UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50- 263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE NO. DPR- 22

(License Amendment Request Dated December 1, 1975)

Northern States Power Company, a Minnesota corporation, requests authorization for changes to the Technical Specifications as shown on the attachments labeled Exhibit A and Exhibit B. Exhibit A describes the proposed changes along with reasons for the change. Exhibit B is a set of Technical Specification pages incorporating the proposed changes.

This request contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By L. J. Wachter
L J Wachter
Vice President, Power Production &
System Operation

On this 1st day of December, 1975, before me a notary public in and for said County, personally appeared L J Wachter, Vice President, Power Production & System Operation, and first being duly sworn acknowledged that he is authorized to execute this document in behalf of Northern States Power Company, that he knows the contents thereof and that to the best of his knowledge, information and belief, the statements made in it are true and that it is not interposed for delay.

Denise E. Branau

DENISE E. BRANAU
NOTARY PUBLIC – MINNESOTA
HENNEPIN COUNTY
My Commission Expires Oct. 10, 1981

EXHIBIT A

MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263

LICENSE AMENDMENT REQUEST DATED DECEMBER 1, 1975 12-1-75

PROPOSED CHANGES TO TECHNICAL SPECIFICATIONS
APPENDIX A OF PROVISIONAL OPERATING
LICENSE NO. DPR-22

Pursuant to 10 CFR 50.59 the holders of Provisional Operating License DPR-22 hereby propose the following changes to Appendix A, Technical Specifications.

1. MAIN STEAM LINE LOW PRESSURE SET POINT

PROPOSED CHANGES

On page 50, change the trip setting in item 1.e of Table 3.2.1 from "850" to "825" psig.

On page 66, Bases, change the two values in the fourth paragraph from "850 psig" to "825 psig." In the same paragraph replace the words, "Reference Section 14.5.4.1 FSAR." with "Reference License Amendment Request Dated December 1, 1975 from L. O. Mayer (NSP) to K. S. Boyd (USNRC)."

REASON FOR CHANGES

The main steamline low pressure isolation setting of 850 psig was chosen for initial plant design and analysis on the basis that it allowed sufficient margin from operating pressure. Experience has shown that it is desirable to reduce the setpoint. To avoid Technical Specification violations the pressure switches must be set to trip well above the specified limit to provide sufficient margin for instrument drift and normal variation. By setting the switches to trip at too high a pressure, any pressure fluctuation in hydraulic sensing lines or main steamlines may result in a spurious isolation and scram. Since the safety evaluation shows that adequate protection is provided at a lower trip setting, it is prudent to make such a change.

SAFETY EVALUATION

The FSAR discusses events which might potentially result in a decrease of reactor coolant inventory. Failure of the inital pressure regulator is one such event analyzed. In the most severe failure the turbine controller will call for 110% of design flow which commences a reactor pressure reduction. The depressurization causes a corresponding increase in the moderator voiding fraction which reduces reactor power. The depressurization continues until the main steamline low pressure trip causes a reactor isolation and scram. Reactor pressure increases after isolation due to decay heat

generation. Pressure is then controlled by relief valve operation, if necessary. The transient is very mild and is bounded by more severe operational transients that are routinely analyzed.

The analysis reported in FSAR Section 14.5.4.1 is based on a 100 psi margin between the isolation setpoint and the turbine inlet pressure, corresponding to an isolation setpoint of 850 psig. However, the mild progression of this transient can be used as a basis for determining the effects of a range of isolation settings. Lowering of the Technical Specification limit to 825 psig will not invalidate the transient safety analysis reported in the FSAR and will result in a negligible added requirement in terms of fuel duty and vessel cooldown. Therefore, lowering of the existing isolation setpoint as described above will not degrade the degree of protection offered by this safety system.

2. MCPR LIMITS

PROPOSED CHANGES

On page 189D, TS 3.11.C and on page 189F, first paragraph of Bases 3.11.C, change the operating MCPR limits from "1.41" to "1.38" and from "1.33" to "1.29" for 8 x 8 and 7 x 7 fuel respectively.

REASON FOR CHANGES

The present limits were derived from a transient analysis based on Cycle 4 operation. An analysis based on Cycle 5 operation shows these limits to be bounding but overly conservative. The proposed changes will provide additional margin to operating limits, thereby giving more operating flexibility.

SAFETY EVALUATION

The operating MCPR limit is derived by adding to the MCPR safety limit the maximum delta CPR of the abnormal operational transients analyzed. For Cycle 5 it has been determined that the turbine trip with failure of the bypass valves to open is the most limiting abnormal operating transient. The delta CPR values were calculated to be 0.23 and 0.32 for 7 x 7 and 8 x 8 fuel respectively; the Technical Specification MCPR safety limit remains 1.06, resulting in operating MCPR limits of 1.29 and 1.38 for 7 x 7 and 8 x 8 fuel respectively. The reactor transients and the thermal hydraulic responses were analyzed as described in the topical report, "GE/BWR Generic Reload Licensing Application for 8 x 8 Fuel, Revision 1, Supplement 2, May 1975, NEDO-20360." The input and output parameters are presented in Tables 1, 2 and 3 and in Figure 1.

