

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

REGION I

Report No. 50-245/80-08

Docket No. 50-245

License No. DPR-21 Priority -- Category C

Licensee: Northeast Nuclear Energy Company

P.O. Box 270

Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Unit 1

Inspection At: Waterford, Connecticut

Inspection Conducted: June 2-6, 1980

Inspectors: *N. J. Blumberg*
N. J. Blumberg, Reactor Inspector

7/2/80
date

E. T. Shaub
E. T. Shaub, Reactor Inspector

7/2/80
date

E. G. Greenman
E. G. Greenman, Nuclear Support Section
No. 2, RO&NS Branch

7/14/80
date

Approved by: *E. G. Greenman*
E. Greenman, Chief, Nuclear Support Section
No. 2, RO&NS Branch

7/14/80
date

Inspection Summary:

Inspection on June 2-6, 1980 (Report No. 50-245/80-08)

Areas Inspected: Routine, unannounced inspection by regionally based inspectors of administrative controls for surveillance procedures; surveillance testing; witnessing of surveillance tests; technician qualifications; inservice plant testing; and, facility tours. The inspection involved 62 inspector-hours onsite by two NRC regionally based inspectors and NRC management.

Results: Of the six areas inspected, no items of noncompliance were found in four areas; two apparent items of noncompliance were found in two areas (Deficiency - failure to perform an inservice inspection in accordance with procedural instructions, Paragraph 7.c; and Deficiency - failure to maintain records of safety related surveillance, Paragraph 4.C).

DETAILS

1. Persons Contacted

- *E. Mroczka, Station Superintendent
- *R. Herbert, Unit 1, Plant Superintendent
- *K. Thomas, Senior Engineer
- *W. Romberg, Operations Supervisor
- *P. Przekop, Unit 1, Engineering Supervisor
- *F. Teeple, Unit 1, I&E Supervisor
- T. Piasek, Reactor Engineer
- P. Callaghan, Maintenance Supervisor
- J. Crosby, Operations Supervisor
- J. Kangley, Chemistry Supervisor

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- *T. Shedlosky, Senior Resident Inspector
- *E. Greenman, Chief, Nuclear Support Section No. 2, RO&NS Branch

The inspectors also interviewed several other licensee employees during the inspection, including reactor operators, technicians, technical support, and office personnel.

*Denotes those present at exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Deficiency (245/78-12-04): Reactor coolant samples were not taken at four hour increments during startup and at steaming rates below 100,000 pounds per hour as required by Technical Specifications. The inspector observed that procedures, OP-201, Reactor Startup and SP-839, Coolant Chemistry-Startup and Rates Below 100,000 Pounds per Hour, had been revised to include the required four hour sample frequency. In addition the inspector reviewed chemistry results from the last Reactor Startup, December 20, 1979, to verify that sampling was performed every four hours.

(Closed) Unresolved Item (77-31-05): The Linear Variable Differential Transformer (LVDT) used for turbine stop valve position indication should be included in a calibration program to check indicated position against valve stroke. The inspector reviewed drawings of the turbine stop valve and observed that the limit switch for 10% valve closure scram signal is in a fixed position and is not dependent on calibration of the LVDT. The turbine stop valve closure scram is functionally tested on a monthly basis per SP408F and is independent of the LVDT. Based on the above, the inspector concurred with a licensee evaluation that calibration of the LVDT need not be included in the balance of plant calibration program.

(Closed) Unresolved Item (245/78-17-07): Submit Technical Specification (T.S.) change to include in T.S. new mechanical snubbers which have been

added to the plant as required by T.S. 3.6.I.6. The licensee has stated that a T.S. change would not be submitted to add the mechanical snubbers. The licensee states that T.S. 3.6.I.6 applies only to hydraulic snubbers and that discussions with twelve other commercial nuclear power plant licensees with mechanical snubbers indicates that their T.S. also do not include mechanical snubbers. In addition, the licensee notes that sampling inspections of mechanical snubbers are required by the Inservice Inspection Program. The licensee reaffirmed its commitment to submit required T.S. changes for the addition or deletion of hydraulic snubbers. The inspector concurred that T.S. 3.6.I.6 refers specifically to hydraulic snubbers and, as written, does not apply to the addition of mechanical snubbers.

