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. 54
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 October 3, 1980, 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. 54 , 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: March 5, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 54

TO FACILITY OPERATING LICENSE NO. DPR-36

DOCKET NO. 50-309

Revise Appendix A as follows:

Remove Page	Insert Page
3.3-1	3.3-1
3.8-1	3.8-1
3.8-2	3.8-2
3.13-1	3.13-1
3.13-2	3.13-2
3.13-3	3.13-3

3.3 REACTOR COOLANT SYSTEM OPERATIONAL COMPONENTS

Applicability: Applies to the operating status of the reactor coolant system equipment.

Objective: To specify conditions of reactor coolant system components for reactor operation.

Specification:

A. At least one reactor coolant pump or one low pressure safety injection pump operating in the residual heat removal mode shall be in operation providing flow through the reactor when the reactor coolant system boron concentration is being reduced.

B. At least one pressurizer code safety valve shall be operable whenever fuel is in the reactor and the reactor coolant system is isolated from the residual heat removal system and the head is on the vessel.

C. At least two pressurizer code safety valves shall be operable whenever the reactor is critical.

D. At least one reactor coolant pump shall be in operation providing flow through the core with its steam generator capable of performing its heat transfer function whenever the reactor is in a critical condition. A second loop shall be maintained operable to perform its heat transfer function should the operating loop become inoperable.

E. At least three reactor coolant pumps shall be in operation providing flow through the core with their steam generators performing their heat transfer function whenever the reactor is in a power operation condition.

F. Minimum pressurizer spray flow must be operable whenever the reactor is critical.

Exception: The requirement of D and E may be modified during initial testing to permit power levels not to exceed 10% of rated power with three loops operating on natural circulation.

G. One power operated relief valve (PORV) and its associated block valve shall be operable whenever the reactor coolant system temperature is greater than 210°F.

3.8 REACTOR CORE ENERGY REMOVAL

Applicability: Applies to the operating status of plant components for removal of reactor core energy.

Objective: To specify conditions of the plant equipment necessary to ensure the capability to remove energy from the reactor core.

Specification: A. At least one of the following cooling mechanisms shall be in operation with a second mechanism operable:

1. RHR Train A
2. RHR Train B
3. Steam Generator No. 1
4. Steam Generator No. 2
5. Steam Generator No. 3
6. A minimum of 23 feet of water above the top of the core with the reactor head removed.

Exceptions: (a) The RHRS may be secured for a period not to exceed six hours to facilitate special maintenance, refueling functions or tests. During such periods reactor coolant temperatures shall be continuously monitored and initiation of core cooling shall be continuously available.

(b) For purposes of inservice inspection testing, the RHRS may be secured provided that reactor coolant temperature is continuously monitored and two cooling mechanisms are continuously available.

B. The following conditions must be met for a steam generator to be considered operable for decay heat removal.

1. The reactor coolant system must be closed and pressurized to 100 psi above saturation pressure.

2. The steam generator must have both the cold and hot leg stop valves fully open.

3. The steam generator water level must be above the top of the tube bundle.

4. An inventory of over 100,000 gallons of primary grade feedwater must be available.

5. A feed pump must be operable.

C. The reactor shall not be in a power operation condition which generates steam at a rate in excess of the on-line steam generator relieving capacity in accordance with figure 3.8-1.

D. The reactor shall not be maintained in a power operating condition unless the following conditions are met to assure post shutdown heat removal capability.

1. Two steam generator auxiliary feed pumps are operable.

2. An inventory of over 100,000 gallons of primary grade feedwater is available.

Exception: If either steam generator auxiliary feed pump becomes inoperable continued power operation is permitted for a maximum of seven days. In this situation the operable feed pump is to be tested once a day.

Basis: Specification A assures that decay heat removal capability is always available.

A single steam generator is capable of removing core decay heat by natural or forced circulation provided the conditions specified in B are met.

A single cooling mechanism is sufficient to remove decay heat but single failure considerations require that two mechanisms be OPERABLE.

Specification C assures sufficient relieving capacity during either two loop or three loop power operation.

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condenser. Therefore, core decay heat can be continuously dissipated via the steam bypass to the condenser as long as feedwater to the steam generators is available. Normally, the capability to supply feedwater to the steam generators is provided by operation of the feedwater system.

In the unlikely event of complete loss of electrical power to the station, decay heat removal is by steam discharge to the atmosphere via the main steam safety valves or the atmospheric steam dump valve. Either steam generator auxiliary feed pump can supply sufficient feedwater for removal of decay heat from the plant.

