

U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-423/84-10
Docket No. 50-423
License No. CPPR-113 Priority -- Category B
Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Unit 3

Inspection at: Waterford, Connecticut

Inspection Conducted: July 8 - August 18, 1984

Inspectors: *Theodore Rebelowski* Nov 8 1984
T. A. Rebelowski, Senior Resident Inspector date signed
Theodor Rebelowski for D. Nov 8 1984
D. Lipinski, Resident Inspector date signed
W. Robertson Nov 8, 1984
W. Robertson, Reactor Engineer date signed
Approved by: *E. McCabe* Nov 29 1984
E. McCabe, Chief, Reactor Projects date signed
Section 3B, DPRP

Inspection Summary: Inspection on July 8 - August 18, 1984 (Report No. 50-423/84-10)

Routine review of licensee action on previous inspection findings; Preoperational Test Program which included preventive maintenance, diesel generator room ventilation system, service water system testing; potential flooding anomaly; electrical anomaly; QA/QC third party inspection; potential significant deficiencies; Flakt-Bahnsen cooling coils review; preoperational test FSAR commitments; bypass/jumper control log review; weld accessibility; Bulletin review; records review; and plant tours. The inspection involved 21 hours by the Regional Inspector and 123 hours by the Resident Inspectors. No violations were identified. Inspector concerns were generated on the adequacy of emergency generator enclosure drainage (Detail 4) and of temporary jumper removal controls (Detail 12). The turnover program turned over, from the A/E to the licensee, approximately 15 systems.

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DETAILS

1. Persons Contacted

Northeast Utilities Service Company (NUSCO)

J. O. Crockett, Superintendent - Unit 3
K. W. Gray, Jr., Staff Assistant - CQA
M. D. Hess, Assistant Startup Supervisor - NNECO
J. S. Harris, Startup Supervisor - Unit 3
R. E. Lefebvre, Project Staff Engineer
D. O. Miller, Jr., Manager, Startup Services
S. Orefice, Project Engineer
S. Toth, Superintendent - New Site Construction

Stone & Webster Corporation (S&W)

A. A. Dasenbrock, Resident Manager
G. G. Turner, Superintendent, Field Quality Assurance
W. H. Vos, Senior Engineer, Field Quality Control

Other members of the licensee staff and operating personnel were contacted during the course of the inspection.

2. Licensee Action On Previous Inspection Findings

- a. (Closed) Noncompliance Item (423/82-06-01) The inspector reviewed the licensee's corrective action to protect mechanical snubbers from dirt and physical damage. The following snubbers: 3-RHS-1-PSSP-402, 410, 414 and 420, identified previously as unprotected, have been removed. Three of the four locations now have surrogates installed to reserve the space until installation of the snubber. The licensee plans to install these snubbers as required to support testing.

An inspection was also made of seven snubbers in the Service Water System. All of these snubbers were protected by plastic and had a sign attached that said, "Do Not Load or Stand On". At the inspector's request, the plastic wrap was pushed back on one snubber in a heavily traveled area in order to check cleanliness. The snubber was found to be in satisfactory condition. The plastic protection was secured in its original position by the licensee. This item is closed.

- b. (Closed) Inspector Follow Item (423/84-06-02) Review of Weld Data History - C1 FSW-13-FW-10. The inspector witnessed a partial weld on C1 FWS-13-FW-10 and documented his concerns as to the weld history of this rework item. A chronological summary was presented for the inspector's review which included Photographic Interpretation Reports to

document final completion of the weld: observation of the joint noted no surface anomalies. This item is closed.

