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

NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-245

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 41
License No. DPR-21

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

   A. The application for amendment by Northeast Nuclear Energy Company (the licensee), dated August 17, 1987 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-21 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 41 , 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, to be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Director
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 11, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 41

FACILITY OPERATING LICENSE NO. DPR-21

DOCKET NO. 50-245

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove	Insert
2-3	2-3
B2-8	B2-8
3/4 1-4	3/4 1-4

2.1.1 FUEL CLADDING INTEGRITY

B. When the reactor pressure is less than or equal to 800 psia or reactor flow is less than 10% of design, the reactor thermal power transferred to the coolant shall not exceed 25% of rated.

C. 1. To assure that the Limiting Safety System Settings established in Specificiations 2.1.2A and 2.1.2B are not exceeded, each required scram shall be initiated by its primary source signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the Primary Source Signal.

2. When the process computer is out of service, this safety limit shall be assumed to be exceeded if the neutron flux exceeds the scram setting established by Specificiation 2.1.2A and a control rod scram does not occur.

D. Whenever the reactor is in the cold shutdown condition with irradiated fuel in the reactor vessel, the water level shall not be less than that corresponding to 12 inches above the top of the active fuel when it is seated in the core. This level shall be continuously monitored.

2.1.2.A.1.a. where:

S = Setting in percent of rated thermal power (2011 MWt)

W = Total recirculation flow in percent of design. See Note (1)

The trip setting shall not exceed 90 percent of rated power during generator load rejections from an initial reactor thermal power greater than 50% of rated. The APRM scram setdown shall be 90% of rated within 30 seconds after initiation of full load rejection.

b. In the event of operation with a maximum fraction of limiting power density (MFLPD) greater than the fraction of rated power (FRP), the setting shall be modified as follows:

$$S \leq (0.58\ W + 62)\ \frac{FRP}{MFLPD}$$

where,

FRP = fraction of rated thermal power (2011 MWt)

Note (1) Design flow to be defined as the recirculation flow (not to exceed 33.48×10^6 lbs/hr.) needed to achieve 100% core flow.

The design of the ECCS components to meet the above criteria was dependent on three previously set parameters: the maximum break size, the low water level scram setpoint, and the ECCS initiation setpoint. To lower the setpoint for initiation of the ECCS would prevent the ECCS components from meeting their design criteria. To raise the ECCS initiation setpoint would be in a safe direction, but it would reduce the margin established to prevent actuation of the ECCS during normal operation or during normally expected transients.

E. Turbine Stop Valve Scram

The turbine stop valve scram, like the load rejection scram, anticipates the pressure, neutron flux, and heat flux increase caused by the rapid closure of the turbine stop valves and failure of the bypass. With a scram setting of ≤ 10% of valve closure, the resultant increase in surface heat flux is limited such that MCPR remains above 1.04 even during the worst case transient that assumes the turbine bypass is closed. This scram is bypassed when reactor thermal power is less than 50% of rated.

F. Turbine Control Valve Fast Closure

The turbine control valve fast closure scram is provided to anticipate the rapid increase in pressure and neutron flux resulting from fast closure of the turbine control valves due to a load rejection and subsequent failure of the bypass; i.e., it prevents MCPR from becoming less than 1.04 for this transient. For the load rejection from 100% power with operable bypass valves, the heat flux increases to only 106.5% of its rated power value, which results in only a small decrease in MCPR. This trip is bypassed below a reactor thermal power of 50% of rated because, below this power level, the MCPR is greater than 1.04 throughout the transient without the scram.

In order to accommodate the full load rejection capability, this scram trip must be bypassed because it would be actuated and would scram the reactor during load rejections. This trip is automatically bypassed for a maximum of 280 millisec following initiation of load rejection. After 280 millisec, the trip is bypassed providing the bypass valves have opened. If the bypass valves have not opened after 280 millisec, the bypass is removed and the trip is returned to the active condition. This bypass does not adversely affect plant safety because the primary system pressure is within limits and MCPR remains above 1.04 during the worst transient even if the trip fails. There are many other trip functions which protect the system during such transients.

G. Main Steam Line Isolation Valve Closure Scram

The low pressure isolation of the main steam lines at 825 psig was provided to give protection against rapid reactor depressurization and the resulting rapid cooldown of the vessel. Advantage was taken of the scram feature which occurs when the main steam line isolation valves are closed,

TABLE 3.1.1 (Continued)
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENTATION REQUIREMENTS

Minimum Number of Operable Inst. Channels per Trip (1) System	Trip Function	Trip Level Setting	Modes in which Function Must Be Operable			Action*
			REFUEL/ SHUTDOWN (8,11)	STARTUP/HOT STANDBY	RUN	
2	Turbine Condenser Low Vacuum	≥23 in. Hg. Vacuum	X (3)	X (3)	X	A or C
2	Main Steamline Radiation	≤7 x Normal Full Power Background (12)	X	X	X	A or C
4 (6)	Main Steamline Isolation Valve Closure	≤10% Valve Closure	X (3)	X (3)	X	A or C
2	Turbine Control Valve Fast Closure	See Section 2.1.2 F	X (4)	X (4)	X (4)	A or C
2	Turbine Stop Valve	≤10% Valve Closure	X (4)	X (4)	X (4)	A or C

Notes:
1. There shall be two operable or tripped trip systems for each function.
2. Permissible to bypass, with control rod block, for reactor protection system reset in REFUEL and SHUTDOWN positions of the reactor mode switch.
3. Bypassed when reactor pressure is <600 psig.
4. Bypassed when first stage turbine pressure is less than that which corresponds to 50% of rated reactor thermal power.