Isolation Functions," to eliminate separate entries for Groups 1, 2, and 3 and Groups 4, 5, and Reactor Pressure Interlocks and make Notes 1 and 2 applicable to all groups. The phrase, "a shared channel is considered one channel," would be added to Note 1.

In Part 1 of the licensee's STI/AOT extension program (Amendment No. 81 to Facility Operating License No. DPR-22, dated April 16, 1992), Notes 1 and 2 to Table 3.2.1 were divided up to recognize new AOT requirements for the instrumentation on the extended (3-month) surveillance cycle (Groups 1, 2, and 3). Since the current proposal will put the remaining instrumentation on a 3-month STI, it deletes the existing wording and places the same AOT requirements on the remaining instrumentation (Groups 4, 5, and Reactor Pressure Interlocks).

The extension of AOTs provides time to perform testing or to make repairs without significantly affecting overall instrumentation failure frequency or plant safety. The wording proposed for the Part 2 instrumentation is identical to the wording approved in Part 1 with the addition of the phrase, "a shared channel is considered one channel." This phrase is being added to clarify that a shared channel is treated as a single channel. The change is consistent with the AOTs recommended by GE in References 3, 9, and 10 and approved by the staff in safety evaluations References 6, 14, and 15, respectively, and is acceptable.

h. The licensee proposes to add Note 6 and revise Note 3 to Table 3.2.2, "Instrumentation That Initiates Emergency Core Cooling Systems." Note 6 is to be added to the columns titled, "Minimum No. of Operable or Operating Trip Systems" and "Minimum No. of Operable or Operating Instrument Channels per Trip System."

Proposed Note 6 reads, "A channel (a shared channel is considered one channel) may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter." The addition of Note 6 is to add the 6-hour out-of-service time for performance of surveillance without tripping the system. The addition of the phrase, "a shared channel is considered one channel," is being added to clarify that a shared channel is treated as a single channel.

The proposed revision to Note 3 includes a new condition "a" that allows "with one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours," changing old condition "a" to condition "b" and revising it to read, "with more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition," and changing old condition "b" to condition "c" without revision.

The changes are consistent with the AOT recommended by GE in Reference 8 and approved by the staff in safety evaluations References 12 and 13, and are acceptable.

i. The licensee proposes to add new Notes 5 and 6 to Table 3.2.4, "Instrumentation That Initiates Reactor Building Ventilation Isolation and Standby Gas Treatment System Initiation." New Note 5 requires that, "Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied action shall be initiated as follows: (a) With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours, or (b) With more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or (c) Place the plant under the specified required conditions using normal operating procedures." New Note 6 requires that, "A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter." New Notes 5 and 6 would be applicable to the Low Low Reactor Water Level and High Drywell Pressure functions.

The addition of Notes 5 and 6 add the extension of AOTs to perform testing or to make repairs for the Low Low Reactor Water Level and High Drywell Pressure functions without significantly affecting overall instrumentation failure frequency or plant safety. The change is consistent with the AOTs recommended by GE in References 2 and 3, which were approved by the staff in safety evaluations References 5 and 6, respectively, and is acceptable.

The licensee proposes to rearrange the applicability notes in Table 3.2.4 to place them all in the column titled, "Min. No. of Operable or Operating Instrument Channels Per Trip System." The rearrangement is to lessen the chances that any notes may be overlooked. The changes are editorial and are acceptable to the staff.

j. The licensee proposes to revise the notes for Table 3.2.8, "Other Instrumentation," to modify the AOTs for the Low Low Reactor Level, High Reactor Level, and Condensate Storage Tank Low Level functions. Modified Note 1 requires that, "Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied, action shall be initiated as follows: a. With one required instrument channel inoperable per trip function, place the inoperable channel or trip system in the tripped condition within 12 hours, or b. With more than one instrument channel per trip system inoperable, immediately satisfy the requirements by placing appropriate channels or systems in the tripped condition, or c. Place the plant under the specified required conditions using normal operating procedures." New Note 2 requires that, "A channel may be placed in an inoperable status for up to 6 hours for required surveillance without placing the trip system in the tripped condition provided that at least one other operable channel in the same trip system is monitoring that parameter." The change is consistent with the changes proposed for Table 3.2.1 above and AOTs recommended by GE in Reference 3 and approved by the staff in safety evaluation Reference 6, and is acceptable.

The proposed change to Note 1 also deletes reference to the described tripped condition "turbine/feedwater trip only," since it is not applicable to the functions described in Table 3.2.8. The change is editorial and is acceptable to the staff.

In Table 3.2.8, the licensee proposes to correct the "Total No. of Instrument Channels Per Trip System" and "Minimum No. of Operable or Operating Instrument Channels Per Trip System" for RCIC Initiation from 2 to 4. These were errors in the table that existed since it was first added. The licensee reviewed Electrical Print NX-7822-22-2 to verify the correct numbers. The change is editorial and is acceptable to the staff.

