March 7, 1990

Docket Nos. 50-282
and 50-306

Mr. T. M. Parker, Manager
Nuclear Support Services
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Dear Mr. Parker:

SUBJECT: ERRATA FOR AMENDMENT NOS. 91 AND 84 TO FACILITY OPERATING LICENSES DPR-42 AND DPR-60 (TAC NOS. 61081 AND 61082)

The changes to the plant Technical Specifications (TS) implemented by License Amendment Nos. 91 and 84, which were transmitted to you by letter dated October 27, 1989, have been found to contain text errors. The enclosed errata to the Technical Specifications changes implemented by License Amendment Nos. 91 and 84 are hereby transmitted and should replace the pages previously transmitted.

Sincerely

Dominic C. DiIanni, Project Manager
Project Directorate III-1
Division of Reactor Projects - III,
IV, V & Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
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PI ERRATA AMD 91/84 61081/82

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

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Northern States Power Company

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ERRATA

ATTACHMENT TO LICENSE AMENDMENTS NOS. 91 AND 84
FACILITY OPERATING LICENSES NOS. DPR-42 AND DPR 60
DOCKETS NOS. 50-282 AND 50-306

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE	INSERT
TS-i thru x	TS-i thru xiii
TS.1-1 thru 8	TS.1-1 thru 8
TS.2.1-1	TS.2.1-1
TS.2.1-2	----------
TS.2.2-1	TS.2.2-1
TS.2.2-2	----------
TS.2.3-1 thru 4	TS.2.3-1 thru 4
TS.2.3-5 thru 6	----------
----------	TS.3.0-1
TS.3.1-1 thru 21	TS.3.1-1 thru 12
Move Figures TS.3.1-1,2 to between TS.3.1-7 and 8	
Move Figures TS.3.1-3 to between TS.3.1 thru 10 and 11	
TS.3.2-1 thru 5	TS.3.2-1 thru 2
TS.3.3-1 thru 8	TS.3.3-1 thru 8
TS.3.4-1 thru 3	TS.3.4-1 thru 3
TS.3.5-1 thru 5	TS.3.5-1
TABLE TS.3.5-4	TABLE TS.3.5-4
TS.3.6-1 thru 6	TS.3.6-1 thru 4
TS.3.7-1 thru 3	TS.3.7-1 thru 3
TS.3.8-1 thru 6	TS.3.8-1 thru 4
TS.3.9-1 thru 13	TS.3.9-1 thru 7
TS.3.10-1 thru 17	TS.3.10-1 thru 8
Figure TS.3.10-1	Figure TS.3.10-1
TS.3.11-1 thru 2	TS.3.11-1
TS.3.12-1	TS.3.12-1
TS.3.13-1 thru 2	TS.3.13-1 thru 2
TS.3.14-1 thru 6	TS.3.14-1 thru 4
TS.3.15-1 thru 2	TS.3.15-1 thru 2
TS.4.1-1 thru 3	TS.4.1-1
TABLE TS.4.1-2B(page 2 of 2)	TABLE TS.4.1-2B(page 2 of 2)
TS.4.2-4	--------
TS.4.3-2	--------
TS.4.4-3	TS.4.4-3
TS.4.4-5A thru 8	--------
TS.4.5-3 thru 4	TS.4.5-3 thru 4
TS.4.6-1 thru 3	TS.4.6-1 thru 3
TS.4.7-1	TS.4.7-1
TS.4.8-1 thru 2	TS.4.8-1 thru 2
TS.4.9-1	TS.4.9-1
TS.4.10-3	---------
TS.4.11-2	TS.4.11-2
TS.4.12-6 thru 7	---------
TS.4.13-3 thru 4	TS.4.13-3
TS.4.14-1 thru 2	TS.4.14-1
TS.4.15-1 thru 2	TS.4.15-1
TS.4.16-2	TS.4.16-2