Table 1
GETAB TRANSIENT ANALYSIS INITIAL CONDITION PARAMETERS

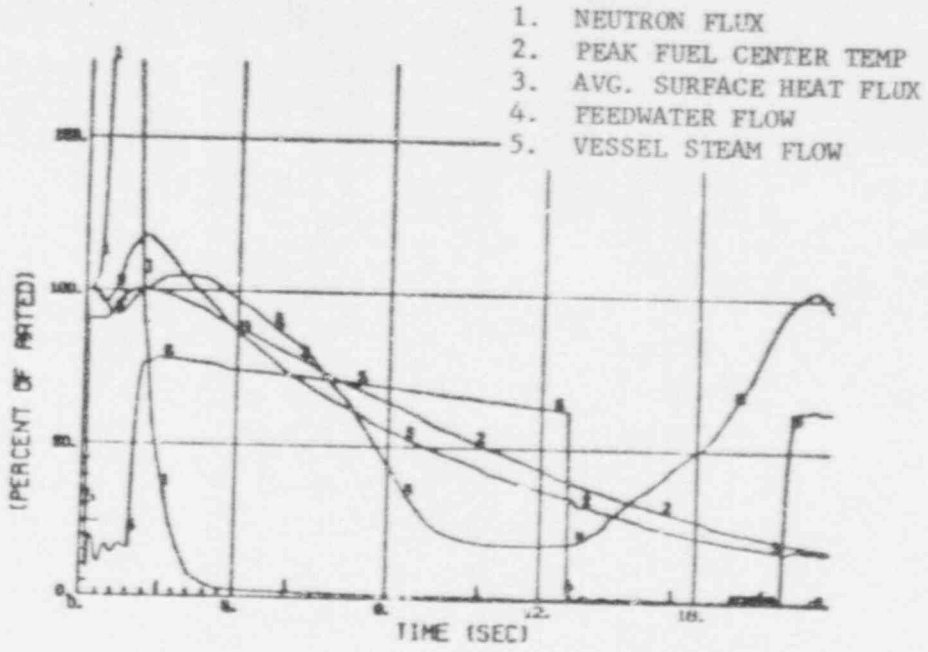
	7 x 7	8 x 8
Peaking factors (local, radial and axial)	1.24/1.46/1.40	1.24/1.53/1.40
R-factor	1.100	1.102
Bundle power	4.932 MWt	5.165
Non-fuel power fraction	0.035	0.035
Core flow	57.6 Mlb/hr	57.6 Mlb/hr
Bundle flow	1.077×10^5 lb/hr	1.061×10^5 lb/hr
Reactor pressure	1030 psia	1030 psia
Inlet enthalpy	523.2 Btu/lbm	523.2 Btu/lbm
Initial MCPR	1.29	1.41

