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

NORTHEAST NUCLEAR ENERGY COMPANY

DOCKET NO. 50-245

MILLSTONE NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 61
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 January 12, 1993, as supplemented by January 19, 1993, 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. 61 , 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: February 19, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 61

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
3/4 1-4	3/4 1-4
3/4 1-5	3/4 1-5
-	3/4 1-5a
3/4 2-2	3/4 2-2
B 3/4 1-4	B 3/4 1-4
-	B 3/4 1-4a
B 3/4 2-3	B 3/4 2-3
-	B 3/4 2-3a

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 REFUEL/ SHUTDOWN (8,11)	STARTUP/HOT STANDBY	RUN	Action*
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	X (12)	X (12)	X (12)	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% rated reactor thermal power.

TABLE 3.1.1 (Continued)
Reactor Protection System (Scram) Instrumentation Requirements

Notes:

5. IRM's are bypassed when mode switch is placed in RUN. The detector for each operable IRM channel shall be fully inserted until the associated APRM channel is operable and indicating at least 3/125 full scale.

6. The design permits closure of any one valve without a scram being initiated.

7. May be bypassed when necessary by closing the manual instrument isolation valve for scram of PS-1621 A through D during purging for containment inerting or deinerting.

8. When the reactor is subcritical and the reactor water temperature is 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
   e. APRM Reduced High Flux

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

10. With the mode switch in RUN position an inoperative trip function also requires an associated APRM "downscale alarm."

11. Trip functions are not required to be operable if all control rods are fully inserted, and either electrically or hydraulically disarmed in accordance with Specification 4.1.D.

12. Trip function may be bypassed for up to two hours per occurrence while placing condensate demineralizers in service.

TABLE 3.1.1 (Continued)
Reactor Protection System (Scram) Instrumentation Requirements

*Action: If the first column cannot be met for one of the trip systems, that trip system shall be tripped. If the first column cannot be met for both trip systems, the appropriate actions listed below shall be taken:

A. Initiate insertion of operable rods and complete insertion of all operable rods within four hours.
B. Reduce power level to IRM range and place mode switch in the STARTUP/HOT STANDBY position within eight hours.
C. Reduce turbine load and close main steam line isolation valves within eight hours.

** An APRM will be considered inoperable if there are less than two LPRM inputs per level or there are less than 50% of the normal compliment of LPRM's to an APRM.

*** One inch on the water level instrumentation is 127 inches above the top of the active fuel.

TABLE 3.2.1

INSTRUMENTATION THAT INITIATES PRIMARY CONTAINMENT ISOLATION FUNCTIONS

Minimum Number of Operable Instrument Channels Per Trip System (1)	Instruments	Trip Level Setting	Action (3)
2	Reactor Low Water	≥ 127 inches above top of active fuel	A
2	Reactor Low Low Water	79 (+4-0) inches above top of active fuel	A
2 (4)	High Drywell Pressure	≤ 2 psig	A
2 (2) (5)	High Flow Main Steamline	≤ 120% of rated steam flow	B
2 of 4 in each of 2 subchannels	High Temperature Main Steamline Tunnel	≤ 200°F	B
2 (6)	High Radiation Main steamline Tunnel	≤ 7 times normal rated power background	B
2	Low Pressure Main Steamlines	≥ 825 psig	B
2	High Flow Isolation Condenser Line	164 inches ≥ trip setting (water differential on steam line) ≥ 150 inches. 44 inches ≥ trip setting (water differential on water side) ≥ 35 inches.	C

(1) Whenever primary containment integrity is required, there shall be two operable or tripped trip systems for each function, except for low pressure main steamline which only need be available in the RUN position.
(2) Per each steamline.
(3) Action: If the first column cannot be met for one of the trip systems, that trip system shall be tripped. If the first column cannot be met for both trip systems, the appropriate actions listed below shall be taken:

A. Initiate an orderly shutdown and have reactor in cold shutdown condition in 24 hours.
B. Initiate an orderly load reduction and have reactor in HOT STANDBY within 8 hours.
C. Close isolation valves in isolation condenser system.

(4) May be bypassed when necessary by closing the manual instrument isolation valve for PS-1623, A through D, during purging for containment inerting or deinerting.
(5) Minimum number of operable instrument channels per trip system requirement does not have to be met for a steamline if both containment isolation valves in the line are closed.
(6) Trip function may be bypassed for up to two hours per occurrence while placing condensate demineralizers in service.

BASES

Discharge of excessive amounts of radioactivity to the site environs is prevented by the air ejector off-gas monitors which cause an isolation of the main condenser off-gas line, provided the limit for a 15-minute period specified in Specification 3.8 is not exceeded. The trip function may be bypassed for up to two hours per occurrence while placing a condensate demineralizer in service. This evolution is approximately one half hour in duration. A two hour per occurrence time limit has been selected as a conservative measure to minimize the overall time that this trip function is bypassed. Operating experience has shown that there is risk of a spurious isolation while placing a condensate demineralizer in service.

