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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 81
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 October 22, 1991, 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:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 81 , 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 16, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 81

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 marginal lines indicating the area of change.

REMOVE	INSET
27	27
--	27a
29	29
32	32
33	33
34	34
35	35
39	39
41	41
42	42
51	51
61	61
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72	72

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE
B. Upon discovery that the requirements for the number of operable or operating trip systems or instrument channels are not satisfied, action shall be initiated as follows: 1. 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 2. 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 3. Place and maintain the plant under the specified required conditions using normal operating procedures.	B. (DELETED)

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
C. RPS Power Monitoring System	C. RPS Power Monitoring System
1. Except as specified below, both channels of the power monitoring system for the MG set or altenate source supplying each reactor protection system bus shall be operable with the following setpoints: a. Over-voltage - ≤128 VAC, Time Delay ≤4 seconds b. Under-voltage - ≥104 VAC, Time Delay ≤4 seconds c. Under-frequency - ≥57 HZ, Time Delay ≤4 seconds	1. Instrument Functional Tests of each RPS power monitoring channel shall be performed at least once every six months.
2. With one RPS electric power monitoring channels for the MG set or alternate source supplying each reactor protection system bus inoperable, restore the inoperable channel to Operable status within 72 hours or remove the associated RPS MG set or alternate power supply from service.	2. At least once each Operating Cycle an Instrument Calibration of each RPS power monitoring channel shall be performed to verify over-voltage, under-voltage, and under-frequency setpoints.
3. With both RPS electric power monitoring channels for the MG set or alternate source supplying each reactor protection system bus inoperable, restore at least one to Operable status within 30 minutes or remove the associated RPS MG set or alternate power supply from service.	

TABLE 3.1.1 - CONTINUED

Trip Function	Limiting Trip Settings	Modes in which function must be Operable or Operating** Refuel(3)	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. Operable or Operating Instrument Channels Per Trip System(1)	Required Conditions*
10. Main Steamline High Radiation (See Note 9)	≤ 10 X Normal background at rated power	X	X(f)	X(f)	2	2	A
11. Main Steamline Isolation Valve Closure	≤ 10% Valve Closure	X(b)	X(b)	X	8	8	A or C
12. Turbine Control Valve Fast Closure	(See Note 7)			X(d,f)	2	2	D
13. Turbine Stop Valve Closure	≤ 10% Valve Closure			X(d)	4	4	D

NOTES:

1. There shall be two operable or tripped trip systems for each function. A channel maybe 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. For an IRM channel to be considered operable, its detector shall be fully inserted.

3. In the refueling mode with the reactor subcritical and reactor water temperature less than 212°F, only the following trip functions need to be operable: (a) Mode Switch in Shutdown, (b) Manual Scram, (c) High Flux IRM, (d) Scram Discharge Volume High Level.

4. Not required to be operable when primary containment integrity is not required.

5. To be considered operable, an APRM must have at least 2 LPRM inputs per level and at least a total of 14 LPRM inputs, except that channels 1, 2, 5, and 6 may lose all LPRM inputs from the companion APRM cabinet plus one additional LPRM input and still be considered operable.

TABLE 4.1.1

SCRAM INSTRUMENT FUNCTIONAL TESTS

MINIMUM FUNCTIONAL TEST FREQUENCIES FOR SAFETY INSTRUMENTATION AND CONTROL CIRCUITS

INSTRUMENTATION CHANNEL	FUNCTIONAL TEST	MINIMUM FREQUENCY (4)
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
High Steam Line Rad (5)	Trip Channel and Alarm	Quarterly
Mode Switch in Shutdown	Place mode switch in shutdown	Each refueling outage

TABLE 4.1.1 (Continued)

Note 1: Deleted.

Note 2: A sensor check shall be performed on low reactor water level once per day and on high steam line radiation once per shift.

Note 3: Perform functional test prior to every startup, and 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.