3.13 REFUELING OPERATIONS

Applicability: Applies to operating limitations during refueling operations.

Objective: To minimize the possibility of an accident occurring during refueling operations that could affect the health and safety of the plant personnel and the public.

Specification: A. The following conditions shall be satisfied during refueling operations:

1. The containment venting and purge systems, including two radiation monitors that initiate isolation of the containment ventilation system, shall be tested and verified to both be operable immediately prior to fuel handling operations. The two monitors shall be located on the containment fuel handling area level, shall be part of the plant area monitoring system, and shall employ one-out-of-two logic for isolation. Should one of the area monitors become inoperable, repairs shall be affected immediately and the logic shall revert to one-out-of-one for isolation. If affected repairs are not completed within 12 hours, Specification 3.13, Paragraph B shall apply.

2. Radiation levels in the containment and spent fuel storage areas shall be monitored continuously.

3. Whenever core geometry is being changed, neutron flux shall be continuously monitored by at least two wide range logarithm monitors, with each monitor providing continuous visual indication in the control room. When core geometry is not being changed, at least one source range neutron monitor shall be in service.

4. At least one residual heat removal pump and heat exchanger shall be in operation. This system may be shutdown for a maximum of 6 hours to facilitate upper guide structure assembly removal or other special maintenance operations. During such periods the reactor coolant temperature shall be continuously monitored and the initiation of core cooling flow shall be continuously available.

5. Both RHRS loops A and B shall be operable when the water level above the top of the irradiated fuel assemblies seated within the reactor pressure vessel is less than 23 feet.

6. During reactor vessel head removal and while refueling operations are being performed in the reactor, the refueling boron concentration shall be maintained in the reactor coolant system and shall be checked by sampling on each shift to insure that the boron concentration is such to maintain the core 5%Δ K/K subcritical.

7. Direct communication between personnel in the control room and at the refueling station shall be operable whenever changes in core geometry are taking place.

B. If any of the conditions in Specification A are not met, all refueling operations shall cease immediately; work shall be initiated to satisfy the required conditions, and no operations that may increase the reactivity of the core shall be made.

C. Whenever spent fuel is being handled in the spent fuel pit, the fuel building ventilation systems shall be in operation with the discharged air passing through a filter pack containing a charcoal filter before going to the primary vent stack.

D. Prior to initial core loading and prior to each refueling a complete check out, including a lead test, shall be conducted on fuel handling cranes that will be used to handle spent fuel assemblies.

E. A minimum of 23 feet of water above the top of the core shall be maintained whenever spent fuel is being handled.

F. Irradiated fuel shall not be handled for 72 hours after reactor shutdown.

G. Spent fuel storage racks may be moved only in accordance with written procedures which ensure that no rack modules are moved over fuel assemblies.

Basis: The equipment and general procedures to be utilized during refueling are discussed in the FSAR. Detailed instructions, the above specificatons and the design of the fuel handling equipment incorporating built-in interlocks and safeguards systems provide assurance that no incident could occur during the refueling operations that would result in a hazard to public health and safety. (1) Whenever changes are not being made in core geometry, one flux monitor is sufficient. This permits maintenance of the instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition. The residual heat removal flow is used to remove core decay heat and maintain a uniform boron concentration.

A single cooling mechanism is sufficient to remove decay heat but single failure considerations require that two mechanisms be OPERABLE.

The shutdown margin as indicated will keep the core substantially subcritical, even if the highest worth CEA's were inadvertently withdrawn from the core without compensating boron addition.

Periodic checks of refueling water boron concentration insure the proper shutdown margin. Communication requirements allow the control room operator to inform the refueling station operation of any impending visual condition detected from the main control board indicators during fuel movement.

In addition to the above engineered safeguards systems, interlocks are utilized during refueling to insure safe handling. An excess weight interlock is provided to prevent excess loading of a fuel assembly, should it inadvertently become stuck.

The charcoal filter installed in the fuel handling building exhaust will handle the full 15,000 cfm capacity of the normal ventilation flow. (2) (3) The offsite thyroid dose as calculated for the fuel handling incident is well below the 10 CFR 100 guideline dose. Valve alignment check sheets are completed to protect against sources of unborated water or draining of the system.

In the analysis of the refueling accident conducted by the Staff, 23 feet of water and 72 hours of decay time were used to limit exposures to 10% of 10 CFR 100.

Procedures are required for movement of spent fuel racks to avoid unnecessary risk of spent fuel damage caused by dropping spent fuel racks.

References:

(1) FSAR, Section 14.16
(2) FSAR, Section 5.2
(3) FSAR, Section 9.10