REMOVE	INSERT
TS.4.16-5 thru 6	---------
TS.4.17-4 thru 5	TS.4.17-4
TS.4.18-1	TS.4.18-1
TS.5.1-2	TS.5.1-2
TS.6.7-1 thru 5	TS.6.7-1 thru 5
	Section 2.0
-----	B.2.1-1 thru 2
-----	B.2.2-1
-----	B.2.3-1 thru 3
	Section 3.0
-----	B.3.0-1
-----	B.3.1-1 thru 9
-----	B.3.2-1
-----	B.3.3-1 thru 4
-----	B.3.4-1
-----	B.3.5-1 thru 4
-----	B.3.6-1 thru 2
-----	B.3.7-1 thru 2
-----	B.3.8-1 thru 3
-----	B.3.9-1 thru 5
-----	B.3.10-1 thru 10
-----	B.3.11-1
-----	B.3.12-1
-----	B.3.13-1
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-----	B.3.15-1
	Section 4.0
-----	B.4.1-1 thru 2
-----	B.4.2-1
-----	B.4.3-1
-----	B.4.4-1 thru 4
-----	B.4.5-1 thru 2
-----	B.4.6-1 thru 2
-----	B.4.7-1
-----	B.4.8-1
-----	B.4.9-1
-----	B.4.10-1
-----	B.4.11-1
-----	B.4.12-1 thru 2
-----	B.4.13-1
-----	B.4.14-1
-----	B.4.15-1
-----	B.4.16-1 thru 2
-----	B.4.17-1 thru 2
-----	B.4.18-1

CONTAINMENT INTEGRITY

CONTAINMENT INTEGRITY shall exist when:

1. Penetrations required to be isolated during accident conditions are either:

   a. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

   b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except as provided in Specifications 3.6.C and 3.6.D.

2. Blind flanges required by Table TS.4.4-1 are installed.

3. The equipment hatch is closed and sealed.

4. Each air lock is in compliance with the requirements of Specification 3.6.M.

5. The containment leakage rates are within their required limits.

COLD SHUTDOWN

A reactor is in the COLD SHUTDOWN condition when the reactor is subcritical by at least 1% $\Delta k/k$ and the reactor coolant average temperature is less than 200°F.

CORE ALTERATION

CORE ALTERATION is the movement or manipulation of any component within the reactor pressure vessel with the vessel head removed and fuel in the vessel, which may affect core reactivity. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

RATED THERMAL POWER

RATED THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant of 1650 megawatts thermal (MWt).

REFUELING

A unit is in the REFUELING condition when:

1. There is fuel in the reactor vessel.

2. The vessel head closure bolts are less than fully tensioned or the head is removed.

3. The reactor coolant average temperature is less than or equal to 140°F, and

4. The boron concentration of the reactor coolant system and the refueling cavity is sufficient to ensure that the more restrictive of the following conditions is met:

   a. $K_{eff} \leq 0.95$, or

   b. Boron concentration $\geq$2000 ppm.

REPORTABLE EVENT

A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 of 10 CFR Part 50.

SHIELD BUILDING INTEGRITY

SHIELD BUILDING INTEGRITY shall exist when:

1. Each door in each access opening is closed except when the access opening is being used for normal transit entry and exit, then at least one door shall be closed, and

2. The shield building equipment opening is closed.

3. The Shield Building Ventilation System is OPERABLE.

SITE BOUNDARY

The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee.

3.1.B. Pressure/Temperature Limits

1. Reactor Coolant System

   a. The Unit 1 and Unit 2 Reactor Coolant Systems (except the pressurizer) temperature and pressure shall be limited in accordance with the limit lines shown on Figures TS.3.1-1 and TS.3.1-2 with:

      1. A maximum heatup of 60°F in any 1-hour period.

      2. A maximum cooldown of 100°F in any 1-hour period.

   b. If these conditions cannot be satisfied, restore the temperature and/or pressure to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the Reactor Coolant System; determine that the Reactor Coolant System remains acceptable for continued operation or be in at least HOT SHUTDOWN within the next 6 hours and reduce the reactor coolant system average temperature and pressure to less than 200°F and 500 psig, respectively, within the following 30 hours.

2. Pressurizer

   a. The pressurizer temperature shall be limited to:

      1. A maximum heatup of 100°F in any 1-hour period.

      2. A maximum cooldown of 200°F in any 1-hour period.

   b. The pressurizer spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 320°F.

   c. If these conditions cannot be satisfied, restore the temperature to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the pressurizer; determine that the pressurizer remains acceptable for continued operation or be in at least HOT SHUTDOWN within the next 6 hours and reduce the pressurizer pressure to less than 500 psig within the following 30 hours.

3.1.C.2 e. If the total reactor coolant system to secondary coolant system leakage through both steam generators of a unit exceeds 1.0 gallon per minute (gpm), within one hour initiate action to place the unit in HOT SHUTDOWN and be in at least HOT SHUTDOWN within the next 6 hours and be in COLD SHUTDOWN within the following 30 hours and perform an inservice steam generator tube inspection in accordance with Technical Specification 4.12.

