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

MAINE YANKEE ATOMIC POWER COMPANY

DOCKET NO. 50-309

MAINE YANKEE ATOMIC POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 62
License No. DPR-36

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

   A. The application for amendment by Maine Yankee Atomic Power Company, (the licensee) dated February 1, 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.B(6)(b) of Facility Operating License No. DPR-36 is hereby amended to read as follows:

   (b) Technical Specifications -

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 62 , 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

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 17, 1982

ATTACHMENT TO LICENSE AMENDMENT NO. 62

TO FACILITY OPERATING LICENSE NO. DPR-36

DOCKET NO. 50-309

Revise Appendix A as follows:

Remove Page	Insert Page
Table of Contents - 1	Table of Contents - 1
-	3.22-1
-	3.22-2
4.1-9	4.1-9
4.6-1	4.6-1
4.6-4	4.6-4
4.6-5	4.6-5
-	4.6-6

TECHNICAL SPECIFICATIONS

Table of Contents

3.22 FEEDWATER TRIP SYSTEM

Applicability:

Applies to the operating status of the feedwater trip system.

Objective:

To specify conditions of the feedwater trip system necessary to ensure steam generator cooldown potential remains acceptable in the event of a main steam line break.

Specification:

The feedwater trip system shall be operable to perform the following functions whenever the reactor coolant boron concentration is less than that required for hot shutdown.

1. Automatic shutdown of all main feedwater, condensate and heater drain pumps which are operating or set for automatic start, and automatic closure of all main feedwater regulating and main feedwater regulating bypass valves which are open or set to open automatically.

2. Automatic trip of all auxiliary feedwater pumps which are operating or set for automatic start and closure of all auxiliary feedwater control valves which are open or set to open automatically.

Exception: Specification 1 does not apply when the main feedwater lines are isolated from the steam generators.

Remedial Action: If the feedwater trip system is found to be inoperable, it must be restored to an operable status within the next two hours, or else the reactor must be shut down within the next six hours and the reactor coolant system borated to hot shutdown concentration within an additional six hours.

Basis:

The feedwater trip system limits the cooldown of the reactor coolant system in the event of a main steam line break by limiting the flow of cold feedwater into the steam generators. Limiting the reactor coolant system cooldown limits reactivity insertion associated with a negative reactivity temperature coefficient during a cooldown.

The feedwater trip system is actuated by signals generated by safety related circuitry associated with the reactor protective system and safety injection system. This safety related circuitry is not itself part of the feedwater trip system. The system provides signals to the controls of feedwater system pumps (main feedwater pumps, condensate pumps, heater drain pumps and auxiliary feedwater pumps), and to the controls of the feedwater regulating valves, feedwater regulating valve bypass valves and auxiliary feedwater control valves.

Operability of the system assures that the reactivity attributable to reactor coolant system cooldown due to feedwater addition to steam generators after a main steam line break is within the limits established in the steam line break safety analysis.

If the feedwater trip system is discovered to be inoperable, the best course of action is to restore its operability promptly, thus avoiding challenges to plant systems that result from perturbing steady state operation. A two-hour time period presents low risk of a main steam line break yet allows enough time for deliberate restoration of system operability through maintenance actions.

If operability cannot be restored the reactor must be shut down. Six hours provides ample time for an orderly controlled shutdown. If operability cannot be restored by that time, the reactor coolant system must be borated to hot shutdown concentration within an additional six hours. Twelve hours permits an orderly shutdown while assuring that the risk of a main steam line break during the period is very low.

The intended function of the feedwater trip system can be accomplished under conditions of partial system inoperability provided all feedwater system pumps and valves tripped by the system which are operating can be tripped by the operable portions of the trip system. Pumps which cannot be tripped by the trip system due to partial trip system inoperability can be shut down to assure functional capability.

When the reactor coolant system is at hot shutdown boron concentration, the steam line break cooldown cannot cause sufficient reactivity insertion to cause a return to critical, so the feed trip system is not required to function.

