

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-336/83-03

Docket No. 50-336

License No. DPR-65 Priority - - Category C

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Unit 2

Inspection at: Waterford, Connecticut

Inspection conducted: February 2-4, 1983

Inspectors: W A Rekito 2/22/83
W. A. Rekito, Lead Reactor Engineer date

Approved by: L J Norrholm 2/23/83
L. J. Norrholm, Acting Chief, Test Programs date
Section, Engineering Programs Branch

Inspection Summary: Inspection on February 2-4, 1983 (Report No. 50-336/83-03)
Areas Inspected: Routine announced licensing action review and inspection of the inservice testing surveillance program for pumps and valves and containment penetration leakage testing surveillance. The inspection involved 25 hours onsite by one region-based NRC inspector.
Results: No violations were identified.

DETAILS

1. Persons Contacted

The technical and supervisory personnel listed below were contacted.

- *R. Blanchard, ISI Coordinator
- J. Kelley, Superintendent
- *R. Place, Engineering Supervisor
- *S. Scace, Operations Supervisor
- D. Schmidt, Northeast Utilities Engineer
- *S. Stadnick, Plant Engineer

NRC Personnel

- *D. Lipinski, Resident Inspector
- *T. Shedlosky, Senior Resident Inspector

*denotes those present at the exit meeting on February 4, 1983.

2. Inservice Testing (IST) Program for Pumps and Valves

2.1 Documents Reviewed

- Inservice Inspection and Testing Program Description for Pumps and Valves, submitted to the NRC on June 25, 1979.
- Revised Inservice Testing Program Description, submitted to the NRC on May 1, 1981
- Procedure EN 21101, Revision 2, ISI Pump and Valve Operability Evaluation
- Procedure EN 21102, Revision 2, Service Water Pumps "A" (P-5A) Operational Readiness Test
- Procedure EN 21106, Revision 2, Auxiliary Feedwater Pumps "B" (P-9B) Operational Readiness Test
- Procedure EN 21108, Revision 2, RBCCW Pump "A" (P-11A) Operational Readiness Test
- Procedure EN 2118, Revision 2, Charging Pump "A" (P-18A) Operational Readiness Test
- Procedure EN 21129, Revision 1, Containment Isolation Valves Operational Readiness Test
- Procedure EN 21132, Revision 1, Service Water System Valve Operational Readiness Tests

- Procedure EN 21136, Revision 2, Safety Injection and Containment Spray System Valve Operational Readiness Tests
- Procedure EN 21137, Revision 2, Pump Vibration Monitoring Equipment Operation
- Procedure SP 2730A, Revision 2, Pressurizer Safety Valve Test
- Procedure SP 2730B, Revision 1, Main Steam Safety Valve Test
- Procedure SP 2613A, Revision 4, Facility I Diesel Generator Operability Test
- Procedure OP 2346 A, Revision 6, Emergency Diesel Generators
- Procedure SP 2605D, Revision 5, Containment Leak Test - Type C
- Selected records of various test results and evaluations including Main Steam and Pressurizer Safety Valves Repair and Test Reports from Wyle Laboratories dated December 28-29, 1981.
- Fourteen selected system drawings, Piping Diagrams

2.2 Scope of Review

The inspector reviewed the above documents to ascertain compliance with 10 CFR 50.55 a(g) and Millstone Unit 2 Technical Specification 4.0.5 which requires inservice testing of pumps and valves in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. A major portion of this review was conducted to finalize an NRC staff evaluation of the licensee's IST program and, pursuant to 10 CFR 50.55 a(g)(6)(i), determine acceptability of requested relief from certain code testing requirements found to be impractical.

Problems identified with certain relief requests and program implementation are described below.

2.3 IST Program Scope

The regulation and code require that the IST program include all class 1, 2 and 3 pumps and valves. By letter dated January 5, 1978, the NRC staff issued guidance limiting the IST program scope, but including safety related valves. The inspector acknowledged some previous confusion on this subject, but explained to the licensee the current NRC:RI position that applicable components in the Fire Protection and Emergency Diesel Generator Auxiliary systems be included in the IST program. The current IST program does not include these components. The licensee acknowledged the NRC position and stated that a review of these systems for applicable components and their testability would be conducted.

