

U. S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 50-423/83-02

Docket No. 50-423

License No. CPPR-113 Priority -- Category A

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: January 10 - February 14, 1983

Inspectors: J. C. Mattia
J. C. Mattia, Senior Resident Inspector

2/28/83
date signed

_____ date signed

Approved by: T. C. Elsas
T. Elsas, Chief, Reactor Projects
Section 1B, DPRP

3/9/83
date signed

Inspection Summary:

Unit 3 Inspection on January 10 - February 14, 1983. Report No. 50-423/83-02
Areas Inspected: Routine, onsite regular and backshift inspection by the resident
inspector (66 Hours). Areas inspected: Follow-up of previous inspection findings;
review of licensee's actions for NRC issued bulletins, circulars and information
notices; installation of pipe, inspection of reinforcing steel cadwelds in
Pressurizer Shield Wall; review of S&W activities associated with reporting of
10CFR50.55(e) items; and plant tours.

Results: No violations identified.

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DETAILS

1. Persons Contacted

Northeast Utilities Service Company (NUSCO)

F. Comstock, Senior QA Engineering Technician
K. Gray, Construction QA Supervisor
W. Langdon, Construction Engineer
R. Lefebvre, Project Staff Engineer (Berlin)
K. Murphy, QA Specialist
E. Peckham, Senior QA Engineering Technician
T. Piscitello, Engineering Technician
J. Putnam, Senior Construction Engineer
S. Toth, Superintendent - New Site Construction
R. Vaccaro, Senior QA Engineering Technician
R. Viviano, Assistant Project Engineer (Berlin)

Stone and Webster Corporation (S&W)

R. Ackley, Project Engineer (Boston)
W. Curtis, Engineering Assurance Lead Engineer (Boston)
R. Flodstrom, Assistant Superintendent Field QC
R. Hagerman, Field QC Chief Inspector
J. Kappas, Superintendent of Construction
J. Kelly, QA Program Administrator (Boston)
W. Lamb, Field QC Chief Inspector
G. Marsh, Senior Engineer, Welding/NDE
M. R. Matthews, Assistant Superintendent Field QC
A. Morales, Field QC Inspector
S. Morris, Senior Field QC Engineer
L. Nace, Project Manager (Boston)
P. Nelson, Engineering Assurance Engineer
W. Orr, Senior Field QC Inspector
L. Peterson, Field QC Inspector Supervisor
R. Rudis, Engineering Assurance Engineer (Boston)
R. Scannel, QC Program Administrator (Boston)
R. Singh, Senior Field QC Engineer
F. Tucker, Document Control Specialist (Boston)
G. Turner, Superintendent, Field QC
W. Voss, Senior Field QC Engineer
G. Wilson, Field QC Inspector

Westinghouse Corporation

E. Harlow, Site Representative

Note: The inspector also conferred with other licensee and contractor personnel during the course of inspection.

2. Licensee Action On Previous Inspection Findings

- a. (Closed) Unresolved Item (423/81-11-04): The inspector observed crafts reforming a containment penetration using a hydraulic ram. The penetration had an out of round condition and did not align with the piping. This method of reforming was not specified in the containment specification. S&W issued a Nonconformance Report #1418 for this item. The reworked penetration was magnetic particle examined and was accepted based upon no rejectable indications being found in the reformed areas. The disposition on the nonconformance report was to accept as is, and that the Containment Specification M109 shall be revised to allow reforming of penetrations in accordance with the Piping Specification M968. This piping specification was revised.

- b. (Closed) Violation (423/82-09-01): Waterstops placed in concrete construction joint keyways of circulation water discharge tunnel were not installed in accordance with detail drawing (EC-16C & D). A Nonconformance Report #1510 was issued and dispositioned to accept the placement of the waterstop in the center of the keyway since it will not affect its intended purpose or integrity of the joints. A design change No. FS-9735 was issued to revise the S&W drawing EC-16C to reflect the actual placement of the waterstop. To prevent similar occurrences, a memorandum was issued by S&W on January 6, 1982, to all site personnel reminding them that everyone needs to adhere to all the requirements in the design documents unless deviations are approved by engineering in advance.

