



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 163 TO FACILITY OPERATING LICENSE NO. DPR-36

MAINE YANKEE ATOMIC POWER COMPANY

MAINE YANKEE ATOMIC POWER STATION

DOCKET NO. 50-309

1.0 INTRODUCTION

By letter of July 14, 1998, Maine Yankee Atomic Power Company (MYAPC or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. DPR-36) for the Maine Yankee Atomic Power Station (Maine Yankee). The proposed change would revise the liquid and gaseous release rate limits to reflect revisions to 10 CFR Part 20, "Standards for Protection Against Radiation."

2.0 EVALUATION

The licensee has proposed to change item b of TS 5.6.3, Radioactive Effluent Controls Program, to allow the limitation on the concentrations of radioactive material released in liquid effluents to unrestricted areas to be ten times the concentration values in 10 CFR Part 20, Appendix B, Table 2, Column 2. This change will allow the licensee to retain operational flexibility consistent with the design objectives for radioactive effluent releases in Appendix I to 10 CFR Part 50.

The current requirements for the content of the TS for radioactive effluents are set forth in 10 CFR 50.36a. This section requires the licensee to maintain control over radioactive material in gaseous and liquid effluents to unrestricted areas, produced during normal reactor operations, to levels that are as low as reasonably achievable (ALARA). For power reactors, Appendix I to 10 CFR Part 50 provides numerical guidance to meet the ALARA criterion. The dose values specified in Appendix I to 10 CFR Part 50 are small percentages of the dose limits in 10 CFR 20.1301. As secondary controls, the instantaneous release rates required by this TS were chosen by NRC staff to help maintain annual average releases of radioactive material in liquid effluents to within the dose values specified in Appendix I of 10 CFR Part 50.

For the purposes of this TS, 10 CFR Part 20 is used as a source of reference values only. These TS requirements, consistent with the provisions in Appendix I to 10 CFR Part 50, allow operational flexibility which may temporarily result in release rates which, if continued for the calendar quarter, would result in radiation doses higher than those specified in Appendix I to 10 CFR Part 50. However, these releases are within the dose limits in 10 CFR 20.1301. The current TS references the concentrations contained in Appendix B, Table II to 10 CFR Part 20.1 - 20.60'2. These referenced concentrations in the old 10 CFR Part 20 are specific values

which relate to an annual dose of 500 mrem. The liquid effluent radioactive effluent concentration values given in Appendix B, Table 2 to 10 CFR 20.1001 - 20.2402 are based on an annual dose of 50 mrem. Since an instantaneous concentration release rate (which corresponded to an annual dose of 500 mrem) has been acceptable as a TS limit for liquid effluents, which applies at all times to assure that the values in Appendix I to 10 CFR Part 50 are not likely to be exceeded, it is not necessary to reduce this limit by a factor of ten. Thus, the use of a factor of ten with the values in Appendix B to 10 CFR 20.1001 - 20.2402 allows the same level of effluent control to be maintained.

The licensee states that the operational history at Maine Yankee has demonstrated that the use of the concentration values associated with 10 CFR 20.106 as TS limits has resulted in calculated maximum individual doses to a member of the public that are small percentages of the values in Appendix I to 10 CFR Part 50. Therefore, the use of liquid effluent concentration values which are based on the use of a factor of ten with the values in Appendix B to 10 CFR 20.1001 - 20.2402 should not have a negative impact on the ability to continue to operate within the ALARA criterion.

Based on the above, it is acceptable that the instantaneous limits associated with the liquid release rate TS are ten times the effluent concentration values in Appendix B, Table 2 to 10 CFR 20.1001 - 20.2402.

The licensee has proposed to change item g of Technical Specification 5.6.3, Radioactive Effluent Controls Program to read as follows:

"Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the site boundary shall be limited to the following:

- (1) For noble gases: Less than or equal to a dose rate of 500 mrem/yr to the total body and less than or equal to a dose rate of 3000 mrem/yr to the skin, and
- (2) For Iodine-131, Iodine-133, tritium and all radionuclides in particulate form with half lives greater than 8 days: Less than or equal to a dose rate of 1500 mrem/yr to any organ."

This change will allow the licensee to retain operational flexibility consistent with the design objectives for radioactive effluent releases in Appendix I to 10 CFR Part 50.

For the purposes of this TS, 10 CFR Part 20 is used as a source of reference values only. These TS requirements, consistent with the provisions in Appendix I to 10 CFR Part 50, allow operational flexibility which may temporarily result in release rates which, if continued for the calendar quarter, would result in radiation doses higher than those specified in Appendix I to 10 CFR Part 50. However, these releases are within the dose limits in 10 CFR 20.1301. This specification, which is based on guidance contained in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants: A Guidance Manual for Users of Standard Technical Specifications," is acceptable as a TS limit for gaseous effluent to ensure that the values in Appendix I to 10 CFR Part 50 are not likely to be exceeded.



The licensee states that the use of the proposed specification will not have a negative impact on the ability to continue to operate within the ALARA criterion.

Based on the above, it is acceptable that the radioactive gaseous release rates be based on the stated dose rates.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Maine State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact was published in the Federal Register on April 30, 1999 (64 FR 23365).

Accordingly, based upon the environmental assessment, the Commission has determined that issuance of this amendment will not have a significant effect on the quality of the human environment.

### 5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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