- c. (Closed) Unresolved Item (423/84-03-06) The licensee and the A/E have reviewed their procedures to indicate a new Boston telephone number that persons in their employ may call and register their concerns to management. The system did receive one concern which is presently under review. The licensee has a Nuclear Review Group (NRG) consisting of four individuals with nuclear backgrounds that monitor the licensee's program to ensure that communication of concerns can be evaluated; thus maintaining the safety aspects of nuclear construction/operations. The review of this item included interviews with a member of the Nuclear Review Group and A/E's management staff. This item is closed.
- d. (Closed) Unresolved Item (423/83-20-01) The inspector has reviewed ten pre and post employment review packages. The licensee employs professional background verification services that report on employment, character backgrounds, criminal backgrounds, neighborhood and financial reviews. The investigated educational background includes verification of degrees, college or high school records and, on some occasions, interviews with class mates. Although no detailed listing of criteria exists for education background checks, the licensee reports address this to a depth of detail that will assure proper identification of education of the employee. This item is closed.
- e. (Closed) Unresolved Item (423/84-02-01) The licensee has reviewed the techniques of NDE in the area of thermowell magnetic particle inspection. The techniques used have been monitored; and based on a limited use of thermowells in the feedwater system and satisfactory final NDE, this item is closed.

3. Preoperational Test Program

The licensee's preoperational program has increased in scope to match the pace of system turnovers. The following areas were monitored during this report period.

a. Preventive Maintenance (PM)

The purpose of this review was to verify that preventive maintenance is being implemented on systems that are turned over. To review I&C and Maintenance Department PM's, two systems were chosen - the Service Water System because it was just recently turned over, and the Liquid Waste Condensate System because it has been under NUSCO control for over a year. For the Liquid Waste Condensate System, the inspector verified that the PM's were completed within the required period and are now scheduled to be completed within the required frequency. The data was reviewed for the calibration of an instrument loop in this system and was found to be satisfactory. For the Service Water

System, the inspector verified that procedures are written and are scheduled to be performed. Some of the initial PM's were completed in conjunction with the Phase I Tests; these were subsequently re-scheduled as required.

The computerized Production Maintenance Management System is being used successfully by the licensee to implement, schedule and track the performance of PM's. The inspector has no further questions in this area at this time.

b. Diesel Generator Room Ventilation System

The inspector reviewed eight mechanical, electrical and instrumentation diesel generator room ventilation Phase I tests for conformance with the Startup Manual requirements. The procedures reviewed included:

3314H-1E01	3314H-1M01
3314H-1E02	3314H-1M02
3314H-1E03	3314H-1M03
3314H-1I01	3314H-1M04

These procedures were reviewed to assure they contained adequate instructions on component operation, verification of equipment functioning and instrumentation and control. No concerns were identified.

c. Service Water System Testing

Test Documents Reviewed:

- T3326-1M01 "Service Water Pumps SWP-P1A,B,C", with changes through CH-10
- GPM-50 "Pump Performance Test", Revision 0
- GPM-52 "Pump Packing/Mechanical Seal Inspection", Revision 0
- GPM-53 "Mechanical Equipment Vibration Check", Revision 1

This inspection was conducted to ascertain whether testing of the Service Water System has thus far been conducted in accordance with the plant Startup Test Manual, industry codes and NRC regulations. The inspection involved both on-scene witnessing of activities and record review.

Findings:

- The inspectors witnessed selected portions of startup and pump run to confirm that the activities conformed to GPM-50 for pump hydraulic performance.
- The inspectors witnessed selected portions of the pump run to confirm that activities (vibration measurement) conformed to GPM-53 for vibration monitoring. The inspectors noted that permanent vibration monitoring blocks have been installed

for routine In-Service Testing per ASME Code Section XI, Chapter IWP and that vibration spectra were monitored at these points as well as the minimum locations specified in the test procedure.

- The inspectors observed pump packing and seals during the test and confirmed conformance to GMP-52.
- Review of the T3326-1M01 Test Package showed that the package, with changes and approvals, conformed to the requirements of the plant Startup Test Manual.
- No unacceptable conditions or practices in test performance or documentation were observed.

Additional testing of the Service Water System will occur during the Startup Test Program. The inspectors will continue to follow activities as support systems are included in the test program.

4. Emergency Generator Enclosures - Potential Flooding Anomaly

References: (1) Facilities Emergency Generator Enclosure, Sheet 3,
S&W Dwg. No. 12179-EB-7C-9

(2) Yard Storm and Sanitary Sewers, Sheet 2

During the inspector's normal plant tours of the Emergency Generator Enclosures, an examination of the floor drains at the 24'-6" elevation indicated that a potential for flooding exists.