(Open) Unresolved Item (245/78-34-03): T.S. Table 3.7.1 lists wrong positions for valves IC-3, IC-4, and CV-5; does not list valves FSV-9-75A-D; and surveillance T.S. 4.7.D.1.C were not accomplished for valves FSD9-75A-D. The licensee stated that a T.S. change concerning valves IC-3, IC-4, and CV-5 would be submitted by July 30, 1980; and that valves FSV-9-75A-D would be modified during the upcoming refueling outage and a T.S. change would be submitted by January 1, 1981.

(Closed) Unresolved Item (245/79-24-03): The Daily Surveillance Log step 4 addressed the three types of fuel bundles used in the cycle 7 core; 7 x 7, 8 x 8, and 8 x 8R. Step 7 of the log does not include the 7 x 7 type fuel bundle. The inspector observed that the current Daily Surveillance Log, Revision 32, May 7, 1980, had been revised to include the 7 x 7 type bundles in the procedure.

f (Closed) Deficiency (245/79-27-01): Fire detectors in the Diesel Generator Room, the Hydrogen Seal Oil Unit, and the Diesel Day Tank Room were being functionally tested annually rather than semi-annually as required by T.S.; and torus water level instrumentation calibration exceeded its calibration interval of six months plus 25 percent. The inspector observed that procedure SP680Q has been revised to include semi-annual functional tests of fire detectors in the Diesel Generator Room, the Hydrogen Seal Oil Unit, and the Diesel Day Tank Room and that these instruments were tested on January 3, 1980; and May 5, 1980. In addition, the inspector observed that SP411L, Torus Water Level Instrumentation calibration was last performed within the six month interval required by T.S.

(Open) Unresolved Item (245/79-27-02): Submit change to T.S. to allow functional tests of fire detectors using direct application of heat rather than by injecting a simulated electrical signal into the measurement channel. This change has been written but has not yet been submitted. The licensee stated the change was held up as the fire detection system is currently being upgraded and that a T.S. change would be submitted by January 1, 1981 which would include both the newly installed fire detectors and the change in method of functionally testing fire detectors.

3. Administrative Controls for Surveillance Procedures and In-service Inspection Program

The inspector performed an audit of the licensee's administrative controls by conducting a sampling review of the below listed administrative procedures with respect to the requirements of the Technical Specifications, Section 6, "Administrative Controls," ANSI N18.7 "Administrative Controls for Nuclear Power Plants" and Regulatory Guide 1.33 "Quality Assurance Program Requirements."

- ACP-QA-3.02, Station Procedures and Forms, Revision 12, May 1, 1980
- ACP-QA-3.03, Document Control, Revision 10, February 14, 1980
- ACP-QA-9.02, Plant Surveillance Program, Revision 6, January 1, 1980
- ACP-QA-9.02A, Unit 1 Surveillance Master Test Control List, Revision 4, January 30, 1980
- ACP-QA-9.03, In-service Plant Testing, Revision 2, January 30, 1980
- ACP-QA-9.04, Control and Calibration of Measuring and Test Equipment, Revision 6, May 9, 1980
- ACP-QA-9.06, In-service Inspection Program, Revision 1, August 3, 1978
- ACP-8.09A, Change and/or Revision Review, Revision 2, October 4, 1979

No items of noncompliance were identified.

4. Surveillance Testing

- a. The inspector reviewed surveillance tests on a sampling basis to verify the following.
 - Tests required by Technical Specifications are available and covered by properly approved procedures;
 - Test frequency is in conformance with Technical Specification requirements;
 - Test format and technical content are adequate and provide satisfactory testing of related systems or components;
 - Test results of selected tests are in conformance with Technical Specifications and procedure requirements have been reviewed by someone other than the tester or individual directing the test.

b. The following surveillance tests were reviewed to verify the items identified above:

- SP 410B, Rod Block Monitor Functional Test, Revision 1, December 12, 1979

Data were reviewed for four tests performed (I&C Form 410B-1, Revision 1, October 3, 1979): January 28, 1980; February 25, 1980; March 31, 1980; and April 28, 1980

- SP 408D, Discharge Volume High Water Level Scram, Revision 2, April 8, 1979

Data were reviewed for four tests performed (I&C Form 408D-1, Revision 2, October 3, 1979): February 19, 1980; March 18, 1980; April 21, 1980; and May 19, 1980

- SP 622.7, LPCI System Operability, Revision 4, November 21, 1979

Data were reviewed for five tests performed (OPS Form 622.7-1, Revision 2): January 15, 1980; February 20, 1980; March 7, 1980; April 8, 1980; and May 13, 1980.