3. Pressure Isolation Valve Leakage

Leakage through the pressure isolation valves shall not exceed the maximum allowable leakage specified in Specification 4.3 when reactor coolant system average temperature exceeds 200°F. If the maximum allowable leakage is exceeded, within one hour initiate the action necessary to place the unit in HOT SHUTDOWN, and be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.2.B.6. Motor-operated valve Number 8809C (Boric Acid Storage Tank to the SI Pumps) for that unit shall be open, shall have its valve position monitor light OPERABLE, and shall have its motor control center supply breaker physically locked in the off position.

7. Manual valves in the boric acid system shall be physically locked in the position required for automatic boric acid injection following a steam line break accident.

C. During STARTUP OPERATION or POWER OPERATION, any one of the following conditions of inoperability may exist for each unit during the time intervals specified, provided STARTUP OPERATION is discontinued until OPERABILITY is restored (except as specified in 3.2.D below). If OPERABILITY is not restored within the time specified, place the affected unit in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

1. Two of the three charging pumps may be inoperable for 72 hours.

2. A unit may operate for 2 hours with no OPERABLE boric acid storage tank.

3. One of the 2 independent flow paths in each unit for boric acid addition to the core may be inoperable for 72 hours. Prior to initiating repairs, the other flow path shall be verified OPERABLE.

4. One channel of heat tracing may be inoperable for 72 hours.

5. Any one redundant automatic valve required for boric acid injection following a steam line break may be inoperable for 72 hours.

6. The valve position monitor light for motor-operated valve No. 8809C (Boric Acid Storage Tank to the SI Pumps) may be inoperable for 72 hours provided the valve position is verified to be open once each shift.

D. During plant shutdown, if the boron concentration of the reactor coolant system is equivalent to or greater than the COLD SHUTDOWN boron concentration, the requirements of 3.2.B.2 are not required to be satisfied.

3.3.A.1.f. Manual valves in the above systems that could (if one is improperly positioned) reduce injection flow below that assumed for accident analyses, shall be blocked and tagged in the proper position for injection. RHR system valves, however, may be positioned as necessary to regulate plant heatup or cooldown rates when the reactor is subcritical. All changes in valve position shall be under direct administrative control.

g. The following valve conditions shall exist:

(1) Safety injection system motor-operated valves 8801A, 8801B, 8806A shall have valve position monitor lights OPERABLE and shall be locked in the open position by having the motor control center supply breakers physically locked in the off position.

(2) Safety injection system motor-operated valves 8816A and 8816B shall be closed, shall have valve position monitor lights OPERABLE, and shall have the motor control center supply breakers physically locked in the off position.

(3) Accumulator discharge valves 8800A and 8800B shall have position monitor lights and alarms OPERABLE.

(4) Residual Heat Removal System valves 8701A and 8701B shall have normal valve position indication OPERABLE.

2. During STARTUP OPERATION or POWER OPERATION, any one of the following conditions of inoperability may exist provided STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

a. One safety injection pump may be inoperable for 72 hours.

b. One residual heat removal pump may be inoperable for 72 hours.

c. One residual heat exchanger may be inoperable for 72 hours.

d. Any redundant valve in the system required for safety injection, may be inoperable for 72 hours.

e. One accumulator may be inoperable for one hour whenever pressurizer pressure is greater than 1000 psig.

f. One safety injection system and one residual heat system may be inoperable for 72 hours provided the redundant safety injection system and heat removal system required for functioning during accident conditions is OPERABLE.

3.3.A.2.g. The valve position monitor lights or alarms for motor-operated valves specified in 3.3.A.1.g above may be inoperable for 72 hours provided the valve position is verified once each shift.

3. At least one safety injection pump control switch in the control room shall be in pullout whenever RCS temperature is less than 310°F* except that both SI pumps may be run while conducting the integrated SI test when either of the following conditions is met:

   (a) There is a steam or gas bubble in the pressurizer and the SI pump discharge valves are shut, or

   (b) The reactor vessel head is removed.

4. Both safety injection pump control switches in the Control Room shall be in pullout whenever RCS temperature is less than 200°F (except as specified in 3.3.A.3 and 3.1.A.1.d.(2)).