The Emergency Generator Enclosure roof drains tie into the floor drains. The floor drains do not have backflow protection, thus a single drain line blockage downstream of the interconnection of roof and floor drains, will direct all roof runoff into the Emergency Generator Enclosures. Additional areas may have similar configurations of drainage that could affect safety related systems or components. This item is unresolved. (423/84-10-01)

The present Emergency Generator Enclosure areas have cable trays that have no installed dewatering systems (no sump pumps or dewatering piping) that would direct this flooding out of the areas of concern. The licensee was informed of the inspector's findings. This item is unresolved. (423/84-10-02)

5. Electrical Anomalies

On August 10, 1984, the licensee found a cut cable in the instrument rack room of the Control Building. Due to an incomplete report on the effects of such a cut on the systems or control circuits, the licensee was re-

quested to perform a detailed review of this cable cut. The results of the review are as follows:

The cable that was cut - 3CCPCNC714 - is a non-safety-related (black) cable that feeds from the output (non-safety side) of safety related isolator cabinet 3CES*PNLBG10, at elevation 4'- 6" of the Control Building, to annunciator logic cabinet 3IHA-ANNMB2, also non-safety related, at elevation 47'-6" of the Control Building.

The purpose of the cable is to transmit the (open) status of the orange division circuit breaker feeding Reactor Building Closed Cooling Water Pump PIC to the Engineered Safety Features Status Monitoring annunciator on Main Control Board Two.

If the cut cable had not been found visually, it would have been detected as part of the circuit red line test point to point wire checks-performed during Phase I electrical testing. This test, 3330A1E01, was released for execution on August 17, 1984. If cutting occurred after testing, the Annunciator 3IHA-ANNMB2E-MCB Alarm 2014 would not indicate the broken cable due to the black board concept.

The need for surveillance of the cabinets appears to be reinforced by this type of incident. Adequacy of licensee checks of this aspect will be followed up during a subsequent inspection (IFI 84-10-05).

6. Third Party Monitoring of QA/QC Programs

The licensee's A/E has the Hartford Steam Boiler Inspection and Insurance Company monitoring a number of attributes in the QA/QC Programs. One area of concern that was addressed was the logging requirements on weld data and authorization to perform work tasks. The items were observed in field data packages and the revised weld data in the field. The inspector reviewed these audits on a random basis. No concerns were identified.

7. Licensee Report Of Potential Significant Deficiencies (10CFR50.55(e))

a. Potential Overpressure in Component Cooling System (SD-58)

The licensee reported on July 13, 1984, a potential significant deficiency in that an overpressure condition in the component cooling system could occur with a primary system to component cooling leakage anomaly. The component cooling radiation monitoring system normally isolates surge tank vent headers on a high radiation signal. The licensee is presently reviewing these systems. This item remains open. (423/84-00-09)

8. Flakt-Bahnson Cooling Coils

The licensee reviewed the unresolved item 424/84-01-01. All the identified items have been addressed and Nonconformance and Disposition (N&D) reports have been written.

- a. N&D 4288 Fan hold down bolt material unknown (i.e. No. marking). Seismic analysis report and specification require ASTM A449, which includes bolt marking.

Present Status: Unauthorized bolts are to be replaced.
Not completed as yet.

- b. N&D 3530 Units received with self tapping screws, for coil attachment, in lieu of nuts and bolts as required by seismic analysis report.

Present Status: The licensee has replaced the tapping screws with nuts, bolts and washers as required by seismic analysis. The inspector has observed the replacement of self tapping screws on two units.

- c. N&D 4223 Motor slide bases do not match bolt patterns on motors. Slide bases will be purchased from a sub-vendor.

Present Status: Replacement slide bases are to be procured.

The above items will be reviewed upon completion of the N&D's listed. This item remains open. (423/84-01-01)

9. Reactor Vessel Internals Lifting Ring - Repair

During the report period the licensee found that one area of the protective ring of the reactor vessel internals lifting ring was bent. The repair to the ring included the replacement of a small portion of damaged web (13") and weld repairs per procedure W 200B. The inspector verified work package completion and witnessed the use of the lifting ring during the removal of the core internals. The inspector has no further questions on this item.