The main steam line isolation valve closure scram is set to scram when the isolation valves are 10% closed from full open in three out of four lines. This scram anticipates the pressure and flux transient which would occur when the valves close. By scramming at this setting all thermal margins and pressure limits are met during the resultant transient. Ref. Section 7.2 of the UFSAR.

A reactor mode switch is provided which actuates, or bypasses, the various scram functions appropriate to the particular plant operating status. Ref. Section 7.2 of the UFSAR.

The manual scram function is active in all modes, thus providing for a manual means of rapidly inserting control rods during all modes of reactor operation.

The IRM and APRM systems provide protection against excessive power levels and short reactor periods in the REFUEL and STARTUP/HOT STANDBY modes. A source range monitor (SRM) system is also provided to supply additional neutron level information during startup but has no scram functions. Thus the IRM and APRM systems are required in the REFUEL and STARTUP/HOT STANDBY modes. In the power range, the APRM provides the required protections; thus, the IRM system is not required in the RUN mode.

The high reactor pressure, high drywell pressure, reactor low water level, and scram discharge volume high level scrams are required for STARTUP/HOT STANDBY and RUN modes of plant operation. They are, therefore, required to be operational for these modes of reactor operation.

The requirement to have all scram functions except those listed in Note 8 of Table 3.1.1 operable in the REFUEL and SHUTDOWN mode is to assure that shifting to the REFUEL mode during reactor power operation does not diminish the need for the reactor protection system. As indicated in Note 11 of Table 3.1.1, no trip functions are required to be operable if all control rods are fully inserted, and either electrically or hydraulically disarmed, since this condition assures maximum negative reactivity insertion.

The turbine condenser low vacuum scram is only required during power operation and must be bypassed to start up the unit. At low power conditions, a turbine stop valve closure does not result in a transient which could not be handled safely by other scrams, such as the APRM.

The requirement that the IRM's be inserted in the core when the APRM's read 3/125, or lower, of full scale assures that there is proper overlap in the neutron monitoring systems and thus, that adequate coverage is provided for all ranges of reactor operation.

BASES

200°F is low enough to detect leaks of the order of 5 to 10 gpm; thus, it is capable of covering the entire spectrum of breaks. For large breaks, it is back-up to high steam flow instrumentation discussed above, and for small breaks with the resultant small release of radioactivity, gives isolation before the guidelines of 10 CFR 100 are exceeded.

High radiation monitors in the main steamline tunnel have been provided to detect gross fuel failure. This instrumentation causes closure of Group 1 valves, the only valves required to close to prevent further release to the environment. With the established setting of seven times normal background, and main steamline isolation valve closure, fission product release is limited so that 10 CFR 100 guideline values are not exceeded for the most rapid failure mechanism postulated (control rod drop accident). The trip function may be bypassed for up to two hours per occurrence while placing a condensate demineralizer in service. This evolution is approximately one half hour in duration. A two hour per occurrence time limit has been selected as a conservative measure to minimize the overall time that this trip function is bypassed. Operating experience has shown that there is risk of a spurious isolation while placing a condensate demineralizer in service.

Pressure instrumentation is provided which trips when main steamline pressure at the turbine drops below 825 psig. A trip of this instrumentation results in closure of Group 1 isolation valves. In the "REFUEL," "Shutdown," and "STARTUP/HOT STANDBY" mode this trip function is bypassed. This function is provided primarily to provide protection against a pressure regulator malfunction which would cause the control and/or bypass valves to open. With the trip set at 825 psig, inventory loss is limited so that fuel is not uncovered and peak clad temperatures are much less than 1500°F; thus, there is no release of fission products other than those in the reactor water.

High pressure actuation of the Isolation Condenser (IC) will be a backup to direct activation on Low-Low level; similar to other ECCS systems. Activation is based on the high pressure signal (1085 PSIG for 15 seconds) which occurs after MSIV closure on Low-Low water level, SRV actuation, and subsequent repressurization. The activation of the IC requires only the opening of normally closed valve IC-3 in the condensate return line. This valve is powered by the safety-grade DC battery. All valves in the system are powered by safety-grade AC or DC power and are also used for containment isolation. All are normally in the open position (other than IC-3). The IC system is safety Class 2 and is seismically qualified. The shell side water volume is sufficient for approximately 30 minutes of operation at rated conditions without makeup. Two sources of makeup are available. For small break mitigation, less than 10 minutes of operation is required, and generally at less than rated conditions.

BASES

Two sensors on the isolation condenser supply and return lines are provided to detect line failure and actuate isolation action. The sensors on the supply and return sides are arranged in a 1 out of 2 logic and to meet the single failure criteria, all sensors and instrumentation are required to be operable. The isolation settings and valve closure times are such as to prevent core uncovery or exceeding site limits.

The instrumentation which initiates ECCS action is arranged in a dual bus system. As for other vital instrumentation arranged in this fashion, the Specification preserves the effectiveness of the system even during periods when maintenance or testing is being performed.