

NORTHEAST UTILITIES



THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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October 16, 1985

Docket No. 50-245

B11816

Director of Nuclear Reactor Regulation
Attn: Mr. Christopher I. Grimes, Chief
Systematic Evaluation Program Branch
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

- References: (1) J. F. Opeka letter to C. I. Grimes, dated May 17, 1985.
(2) H. L. Thompson letter to J. F. Opeka, dated July 31, 1985.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
Integrated Safety Assessment Program

In Reference (1), Northeast Nuclear Energy Company (NNECO) provided a proposed scope for the Integrated Safety Assessment Program (ISAP) review of Millstone Unit No. 1. In Reference (2), the Staff formally issued the results of the ISAP screening review process, establishing the scope of ISAP for Millstone Unit No. 1 and initiating issue-specific evaluations. Reference (1) also indicated that for each issue or topic included in ISAP, NNECO would provide a discussion of the safety objective and an evaluation of the plant design with respect to the issue being addressed to identify specific items to be considered in the integrated assessment. In accordance with this commitment, reviews for the following ISAP topics are attached.

- o ISAP Topic 1.46 - "Determination of SRV Pool Dynamic Loads"

If you have any questions concerning the attached review, please contact us.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

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Docket No. 50-245

ISAP TOPIC NO. 1.46

DETERMINATION OF SRV POOL DYNAMIC LOADS

October, 1985

ISAP Topic No. 1.46
Determination of SRV Pool Dynamic Loads

I. Introduction

During the conduct of a large scale testing program for an advanced design BWR pressure suppression containment system (Mark III), new suppression pool hydrodynamic loads associated with a postulated LOCA were identified which had not been explicitly included in the original design of the Mark I containment systems. These additional loads result from the dynamic effects of drywell air and steam being rapidly forced into the suppression pool (torus) during a postulated LOCA event. Specifically, these loads result from initial vent clearing of relief valve or downcomer piping and steam quenching due to high local pool temperatures. Consequently, it was determined that a reassessment of the Mark I containment system design would be required. This item was originally identified in NUREG-0371 (Reference 6) and was later determined to be an unresolved safety issue (USI).

The USI was generically resolved in August 1982 with the publication of NUREG-0661 (Reference 7). The purpose of this topic is to provide the status of this USI for Millstone Unit No. 1.

II. Review Criteria

1. USI A-7, Mark I Long-Term Program
2. USI A-39, Determination of Safety Relief Valve Pool Dynamic Loads and Temperature Limits
3. 10CFR50, Appendix A, General Design Criterion 50

III. Related Topics/Interfaces

None.

IV. Evaluation

By letter dated July 7, 1982 (Reference 3), NNECO was requested to provide the NRC with the status of and progress towards completion of the USIs at Millstone Unit No. 1. Although not specifically applicable to Millstone Unit No. 1, Reference 4 requested licensees to confirm the applicability of the NRC Staff generic positions and conclusions developed on individual USIs. On October 13, 1982 (Reference 5), NNECO presented its positions on each USI applicable to Millstone Unit No. 1; USI A-39, "Determination of Safety Relief Valve Pool Dynamic Loads and Temperature Limits," was addressed in this submittal.

NNECO submitted a Plant Unique Analysis Report (PUAR) (References 10 and 11) on pool dynamic loads for Millstone Unit No. 1. The report provided a description of the application of the generic Mark I pool dynamic loads and methods for Millstone Unit No. 1 as well an evaluation of the capability of the containment and components to accommodate pool dynamic loads.

The Brookhaven National Laboratory was contracted by the NRC to review the PUAR for compliance with NRC acceptance criteria and to evaluate the acceptability of any proposed alternative load specifications. As indicated in Brookhaven's report, "Technical Evaluation of the Millstone Point Unit 1 Plant Unique Analysis Report" (Reference 8), NNECO adopted all but a few generic criteria. Where alternative load specifications were proposed, they were found to be conservative. All modifications to the plant resulting from this issue have been made.

Reference 9 requested NNECO to submit any Technical Specification changes required as a result of containment modifications made as part of NNECO's resolution of USI A-39. No changes to the Millstone Unit No. 1 Technical Specifications were required; the Technical Specifications had been revised previously, via Amendments 51 and 73, dated July 6, 1976 and March 11, 1981, respectively.

V. Conclusions

The NRC concluded in a September 12, 1984 letter to NNECO (Reference 9) that the PUAR verifies that the modifications resulting from NNECO's address of USI A-39 have strengthened the containment sufficiently to satisfy the originally intended design safety margins for the lifetime of Millstone Unit No. 1. NNECO concludes that USI A-39 is resolved for Millstone Unit No. 1.

VI. References

1. D. M. Crutchfield letter to W. G. Counsil, dated January 19, 1982.
2. W. G. Counsil letter to D. M. Crutchfield, dated March 1, 1982.
3. G. Lainas letter to W. G. Counsil, dated July 7, 1982.
4. D. M. Crutchfield letter to J. A. Kay, dated August 17, 1982 (Docket No. 50-29).
5. W. G. Counsil letter to D. M. Crutchfield, dated October 13, 1982.
6. NUREG-0371, "Task Action Plans for Generic Activities (Category A)," U.S. Nuclear Regulatory Commission, November 1978.
7. NUREG-0661, dated July, 1980 and NUREG-0661, Supplement 1, "Safety Evaluation Report for the Mark I Containment Long-Term Program," U.S. Nuclear Regulatory Commission, August 1982.
8. BNL-04243, "Technical Evaluation of Millstone Point Unit 1 Plant Unique Analysis Report," Brookhaven National Laboratory, June 1984.
9. W. A. Paulson letter to W. G. Counsil, dated September 12, 1984.
10. W. G. Counsil letter to D. M. Crutchfield, dated December 23, 1982.
11. W. G. Counsil letter to D. M. Crutchfield, dated May 18, 1983.