UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

MAINE YANKEE ATOMIC POWER COMPANY

DOCKET NO. 50-309

MAINE YANKEE ATOMIC POWER STATION

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 144

License No. DPR-36

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

   A. The application for amendment filed by the Maine Yankee Atomic Power Company (the licensee) dated January 25, 1993, as supplemented by letters dated November 3 and 23, and December 9, 1993, and January 5 and 24, 1994, 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:

Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 144, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Walter R. Butler

Walter R. Butler, Director
Project Directorate I-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 15, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 144

FACILITY OPERATING LICENSE NO. DPR-36

DOCKET NO. 50-309

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove	Insert
1.1-1	1.1-1
1.1-2	1.1-2
-----	1.1-3
3.13-1	3.13-1
3.13-3	3.13-3
3.13-4	3.13-4

1.1 FUEL STORAGE

Applicability:

Applies to the capacity and storage arrangements of the new and spent fuel facility.

Objective:

To describe and define those aspects of fuel storage which relate to the prevention of criticality in the fuel storage facility.

Specification:

A. The new and spent fuel pool structures including fuel racks are designed to withstand the anticipated earthquake loadings as Class I structures. The spent fuel pool is lined with stainless steel to ensure against loss of water.

B. Fuel shall be stored vertically in racks. The racks are designed to maintain fuel assembly center to center distances that will assure K_{eff} is less than or equal to 0.95 even with the pool filled with unborated water.

C. Whenever there is fuel in the spent fuel pool, except for initial new fuel storage, the spent fuel storage pool shall be filled with water borated to the refueling water boron concentration. This concentration matches that in the reactor cavity and refueling canal during refueling operations.

D. Spent fuel shipping casks shall not be lifted over the spent fuel storage pool.

E. No more than 2019 standard fuel assemblies shall be stored in either Region I or Region II of the spent fuel pool in accordance with the limitations of Figure 1.1-1. Unirradiated fuel assemblies shall be stored in either the New Fuel Storage Area or Region I of the spent fuel pool. Consolidated fuel shall be stored in Region II only.

F. No more than 121 additional standard fuel assemblies may be temporarily stored in a temporary spent fuel storage rack to be located in the spent fuel cask laydown area. These are in addition to the 2019 standard fuel assemblies of specification E. All 121 assemblies shall be suitable for placement into Region II racks.

G. No more than 20 standard fuel assemblies may be in consolidated form. These are included in the 2019 standard assemblies of specification E.

Basis:

Safety analyses, Reference (a) and NRC safety evaluation reports, Reference (b) document the configuration of Maine Yankee's spent fuel rack design. Included within this design are considerations for the storage of consolidated fuel. These reports demonstrate the safety and environmental acceptability of storing standard and consolidated spent fuel assemblies in the Region II permanent storage locations. The Region I storage locations are designed to accommodate low burnup or unirradiated fuel. Up to 121 additional standard fuel assemblies may be stored in temporary storage in the spent fuel cask laydown area, Reference (c) and (d).