*Valid until 20 EFPY

3.3.B. Containment Cooling Systems

1. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F unless the following conditions are satisfied (except as specified in 3.3.B.2 below):

   a. Two containment spray pumps are OPERABLE.

   b. Four containment fan cooler units are OPERABLE.

   c. The spray additive tank is OPERABLE with not less than 2590 gallons of solution with a sodium hydroxide concentration of 9% to 11% by weight inclusive.

   d. Manual valves in the above systems that could (if improperly positioned) reduce spray flow below that assumed for accident analysis, shall be blocked and tagged in the proper position. During POWER OPERATION, changes in valve position will be under direct administrative control.

   e. The containment spray system motor operated valves MV-32096 and MV-32097 (Unit 2 valves: MV-32108 and MV-32109) shall be closed and shall have the motor control center supply breakers in the off position.

2. During STARTUP OPERATION or POWER OPERATION, any one of the following conditions of inoperability may exist provided STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

   a. One containment fan cooler unit may be inoperable for 7 days, provided both containment spray pumps are OPERABLE.

   b. One containment spray pump may be inoperable for 72 hours, provided at least two containment fan cooler units are OPERABLE.

   c. Two containment fan cooler units may be inoperable for 72 hours, provided at least one containment spray pump is OPERABLE.

   d. Two containment spray pumps may be inoperable for 72 hours, provided four containment fan cooler units are OPERABLE.

   e. The spray additive tank may be inoperable for 72 hours.

3.3.D. Cooling Water System

1. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F, unless the following conditions are satisfied (except as specified in 3.3.D.2 below).

   a. Two diesel-driven cooling water pumps are OPERABLE.

   b. Two motor-driven cooling water pumps are OPERABLE.

   c. Two safeguards traveling screens are OPERABLE.

2. During STARTUP OPERATION or POWER OPERATION, the following conditions of inoperability may exist provided STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

   a. One diesel-driven cooling water pump may be inoperable for 7 days (total for both diesel-driven cooling water pumps during any consecutive 30 day period) provided:

      (1) the other diesel-driven pump and its associated diesel generator are OPERABLE.

      (2) the engineered safety features associated with the OPERABLE diesel-driven cooling water pump are OPERABLE; and

      (3) both paths from transmission grid to the plant 4 kV safeguards buses are OPERABLE.

      (4) two motor-driven cooling water pumps shall be OPERABLE.

   b. One of the two required motor-driven cooling water pumps may be inoperable for 7 days provided both diesel-driven cooling water pumps are OPERABLE.

   c. One of the two required cooling water headers may be inoperable for 72 hours provided:

      (1) the diesel-driven pump and the diesel generator associated with safety features on the OPERABLE header are OPERABLE.

      (2) the horizontal motor-driven pump associated with the OPERABLE header and the vertical motor-driven pump are OPERABLE.

3.3.D.2.d. One of the Safeguards Traveling Screens may be inoperable for 90 days provided a sluice gate connecting the Emergency Bay and the Circ Water Bay is open (except during periods of testing not to exceed 24 hours).

e. Both Safeguards Traveling Screens may be inoperable for 7 days provided a sluice gate connecting the Emergency Bay and the Circ Water Bay is open.

f. The Emergency Cooling Water line from the Mississippi River may be inoperable for 7 days provided that a sluice gate connecting the Emergency Bay and the Circ Water Bay is open.

3.4.B.1.d. A minimum of 100,000 gallons of water is available in the condensate storage tanks and a backup supply of river water is available through the cooling water system.

e. Motor operated valves MV-32242 and MV-32243 (Unit 2 valves MV-32248 and MV-32249) shall have valve position monitor lights OPERABLE and shall be locked in the open position by having the motor control center supply breakers physically locked in the off position.

f. Manual valves in the above systems that could (if one is improperly positioned) reduce flow below that assumed for accident analysis shall be locked in the proper position for emergency use. During POWER OPERATION, changes in valve position will be under direct administrative control.

g. The condensate supply cross connect valves C-41-1 and C-41-2, to the auxiliary feedwater pumps shall be blocked and tagged open. Any changes in position of these valves shall be under direct administrative control.

2. During STARTUP OPERATION or POWER OPERATION, any one of the following conditions of inoperability may exist for each unit provided STARTUP OPERATION is discontinued until OPERABILITY is restored. If OPERABILITY is not restored within the time specified, place the affected unit (or either unit in the case of a motor driven AFW pump inoperability) in at least HOT SHUTDOWN within the next 6 hours and reduce reactor coolant system average temperature below 350°F within the following 6 hours.

a. A turbine driven AFW pump, system valves and piping may be inoperable for 72 hours.

b. A motor driven AFW pump, system valves and piping may be inoperable for 72 hours.

c. The condensate storage tanks may be inoperable for 48 hours provided the cooling water system is available as a backup supply of water to the auxiliary feedwater pumps.

d. The backup supply of river water provided by the cooling water system may be inoperable for 48 hours provided a minimum of 100,000 gallons of water is available in the condensate storage tanks.

e. The valve position monitor lights for motor operated valves MV-32242 and MV-32243 (Unit 2 valves MV-32248 and MV-32249) may be inoperable for 72 hours provided the associated valves' positions are verified to be open once each shift.