TABLE 4.1.2

SCRAM INSTRUMENT CALIBRATION

MINIMUM CALIBRATION FREQUENCIES FOR REACTOR PROTECTION INSTRUMENT CHANNELS

INSTRUMENT CHANNEL	GROUP	CALIBRATION METHOD	MINIMUM FREQUENCY (2)
APRM	B	Heat Balance	Once every 3 days (4)
IRM	B	Heat Balance	See Note 1
High Reactor Pressure	A	Pressure Standard	Every 3 months
High Drywell Pressure	A	Pressure Standard	Every 3 months
Low Reactor Water	B	Pressure Standard	Every Operating Cycle -- Transmitter Every 3 months - Trip Unit
High Water Level in Scram Discharge	A or B	Water Level	Every 3 months
Condenser Low Vacuum	A	Vacuum Standard	Every 3 months
High Steam Line Radiation	B	See Note 3	See Note 3
Main Steamline Isolation Valve Closure	A	Observation	Every Operating Cycle
Turbine Control Valve Fast Closure	A	Pressure Standard	Every 3 months
Turbine Stop Valve Closure	A	Observation	Every Operating Cycle
Recirculation Flow Meters & Flow Instrumentation	-	Pressure Standard	Every 3 months

Notes:

1. Perform calibration test during every startup and normal shutdown.
2. Calibration 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.
3. This instrument will be calibrated every three months by means of a built-in current source, and each refueling outage with a known radioactive source.
4. This calibration is performed by taking a heat balance and adjusting the APRM to agree with the heat balance. Alarms and trips will be verified and calibrated if necessary during functional testing.

*GROUPS:

A. Passive type devices.
B. Vacuum tube or semiconductor devices and detectors that drift or lose sensitivity.

Bases:

3.1 The reactor protection system automatically initiates a reactor scram to:

1. preserve the integrity of the fuel cladding;
2. preserve the integrity of the primary system barrier; and
3. minimize the energy which must be absorbed, and prevent criticality following a loss of coolant accident.

This specification provides the limiting conditions for operation necessary to preserve the ability of the system to tolerate single failures and still perform its intended function.

The reactor protection system is of the dual channel type. Ref. Section 7.7.1 FSAR. The system is made up of two independent trip systems, each having three subchannels or tripping devices. One of the three subchannels has inputs from the manual scram push buttons and reactor mode switch. Each of the two remaining subchannels has an input from at least one independent sensor which monitors each critical parameter. The outputs of these subchannels are combined in a 1 out of 2 logic; i.e., an input signal on either one or both of the subchannels will cause a trip system trip. The outputs of the trip systems are arranged so that a trip on both systems is required to produce a reactor scram.

This system meets the intent of the proposed IEEE Standard for Nuclear Power Plant Protection Systems issued Sept. 13, 1966. The system has a reliability greater than that of a 2 out of 3 system and somewhat less than that of a 1 out of 2 system. Ref. APED 5179.

The required conditions when the minimum conditions are not met are chosen so as to bring plant operation promptly to such a condition that the particular protection instrument is not required; or the plant is placed in the protection or safe condition that the instrument initiates. This is accomplished in a normal manner without subjecting the plant to abnormal operating conditions.

When the minimum requirements for the number of operable or operating trip systems and instrumentation channels are satisfied, the effectiveness of the protection system is preserved; i.e., the system can tolerate a single failure and still perform its intended function of scramming the reactor.

Bases Continued:

3.1 The IRMs are calibrated by the heat balance method such that 120/125 of full scale on the highest IRM range is below 20% of rated neutron flux (see Specification 2.3.A.2). The requirement that the IRM detectors be inserted in the core assures that the heat balance calibration is not invalidated by the withdrawal of the detector.

Although the operator will set the set points within the trip settings specified on Table 3.1.1, the actual values of the various set points can differ appreciably from the value the operator is attempting to set. The deviations could be caused by inherent instrument error, operator setting error, drift of the set point, etc. Therefore, such deviations have been accounted for in the various transient analyses and the actual trip settings may vary by the following amounts:

Trip Function	Deviation	Trip Function	Deviation
3. High Flux IRM	+2/125 of scale	*7. Reactor Low Water Level	-6 inches
5. High Reactor Pressure	+10 psi	8. Scram Discharge Volume High Level	+1 gallon
6. High Drywell Pressure	+1 psi	9. Turbine Condenser Low Vacuum	-1/2 in. Hg

* This indication is reactor coolant temperature sensitive. The calibration is thus made for rated conditions. The level error at low pressures and temperatures is bounded by the safety analysis which reflects the weight-of-coolant above the lower tap, and not the indicated level.

