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
B11818

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

- ISAP Topic 1.03 - "Containment Isolation - Appendix A Modifications"
- ISAP Topic 1.14 - "Appendix J Modifications"

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

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka
Senior Vice President

By: C. F. Sears
Vice President

cc: J. A. Zwolinski

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Docket No. 50-245

ISAP TOPIC NO. 1.03

CONTAINMENT ISOLATION - APPENDIX A MODIFICATIONS

October, 1985

ISAP Topic No. 1.03
Containment Isolation - Appendix A Modifications

I. Introduction

Isolation provisions of fluid systems of nuclear power plants limit the release of fission products from the containment for postulated pipe breaks inside containment and thus prevent uncontrolled release of primary system coolant as a result of a postulated pipe break outside containment. General Design Criteria 54 through 57 of Appendix A to 10 CFR 50 assure that nuclear power plants implement appropriate containment isolation provisions. General Design Criterion 54 establishes design and test requirements for leak detection provisions, the isolation function and the containment capability of the isolation barriers in lines penetrating the primary reactor containment. General Design Criteria 55, 56 and 57 establish explicit requirements for isolation valving in lines penetrating the containment. Specifically, they address the number and location of isolation valves (e.g., redundant valving with one located inside containment and the other located outside containment), valve actuation provisions (e.g., automatic or remote manual isolation valves), valve position (e.g., locked closed, or the position of greater safety in the event of an accident or power failure), and valve type (e.g., a simple check valve is not a permissible automatic isolation valve outside containment).

The purpose of this topic is to provide the status of Milistone Unit No. 1 regarding conformance with current containment isolation licensing criteria.

II. Review Criteria

1. 10 CFR 50, Appendix A, General Design Criteria 54 through 57
2. Standard Review Plan Section 6.2.4
3. Regulatory Guide 1.11
4. Regulatory Guide 1.141

III. Related Topics/Interfaces

1. ISAP Topic 1.14, "Appendix J Modifications"
2. ISAP Topic 1.42, "Main Steam Line Leakage Control System"

IV. Evaluation

General Design Criteria 54 through 57 of Appendix A to 10 CFR 50 require isolation provisions for the lines penetrating the primary containment to maintain an essentially leak-tight barrier against the uncontrolled release of radioactivity to the environment. During the Systematic Evaluation Program (SEP), the NRC compared Millstone Unit No. 1 with criteria currently used for licensing new facilities. This effort included the comparison of Millstone Unit No. 1 with current criteria on containment isolation provisions under SEP Topic VI-4, "Containment Isolation System."

On October 8, 1982 (Reference 3), the NRC issued their final evaluation of SEP Topic VI-4 for Millstone Unit No. 1, which documented differences from current containment isolation licensing criteria. The NRC evaluation formed the basis for Section 4.20 of the NRC's Integrated Plant Safety Assessment Report (Reference 5), issued in February 1983. Section 4.20 of Reference 5 identified several Millstone Unit No. 1 areas that did not conform to current containment isolation licensing criteria. The NRC, assisted by a limited Sandia risk assessment (Reference 11) which classified this issue as having low importance to risk, recommended that backfitting not be required except for the establishment of administrative procedures to lock isolation valves in a closed position, ensuring adequate leakage detection capabilities for certain lines, and installation of three (3) drain valves to provide two-valve isolation.

Specifically, the NRC required that:

1) Selected valves (identified in Section 4.20.1 of Reference 5) be provided with mechanical locking devices in accordance with General Design Criteria 55, 56 and 57, as well as appropriate administrative controls. These valves are either test, vent, drain, or sample line manual isolation valves that connect to piping penetrating the containment.

2) Adequate leakage detection and appropriate procedures for operator action should be demonstrated and the operating station be located in an accessible area, where necessary, for the valves given in Section 4.20.3 of Reference 5.

3) Three lines be provided with a second valve and mechanical locking devices for both valves with appropriate administrative controls. These lines were identified in Section 4.20.2 of Reference 5.

4) NNECO review the isolation capability of the following lines and either implement modifications or demonstrate that adequate isolation capability exists:

Penetration	Line
X-211A	Reactor coolant sample return line connected to line CC-26
X-204	Cooling water return lines (2) that branch off between takeoffs to containment spray pumps

The following information addresses the four (4) items described above as requiring further NNECO action.

(1) As documented in References 8 and 9, all modifications and procedural revisions are complete.

(2) As documented in References 8 and 10, NNECO has installed blank flanges and pipe caps on these penetrations.

(3) In a letter to the NRC dated February 23, 1983 (Reference 4), NNECO described leakage detection provisions for the affected valves. In a subsequent safety evaluation (Reference 7), the NRC concluded that these provisions were acceptable.

(4) In a letter to the NRC dated June 22, 1983 (Reference 6), NNECO documented it's completion of the review of penetrations X-211A and X-204 and concluded that the isolation capability of penetration X-211A complies with the requirements of General Design Criterion 54 of Appendix A to 10 CFR 50. Regarding penetration X-204, NNECO is addressing further modifications to this penetration as part of ISAP Topic 1.14, "Appendix J Modifications."

V. Conclusions

As discussed above, NNECO considers this issue to be resolved, with the exception of potential modifications to penetration X-204, which is being addressed as part of ISAP Topic 1.14. All other aspects of this issue are considered completed.