3.6 CONTAINMENT SYSTEM

Applicability

Applies to the integrity of the containment system.

Objective

To define the operating status of the containment system for plant operation.

Specification

A. Containment Integrity

1. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F unless CONTAINMENT INTEGRITY is maintained.

2. If these conditions cannot be satisfied, within one hour initiate the action necessary to place the unit in HOT SHUTDOWN, and be in at least HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

B. Vacuum Breaker System

1. Both valves in each of two vacuum breaker systems, including actuating and power circuits, shall be OPERABLE when CONTAINMENT INTEGRITY is required (except as specified in 3.6.B.2 and 3.6.B.3 below).

2. With one vacuum breaker inoperable with respect to its containment isolation function, apply the requirements of Specification 3.6.C.3, to the isolation valves associated with the inoperable vacuum breaker.

3. One vacuum breaker may be inoperable with respect to its vacuum relief function for 7 days.

C. Containment Isolation Valves

1. Non-automatic containment isolation valves shall be locked closed or shall be under direct administrative control and capable of being closed within one minute following an accident.

2. Automatic containment isolation valves, listed in Table TS.4.4-1 including actuation circuits, shall be OPERABLE when CONTAINMENT INTEGRITY is required (except as specified in 3.6.C.3 below).

3. With one or more valve(s) listed in Table TS.4.4-1 inoperable, within four hours:

   (a) restore the inoperable valve(s) to operable status or,

   (b) deactivate the operable valve in the closed position or,

   (c) lock closed at least one valve in each penetration having one inoperable valve.

3.7.B.5. D1 and D2 diesel generators may be inoperable for 2 hours provided the two required paths from the grid to the plant 4 kV safeguards distribution system are OPERABLE and the OPERABILITY of the two required paths from the grid are verified OPERABLE within 1 hour.

6. One 4 kV safeguards bus (and its associated 480 V bus including associated safeguards motor control centers) or one 480 V safeguards bus including associated safeguards motor control centers may be inoperable or not fully energized for 8 hours provided its redundant counterpart is verified OPERABLE and the diesel generator and safeguards equipment associated with its counterpart are OPERABLE.

7. One battery charger may be inoperable for 8 hours provided, (a) its associated battery is OPERABLE, (b) its redundant counterpart is verified OPERABLE, and (c) the diesel generator and safeguards equipment associated with its counterpart are OPERABLE.

8. One battery may be inoperable for 8 hours provided that the other battery and both battery chargers remain OPERABLE.

9. In addition to the requirements of Specification TS.3.7.A.7 a second inverter supplying Instrument AC Panels 111, 112, 113, and 114 may (Unit 2 panels 211, 212, 213 and 214) be powered from an inverter bypass source for 8 hours.

3.8 REFUELING AND FUEL HANDLING

Applicability

Applies to operating limitations associated with fuel-handling operations, CORE ALTERATIONS, and crane operations in the spent fuel pool enclosure.

Objectives

To ensure that no incident could occur during fuel handling, CORE ALTERATIONS and crane operations that would affect public health and safety.

Specification

A. Core Alterations

1. During CORE ALTERATIONS the following conditions shall be satisfied (except as specified in 3.8.A.2 and 3 below):

   a. The equipment hatch and at least one door in each personnel air lock shall be closed. In addition, at least one isolation valve shall be OPERABLE or locked closed in each line which penetrates the containment and provides a direct path from containment atmosphere to the outside.

   b. Radiation levels in the fuel handling areas of the containment shall be monitored continuously.

   c. The core subcritical neutron flux shall be continuously monitored by at least two neutron monitors, each with continuous visual indication in the control room and one with audible indication in the containment, which are in service whenever core geometry is being changed. When core geometry is not being changed, at least one neutron flux monitor shall be in service.

   d. The plant shall be in the REFUELING condition.

   e. During movement of fuel assemblies or control rods out of the reactor vessel, at least 23 feet of water shall be maintained above the reactor vessel flange. The required water level shall be verified prior to moving fuel assemblies or control rods and at least once every day while the cavity is flooded.

