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. 13
License No. DPR-22

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. This application for amendment by Northern States Power Company (the licensee) dated June 25, 1982 and supplements dated August 3, and 24th, 1982 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:

   2. Technical Specifications

   The Technical Specifications contained in Appendices A and B as revised through Amendment No. 13 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 13, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 13

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

Remove the following pages and insert identically numbered pages:

INSERT
82
212
213
214
215
216

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
Any four rod group may contain a control rod which is valved out of service provided the above requirements and Specification 3.3.A are met.	
3. If the cycle average scram insertion time (τ_{ave}), based on the de-energization of the scram pilot valve solenoids at time zero, of all operable control rods in the reactor power operation condition at the 20% inserted position is larger than the adjusted analysis mean scram time (τ_s), a more restrictive MCPR limit (see section 3.11.C) shall be used.	
D. Control Rod Accumulators	D. Control Rod Accumulators
In the "Startup" or "Run" Mode, a rod accumulator may be inoperable provided that no other control rod in the nine-rod square array around this rod has a:	Once a shift check the status in the control room of the required Operable accumulator pressure and level alarms.
1. Inoperable accumulator.	
2. Directional control valve electrically disarmed while in a non-fully inserted position.	
If a control rod with an inoperable accumulator is inserted "full-in" and its directional control valves are electrically disarmed, it shall not be considered to have an inoperable accumulator.	
In the "Refuel" Mode, the accumulator associated with any withdrawn control rod must be Operable unless all the fuel has been removed from the cell containing that control rod.	

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
minutes to restore operation to within the prescribed limits. Surveillance and corresponding action shall continue until reactor operation is within the prescribed limits. If the APLHGR is not returned to within the prescribed limits within two (2) hours, the reactor shall be brought to the Cold Shutdown condition within 36 hours.	
3. Linear Heat Generation Rate (LHGR) During power operation, the LHGR shall be limited to: LHGR $\leq$ 13.4 kw/ft If at any time during operation it is determined that the limiting value for LHGR is being exceeded, action shall be initiated within 15 minutes to restore operation to within the prescribed limits. Surveillance and corresponding action shall continue until reactor operation is within the prescribed limits. If the LHGR is not returned to within the prescribed limits within two (2) hours, the reactor shall be brought to the Cold Shutdown condition within 36 hours.	B. Linear Heat Generation Rate (LHGR) The LHGR shall be checked daily during reactor operation at $\geq$ 25% of rated thermal power.

3.0 LIMITING CONDITIONS FOR OPERATION	4.0 SURVEILLANCE REQUIREMENTS
C. Minimum Critical Power Ratio (MCPR)	C. Minimum Critical Power Ratio (MCPR)
During power operation the Operating MCPR Limit shall be $\geq$ 1.36 for 8x8, $\geq$ 1.37 8x8R fuel, $\geq$ 1.39 for P8x8R fuel at rated power and flow, provided $\tau_B \geq \tau_{ave}$* (see section 3.3.C.3). If at any time during operation it is determined that the limiting value for MCPR is being exceeded, action shall be initiated within 15 minutes to restore operation to within the prescribed limits. Surveillance and corresponding action shall continue until reactor operation is within the prescribed limits. If the steady state MCPR is not returned to within the prescribed limits within two (2) hours, the reactor shall be brought to the Cold Shutdown condition within 36 hours. For core flows other than rated the Operating MCPR Limit shall be the above applicable MCPR value time K_f where K_f is as shown in Figure 3.11.3.	MCPR shall be determined daily during reactor power operation at $\geq$ 25% rated thermal power and following any change in power level or distribution which has the potential of bringing the core to its operating MCPR Limit.

*If $\tau_{ave} > \tau_B$, the operating MCPR Limit shall be a linear interpolation between the limits in 3.11.C and 1.41 for 8x8, 1.42 for 8x8R fuel and 1.44 for P8x8R fuel.

