



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 77

TO FACILITY OPERATING LICENSE NO. DPR-21

NORTHEAST NUCLEAR ENERGY COMPANY

MILLSTONE NUCLEAR POWER STATION, UNIT 1

DOCKET NO. 50-245

1.0 INTRODUCTION

By letter dated October 14, 1994, the Northeast Nuclear Energy Company (NNECO) submitted a request for changes to the Millstone Nuclear Power Station, Unit 1 Technical Specifications (TS). The requested changes would clarify the low pressure coolant injection (LPCI) requirements as required by TS 4.5.A.2. TS 4.5.A.2 currently requires that the LPCI subsystem be tested as specified in TS 4.5.A.1.a, b, and c (the core spray (CS) subsystem testing requirements) except that three LPCI pumps deliver at least 15,000 gpm against a system head corresponding to a reactor vessel pressure of ≥ 14.7 psia. The requested change deletes the requirement to show that three pumps can deliver 15,000 gpm; and eliminates the surveillance to check, calibrate, and test the differential pressure instrumentation (requirement to test LPCI per TS 4.5.A.1.c).

2.0 BACKGROUND

The existing Millstone Unit 1 TS require that the LPCI subsystem be tested as specified in TS 4.5.A.1.a,b,c except that three LPCI pumps deliver at least 15,000 gpm against a system head corresponding to a reactor vessel pressure of ≥ 14.7 psia. The CS TS require, in part, that header differential pressure be checked, calibrated, and tested at specified intervals. On October 5, 1994, NNECO determined that the surveillance testing of the LPCI pumps did not ensure literal compliance of the TS. Specifically, NNECO had not previously determined if output from three pumps could achieve 15,000 gpm. In addition, NNECO determined that there is no LPCI equivalent to the CS header differential pressure instrumentation in existence. NNECO then performed an analysis of the existing pump flow data and verified that the LPCI system would perform adequately to meet the three pump criterion. NNECO docketed the analysis in a licensee event report dated November 3, 1994.

In the October 14, 1994, letter, NNECO stated that they believe the 15,000 gpm requirement dated back to the original TS and seems not to consider the limiting single failures. If so, this surveillance requirement became irrelevant when 10 CFR Part 50, Appendix K was adopted into the Millstone Unit

1 licensing basis. The Appendix K methodology required a systematic single failure study, which resulted in identification of the loss of the LPCI injection valve (for large breaks) and loss of the gas turbine generator (for small breaks) as the two limiting failures. Neither of these two limiting failures result in three LPCI pumps remaining operable.

In the October 14, 1994, letter, NNECO also stated that the requirement for checking, calibrating, and testing the LPCI differential pressure instrumentation was an error introduced in Amendment No. 76 of the Provisional Operating License. The LPCI subsystem does not contain any differential pressure instrumentation which performs a function similar to one performed by the CS header differential pressure instrumentation.

3.0 EVALUATION

NNECO proposes to delete the requirement that three LPCI pumps can deliver 15,000 gpm; and eliminate the surveillance to check, calibrate, and test the LPCI header differential pressure instrumentation. The existing LPCI subsystem requirements would be replaced by the following:

	<u>Item</u>	<u>Frequency</u>
a.	Simulated Automatic Actuation Test	Each Refueling Outage
b.	Pump and Valve Operability	Per Surveillance Requirement 4.13

The LPCI pumps and valves will continue to be tested in accordance with the Millstone Unit 1 Inservice Testing (IST) program which is referenced in Surveillance Requirement 4.13. The IST program requires quarterly testing of each LPCI pump individually. The testing measures the flow rate with the pump discharge pressure maintained at a constant pressure. The current acceptance criterion requires that each pump demonstrate an ability to provide a flowrate between 5000 and 5500 gpm at 80 psig. To ensure that this surveillance verifies pump operation that will meet or exceed the loss of coolant accident (LOCA) analysis requirements, the measured flow is adjusted for the following factors: diesel generator droop, instrument uncertainty, and combined pump flow. This surveillance practice of testing one pump at a time ensures that the requirements of the LOCA analysis are met or exceeded. Considering the current LOCA analysis requirements, determining three pump flow has no relevance to the design basis requirements. Providing a reference to TS 4.13 and the IST program for the details of the actual surveillance will ensure that LPCI is tested commensurate with its safety function, and make the LPCI specification consistent with those of the remainder of the emergency core cooling subsystems.

Removal of the surveillance of the LPCI differential pressure instrumentation is necessary to correct an error which was introduced in Amendment No. 76 of the Provisional Operating License for Millstone Unit 1. The LPCI subsystem does not contain any differential pressure instrumentation which performs a function similar to one performed by the CS header differential pressure instrumentation, nor is any such instrumentation necessary. This surveillance of the LPCI subsystem was inadvertently specified when the CS surveillance requirements were modified in 1981, and the effect on the LPCI surveillance requirements due to cross-referencing was not carefully evaluated.

Therefore, the NRC staff finds that: (1) the removal of the requirement that three LPCI pumps deliver at least 15,000 gpm against a system head corresponding to a reactor vessel pressure of ≥ 14.7 psia, and (2) the removal of the surveillance of the LPCI differential pressure instrumentation to be acceptable. This is based on: (1) the current LOCA analysis requirements not requiring three LPCI pumps operating and that the LPCI pumps continue to be tested in accordance with the approved Millstone Unit 1 IST program per TS 4.13, and (2) since the LPCI subsystem does not contain differential pressure instrumentation which performs a function similar to the one performed by the CS instrumentation.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a surveillance requirement. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (59 FR 63125). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 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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