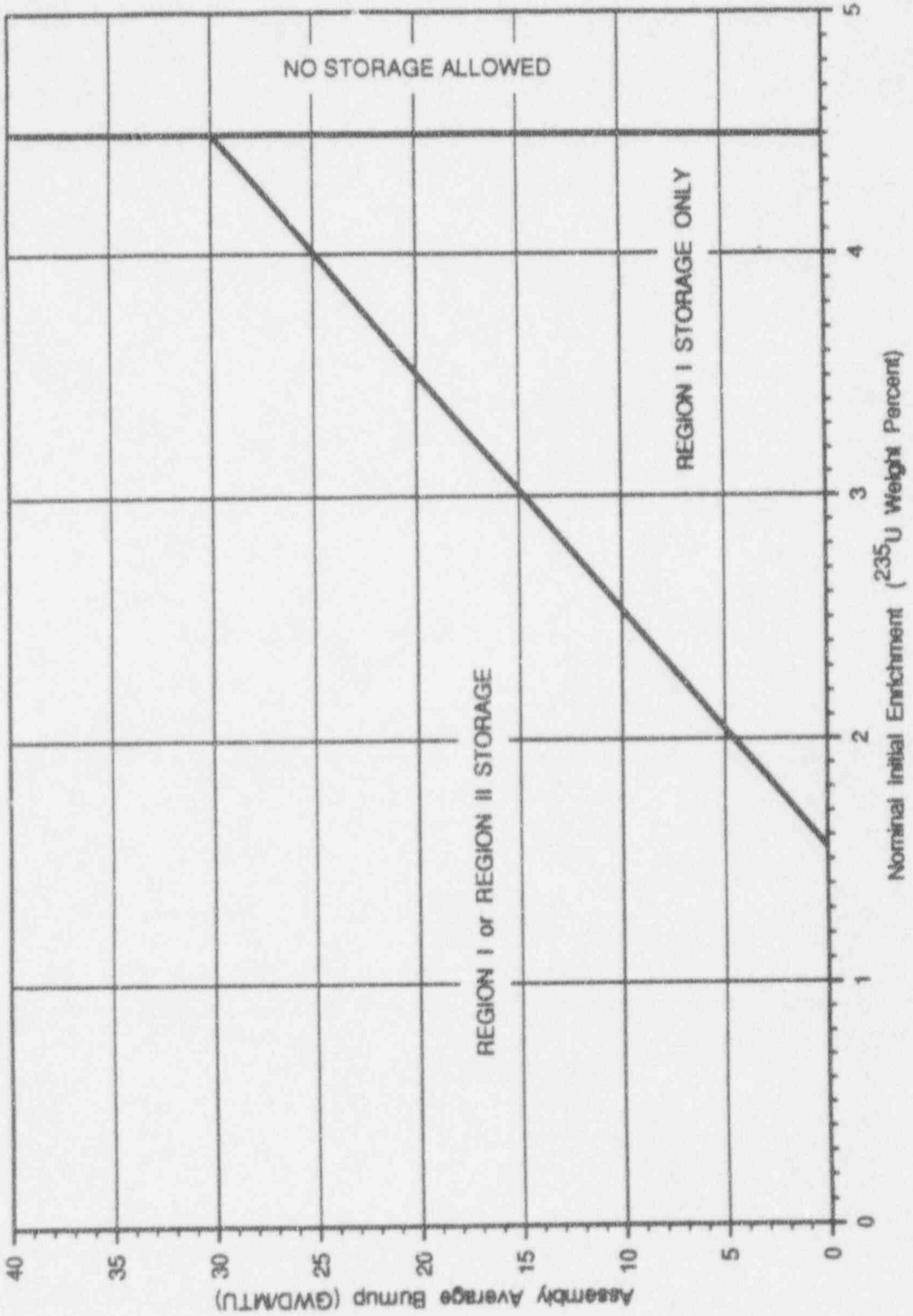
References:

(a) Maine Yankee letter to USNRC dated January 25, 1993; "Maine Yankee Spent Fuel Pool Reracking"; MN-93-09.

(b) USNRC Staff Safety Evaluation of the Maine Yankee License Amendment Application dated January 25, 1993.

(c) Maine Yankee letter to USNRC dated October 5, 1981, "Maine Yankee Spent Fuel Storage Modification - Complete Report" with enclosure, as supplemented and amended on February 10, 1982, May 7, 1982, and May 26, 1983.

(d) USNRC letter to Maine Yankee dated June 16, 1982, "Safety Evaluation and Environmental Impact Appraisal Regarding Maine Yankee Spent Fuel Storage" as supplemented via USNRC letter to Maine Yankee dated October 22, 1982, "Resolution of Open Items - Safety Evaluation of Maine Yankee Spent Fuel Storage".



MAINE YANKEE Technical Specification	Spent Fuel Pool Assembly Placement Limitations	Figure 1.1-1

3.13 REFUELING AND FUEL CONSOLIDATION OPERATIONS

Applicability:

Applies to operating limitations during refueling and fuel consolidation operations.