This statement, along with discussions of possible alternate tests considered acceptable, satisfied the inspector's concern. The inspector informed the licensee that this matter would be addressed in the NRC Safety Evaluation Report (SER) approving the IST program and that a formal response would be expected sometime after issuance of the SER. (Followup Item 336/83-03-01)

One additional problem with the IST program scope was identified during this inspection which is described in detail in section 3.1 of this report. Specifically, there are several containment isolation valves (CIVs) which previously were not considered to be CIVs and were not being type C local leak rate tested in accordance with 10 CFR 50 Appendix J. These valves are also not included in the licensee's IST program description. The licensee is currently reviewing the correctness of the containment isolation provisions and valve classifications and will include additional CIVs in the leak rate test program as appropriate during the upcoming refueling outage. As this determination is made, the additional CIVs must be classified as category A valves and automatically included in the IST program. The licensee acknowledged this requirement and understood that additional relief requests should be submitted to the NRC if and when they are determined to be needed. (Followup Item 336/83-03-07)

2.4 Stroke Testing of Check Valves

IWV-3520 requires check valves to be exercised to their safety function position. The licensee was previously given the NRC position that exercising check valves to the open position required positive indication of disc position or demonstration of the minimum safety analysis flow rate through the valve.

In Program Relief Request 3 for the Safety Injection System, the licensee explained that it was impractical to full stroke exercise 12-inch check valves 2-SI-215, 2-SI-225, 2-SI-235, and 2-SI-245 in the four Safety Injection Accumulator discharge lines. The alternate testing proposed was to part stroke exercise these valves during cold shutdowns and refuelings. The test procedure (EN 21136) uses a one inch test line as the flow path and the acceptance criteria for minimum flow is 20 gallons per minute. The inspector discussed with the licensee the need to develop a test method which more fully exercises these check valves and stated that this matter would be addressed in the NRC Safety Evaluation Report. The licensee stated that he would further investigate possible methods to full stroke and more fully part stroke these check valves. (Followup Item 336/83-03-02)

In Program Relief Request 4 for the Containment Spray System, the licensee explained that it was impractical to full stroke exercise 24-inch check valves 2-CS-15A and 2-CS-15B. These valves are in the containment sump (building floor) recirculation line.

The alternate testing proposed was to part stroke exercise these valves quarterly. The test procedure (EN 21136) uses a temporary supply of demineralized water at a very low flow rate to exercise these valves. After review of the applicable drawings and procedure, the inspector concluded that it was impractical to full stroke these valves by normal means with water; and that the part stroke test being done was the best available alternate. However, the inspector discussed with the licensee the feasibility of partial disassembly of these valves for inspections and mechanically exercising the disc at some alternate, less frequent, interval. The licensee acknowledged the inspector's concern and felt that this additional alternate activity may not be impractical. The inspector stated that this matter would be addressed in the NRC Safety Evaluation Report. (Followup Item 336/83-03-03)

2.5 Safety and Relief Valve Testing

IWV-3510 requires that safety and relief valve operating set points be verified on a sampling basis and schedule such that all valves in the IST program will be tested at a minimum of every five years. Additionally, the sample size for a system is to be increased if any valves tested are found to not function properly. These regular tests are in addition to the special post-repair or maintenance test requirements of IWV-3200.

The licensee has developed station test procedures to verify the set point pressures for most of these valves in place (installed in system). However, occasionally the licensee's practice has been to remove the valves and send them to a test facility for maintenance and testing. This was done during the 1981 refueling outage for the two pressurizer relief valves and all sixteen main steam relief valves. Review of the test records revealed that these valves were not tested in the "AS FOUND" condition prior to being disassembled for inspection and overhaul. The inspector stated that this practice did not fully satisfy the routine testing requirements of IWV-3510 and that the potential existed for overlooking possible safety system degradation and Technical Specification reporting requirements for same. The licensee acknowledged the inspector's concern and stated that he would re-evaluate how the test requirements would be satisfied prior to the next series of relief valve tests scheduled for the upcoming refueling outage. This matter is unresolved pending review of licensee's actions to satisfy the regular inservice testing requirements of IWV-3510. (336/83-03-04)

2.6 Valve Leak Rate Testing (LRT)

IWV-3420 requires seat leak testing of Category A valves. The licensee's revised Containment Isolation relief request 4 requested exemptions from the test requirements of IWV-3420 (a-e) for all containment isolation valves. The alternate testing proposed is the type C local leak rate testing being conducted in accordance with Technical Specification 3.6.1.2 and 10 CFR 50 Appendix J.