The licensee proposes to revise Table 3.2.8 Required Condition A to reference the specific TS, TS 3.5.A, that pertains to the applicable condition. TS 3.5.A, "ECCS Systems," provides the specific limiting conditions for operation to be entered, and so is more descriptive than the current wording of Required Condition A, which lists only the allowable modes. The change is consistent with other sections of the TS. In addition, the licensee proposes to revise Table 3.2.8 Required Condition C to read, "place the plant in the Required Condition A for HPCI, or B for RCIC." The addition provides separate pointers to the correct TS sections pertaining to HPCI and RCIC. The changes clarify existing TS and do not add or delete existing requirements. The changes are acceptable to the staff.

k. The licensee proposes to increase the test frequency to once/3 months for all entries currently listed as once/month in Table 4.2.1, "Minimum Test and Calibration Frequency for Core Cooling Rod Block and Isolation Instrumentation," including ECCS, Rod Block, Isolation Group 4 (HPCI), Isolation Group 5 (RCIC), Reactor Building Ventilation & Standby Gas Treatment, Recirculation Pump Trip and Alternate Rod Injection, and Shutdown Cooling Supply Isolation Systems. The extended STIs will reduce the potential for unnecessary plant scrams, thereby reducing challenges to plant shutdown systems and excessive cycling of equipment, thus improving plant availability. In addition, the elimination of unnecessary testing results in a potential safety gain and operational improvement by improving utilization of personnel and resources required for testing activities, by decreasing radiation exposure, and by reducing potential equipment wearout. The changes are consistent with the STIs recommended by GE in References 1 through 3 and 7 through 10 and approved by the staff in safety evaluations References 4 through 6 and 11 through 15 and are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (60 FR 45182). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Lyon

Date: December 23, 1998

6.0 REFERENCES

1. GE Topical Report NEDC-30851P, "Technical Specification Improvement Analysis for BWR Reactor Protection System," dated May 31, 1985. (NRC-accepted version dated March 1988.) (Proprietary Information. Not publicly available.)
2. GE Topical Report NEDC-30851P, Supplement 2, "Technical Specification Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," dated August 29, 1986. (NRC-accepted version dated March 1989.) (Proprietary Information. Not publicly available.)
3. GE Topical Report NEDC-31677P, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," dated June 27, 1989. (NRC-accepted version dated July 1990.) (Proprietary Information. Not publicly available.)
4. Letter and enclosed safety evaluation approving GE Topical Reports NEDC-30844 and NEDC-30851P, dated July 15, 1987, from A. Thadani (NRC) to T. Pickens (BWR Owners' Group).
5. Letter and enclosed safety evaluation approving GE Topical Report NEDC-30851P, Supplement 2, dated January 6, 1989, from C. Rossi (NRC) to D. Grace (BWR Owners' Group).
6. Letter and enclosed safety evaluation approving GE Topical Report NEDC-31677P, dated June 18, 1990, from C. Rossi (NRC) to S. Floyd (BWR Owners' Group).
7. GE Topical Report NEDC-30851P, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," dated June 23, 1986. (NRC-accepted version dated October 1988.) (Proprietary Information. Not publicly available.)
8. GE Topical Report NEDC-30936P, "BWR Owners' Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation), Parts 1 and 2," dated July 23, 1987. (NRC-accepted version dated December 1988.) (Proprietary Information. Not publicly available.)
9. GE Topical Report GENE-770-06-1, "Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications," dated February 19, 1991. (NRC-accepted version dated December 1992.) (Proprietary and nonproprietary reports available.)
10. GE Topical Report GENE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications" (BWR RCIC Instrumentation), dated February 19, 1991. (NRC-accepted version dated December 1992.) (Proprietary Information. Not publicly available.)

11. Letter and enclosed safety evaluation approving GE Topical Report NEDC-30851P, Supplement 1, dated September 22, 1988, from C. Rossi (NRC) to D. Grace (BWR Owners' Group).
12. Letter and enclosed safety evaluation approving GE Topical Report NEDC-30936P, Part 1, dated September 26, 1988, from A. Thadani (NRC) to R. Janecek (BWR Owners' Group).
13. Letter and enclosed safety evaluation approving GE Topical Report NEDC-30936P, Part 2, dated December 9, 1988, from C. Rossi (NRC) to D. Grace (BWR Owners' Group).
14. Letter and enclosed safety evaluation approving GE Topical Report GENE-770-06-1, dated July 21, 1992, from C. Rossi (NRC) to R. Binz (BWR Owners' Group).
15. Letter and enclosed safety evaluation approving GE Topical Report GENE-770-06-2, dated September 13, 1991, from C. Rossi (NRC) to G. Beck (BWR Owners' Group).