Objective:

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

Specification:

A. Prior to each refueling a complete checkout, including a load test, shall be conducted on fuel handling cranes that will be used to handle irradiated fuel assemblies.

B. Irradiated fuel shall not be moved until 144 hours after the reactor has been made subcritical.

C. Whenever the reactor vessel head is removed and there is fuel 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 it is sufficient to maintain the core 5% delta k/k subcritical.

D. The following conditions shall be satisfied during core alterations or movement of irradiated fuel within the containment:

1. The containment equipment hatch must be closed and held in place by a minimum of four bolts when the reactor has been subcritical less than 210 hours.

2. At least one door in the personnel airlock shall be closed when the reactor has been subcritical less than 210 hours.

   Exception: Both personnel airlock doors may be opened briefly within the 210 hour period to allow passage of long objects through the airlock.

3. The containment venting and purge inlet and outlet trip valves shall be closed or be operable and able to isolate the ventilation system in response to high radiation signals. The venting and purge system discharge shall be filtered through the high efficiency particulate air filters and charcoal absorbers.

   Exception: The HEPA filters and charcoal absorbers may be bypassed after the reactor has been subcritical for 210 or more hours.

9. Both RHR Trains A and B shall be operable when the water level above the top of the irradiated fuel assemblies seated within the reactor vessel is less than 23 feet.

   Exception: Only one power source, normal or emergency, is required for an RHR train to be considered operable.

10. Maintain a minimum of 23 feet of water above the top of the core whenever irradiated fuel is being moved.

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

Remedial Action: If any of the conditions or associated remedial actions in Specification D are not met or remedial actions are not specified, core geometry changes and movement of irradiated fuel in the containment shall cease immediately; and no operations that may increase the reactivity of the core shall be made.

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

F. The following condition shall be satisfied during fuel consolidation:

1. Irradiated fuel shall not be consolidated until it has been cooled at least 730 days after final discharge from the reactor.

Basis:

The equipment and general procedures to be utilized during refueling are discussed in the FSAR. Detailed instructions, the above specifications 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.

After being shutdown for 210 hours, the fuel has decayed sufficiently to maintain dose levels, during a postulated fuel handling accident inside containment within 10 CFR Part 100 limits. Therefore, the containment ventilation/purge filter system may be bypassed to prevent unnecessary filter depletion which might result from fumes given off by painting or welding during the outage period.

The exception to paragraph 3.13.D.4 permits routine testing of the radiation monitors without incurring unnecessary wear of the purge valve resilient seals. Weekly testing of these trip valves is sufficient to insure their operability.

Whenever changes are not being made in core geometry, one source range neutron 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 by OPERABLE. Cooling mechanisms available include RHR trains A and B and 23 feet of water above the top of the core.

The shutdown margin of 5% delta k/k will keep the core substantially subcritical, even if the highest worth CEAs 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 operator 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.

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. Valve alignment check sheets are completed to protect against sources of unborated water or draining of the system. An additional 72 hours of decay time has been added to ensure lower assembly decay heat levels in the spent fuel pool during refuelings. Therefore, the total delay time prior to the movement of irradiated fuel is 144 hours after the reactor has been made subcritical.

To ensure containment fission product barrier continuity during the period when the containment ventilation/purge filter is in operation, the equipment hatch and at least one door in the personnel hatch should generally remain closed. The exception allows the personnel hatch to be opened for brief periods to permit passage of long objects in support of refueling operations during the initial 210 hour period after making the reactor subcritical. These restrictions do not apply after the 210 hour period.

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

The 730 day cooling period after discharge from the reactor allows substantial radio-active decay. This ensures that the dose consequences of a consolidated spent fuel handling accident are bounded by the consequences of the design basis spent fuel drop accident. It also ensures that the maximum outlet temperatures for the limiting fuel assembly and the consolidated fuel storage bundle are both well below the saturation temperature at the cell outlet for any storage array.