VI. References

1. W. G. Counsil letter to D. M. Crutchfield, dated November 6, 1980.

2. W. G. Counsil letter to D. M. Crutchfield, dated April 14, 1982.

3. J. J. Shea letter to W. G. Counsil, dated October 8, 1982.

4. W. G. Counsil letter to D. M. Crutchfield, dated February 23, 1983.

5. Integrated Plant Safety Assessment Report, Millstone Nuclear Power Station, Unit 1, NUREG-0824, February 1983.

6. W. G. Counsil letter to D. M. Crutchfield, dated June 22, 1983.

7. J. J. Shea letter to W. G. Counsil, dated July 7, 1983.

8. E. C. Wenzinger letter to W. G. Counsil, dated February 28, 1985 (Inspection 50-245/84-24).

9. W. G. Counsil letter to E. C. Wenzinger, dated April 2, 1985.

10. W. G. Counsil letter to J. A. Zwolinski, dated April 25, 1985.

11. Sandia National Laboratories Report No. SAND 82-2429, "The Effect of Resolution of the Millstone Point Unit 1 Systematic Evaluation Program Issues on Probabilistic Calculations of Risk."

Docket No. 50-245

ISAP TOPIC NO. 1.14

APPENDIX J MODIFICATIONS

October, 1985

ISAP Topic No. 1.14
Appendix J Modifications

I. Introduction

Appendix J to 10CFR50, "Primary Reactor Containment Leakage Testing for Water-Cooled Reactors," was published on February 14, 1973. Many nuclear plants, including Millstone Unit No. 1, had either received an operating license or their containments had reached advanced stages of design or construction at that time. The NRC expressed concern that these plants might not be in full compliance with the requirements of this regulation, and on August 7, 1975 (Reference 1) requested NNECO to determine if containment leakage testing at Millstone Unit No. 1 was in full compliance with Appendix J.

Specifically, NNECO was requested to identify any design features that do not permit conformance with its requirements or existing Technical Specification requirements which are in conflict with Appendix J. NNECO was requested to provide a summary of planned remedial actions, i.e., design/Technical Specification modifications or exemption requests, as well as schedules for such actions. The purpose of this topic is to assess the status of such efforts for Millstone Unit No. 1, and achieve resolution in the remaining open areas.

II. Review Criteria

1. 10CFR50, Appendix J
2. 10CFR50, Appendix A, General Design Criteria 52 and 53

III. Related Topics/Interfaces

1. ISAP Topic 1.03, "Containment Isolation - Appendix A Modifications"
2. ISAP Topic 1.42, "Main Steam-Line Leakage Control System"

IV. Evaluation

On November 14, 1975 (Reference 2), NNECO responded to the NRC's request of August 7, 1975. Exceptions to the requirements of Appendix J regarding Types A, B and C testing were identified as well as Technical Specification requirements not in strict compliance with Appendix J. At that time, NNECO requested exemptions to Appendix J for these items and committed to submit Technical Specification changes incorporating Appendix J requirements and reflecting specific exemptions once such exemptions were reviewed and approved by the NRC.

Subsequently, on March 3, 1977 (Reference 3), the NRC provided NNECO with its position relating to Millstone Unit No. 1 conformance with Appendix J. The intent of the NRC's letter was to provide guidelines by which NNECO could propose Technical Specification changes and submit specific requests for exemptions. Specific issues addressed in both References 2 and 3 were:

1. Isolation valves in safety-related cooling systems;

2. Local leak rate repair during Type A testing;
3. Type B testing of air locks;
4. Type B testing of penetrations with expansion bellows;
5. Reverse-direction testing;
6. Main steam isolation valve testing;
7. Control rod drive system;
8. Standby liquid control valves; and
9. TIP valves.

NNECO responded to the NRC's positions on July 29, 1977 (Reference 4) and provided the NRC with proposed Technical Specification changes; at that time, NNECO informed the NRC that evaluation of certain NRC positions was ongoing and that the need for further design or Technical Specification changes would be addressed further.

As part of ISAP Topic 1.14, NNECO is evaluating the current status of Millstone Unit No. 1 compliance with the requirements of Appendix J. NNECO intends to identify remaining areas of noncompliance, propose acceptable means of addressing all open issues and develop schedules for resolution of such issues. This will be the subject of further correspondence.

V. Conclusions

NNECO is currently evaluating the status of Millstone Unit No. 1 compliance with the requirements of 10CFR50, Appendix J in conjunction with a review of Reference 9. Additional information will be provided to the NRC once this review and evaluation are complete.

VI. References

1. K. R. Goller letter to D. C. Switzer, dated August 7, 1975.

2. D. C. Switzer letter to K. R. Goller, dated November 14, 1975.

3. G. Lear letter to D. C. Switzer, dated March 3, 1977.

4. D. C. Switzer letter to G. Lear, dated July 29, 1977.

5. D. C. Switzer letter to D. L. Ziemann, dated March 20, 1978.

6. W. G. Counsil letter to D. L. Ziemann, dated September 20, 1978.

7. W. G. Counsil letter to D. M. Crutchfield, dated December 7, 1984.

8. J. A. Zwolinski letter to W. G. Counsil, dated April 24, 1985.

9. J. A. Zwolinski letter to J. F. Opeka, dated May 10, 1985.