- SP 626.2, Manual Operation of Relief Valves When Reactor is at Low Pressure, Revision 4, February 10, 1979

Data was reviewed for the test performed June 27, 1979, (OPS Form 626.2, Revision 2, January 31, 1979)

- SP 628.1, Integrated Simulated Automatic Acutation of FWCI, Core Spray, LPCI, Diesel and Gas Turbine Generator, Revision 3, August 1, 1979

Data was reviewed for the test performed June 23, 1979 (OPS Form 628.1-1, Revision 2, July 25, 1979)

- 631.2, Control Rod Exercise-Stuck Control Rod, Revision 4, May 6, 1980

Data were reviewed for six tests performed (OPS Form 631.2-1, Revision 2, August 26, 1977): April 21, 1980; May 1, 8, 15, 22, and 29, 1980

- SP 632.4, Suppression Chamber Drywell Vacuum Breaker Exercise, Revision 3, February 23, 1978

Data were reviewed for the four tests performed (OPS Form 632.4-1, Revision 2, November 14, 1979): January 4, 1980; February 7, 1980; March 4, 1980; and April 1, 1980

- SP 638.1, JET Pump Check, Revision 3, May 7, 1980
Data were reviewed for fifteen daily tests performed (OPS Form 10.10 Shift Surveillance Schedule P.9, Revision 32, May 7, 1980) May 14-May 28, 1980
- SP 661.4, Standby Liquid Control Pump Operational Readiness Test, Revision 1, November 21, 1979
Data were reviewed for four tests performed (OPS Form 661.4-1, Revision 2, October 31, 1979): January 18, 1980; February 19, 1980; March 17, 1980; and April 14, 1980
- SP 668.2, Gas Turbine Emergency Fast Start Test, Revision 8, April 4, 1980
Data were reviewed for five tests performed (OPS Form 668.2-1, Revision 3, April 19, 1980): January 4 and 5, 1980; March 7, 1980; April 1, 1980; and May 12, 1980
- SP 680B, Fire Pumps Auto Start Test, Revision 5, November 7, 1979
Data were reviewed for six tests performed (OPS Form 680B-1, Revision 2, November 30, 1978): February 8, 1980; March 7 and 31, 1980; April 4 and 12, 1980; and May 2, 1980
- SP 680C, Semi-Annual Fire Protection System Post Indicator Valve and Hydrant Valve Test, Revision 2, April 16, 1980
Data were reviewed for two tests performed (OPS Form 680C-1, Revision 2): October 4, 1979 and April 1, 1980
- SP 680M, Annual Fire Protection System Fire Pump Flow Rate Test, Revision 1, November 18, 1978
Data was not maintained by the licensee for this test, see paragraph C1.
- SP-778.2, Bench Check of Relief/Safety Valves, Revision 2, June 13, 1979
Data were reviewed for tests performed (OPS Form 778.2-1, Revision 1, June 13, 1979 and vendor data sheets) in April 1979 by vendor on new relief valves.
- SP 780.3, Load Test on Station Batteries, Revision 4, April 4, 1980

Data was reviewed for tests performed (OPS Form 780.3-1, Revision 0, August 12, 1978) on May 9 and 11, 1979

- c. As a result of the above review, the following item was identified:
- (1) Documentation of SP 680M, Annual Fire Protection System Pump Flow Rate Test, was not maintained for test performed on August 28, 1979, as required by Technical Specification 6.10.1.d. Failure to maintain records of safety related surveillances constitutes a deficiency level item of noncompliance (50-245/80-08-01).