3.8.A.1.f. At least one residual heat removal pump shall be OPERABLE and running. The pump may be shut down for up to one hour to facilitate movement of fuel or core components.

g. If the water level above the top of the reactor vessel flange is less than 20 feet, except for control rod unlatching/latching operations or upper internals removal/replacement, both residual heat removal loops shall be OPERABLE.

h. Direct communication between the control room and the operating floor of the containment shall be available whenever CORE ALTERATIONS are taking place.

i. No movement of irradiated fuel in the reactor shall be made until the reactor has been subcritical for at least 100 hours.

j. The radiation monitors which initiate isolation of the Containment Purge System shall be tested and verified to be OPERABLE prior to CORE ALTERATIONS.

2. If any of the above conditions are not met, CORE ALTERATIONS shall cease. Work shall be initiated to correct the violated conditions so that the specifications are met, and no operations which may increase the reactivity of the core shall be performed.

3. If Specification 3.8.A.1.f or 3.8.A.1.g cannot be satisfied, all fuel handling operations in containment shall be suspended, the requirements of Specification 3.8.A.1.a shall be satisfied, and no reduction in reactor coolant boron concentration shall be made.

3.8.C. Small Spent Fuel Pool Restrictions

No more than 45 recently discharged assemblies shall be located in the small pool (pool No. 1).

D. Spent Fuel Pool Special Ventilation System

1. Both trains of the Spent Fuel Pool Special Ventilation System shall be OPERABLE at all times (except as specified in 3.8.D.2 and 3.8.D.3 below).

2. With one train of the Spent Fuel Pool Special Ventilation System inoperable, fuel handling operations and crane operations with loads over spent fuel (inside the spent fuel pool enclosure) are permissible during the following 7 days, provided the redundant train is demonstrated OPERABLE prior to proceeding with those operations.

3. With both trains of the Spent Fuel Pool Special Ventilation System inoperable, suspend all fuel handling operations and crane operations with loads over spent fuel (inside the spent fuel pool enclosure).

4. The provisions of specification 3.0.C are not applicable.

E. Storage of Low Burnup Fuel

1. The following restrictions shall apply whenever fuel with an average assembly burnup less than 5,000 MWD/MTU is stored in the spent fuel pool (except as specified in 3.8.E.2 and 3.8.E.3 below):

   a. The boron concentration in the spent fuel pool shall be maintained greater than or equal to 500 ppm, and

   b. Fuel with an average assembly burnup less than 5,000 MWD/MTU shall not be stored in more than three storage locations of every two by two storage rack array.

2. If the conditions in 3.8.E.1.a above are not met, verify that the spent fuel pool storage configuration meets the requirements of specification 3.8.E.1.b and suspend all actions involving the movement of fuel in the spent fuel pool until the boron concentration is increased to 500 ppm or greater.

3. If the conditions in 3.8.E.1.b above are not met, suspend all actions involving movement of fuel in the spent fuel pool, verify the spent fuel pool boron concentration to be greater than or equal to 500 ppm and initiate corrective actions. Mis-positioned fuel assemblies shall be moved to acceptable locations prior to the resumption of other fuel movement in the spent fuel pool.

3.10.C.2. If the QUADRANT POWER TILT RATIO exceeds 1.02 but is less than 1.07 for a sustained period of more than 24 hours, or if such a tilt recurs intermittently, the reactor shall be brought to the HOT SHUTDOWN condition. Subsequent operation below 50% of rating, for testing, shall be permitted.

3. Except for PHYSICS TESTS if the QUADRANT POWER TILT RATIO exceeds 1.07, the reactor shall be brought to the HOT SHUTDOWN condition. Subsequent operation below 50% of rating, for testing, shall be permitted.

4. If the core is operating above 85% power with one excore nuclear channel inoperable, then the core quadrant power balance shall be determined daily and after a 10% power change using either 2 movable detectors or 4 core thermocouples per quadrant, per Specification 3.11.

D. Rod Insertion Limits

1. The shutdown rods shall be fully withdrawn when the reactor is critical or approaching criticality.

2. When the reactor is critical or approaching criticality, the control banks shall be limited in physical insertion; insertion limits are shown in Figure TS.3.10-2, -3 and -4 for normal and abnormal operating conditions.

3. Control bank insertion may be further restricted by specification 3.10.A if, (1) the measured control rod worth of all rods, less the worth of the worst stuck rod, is less than 5.52% reactivity at the beginning of the first cycle or the equivalent value if measured at any other time, or (2) if a rod is inoperable (Specification 3.10.G).

