



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 65 TO LICENSE NO. DPR-36

MAINE YANKEE ATOMIC POWER COMPANY

MAINE YANKEE ATOMIC POWER STATION

DOCKET NO. 50-309

1.0 Introduction and Background

By letter dated November 30, 1981 (Ref. 1), as supplemented May 28, 1982 (Ref. 2), Maine Yankee Atomic Power Company (the licensee) requested an amendment to Appendix A to Facility Operating License No. DPR-36 for the Maine Yankee Atomic Power Station. The proposed changes modify Technical Specification Section 3 and the Definitions section in their entirety.

A commitment was made by the licensee to identify and correct conflicts and ambiguities contained with the Limiting Conditions for Operating (LCO) sections of the Maine Yankee Technical Specifications at an enforcement conference (Ref. 3) held on September 2, 1981 in the Region I Office. The conference derived from a containment integrity violation found during an inspection conducted on July 19, 1981 (Ref. 4) of activities at the Maine Yankee Atomic Power Station. Proposed changes to Section 3 LCOs and the Definitions section were to be formulated with the objective of providing clarification, restructure and improvement of Section 3 which, when adopted, would provide clear guidance to operators on actions to be undertaken when an LCO cannot be met, in accordance with the requirements of 10 CFR 50.36.

The November 30, 1981 originally proposed changes were discussed in a meeting held at NRC Region I Office on April 14, 1982. Several areas were identified where further justification, clarification or revision were required (Ref. 5). The licensee re-submitted proposed changes on May 28, 1982 to incorporate the changes discussed at the April 14th meeting. Subsequent discussions with the licensee identified and resolved additional items in the May 28th submittal requiring further revision. These items are discussed in Section 2.0.

2.0 Discussion

The review and resulting evaluation of the proposed changes were performed to determine that:

- a) Clarification of TS LCOs is achieved without altering the intent of the present specifications;
- b) Items resolved in the April 14 meeting were incorporated as agreed;

- c) Changes which require interpretation of the intent of TS are conservative and within the bounds of existing safety analyses; and,
- d) Changes are limited to structural standardization and clarification of the present TS without deleting the existing specifications.

Within the above scope it was concluded that, with the exception of the items discussed below, the May 28, 1982 proposed changes were acceptable as submitted in Ref. 2 for the purpose of clarity and structural improvement over the previous existing Technical Specifications.

The items identified in the May 28, 1982 submittal as requiring further revision, in order of appearance in the Technical Specifications (as proposed in Ref. 2), are as follows:

2.1 Page 2, Reactor Status Definitions - Reactor Critical

The proposed change added a definition for the subcritical state.

The licensee has agreed to reconsider the definition for further revision because of the unusual practice of defining criticality in terms of power level (instead of neutron reactivity or k_{eff}). Many Section 3 LCOs require operability whenever the reactor is critical; however, the standard practice is to require system operability under operational modes (or "conditions", such as exist for Maine Yankee). These correspond to a combination of core reactivity condition, power level and average reactor coolant temperature. Seven such conditions (covering Refueling Shutdown to Power Operation) are delineated in the TS definitions section, but are not referred to nor utilized in any LCO.

Further changes addressing this definition are to be submitted under separate cover.

2.2 Page 3.0-1, LCO 3.0.A - Title

Word "Noncompliance" in first line replaced with "Nonconformance" to be consistent with the intent of TS 3.0.A.

2.3 Page 3.2-1, LCO 3.2.A.1&2 (third line)

Reword the end of the phrase "... any ... 12 month period," with the words "any period of 12 consecutive months" in LCO 3.2.A.1.

Reword the end of the phrase "... any 6 month period" with the words "any period of 6 consecutive months" in LCO 3.2.A.2.

2.4 Page 3.4-2, LCO 3.4.D.1 - Remedial Action

The vent specified in LCO 3.4.D.1 is required to provide low temperature overpressure protection. The proposed 0.15 in² vent size has not been shown to provide this protection, and the sentence has therefore been deleted. Further justification is to be provided by the licensee under separate cover.

2.5 Page 3.10-3, LCO 3.10.B.3.1

Statement beginning with words "Comply with the alarm..." should be indexed as item b (not 2).

2.6 Page 3.10-5, LCO 3.10.F.3

The proposed change was added to the Ref. 2 submittal without either being discussed during the April 14, 1982 meeting or having sufficiently detailed bases. The proposed change clarifies the requirements for Lower Power Physics testing to be conducted outside of the primary coolant temperature/pressure limits of TS Figure 3.10-6.

2.7 Page 3.11-1, LCO 3.11.A(B) - Remedial Action

The remedial action statement under specification 3.11.A is applicable to specification 3.11.B., and has been relocated under 3.11.B (after the Exception) for clarity.