- c. (Closed) Unresolved Item (423/81-10-01): This item concerns the suitability of 90-10 copper-nickel clad service water pipe based on melt-through on weld joint 3-SWP-27-10-4-3, FW6 by the pipe fabricator. S&W issued a Nonconformance Report No. 1732 for this condition. Grinding was performed on the ID of the weld joint until an acceptable liquid penetrant could be obtained. When this was obtained, the remaining clad thickness at the area of deepest excavation was measured to be 0.039". The minimum design cladding thickness is 0.040". S&W accepted this condition. A NRC specialist reviewed the S&W evaluation dated December 23, 1982 (NESF-5983) which addressed the NRC concerns that a melt-through condition can exist in other welds in the approximately 200 clad pipe spools installed, and concurred with their evaluation. This S&W evaluation discussed the ramifications if a crevice-like discontinuity existed and indicated that copper-nickel alloys are not susceptible to crevice corrosion and have excellent resistance to fatigue cracking. The NRC has no further questions on this matter at this time.

- d. (Closed) Unresolved Item (423/82-13-02): Cable tray support H112-50 in the intake structure contacted a Category I Limitorque valve operator. An engineering design change F-E-11788 was issued to modify the cable tray support to remove the interference. The support was

modified and the NRC inspector verified that there was now clearance. S&W issued a memorandum dated January 10, 1982, to construction supervisors to remind them that the Electrical Specification E-350, Para. 3.1.1.6 requires that all trays and conduit runs are to be checked to verify that no interferences exist.

3. Licensee Action On NRC Issued Bulletins, Circulars, and Information Notices

A. The inspector reviewed the records relating to the following NRC issued bulletins to verify receipt, review for applicability, and that routing of the bulletin to organizations responsible for action has been accomplished, and that appropriate action was taken when required:

- Bulletin 80-03 (Loss Of Charcoal From Standard Type II, 2 Inch, Tray Adsorber Cells)
The inspector reviewed this bulletin during Inspection 82-08 and noted that eight CVI Corporation Model No. HEPA (R) II, Adsorber Cells were not inspected for type of discrepancies listed in the bulletin. The inspector reviewed a S&W document dated August 9, 1982, indicating that the remaining adsorber cells were inspected at the site and were satisfactory.
This item is considered closed.
- Bulletin 81-03 (Flow Blockage Of Cooling Water To Safety System Components By Corbicula Sp. (Asiatic Clam) And Mytilus Sp. (Mussel))
The licensee has a detailed program for this mussel and clam problem and has adequately addressed it for all the Millstone units.
This item is considered closed.
- Bulletin 81-02 And Supplement #1 (Failure Of Gate Type Valves To Close Against Differential Pressure)
The inspector reviewed documentation from the A/E and NSSS which indicated that there were seven Westinghouse EMD valves that would fail to close under conditions that approximated those of their intended service. The documentation dated October 29, 1981, stated that valves were not manufactured as yet and will be designed and manufactured to ensure that they are capable of closing under the maximum required differential pressure. S&W did not have an updated status of these valves and will query Westinghouse.
This item is considered open.
- Bulletin 82-01 And Supplement #1 (Alterations Of Radiographs On Welds In Piping Subassemblies)
The inspector reviewed documentation from the A/E and NSSS stating that Millstone Unit 3 did not have any contracts with ITT at Kernsville, N.C., or AP&E of Compton, CA.
This item is considered closed.
- Bulletin 82-02 (Degradation Of Threaded Fasteners In The Reactor Coolant Pressure Boundary Of PWR Plants)
The inspector reviewed various documents to verify compliance with the bulletin requirements. The following actions have been adopted to comply:

- a. Studs and nuts have been identified by NSSS and certified that test reports of materials used are on file.
- b. Lubricants used in the assembly and installation are controlled by various A/E, NSSS and licensee documents.
- c. A/E Specification M345 contains provisions for easily removable insulation to allow for the inspection of threaded fasteners in the reactor coolant boundary systems.

This item is considered closed.

- Bulletin 82-03 And Rev. 1 (Stress Corrosion Cracking In Thick Wall, Large Diameter, Stainless Steel Recirculation Piping At BWR Plants)

This bulletin was reviewed for applicability by the A/E, NSSS and licensee and it was determined that it was not.

This item is considered closed.

- Bulletin 82-04 (Deficiencies In Primary Containment Electrical Penetration Assemblies)

This bulletin was reviewed for applicability by the A/E, NSSS and licensee and it was determined that it was not.

This item is considered closed.

- B. The inspector reviewed the records relating to the following NRC Circulars to verify receipt, review for applicability, and that routing of circulars to the organizations responsible for action had been accomplished.