Table 4.1-2 (Continued)

Channel Description	Surveillance Function	Frequency	Surveillance Method
15. High Pressure Safety Injection Pump Current	a. Check	M (3)(4)	a. Verify pump ammeter indication during pump test.
	b. Calibrate	R	b. Known Current applied to meter.
16. Low Pressure Safety Injection Pump Current	a. Check	M (3)(4)	a. Verify pump ammeter indication during pump test.
	b. Calibrate	R	b. Known current applied to meter.
17. Containment Spray Header Pressure	a. Check	M (3)(4)	a. Verify header pressure indication during pump test.
	b. Calibrate	R	b. Known pressure applied to sensors.
18. Containment Spray Pump Current	a. Check	M (3)(4)	a. Verify pump ammeter indication during pump test.
	b. Calibrate	R	b. Known current applied to meter.
19. Refueling Water Tank Level	a. Check	S (3)	a. Verify level indication.
	b. Calibrate	R	b. Known pressure applied to sensor.
20. Feedwater Trip System	a. Test	R	a. Simulate initiation signal and verify logic operation;
	b. Test	R	b. Simulate logic operation and verify valve closure and actuation of main and auxiliary feedwater pump trip controls.

(1) Not required unless the reactor is in the power operating condition.
(2) Not required during plant startup and shutdown periods.
(3) Not required when plant is in the cold shutdown condition.
(4) Must be performed within 30 days prior to attaining a power operating condition.

4.6 PERIODIC TESTING

SAFETY INJECTION AND CONTAINMENT SPRAY SYSTEMS
STEAM GENERATOR AUXILIARY FEED PUMPS
MAIN STEAM EXCESS FLOW CHECK VALVES
FEEDWATER TRIP SYSTEM

Applicability: Applies to the safety injection system, the containment spray system, chemical injection system, the containment cooling system, the auxiliary feedwater system, the main steam excess flow check valves, and the feedwater trip system.

Objective: To verify that the subject systems will respond promptly and perform their intended functions, if required.

Specification:

A. SAFETY INJECTION AND CONTAINMENT SPRAY SYSTEMS

1. The following tests will be performed monthly whenever plant conditions are as defined in Section 3.6.A of these Specifications.

   a. Emergency Core Cooling System (ECCS) Pumps:

      Both operable high pressure safety injection (HPSI) pumps shall be tested by operating in the charging mode.

      Both operable low pressure safety injection (LPSI) pumps and both operable containment spray (CS) pumps shall be tested by operating in the recirculation mode.

      Acceptable performance shall be that pumps attain rated heads, operate for at least 15 minutes, and that the associated instrumentation and controls function properly.

   b. ECCS Valves:

      All automatically operated valves that are required to operate to assure core flooding, or containment spray shall be exercised. The volume control tank (VCT) outlet to charging pump suction valves shall be exercised through part travel and all other valves shall be visually checked to verify proper operating position.

      Exception: LSI-M-11, 21 or 31 shall not be tested when the associated ECCS check valve barrier leakage falls into Condition 2 or 3, as defined in Specification 4.6.A.2.f.

2. The following tests will be performed at each refueling interval:

   a. ECCS Pumps:

      One HPSI pump shall be flow tested at 1000 psig discharge head.

Monthly inspections shall be performed to verify that all manual valves in the AFW system necessary to assure flow from the primary water source to the steam generators are locked in the proper position.

During normal plant operation, each auxiliary feed pump shall be tested at quarterly intervals to demonstrate operability of pumps, system valves and instrumentation.

C. MAIN STEAM EXCESS FLOW CHECK VALVES

The main steam excess flow check valves shall be tested once every 6 weeks for movement of the valve disc through a distance of approximately one and one-half inches. These valves will be tested through full travel distance during each refueling interval.

D. FEEDWATER TRIP SYSTEM

1. The following tests will be performed at each refueling interval:

a. Main Feedwater Pumps.

Each main feedwater pump, condensate pump, and heater drain pump trip system shall be tested by tripping the actuation circuitry with a safety injection signal coincident with steam generator low pressure signal.

b. Feedwater Valves.

Each main feedwater regulating valve, main feedwater regulating bypass valve, and auxiliary feedwater control valve trip system shall be tested by tripping the valves with a low pressure signal from their respective steam generators.

c. Auxiliary Feedwater Pumps

Each auxiliary feedwater pump trip system shall be tested by tripping the actuation circuitry with a steam generator low pressure signal.

Basis:

The safety injection system and the containment spray system are principal plant safeguards systems that are normally operable during reactor operation.