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip setting, or a sufficient number of devices have been affected by any means such that the automatic function is incapable of operating within the allowable deviation while in a reactor mode in which the specified function must be operable, or the actions specified in 3.1.B are not initiated as specified.

If an unsafe failure is detected during surveillance testing, it is desirable to determine as soon as possible if other failures of a similar type have occurred and whether the particular function involved is still operable or capable of meeting the single failure criterion. To meet the requirements of Table 3.1.1, it is necessary that all instrument channels in one trip system be operable

Bases:

4.0 This specification provides that surveillance activities necessary to ensure the Limiting Conditions for Operations are met and will be performed during the periods when the Limiting Conditions for Operation are applicable.

A tolerance for performing surveillance activities beyond the nominal interval is provided to allow operational flexibility because of scheduling and performance considerations. The plant uses a fixed surveillance program that prevents repetitive addition of the allowable 25% extension. Each surveillance test is completed within plus or minus 25% of each scheduled fixed date. Scheduled dates are based on dividing each calender year into four 13-week "surveillance" quarters consisting of 3 4-week "surveillance" months and one "catch-up" week. This method of scheduling permits certain tests always to be scheduled on certain days of the week.

The specification ensures that surveillance activities associated with a Limiting Condition for Operation have been performed within the specified time interval prior to entry into a plant condition for which the Limiting Condition for Operation is applicable. Under the terms of this specification, for example, during-initial plant startup or following extended plant outage, the surveillance activities must be performed within the stated surveillance interval prior to placing or returning the system or equipment to Operable status.

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.

NOTES:

(1) For Groups 1, 2 and 3, there shall be two operable or tripped trip systems for each function. 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.

For Groups 4, 5 and Reactor Pressure Interlocks there shall be two operable or tripped trip systems for each function.

(2) For Groups 1, 2 and 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 operable 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.

For Groups 4, 5 and Reactor Pressure Interlocks 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.

(b) 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 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)
ECCS INSTRUMENTATION			
1. Reactor Low-Low Water Level	Once/month (Note 5)	Every Operating Cycle - Transmitter Once/3 months - Trip Unit	Once/Shift
2. Drywell High Pressure	Once/month	Once/3 months	None
3. Reactor Low Pressure (Pump Start)	Once/month	Once/3 months	None
4. Reactor Low Pressure (Valve Permissive)	Once/month	Once/3 months	None
5. Undervoltage Emergency Bus	Refueling Outage	Refueling Outage	None
6. Low Pressure Core Cooling Pumps Discharge Pressure Interlock	Once/month	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/month (Note 5)	Every Operating Cycle - Transmitter Every 3 months - Trip Unit	Once/Shift
ROD BLOCKS			
1. APRM Downscale	Once/month (Note 5)	Once/3 months	None
2. APRM Flow Variable	Once/month (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/month (Note 5)	Once/3 months	None
6. RBM Downscale	Once/month (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
MAIN STEAM LINE (GROUP I) ISOLATION			
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. Steam Line High Radiation	Once/3 months (Note 5)	Note 6	Once/shift
5. Reactor Low Low Water Level	Once/3 months (Note 5)	Every Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/shift
CONTAINMENT ISOLATION (GROUPS 2 & 3)			
1. Reactor Low Water Level (Note 10)	-	-	-
2. Drywell High Pressure (Note 10)	-	-	-
HPCI (GROUP 4) ISOLATION			
1. Steam Line High Flow	Once/month	Once/3 months	None
2. Steam Line High Temperature	Once/month	Once/3 months	None
RCIC (GROUP 5) ISOLATION			
1. Steam Line High Flow	Once/month	Once/3 months	None
2. Steam Line High Temperature	Once/month	Once/3 months	None
REACTOR BUILDING VENTILATION			
1. Radiation Monitors (Plenum)	Once/month	Once/3 months	Once/day
2. Radiation Monitors (Refueling Floor)	Once/month	Once/3 months	Note 4
RECIRCULATION PUMP TRIP AND ALTERNATE ROD INJECTION			
1. Reactor High Pressure	Once/month (Note 5)	Once/Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/Day
2. Reactor Low Low Water Level	Once/month (Note 5)	Once/Operating Cycle-Transmitter Once/3 Months-Trip Unit	Once/shift
SHUTDOWN COOLING SUPPLY ISOLATION			
1. Reactor Pressure Interlock	Once/month	Once/3 Months	None