5. Inspector's Witnessing of Surveillance Tests

- a. The inspector witnessed the performance of surveillance testing on selected components to verify the following:
- Surveillance test procedure was available and in use;
 - Special test equipment required by procedure was calibrated and in use;
 - Test prerequisites were met;
 - The procedure was adequately detailed to assure performance of a satisfactory surveillance;
 - Surveillance test was performed in accordance with procedural requirements;
 - System restoration was correct.
- b. The inspector witnessed the performance of the following surveillance tests:
- SP 404B, Average Power Range Monitor Functional Test, Revision 0, March 4, 1977, performed June 3, 1980
 - SP 608H, Fire Protection System Transformer Deluge System, Revision 1, April 20, 1978, performed June 5, 1980
 - SP 680J, Manual Sprinkler System Valve Operability Test and Inspection of Systems, Revision 1, April 16, 1980, performed June 5, 1980
 - SP 680Q, Functional Test of Hydrogen Seal Oil, Diesel Generator Room, Heater Bay, and Diesel Day Tank Fire Detection, Revision 1, March 26, 1980, performed June 5, 1980

c. Observations During Surveillance Testing

- (1) During the Transformer Deluge System Test, SP 680H, site operators, encountered an arcing overheating problem with the switch on the solenoid actuated deluge valves. The operators informed the electrical maintenance foreman, and resolved the problem.
- (2) While performing functional test of Diesel Day Tank Fire Detection System, SP 680Q, the operators encountered problems reseating water supply valve 1-Fire-80 and inoperability of the local valve actuation alarm. The operators cycled the valve manually several times, which removed the reseating problem, and initiated a maintenance request (MR) to repair the local alarm.

No items of noncompliance were identified.

6. Technician Qualifications

The inspector discussed the qualification records of personnel having responsibility for surveillance testing of safety-related components and equipment to verify that the individual's experience level and training were in accordance with the guidelines of ANSI N18.1-1971, Selection and Training of Nuclear Power Plant Personnel.

No items of noncompliance were identified.

7. Inservice Inspection Program

- a. The inspector reviewed the in-service inspection plan and procedures on a sampling basis to verify the following:
 - Tests are in conformance with the in-service inspection program requirements.
 - Test frequency is in conformance with Technical Specifications and the In-Service Inspection Program.
 - Test format and technical content are adequate and provide satisfactory testing of related systems or components.
 - Test results have been reviewed as required by facility administrative requirements and appropriate action was taken for results failing acceptance criteria.
 - Tests were performed by qualified personnel.
- b. The following in-service inspection plans, procedures and test results were reviewed to verify the above:

- In-service Inspection Ten Year Program for Northeast Nuclear Energy Co. Millstone Unit 1, General Revision, October 10, 1978; Pump and Valve In-service Testing sections.
- SP 1060 ISI Program Pump Vibration and Hydraulic Test, Revision 2, January 9, 1980
 - (1) Data sheet, SP 1060-1, LPCI Pump Vibration, Revision 1, November 1, 1978. Data reviewed for tests performed: February 12, 1980; March 7, 1980; April 8, 1980; and May 13, 1980.
 - (2) Data sheet, SP 1060-4, Condensate Booster Pump Vibration and Hydraulic Test, Revision 0, November 1, 1978. Data reviewed for tests performed: January 30, 1980; February 26, 1980; April 1, 1980; and April 29, 1980.
 - (3) Data sheet, SP 1060-9, Emergency Service Water Vibration and Hydraulic Test, Revision 0, November 1, 1978. Data reviewed for tests performed: February 12, 1980; March 12, 1980; April 10, 1980; and May 14, 1980.
 - (4) Data sheet, SP 1060-11, Reactor Building Closed Cooling Water Vibration and Hydraulic Test, Revision 0, November 1, 1978. Data reviewed for tests performed: February 7, 1980; March 12, 1980; April 7, 1980; and May 12, 1980.
 - (5) Data Sheet, SP 1060-14, Control Rod Drive Pump Vibration and Hydraulic Test, Revision 0, November 1, 1978. Data reviewed for tests performed: April 15 and 22, 1980 and May 20, 1980 for CRD Pump A; January 17, 1980, February 19, 1980 and March 19, 1980 for CRD Pump B.
- SP 1061, ISI Valve Timing Program, Revision 1, November 8, 1978
 - (1) Data sheet, 623.14-1, Containment Isolation Valve Leak Rate Test, Revision 1, April 15, 1978. Data reviewed for test done May 2, 1979; performed on valve 1-FW-9A, Outside Containment Check.
 - (2) COL 335-1, Low Pressure Coolant Injection Valve Check-Off List, Revision 0, May 20, 1977. Reviewed check-off list completed June 22, 1979 for valve 1-LP-1A system suction shut-off.
 - (3) COL 322-1, Emergency Service Water Valve Check-off List, Revision 0, April 28, 1977. Reviewed check-off list completed June 11, 1979 for valve 1-LPC-2C, Pump Discharge Stop.