The inspector informed the licensee that this alternate testing was acceptable. However, the specification of maximum permissible leakage rates and trending test results in accordance with IWV-3420 (f) and (g) was required. A review of the applicable LRT procedure (SP-2605 D) and the IST evaluation procedure (EN 21101) revealed that most valves have individual leakage acceptance criteria but required trend evaluations are not currently being accomplished in a formal acceptable manner. The licensee acknowledged this slight deficiency in the formal IST program implementation and stated that after appropriate engineering review full conformance would be achieved during the upcoming refueling outage. This matter is unresolved pending review of licensee's actions to more formally analyze LRT results in accordance with IWV-3520 (f) and (g). (336/83-03-5)

3. Containment Penetration Leakage Testing

The inspector reviewed procedure SP 2605 D, revision 5, Containment Leak Test - Type C, and FSAR section 5.2.8, Containment Isolation System to ascertain compliance with regulatory requirements of 10 CFR 50 Appendix J and Appendix A. This review also supported the IST program review in that containment isolation valves are category A valves and the licensee takes credit for the Appendix J testing to satisfy the code leak-testing requirements. In addition, the inspector held discussions with licensee representatives regarding plans for the next Containment Integrated Leakage Rate Test (CILRT) scheduled for the upcoming refueling outage. During these discussions the inspector described current NRC positions regarding the evaluation of the CILRT "AS FOUND" condition and valve leakage improvements preceding it. One unacceptable condition was identified and is described below.

3.1 Scope of Leakage Rate Testing

The inspector questioned the completeness and adequacy of the containment isolation valve (CIV) local leakage rate testing program, citing examples of eight containment isolation check valves in penetrations 1, 4, 5, 37, 38, 49, 62, and 87 which were not being leakage rate tested as required by 10 CFR 50 Appendix J. These valves are all located inside containment and a review of FSAR Table 5.2-11 reveal that all valves except 2-CS-15 A and B were not considered containment isolation valves because the systems they were in were considered to be closed inside containment and per 10 CFR 50 Appendix A, General Design Criterion (GDC) 57, do not require an isolation valve inside containment. The inspector informed the licensee that the FSAR classification of the subject systems appeared to be incorrect because these system did not meet the GDC 2 requirements for seismic qualifications. Similarly, the inspector questioned the correctness of the closed system FSAR classification for penetrations 11 and 34 which did not appear to have any containment isolation provisions inside containment.

The inspector also questioned the justification for not conducting Type C leak rate tests on containment isolation valves for penetrations 12, 13, and 42.

The licensee acknowledged the inspector's concerns and initiated a review of the containment isolation provisions and adequacy of the LLRT program. The licensee management further explained their intentions to complete this review expeditiously; make appropriate changes to the LLRT program prior to the end of the upcoming refueling outage and report to the NRC any cases where containment isolation or testing requirements cannot be met.

After discussions with the licensee staff conducting this review, the inspector did not have an immediate safety concern and concluded that the licensee's actions and plans were appropriate for the circumstances. However, the inspector stated that this matter would be brought to NRC management attention and examined more closely during the upcoming refueling outage. The item is considered unresolved pending revision of the LLRT program and further NRC review for conformance with 10 CFR 50 Appendix A and J. (336/83-03-06)

4. Facility Tour

The inspector made tours of the facility including the control room, turbine building, auxiliary feed pump rooms, and the service water intake structure.

During the tours, the inspector observed operations and activities in progress, and the general condition of safety related equipment.

No unacceptable conditions were identified.

5. Unresolved Items

Items about which more information is required to determine acceptability are considered unresolved. Paragraphs 2.5, 2.6, and 3.1 of this report contain unresolved items.

6. Exit Interview

The inspector met with licensee representatives (see paragraph 1 for attendees) on February 4, 1983. The inspector summarized the scope and findings of the inspection at that time. The inspector also explained the plans and expected schedule to complete and issue a SER giving final approval of the IST program for the first 10 year service interval.