Bases:

3.2 In addition to reactor protection instrumentation which initiates a reactor scram, protective instrumentation has been provided which initiates action to mitigate the consequences of accidents which are beyond the operators ability to control, or terminate a single operator error before it results in serious consequences. This set of specifications provides the limiting conditions of operation for the primary system isolation function, initiation of the emergency core cooling system, and other safety related functions. The objectives of the Specifications are (i) to assure the effectiveness of the protective instrumentation when required, and (ii) to prescribe the trip settings required to assure adequate performance. This set of Specifications also provides the limiting conditions of operation for the control rod block system.

Isolation valves are installed in those lines that penetrate the primary containment and must be isolated during a loss of coolant accident so that the radiation dose limits are not exceeded during an accident condition. Actuation of these valves is initiated by protective instrumentation shown in Table 3.2.1 which senses the conditions for which isolation is required. Such instrumentation must be available whenever primary containment integrity is required. The objective is to isolate the primary containment so that the guidelines of 10 CFR 100 are not exceeded during an accident.

The instrumentation which initiates primary system isolation is connected in a dual bus arrangement. Thus, the discussion given in the bases for Specification 3.1 is applicable here.

The low reactor water level instrumentation is set to trip when reactor water level is 10'6" (7" on the instrument at 100% rated thermal power) above the top of the active fuel. This trip initiates closure of group 2, and ary containment isolation valves. Reference Section 7.7.2.2 FSAR. For a trip setting of 10'6" above the top of the active fuel, the valves will be closed before perforation of the clad occurs even for the maximum break in that line and therefore the setting is adequate.

The low low reactor water level instrumentation is set to trip when reactor water level is 6'6" above the top of the active fuel. This trip initiates closure of the Group 1 Primary containment isolation valves, Reference Section 7.7.2.2 FSAR, and also activates the ECC systems and starts the emergency diesel generator.

Bases:

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The instrumentation which initiates primary system isolation is connected in a dual bus arrangement. Thus, the discussion given in the bases for Specification 3.1 is applicable here.

The low reactor water level instrumentation is set to trip when reactor water level is 10'6" (7" on the instrument at 100% rated thermal power) above the top of the active fuel. This trip initiates closure of group 2, and 3 primary containment isolation valves. Reference Section 7.7.2.2 FSAR. For a trip setting of 10'6" above the top of the active fuel, the valves will be closed before perforation of the clad occurs even for the maximum break in that line and therefore the setting is adequate.

The low low reactor water level instrumentation is set to trip when reactor water level is 6'6" above the top of the active fuel. This trip initiates closure of the Group 1 Primary containment isolation valves, Reference Section 7.7.2.2 FSAR, and also activates the ECC systems and starts the emergency diesel generator.

Bases:

4.2 The instrumentation in this section will be functionally tested and calibrated at regularly scheduled intervals. Although this instrumentation is not generally considered to be as important to plant safety as the Reactor Protection System, the same design reliability goals are applied. As discussed in Section 4.1 Bases, monthly or quarterly testing is generally specified unless the testing must be conducted during refueling outages. Quarterly calibration is specified unless the calibration must be conducted during refueling outages. Where applicable, sensor checks are specified on a once/shift or one/day basis.