2.8 Page 3.12-1, LCO 3.12.A - Remedial Action

The provisions of Specification 3.0.A always follow if any applied LCO remedial action is not met. To be consistent with remedial action implied for other LCO specifications, the last four words following the word "hours" have been removed.

2.9 Page 3.12-1, LCO 3.12.A, B & C, and
Page 3.12-2, LCO 3.12 - Basis

A portion of the proposed changes to this specification for station service electrical power are disallowed since they represent relaxed requirements from existing specifications.

The proposed changes were intended to add consistency with ECCS LCO 3.6; however, the proposed operability of two diesels in LCO 3.12.B whenever the reactor is in a power operating condition (greater than 2% rated power) is a less conservative posture than existing specifications which require both diesels whenever the reactor is critical (greater than 10-4% rated power).

Section 3.12 has been revised to reflect existing specifications. Proposed LCO 3.12.A is acceptable since it represents a new, more restrictive requirement; one operable diesel and a 10,000 gallon fuel oil supply (approximately 4 days of fuel for full safeguards loads) whenever RCS temperature and pressure exceed 210°F and 400 psig, respectively. This degraded mode recognizes reduced accident consequences at subcritical conditions. Proposed LCO 3.12.B is revised to retain its original operability requirement for whenever the reactor is critical (rather than in a power operating condition).

The proposed LCO 3.12.C change, which limits automatically connected accident loads to the diesel generator short-time rating of 2900 kW, is unacceptable. The basis provided for the change, namely to be consistent with current standards such as IEEE-387, is insufficient. The Reference 6 STS include, as a surveillance requirement, the verification that auto-connected loads to the diesel generator do not exceed a 2000 hour rating. While the 2900 kW (two-hour) rating is documented for these diesel generators (refer to Maine Yankee letter 80-71 dated April 24, 1980 - response to IE Bulletin No. 79-23), further information is required to justify auto-connection of an additional 50 kW of safeguards load. Necessary information would include specifying the maximum expected emergency loading, characterization of the type of additional load including a sequence schedule and bus voltage study, as well as addressing the need for a periodic (18 month) full-load-carrying capability test (24 hour duration) as described by Regulatory Guide 1.108. Therefore, proposed LCO 3.12.C is returned to the original specification wording for the 2000 hour rating of 2850 kW.

The last paragraph of the proposed bases was deleted for reasons as discussed above.

- 2.10 Page 3.13-1, LCO 3.13.A.1 - Exception, and
Page 3.13-3, LCO 3.13 - Basis (2nd Paragraph)

Delete the Exception (with its basis) proposed under LCO Specification 3.13.A.1 and contained in former LCO Section 3.17.B.7.b regarding bypass of Reactor Building purge line HEPA filters and charcoal absorbers during refueling maintenance inside Containment. This exception was granted on a one-time basis during the Cycle 5/6 refueling. A separate NRC review of refueling accidents inside containment has addressed this issue.

- 2.11 Page 3.14-1, LCO 3.14.C - Specification C.1 and Remedial Action

For purposes of clarity, and to emphasize the importance of potential primary system deterioration, Specification C.1 is reworded to read:

1. Leakage into the reactor containment of any magnitude that has been determined to be an indication of a deterioration of primary system pressure boundary strength welds or material.

The Remedial Action statement for Spec. 3.14.C is broken up into two action statements:

1. If the leakage specified in C.1 above has been determined to be a deterioration of primary system pressure boundary strength welds or material, then the provisions of Specification 3.0.A.2 and 3 apply.
2. If reactor coolant system leakage exceeds any of the Specifications C.2 through C.5 above, the reactor shall be shut down within 24 hours.

2.12 Page 3.23-1, LCO 3.23.B - Remedial Action

To be consistent with existing TS and for the reason stated in item 2.8 above, Remedial Action statement 2.a is reworded to read as follows:

2. With no fire suppression water system operable:
 - a. Establish a backup fire suppression system within 24 hours.

Statements 2.b and 2.c will remain as originally proposed in Ref. 2.

2.13 Page 3.24-1, LCO 3.24 - Remedial Action

"Hot Standby" was replaced by "Hot Shutdown" to be consistent with the subcritical mode in the Ref. 6 Standard Technical Specifications; then, for the same reasons as stated in items 2.8 and 2.12 above, the entire Remedial Action statement was removed since it is equivalent action to that specified by LCO 3.0.A.

3.0 Evaluation

The proposed changes were evaluated in accordance with the three criteria outlined below:

- a) Rewording or restructuring implies clarification of intended meaning.
- b) Additional requirements are consistent with the objectives of the proposed changes, and do not reduce the existing safety margins.
- c) Consistency with the Ref. 6 Standard Technical Specifications (STS) implies equal or more restrictive conditions.

The changes outlined below, addressed in a continuous section-by-section fashion for the entire Definitions and LCO sections, do not involve any significant hazards considerations and are acceptable.