4. Insertion limits do not apply during PHYSICS TESTS or during periodic exercise of individual rods. The shutdown margin shown in Figure TS.3.10-1 must be maintained except for low power PHYSICS TESTING. For this test the reactor may be critical with all but one high worth control rod inserted for a period not to exceed 2 hours per year provided a rod drop test is run on the high worth control rod prior to this particular low power PHYSICS TEST.

3.10.E. Rod Misalignment Limitations

1. If a rod cluster control assembly (RCCA) is misaligned from its bank by more than 24 steps, the rod will be realigned or the core power peaking factors shall be determined within 2 hours, and Specification 3.10.B applied. If peaking factors are not determined within 2 hours, the high neutron flux trip setpoint shall be reduced to 85 percent of rating.

2. a. If the bank demand position is greater than or equal to 215 steps, or less than or equal to 30 steps and the rod position indicator channel differs by more than 24 steps, that rod control cluster assembly (RCCA) shall be considered misaligned.

   b. If the bank demand position is between 30 and 215 steps and the rod position indicator channel differs by more than 12 steps, that RCCA shall be considered misaligned.

3. If the misaligned RCCA is not realigned within a total of 8 hours, the RCCA shall be declared inoperable.

F. Inoperable Rod Position Indicator Channels

1. If a rod position indicator (RPI) channel is out of service then

   a. For operation between 50% and 100% of RATED THERMAL POWER, the position of the RCCA shall be checked directly by core instrumentation (excore detector and/or thermocouples and/or movable incore detectors) every shift or subsequent to rod motion exceeding a total of 24 steps, whichever occurs first.

   b. During operation below 50% of RATED THERMAL POWER, no special monitoring is required.

2. The plant shall be brought to the HOT SHUTDOWN Condition should more than one RPI channel per group or more than two RPI channels per bank be found to be inoperable during POWER OPERATION.

3. If a control rod having a rod position indicator channel inoperable is found to be misaligned from 1.a. above, then apply Specification 3.10.E.

3.15.B. Radiation Monitors

1. The event monitoring instrumentation channels specified in Table TS.3.15-2 shall be OPERABLE.

2. With the number of OPERABLE event monitoring instrumentation channels less than the Required Total Number of Channels shown on Table TS.3.15-2, either restore the inoperable channels to OPERABLE status within 7 days, or prepare and submit a special report to the Commission within 30 days outlining the action taken, the cause of the inoperability, the plans and the schedule for restoring the system to OPERABLE status.

3. With the number of OPERABLE event monitoring instrumentation channels less than the Minimum Channels Operable requirement of Table TS.3.15-2, initiate the preplanned alternate method of monitoring the appropriate parameters and either restore the inoperable channels to OPERABLE status within 7 days, or prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.7.B.2 within the next 30 days outlining the action taken, the cause of the inoperability, the plans and the schedule for restoring the system to OPERABLE status.

4. The provisions of specification 3.0.C are not applicable.

C. Reactor Vessel Level Instrumentation

1. The reactor vessel level instrumentation channels specified in Table TS.3.15-3 shall be OPERABLE.

2. With the number of OPERABLE reactor vessel level instrumentation channels less than the Required Total Number of Channels shown on Table TS.3.15-3, either restore the inoperable channels to OPERABLE status within 14 days, or be in at least HOT SHUTDOWN within the next 6 hours.

3. With the number of OPERABLE reactor vessel level instrumentation channels less than the Minimum Channels Operable requirements of Table TS.3.15-3, either restore the minimum number of channels to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 6 hours.

6.7.C.1.(d) The reports shall also include the following: a summary description of the radiological environmental monitoring program; a map of all sampling locations keyed to a table giving distances and directions from one reactor; and the results of licensees participation in the Interlaboratory Comparison Program, required by Specification 4.10.C.1.

2. Environmental Special Reports

(a) When radioactivity levels in samples exceed limits specified in Table 4.10-3, an Environmental Special Report shall be submitted within 30 days from the end of the affected calendar quarter. For certain cases involving long analysis time, determination of quarterly averages may extend beyond the 30 day period. In these cases the potential for exceeding the quarterly limits will be reported within the 30 day period to be followed by the Environmental Special Report as soon as practicable.