TABLE 3.11.1

MAXIMUM AVERAGE PLANAR LINEAR HEAT GENERATION RATE vs. EXPOSURE

Exposure	MAPLHGR FOR EACH FUEL TYPE (kw/ft)							
MWD/STU	8DB262	8DB250	8DB219L	8DRB265L	P8DRB265L	8DRB282	P8DRB282	P8DRB284LB
200	11.1	11.2	11.4	11.5	11.6	11.2	11.2	11.4
1,000	11.3	11.3	11.5	11.6	11.6	11.2	11.2	11.4
5,000	11.9	11.9	11.9	11.7	11.8	11.6	11.8	11.8
10,000	12.1	12.1	12.0	11.8	11.9	11.7	11.9	11.9
15,000	12.1	12.1	11.9	11.7	11.9	11.7	11.8	11.9
20,000	12.0	11.9	11.8	11.6	11.8	11.5	11.7	11.7
25,000	11.6	11.5	11.3	11.3	11.3	11.3	11.3	11.4
30,000	10.5	10.6	10.2	10.7	10.7	11.1	11.1	10.8
35,000	9.8	9.6	9.7	10.2	10.2	10.4	10.4	10.2
40,000	8.9	9.0	9.1	9.6	9.6	9.8	9.8	9.5

Bases 3.11

A. Average Planar Linear Heat Generation Rate (APLHGR)

This specification assures that the peak cladding temperature following the postulated design basis loss-of-coolant accident will not exceed the limit specified in the 10CFR50, Appendix K.

The peak cladding temperature following a postulated loss-of-coolant accident is primarily a function of the average heat generation rate of all the rods of a fuel assembly at any axial location and is only dependent secondarily on the rod to rod power distribution within an assembly. Since expected local variations in power distribution within a fuel assembly affect the calculated peak cladding temperature by less than $\pm$ 20° relative to the peak temperature for a typical fuel design, the limit on the average linear heat generation rate is sufficient to assure that calculated temperatures are within the 10CFR50 Appendix K limit. The limiting value for APLHGR is given by this specification.

Reference 6 demonstrates that for lower initial core flow rates the potential exists for earlier DNB during postulated LOCA's. Therefore a more restrictive limit for APLHGR is required during reduced flow conditions.

Those abnormal operational transients, analyzed in FSAR Section 14.5, which result in a automatic reactor scram are not considered a violation of the LCO. Exceeding APLHGR limits in such cases need not be reported.

B. LHGR

This specification assures that the linear heat generation rate in any rod is less than the design linear heat generation.

Those abnormal operational transients, analyzed in FSAR Section 14.5, which result in an automatic reactor scram are not considered a violation of the LCO. Exceeding LHGR limits in such cases need not be reported.

Bases Continued

C. Minimum Critical Power Ratio (MCPR)

The ECCS evaluation presented in Reference 4 and Reference 6 assumed the steady state MCPR prior to the postulated loss-of-coolant accident to be 1.24 for all fuel types for normal and reduced flow. The Operating MCPR Limit is determined from the analysis of transients discussed in Bases Sections 2.1 and 2.3. By maintaining an operating MCPR above these limits, the Safety Limit (T.S. 2.1.A) is maintained in the event of the most limiting abnormal operational transient.

Use of GE's new ODYN code Option B will require average scram time to be a factor in determining the MCPR (Reference 7). In order to increase the operating envelope for MCPR below $MCPR_A$ (ODYN code Option A), the cycle average scram time (τ_{AVG}) must be determined (see Bases 3.3.C). If τ_{AVG} is below the adjusted analysis scram time, the $MCPR_B$ Limit can be used. If $\tau_{AVG} > \tau_D$ a linear interpolation must be used to determine the appropriate MCPR. For example:

$$MCPR = MCPR_B + \frac{\tau_{AVG} - \tau_B}{0.9 - \tau_B}(MCPR_A - MCPR_B)$$

$MCPR_A$ and $MCPR_B$ have been determined from the most limiting accident analyses.

For operation with less than rated core flow the Operating MCPR Limit is adjusted by multiplying the above limit by K_f. Reference 5 discusses how the transient analysis done at rated conditions encompasses the reduced flow situation when the proper K_f factor is applied.

Those abnormal operational transients, analyzed in FSAR Section 14.5, which result in an automatic reactor scram are not considered a violation of the LCO. Exceeding MCPR limits in such cases need not be reported.