Complete system tests cannot be performed when the reactor is operating because of their interrelation with operating systems. The method of assuring operability of these systems is a combination of complete system tests performed during refueling shutdowns and monthly tests of active system components (pumps and valves) which can be performed during reactor operation. The test interval is based on the judgment that more frequent testing would not significantly increase the reliability (i.e., the probability that the component would operate when required), yet more frequent tests would result in increased wear over a long period of time.

The monthly part travel exercising of the VCT outlet to charging pump suction valves, in lieu of the full travel exercise, is conducted to preclude an interruption of normal plant operations. Redundant valves have been used to assure proper lineup in the event of ECCS actuation.

Other ECCS valves whose operation is not required to assure core flooding or containment spray shall be tested during each refueling shutdown period in accordance with 2.b.

The three check valves in the ECCS line to each loop provide assurance that a valve failure will not result in unrestricted flow of pressurized reactor coolant into lower pressure connecting piping outside the containment. The valve integrity testing required by Technical Specification 4.6.A.2.f assures that the rate of flow under a valve failure condition will not exceed the pressure relief capacity of the line. It further provides periodic assurance that the check valves are intact.

The two check valves closest to the loop are grouped together as a single check valve barrier for test purposes. The first valve provides a thermal barrier preventing thermal distortion from affecting the tightness of the second valve. The third valve alone constitutes a check valve barrier.

The check valves are hard seated swing checks designed to withstand the rigors of long term RHR operation without damage and the greatest assurance of integrity and dependability.

In addition to the check valves the ECCS line to each loop contains a Motor Operated Valve (MOV) which is closed except for periodic monthly testing. The MOV and reactor side piping is designed for full system pressure and is also capable of preventing an overpressure condition of connecting piping.

The leakage criteria provide an acceptable balance between the need to maintain a degree of tightness as a criterion of integrity on one hand and ALARA and power dependability considerations on the other giving due credit to the unique design feature of and protection provided by the four valves in series.

Verification that the spray piping and nozzles are open will be made initially by a suitably sensitive method, and at least every five years thereafter. Since all piping material is all stainless steel, normally in a dry conditions, and with no plugging mechanism available, the retest every five years is considered to be more than adequate.

Other systems that are important to the emergency cooling function are the SI tanks, the component cooling system and the service water system. The SI tanks are a passive safety feature. In accordance with Specification 4.1 (Table 4.1-2, Item 11), the water volume and pressure in the SI tanks are checkec periodically. The component cooling and service water systems operate when the reactor is in operation and are continuously monitored for satisfactory performance.

The three month testing interval of the steam generator auxiliary feed pumps verifies their operability by recirculating water to the demineralized water tank.

Prior to plant startup following an extended cold shutdown, a flow test is performed on the Auxiliary Feedwater System to functionally verify the system alignment from the demineralized water storage tank to the steam generators.

Monthly inspections are performed to verify that all manual valves in the Auxiliary Feedwater System from the primary water source to the steam generators are locked in the proper position.

Proper functioning of the steam turbine admission valve and starting of the auxiliary feed pump will demonstrate the operability of the steam driven pump. Verification of correct operation will be made both from instrumentation with the main control room and direct visual observation of the pumps.

The main steam, excess flow check valves serve to limit an excessive reactor coolant system cooldown rate and resultant reactivity insertion following a main steam break incident. Their freedom to move will be verified periodically.

The feedwater trip system acts to limit excessive reactor coolant system cooldown and the resultant reactivity insertion produced by excessive feedwater flow to the steam generators in the event of a main steam line break. The system acts to trip feedwater pumps, condensate pumps, heater drain pumps, and auxiliary feedwater pumps, and close the main feedwater regulating valve, feedwater regulating valve bypass valve, and auxiliary feedwater valve to the affected steam generator. Signals activating the system are developed by instrumentation, logic, and relaying associated with the safety injection actuation system and the excess flow check valve actuation system. The circuitry which develops these signals is subject to surveillance requirements of Tables 4.1-1 and 4.1-2 which assure their reliability.

The feedwater pumps, condensate pumps, and heater drain pumps trip upon coincidence of SIAS and a low steam generator pressure. The valves close on the low steam generator pressure in the affected steam generator. The auxiliary feedwater pumps trips on low steam generator pressure in any steam generator. The reliability of the coincidence logic is assured by testing in accordance with #20 of Table 4.1-2.