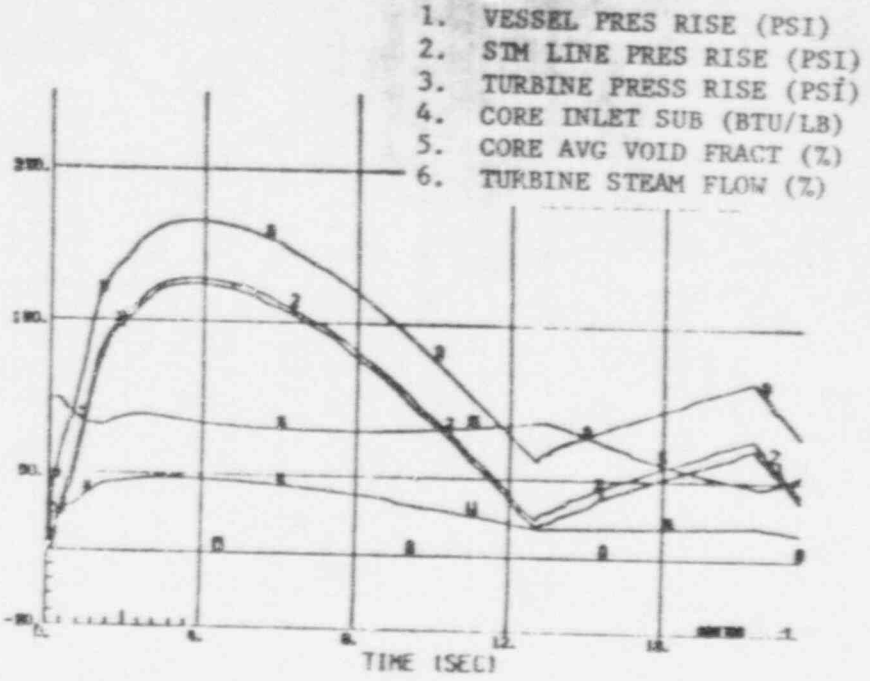
Table 2
TRANSIENT INPUT PARAMETERS

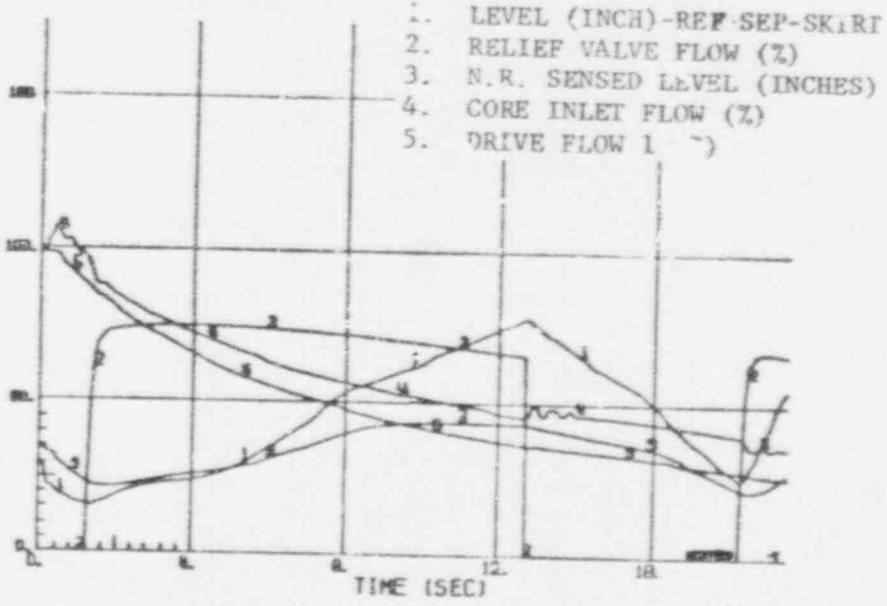
Thermal Power	(MWt)	1670	100%
Rated Steam Flow	(lb/hr)	6.78×10^6	100%
Rated Core Flow	(lb/hr)	57.6×10^6	100%
Dome Pressure	psig	1025	
Turbine Pressure	psig	980	
S/RV Set Point	psig	1080 + 1%	
S/RV Capacity (at Set Point)	#/%	6/68.76	
S/RV Time Delay	(msec)	400	
S/RV Stroke Time	(msec)	100	
Void Coefficient	(¢/%Rg)	-8.688	
Void Fraction	(%)	36	
Doppler Coefficient	(¢/°F)	-0.208	
Average Fuel Temperature	(°F)	1153	
Scram Reactivity Curve		EOC-5	
Scram Worth	($)	33.024	

Table 3
TRANSIENT DATA RESULTS

Transient	Power (%)	Core Flow (%)	Δ ϕ (%)	Δ Q/A (%)	Δ Psl (psig)	Δ Pv (psig)	ΔCPR (8x8/7x7)
Turbine Trip w/o Bypass	100	100	390	118	1196	1221	0.32/0.23







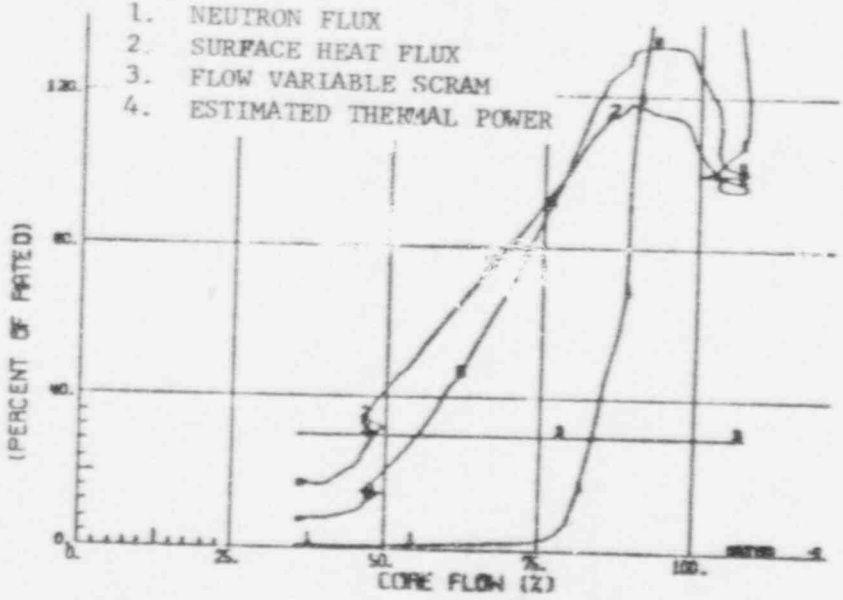


Figure 1. Turbine Trip Without Bypass