3. Other Environmental Reports (non-radiological, non-aquatic)

Written reports for the following items shall be submitted to the appropriate NRC Regional Administrator:

a. Environmental events that indicate or could result in a significant environmental impact casually related to plant operation. The following are examples: excessive bird impaction; onsite plant or animal disease outbreaks; unusual mortality of any species protected by the Endangered Species Act of 1973; or increase in nuisance organisms or conditions. This report shall be submitted within 30 days of the event and shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

b. Proposed changes, test or experiments which may result in a significant increase in any adverse environmental impact which was not previously reviewed or evaluated in the Final Environmental Statement or supplements thereto. This report shall include an evaluation of the environmental impact of the proposed activity and shall be submitted 30 days prior to implementing the proposed change, test or experiment.

D. Special Reports

Unless otherwise indicated, special reports required by the Technical Specifications shall be submitted to the appropriate NRC Regional Administrator within the time period specified for each report.

3.0 Applicability

Bases

The intent of action statements which direct the operators to place the plant in "at least HOT SHUTDOWN" is:

1. in POWER OPERATIONS the plant shall be placed in HOT SHUTDOWN,

2. in STARTUP OPERATIONS any plant heatup shall be stopped and the reactor coolant system boron concentration shall be at the concentration required to assure 1% shutdown margin at 200°F,

3. in any other condition above COLD SHUTDOWN, no heatup shall be allowed and the reactor coolant system boron concentration shall be at the concentration required to assure 1% shutdown margin at 200°F.

If the plant is required to be in some condition within 6 hours, and this condition is obtained within a shorter period of time, the time saved may be added to any required time to achieve another condition.

For example consider the following action statement: One of two pumps may be inoperable for 72 hours. If operability is not restored, be in HOT SHUTDOWN within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. The action statement provides up to 108 hours (72 + 6 + 30) to achieve COLD SHUTDOWN.

1. If one of the pumps is discovered inoperable while in POWER OPERATIONS, and the plant was placed in HOT SHUTDOWN after 60 hours, COLD SHUTDOWN would need to be achieved within the next 48 hours (72 - 60 = 12, 12 + 6 + 30 = 48).

2. However, if this condition were discovered while in HOT SHUTDOWN, the unit could remain in HOT SHUTDOWN for the next 72 hours. The 6 hours for achieving HOT SHUTDOWN could not be used since the plant is already in that condition.

3. If this condition were discovered in between HOT SHUTDOWN and COLD SHUTDOWN, the plant could remain in that condition for 72 hours, and then be in COLD SHUTDOWN within the following 30 hours. The 6 hours for achieving HOT SHUTDOWN could not be used since the plant is already below that condition.

The above paragraphs apply to all Section 3 requirements.

3.8 REFUELING AND FUEL HANDLING

Bases

The equipment and general procedures to be utilized during refueling are discussed in the FSAR. Detailed instructions, the precautions specified above, and the design of the fuel handling equipment incorporating built-in interlocks and safety features, provide assurance that no incident could occur during CORE ALTERATIONS that would result in a hazard to public health and safety (Reference 1). Whenever changes are not being made in core geometry, one flux monitor is sufficient. This permits maintenance of the instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition. The residual heat removal pump is used to maintain a uniform boron concentration.

Under rodded and unrodded conditions, the K_{eff} of the reactor must be less than or equal to 0.95 and the boron concentration must be greater than or equal to 2000 ppm. Periodic checks of refueling water boron concentration insure that proper shutdown margin is maintained. 3.8.A.1.h allows the control room operator to inform the manipulator operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

No movement of fuel in the reactor is permitted until the reactor has been subcritical for at least 100 hours to permit decay of the fission products in the fuel. The delay time is consistent with the fuel handling accident analysis (Reference 2).

The spent fuel assemblies will be loaded into the spent fuel cask after sufficient decay of fission products. While inserting and withdrawing the cask into pool No. 1, the cask will be suspended above the bottom of the pool up to a maximum of 42 feet. The consequences of potential load drops have been evaluated in accordance with NUREG-0612 (Reference 4). Following is a discussion of the basis for the limitations which resulted from that evaluation.

The cask will not be inserted into the pool until all fuel stored in the pool has been discharged from the reactor a minimum of 5 years. Supporting analysis indicated that fuel stored in the pool for a period as short as 50 days would allow sufficient decay of the fission products such that their release would result in off-site doses less than 25% of the 10 CFR Part 100 guidelines. The five year decay period was selected in following the general principle that spent fuel with the longest decay time would result in the least off-site doses in the event of an accident, while providing the plant operational flexibility. The cask will not be inserted or withdrawn from the pool unless a minimum boron concentration of 1800 ppm is present. The 1800 ppm will ensure that if fuel is crushed by a cask