(4) COL 307-1, Isolation Condenser System Valve Check-off List, Revision 4, May 14, 1980. Reviewed check-off completed June 23, 1979 for valve 1-IC-12, Makeup Stop.

-- SP 1062, ISI Bearing Temperature Program, Revision 2, November 8, 1978. No data was reviewed.

c. Findings

(1) The inspector reviewed a sampling of valves listed in the In-service Inspection Program, Table IWV-1 to determine compliance with in-service test requirements. The inspector observed that in-service test requirements were not being met for the following valves:

- Table IWV-1 requires that valve 1-IC-12, "Makeup to Isolation Condenser Stop", be verified in the "locked open" position. The inspector observed that Valve Check-off List 307-1 verified 1-IC-12 in the open position only and, in addition, the inspector observed that 1-IC-12 was open but not locked. Prior to completion of the inspection, the licensee stated that a lock had been installed on 1-IC-12 and that Valve Check-off List 307-1 had been revised to require 1-IC-12 to be locked open.
- Table IWV-1 requires that Valve 1-RC-6, "Reactor Building Closed Cooling Water Inlet Check Valve," be exercised full stroke for operability. A "Relief Request" associated with Table IWV-1 states that 1-RC-6 should be exempt from quarterly testing and specifies a full stroke exercise during reactor refuelings. Since issuance of the ISI program revision in October 1978, a reactor refueling outage occurred during 1979, however, valve 1-RC-6 was not tested nor did there appear to be any plans or procedures to assure this valve would be tested during the next refueling outage. The licensee stated a procedure would be prepared to ensure the future testing of 1-RC-6.
- Table IWV-1 requires that Valve 301-138, "Control Rod Drive (CRD) Return Isolation", be verified open every three months. The inspector determined that this valve is not being verified open every three months. The licensee stated that a surveillance would be established to assure that the valve is verified open on a quarterly basis.

Failure to perform in-service inspection tests is contrary to T.S. 4.13 and the In-service Inspection Ten Year Program and constitutes a deficiency level item of noncompliance (50-245/80-08-02).

- (2) Data sheet SP 1060-17 has recently been issued to provide for in-service testing of the fuel pool cooling pumps; however, procedure SP 1060 has not been revised to refer to SP 1060-17. In addition the procedure lists form SP 1060-16, "In-service Inspection Pump and Motor Record", as an active form but provides no instruction as to its use. The licensee stated procedure SP 1060 would be revised by July 31, 1981 to include form SP1060-17 and to provide instructions for use of form SP1060-16. This item is unresolved pending licensee action and subsequent NRC:RI review (50-245/80-08-03).

8. Facility Tour

On several occasions during the inspection, tours of the facility were conducted including the Reactor Building, Auxiliary Building, Turbine Building and Diesel and Gas Turbine Generator Rooms. During the tours, the inspector discussed plant operations and observed housekeeping, radiation control measures, monitored instrumentation and controls for Technical Specification compliance. In addition, the inspectors observed Control Room operations on each day of the inspection for Control Room manning and facility operation in accordance with Administrative and Technical Specification requirements.

During the tour of the Reactor Building the inspectors noticed two CRD scram inlet valves leaking for rods 34-39 and 22-31. The inspectors notified the licensee of the leaks and the licensee completed maintenance requests (MR) for the valves (MR 1033-80, ROD 34-39 and MR 1032, ROD 22-31) to initiate corrective action if the leaks still persist when the CRD system is placed back in operation.

No items of noncompliance were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items or items of noncompliance. The unresolved item identified during the inspection is discussed in Paragraph 7.c.(2).

10. Presentation of Preliminary Findings

Licensee management was periodically informed of inspector findings as follows: on June 3 and 4, 1980 report details 4.c.(1), 7c(1) and 7c(2). A summary of inspection findings was provided to the senior licensee representative on site at the conclusion of the inspection June 6, 1980. The licensee acknowledged the inspection findings. Subsequent telephone discussions concerning inspection findings were held between Mr. R. Herbert and Mr. N. Blumberg on June 9 and 10, 1980.