3.1 Definitions Section

3.1.1 Reactor Operating Conditions

Operating conditions were numerically sequenced to define the higher operating condition, which enables use of the term "higher operating condition". This is consistent with the use of operational modes in the Standard Technical Specifications (STS).

The Transthermal Condition (Condition 4) is added to provide a state which was undefined in existing Technical Specifications.

3.1.2 Reactor Status

- a) A definition for Hot Shutdown Boron Concentration is added, which is identical to that for Cold Shutdown.
- b) Quadrant Power Tilt is now expressed as a fractional tilt, rather than a percent tilt given in the previous TS. This is consistent with the expressions for the azimuthal power tilts in LCO 3.10.B.12.1 and 3.10.D.4.

3.1.3 Reactor Protective System

The word "Control Rod" is replaced with the formal term "Control Element Assembly (CEA)", consistent with the STS.

3.1.4 Engineered Safeguards Systems

Definition of "Subsystem" is reworded for clarity.

3.1.5 Miscellaneous Definitions

- a) Term "Control Rod" is replaced with a standard definition of "Control Element Assemblies (CEA's)"
- b) "E-Average Disintegration Energy" and "Dose Equivalent I-131" are transferred from LCO 3.12 for structural consistency.
- c) "Remedial Action", "Noncompliance" and "Nonconformance" are defined to clarify an ambiguity as to the applicability of LCO Specification 3.0, and to distinguish remedial actions from "Exceptions", as a means to operate the plant under degraded conditions.

3.2 LCO 3.0 - Limiting Conditions for Operations

3.2.1 Specification 3.0.A

Under the previous TS LCO, allowable time periods for various remedial action statements and LCO 3.0.A were applied inconsistently. In parallel with prescribed STS remedial measures, the LCO format is restructured for uniformity and clarity. The changes will assure compliance with the requirements specified in 10 CFR 50.36.

3.2.2 LCO 3.0.B

Limiting conditions are added when entry into a higher operating condition is permitted.

This change is more restrictive than the conditions imposed under the present TS, and is in conformance with the format of LCO 3.0.A.

3.3 LCO 3.1 - Reactor Core Instrumentation

Operability requirements for incore instrumentation are added in order to be consistent with LCO 3.10.

3.4 LCO 3.2 - Reactor Coolant System Activity

Remedial Action statements are reworded for clarity. NRC reporting requirements are clarified to impose a 30 day limit, consistent with the LER reporting requirements.

3.5 LCO 3.3 - Reactor Coolant System Operational Components

The pressurizer PORV requirements for the degraded mode operation are clearly defined, and the operability of the pressurizer spray flow is clarified.

3.6 LCO 3.4 - Combined Heatup, Cooldown and Pressure - Temperature Limitations

Remedial statement added to mandate action undertaken when outside of Reactor Coolant System Operational limits. Reactor core specifications are restructured to be consistent with the new format.

To protect against low temperature overpressure, relief requirements of operable PORV's and RHR spring relief valves are specified, delineating acceptable degraded mode of operation.

3.7 LCO 3.5 - Chemical and Volume Control System

Minimum temperature for the boron solution is specified, and remedial action is added under a degraded mode, consistent with the STS.

3.8 LCO 3.6 - Emergency Core Cooling and Containment Spray Systems

Operability of Chemical Addition Tank is added, and Remedial Action under degraded mode replaces previous exceptions, consistent with the intent of the existing TS.

3.9 LCO 3.7 - Boron and Sodium Hydroxide Available for the Containment Spray System

Remedial action statement added, including a four hour allowable period to meet specified volumes, temperature and concentrations. Also, concentration is allowed to be within $\pm 10\%$, providing ample time to adjust concentration to specification.

3.10 LCO 3.8 - Reactor Core Energy Removal

Remedial Action statements are added to limit core alterations when decay heat removal mechanisms are inoperable.

T_{ave} is increased to 210°F in order to be consistent with the definition of Cold Shutdown condition. Steam Generator auxiliary feed pumps are specified as two motor-driven, which have 100% combined capacity. Degraded mode operation and associated surveillance requirements are now remedial actions (instead of exceptions) consistent with the definitions. Allowable time period is consistent with the present TS.

3.11 LCO 3.9 - Operational Safety Instrumentation, Control Systems and Accident Monitoring Instrumentation

Specifications are reworded to improve clarity, and to be consistent with definitions. An allowable period of 6 hours, in which to be in Hot Shutdown if LCO 3.9 specifications cannot be met, is added to be consistent with LCO 3.0.A. It is to be noted that changes associated

with Amendment No. 61 to the TS, issued July 14, 1982, are reflected in Table 3.9-2 and the Bases section, regarding the safety injection actuation logic modification installed during the March, 1982 outage.