10. Reported Failure of SFF-30 Underfrequency Relays

GE Type SFF-30 Underfrequency Relays were the subject of a failure on the Emergency Diesel Generator at a Region I site. General Electric has reported this item under a Part 21 item and issued a service advice letter (SAL) 721-PSM-1721. The licensee had reviewed the area and found the installed SFF-21 Relay was not subject to false operation. The integrated circuit involved in SFF-30 is not incorporated in the SSF-21 design. This item is closed.

11. Preoperational Test FSAR Commitments

The inspector requested the method by which startup testing can assure that the various testing requirements documented in the FSAR are completed.

The licensee stated that at Plan of the Day Meetings, FSAR reviews have been made, and system engineers have reviewed the FSAR and the FSAR changes. To document requirements for testing, a commitment number is assigned to each identified testing item. A Commitment Follow Computer Program EN 31057 Procedure has been approved. The FSAR Chapters addressed are 8, 13, 14, 15, 17 and 18. The inspector will review the content of the computer listing at a subsequent inspection. (IFI 423/84-10-03)

12. Bypass/Jumper Control Log

During a tour of the control room, a review of Station Bypass and Jumper Control Log required by ACP QA 2.06 noted that all jumpers were properly logged and an accounting of all numbers was correct.

One area of concern was the manner in which the retired numbers are closed. If a bypass jumper is missing, there is no documentation of the completion of the removal of the original jumpers, or that the jumper was placed on the correct equipment. The licensee was informed of the inspector's concerns. Further review in this area will be performed at a subsequent inspection. (IFI 423/84-10-04)

13. Welder Request For Review Of Accessibility

On April 4, 1984, the resident inspector was called by a site welder who informed him that he was requesting removal of interferences prior to welding a Class 3 pipe. The inspector accompanied by a member of NUSCO staff engineering went to the area identified in the auxiliary building. The area consists of a number of concrete cubicles that can only be entered through an approximate 2'x2' opening at deck level. The cubicles (8'x8'x8') contain valves that are remotely operated outside the cubicles, and piping that direct spent resin and the chemical/volume control system effluent to the waste handling building.

The welder was in the area and identified himself and his foreman and pointed out the weld joint in question. The joint, FM0009 on line CHS-002-127-3, is part of the chemical and volume control system.

Further discussion indicated that the shift welding foreman examined the joint and deemed it accessible for welding. This difference in opinion led to the identification of the problem to the inspector by the welder.

The joint was subsequently welded and completed without the use of optical instruments by the welder. When visually inspected by the area foreman and the licensee, it appeared to be a high quality weld. However, the inspector had the following concerns that required follow-up inspection.

- a. The licensee's FSAR commitment to Reg. Guide 1.71, "Welder Qualification For Limited Accessibility Welds", requires volumetric inspection in lieu of requalifying the welder under simulated limited accessibility conditions for ASME III, Class 1 welds. The licensee's qualification of welders to a limited accessibility criteria pre-empts this requirement because the weld is not considered to be limited access if it is performed by a welder qualified to perform limited access welds per PQM Manual General Instruction, Para. 3.1.7. The licensee's A/E presently qualifies all welders to this limited access criteria. This position has been reviewed by a regional specialist inspector and found to be acceptable.
- b. At the time of the inspection, it was believed that the weld was to be performed using instruments to aid the welder in seeing the more inaccessible areas. It was subsequently determined that the weld was satisfactorily completed without the use of visual instruments. No special weld technique or qualification was required other than limited accessibility requirements as previously stated.

The inspector requested an "information only" radiograph of a similar, limited access weld joint, FW-8 line 3CHS-374095 to 374011. This field weld was satisfactorily radiographed, reviewed and evaluated by NUSCO QA personnel, confirming that the weld integrity is acceptable. This item is closed. (RI-84-A-0052)

14. NRC Bulletins

The inspector's review of responses to NRC Bulletins determined that a number of the 1976 - 1978 Bulletins require updates or verification of actions that were to be accomplished. An initial review identified the following Bulletins that required further information.