3.12 LCO 3.10 - CEA Group, Power Distribution, Moderator Temperature Coefficient Limits and Coolant Conditions

A clarifying statement is provided on Low Power Physics Testing privileges and requirements.

3.13 LCO 3.11 - Containment

Section added on operation of Containment Weight of Air Monitoring System. Remedial Action statements added to specify required action during containment isolation valve and Containment Weight of Air Monitoring System inoperability.

3.14 LCO 3.12 - Station Service Power

A new restriction (LCO 3.12.A) is added requiring one diesel generator and 10,000 gallons of fuel oil whenever RCS temperature and pressure exceed 210°F and 400 psig.

Remedial action statements clarify existing degraded mode operation "Exceptions", including provisions to follow LCO 3.0.A shutdown requirements if more than one LCO 3.12.B power supply is inoperable whenever the reactor is critical.

3.15 LCO 3.13 - Refueling Operations

Refueling Operations previously specified in LCO 3.17 are transferred to this section. "Exception" applying to containment purge filters deleted for the reasons discussed in Section 2.10 above.

Other changes assure that radiation monitors remain operational, with an audible neutron count rate in Containment available during refueling, consistent with STS.

3.16 LCO 3.14 - Primary System Leakage

Degraded mode of operation is redefined as a remedial action.

Allowable time period of 24 hours under Specifications 3.14.C.1 (i.e., indication of deterioration of the primary system pressure boundary) is deleted. More restrictive action (LCO Sections 3.0.A.2 and 3) imposed in order to be consistent with the STS.

3.17 LCO 3.15 - Reactivity Anomalies

No changes

3.18 LCO 3.16 - Release of Liquid Radioactive Waste

No changes

3.19 LCO 3.17 - Release of Gaseous Radioactive Waste

Filtration requirements in Specification 3.17.B.7 for Reactor Building purge through HEPA filters and charcoal absorbers are clarified to account for temporary localized increases which do not result in average airborne concentrations exceeding occupational MPC fractions.

3.20 LCO 3.18 - Reactor Coolant System Oxygen and Chloride/Fluoride Concentration

Specifications are restructured for clarity, and individual limits are imposed on oxygen and chloride/fluoride separately. The combined limit in the previous existing TS is reworded. Since deterioration due to chloride/fluoride concentrations on system materials is interdependent upon the amount of oxygen contained in the system, new individual limits provide added restriction and assurance of material functional integrity.

3.21 LCO 3.19 - Safety Injection System

Operability requirements are reworded and restructured for consistency. The exception to LCO 3.19.A, allowing a single safety injection tank isolation valve to be closed for one hour, is added to be consistent with LCO 3.6.C exceptions.

3.22 LCO 3.20 - Shock Suppressors (Snubbers)

Reorganized for clarity and consistency with LCO 3.0.A.

3.23 LCO 3.21 - (Deleted)

Previous existing TS 3.21.A for steam generator operability is transferred to LCO 3.8.C for consistency. Therefore, the entire Section 3.21 is deleted.

3.24 LCO 3.22 - Feedwater Trip System

No changes.

3.25 LCO 3.23 - Fire Protection Systems

Remedial Action is reorganized in order to be consistent with LCO 3.0.A. The wording has been changed (see Discussion Section 2.12 above) for clarity.

3.26 LCO 3.24 - Secondary Coolant Activity

Remedial Action now requires to be in Hot Shutdown (versus Hot Standby, as previously required) within 6 hours if the specification is not met, in accordance with STS. This change is consistent with, and equivalent to, LCO 3.0.A, so that the applied Remedial Action statement is not needed in Specification 3.24.

3.27 LCO 3.25 - Installed Ventilation and Filter Systems

No changes, but reformatted.

4.0 Environmental Consideration and Conclusion

4.1 Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

4.2 Conclusion

In all cases, the licensee's proposed Technical Specifications as modified are equivalent to or more restrictive than the requirements currently in the Maine Yankee Technical Specifications. In addition, none of the requirements in the existing Technical Specifications have been deleted by the licensee's proposed Technical Specifications as modified.

Therefore, we conclude that the licensee's proposed Technical Specifications as modified are acceptable.

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: October 28, 1982

References

1. MYAPCo Letter to USNRC dated November 30, 1981 (FMY-81-168), Proposed Change 89
2. MYAPCo Letter to USNRC dated May 28, 1982 (MN-82-99), Proposed Change 89, Supplement 1.
3. Region I Meeting Report 50-309/81-22 dated September 22, 1981, Enforcement Conference
4. Region I Inspection Report 50-309/81-20, dated November 13, 1981
5. Region I memorandum (Gallo to Starostecki) dated June 17, 1982, Meeting Summary.
6. NUREG-0212 (Rev. 2), Standard Technical Specifications for Combustion Engineering Pressurized Water Reactors, issued Fall, 1980.