- Bulletins 77-BU-04 thru 07
- Bulletins 78-BU-03, 07, 09, 11, 12a, 13, 14

A program of licensee/inspector Bulletin review meetings have been formulated to ensure that the areas of Bulletins, Circulars and Information Notices are resolved prior to completion of the startup program. This item will be addressed at a subsequent inspection.

15. Records Review

The inspector reviewed documentation for a random sample of eleven ASME Class 2 items. The sample included 5 piping spools, 3 valves, and 3 pipe support hangers. For the case of fabricated piping spools, the sample included piping provided by two different vendors. The packages reviewed were complete and contained detailed metalurgical data on the

materials including welding rods used. For the case of valves, the sample included valves supplied by two different vendors. The packages reviewed did not include detailed material certifications, but rather referred to separately filed Certificates of Compliance and Design Verification Certificates. The information for all three packages was readily obtained from the separate file and deemed to be appropriate. For the case of pipe hangers, three locally fabricated Category 1, Class 2 hangers were reviewed. Documentation had not been assembled into "packages". Rather, inspection report sheets referred to isometric drawings which, in turn, referenced specific bills of material. The inspector traced the information through these records and found the documents to be acceptable.

The sample is described below:

<u>Item</u>	<u>Identification</u>	<u>Vendor</u>	<u>Documentation Status</u>
Complex Piping Spool	NPP-1-3RHS-5-190-4-2	Southwest Fabricating & Welding	Sat.
Complex Piping Spool	NPP-1-3RHS-5-1-4-2	Tubeco	Sat.
Complex Piping Spool	NPP-1-3RHS-5-2-4-2	Tubeco	Sat.
Complex Piping Spool	NPP-1-3RHS-5-3-4-2	Tubeco	Sat.
Complex Piping Spool	NPP-1-3RHS-5-4-4-2	Tubeco	Sat.
Valve (3/4")	NPV-1-H970ABD	Dresser Industries	Sat.
Valve (3/4")	NPV-1-H990ABD	Dresser Industries	Sat.
Valve (10")	NPV-1-05963	Pacific Valve	Sat.
Hanger	EK515003H014	NA	Sat.
Hanger	EK515003H016	NA	Sat.
Hanger	EK515003H017	NA	Sat.

Within the scope of this inspection, no concerns were identified. This item is closed (RI-84-A-0107)

16. Plant Tours

The inspector observed work activities in progress, completed work and construction status in several areas of the plant. The inspector examined work in progress for any obvious defects or violations of regulatory requirements or the Final Safety Analysis Report.

- Plant Housekeeping Controls: Plant housekeeping controls were observed including control and storage of flammable material and control of potential safety hazards. The areas requiring additional housekeeping attention continue to be trade pick up after completion of installation of such items as electrical terminations.
- The continued protection of equipment in the area of motor operator valve stems and pump shafts was noted.

- Tours of the fence line for maintenance of obstruction-free distances between the operating units were made on a weekly basis.

Observations of the toured areas included the following:

- Control Room manning by licensee operating personnel was noted. Discussions with the Shift Supervisor indicated that the methods of identifying the systems under test in the Control Room continue to be acceptable.
- Observed the preliminary placement of the reactor vessel refueling seal ring. Modification of lifting lugs was necessary. No concerns were identified.
- Area of the Technical Support Center had been cleared of trades in preparation for the installation of equipment necessary to activate the area.
- The presence of quality control inspectors was verified. Samples of quality control inspection records, material identification and non-conforming material identifications were examined as part of the total activity review. The inspector noted a satisfactory effort by the licensee to correct licensee-identified items of concern.
- Tour of the Radwaste area identified no items of concern.
- Observation of reactor internals movement was made. The control of material/tools in the area was discussed with the Quality Control Inspectors monitoring the movement.
- Witnessed installation of termination of 416K NHV7 cable. No concerns were identified.

17. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. The unresolved items disclosed during the inspection are discussed in paragraph 4.

18. Management Meetings

At periodic intervals during the course of this inspection, meetings were held with senior plant management to discuss the scope and findings of this inspection.