- Circular 78-03 (Packaging Greater Than Type A Quantities Of Low Specific Activity Radioactive Material For Transport)

A review of this circular was accomplished and the licensee in their internal letter #3-914 stated a QA Program for this packaging had been instituted and will be implemented when required.

This item is considered closed.

- Circular 78-05 (Inadvertent Safety Injection During Cooldown)

The inspector reviewed licensee's letter #3-914 which stated that MS-3 uses a different logic than that discussed in the circular to detect steam line break which should minimize potential for inadvertent safety injection.

This item is considered closed.

- Circular 78-13 (Inoperability Of Service Water Pumps)

The licensee has a commitment (#001249) to establish operating procedures to prevent the loss of service water due to surface ice, low water level, or silting at intake structure.

This item is considered closed.

- C. The inspector reviewed the licensee's system for reviewing NRC Information Notices (IN) and their method of implementing corrective action when required. The licensee treats information notices

similar to bulletins and circulars. All information notices are logged, tabulated and tracked until closed out. The inspector was given a computer print-out dated 12/31/82 of all NRC Information Notices issued to date. This print-out listed the licensee's status of review for each information notice. The inspector randomly selected 22 information notices out of the 100 issued and reviewed the data package for each. The following specific information notices were reviewed:

79-01; -03, -05, -11, -34
 80-11; -15, -21, -26, -38
 81-38
 82-03; -04, -08, -11, -17, -20, -29, -34, -45, -55

The inspector's review indicated that the licensee's system for handling NRC Information Notices is acceptable. Out of 22 reviewed, one concern was noted. For Information Notice 82-04, the NSSS was not contacted to determine for his scope of supply that Agastat E-7000 series time delay relays were used for MS-3. The licensee will contact Westinghouse and take whatever corrective action is required.

This item is considered closed.

4. A/E Review Of Potentially Reportable Deficiencies

The inspector reviewed several of the A/E's Report Of A Problem (ROAP) to determine compliance with their Engineering Procedure 16.2, entitled "Notifying Clients of Potentially Reportable Deficiencies under 10 CFR 50.55(e)". The specific ROAPS reviewed are as follows:

<u>ROAP Issue Date</u>	<u>Determination Date and Conclusion</u>	<u>Subject</u>
6/30/82	9/23/82 (Not Reportable)	LAMCO Reactor Coolant Equipment Supports
6/14/82	6/28/82 (Not Reportable)	Containment Enclosure Leak Overlap
7/1/82 & 7/27/82	7/16/82 & 9/9/82 (Not Reportable)	Load Indicating Washer Problems
7/23/82	9/9/82 (Not Reportable)	BOA Flexible Conduit Problem
8/5/82	11/22/82 (Reportable)	Cracks In Cable Tray Reducers
8/11/82	10/15/82 (Not Reportable)	Hard Marking Of Pipe
8/9/82	11/29/82 (Reportable)	Pipe Support Straps
9/30/82	12/2/82 (Reportable)	Cracks In Containment Columns
11/23/82	12/13/82 (Not Reportable)	Invoking Of Code Cases Without Authorization
9/18/81	9/22/81 (1st reviewer stated it was reportable; the 2nd reviewer needed more information before determinable.)	Service Water Pump Strainer Clogging During Initial Testing

The inspector discussed with the A/E and the licensee that there were two concerns that he had based upon the above review of ROAPs.

- There were several examples where the evaluation is taking an abnormal amount of time to determine if it is reportable. The licensee and A/E have been made aware of this in the past, and as of December 6, 1982, S&W issued Revision 1 to project procedure NEAM 114, which states that "The evaluation shall be completed within two calendar weeks of the ROAP's initial date." The inspector informed the licensee that a subsequent NRC inspection will monitor this criteria for reporting.
- The service water lubrication system strainer (Zurn Model 595) failed to meet its design acceptance criteria in 1981 and should probably have been reported at that time to the NRC in accordance with the provisions of 10 CFR 50.55(e)(iii). However, Zurn revised its original design and further testing was conducted in February, 1983. Using Long Island Sound water, the revised design was tested at an expected flow rate of 40 gallons per minute; however, strainer clogging occurred after 48 hours of operation. The architect engineer is continuing to evaluate methods to correct the problem. Failure of the strainer to pass the current test was reported to Region I on February 23, 1983 as a potential significant deficiency (10 CFR 50.55(e)).

5. Review of Status of Design Changes

The inspector reviewed the status of design changes (E&DCR) to verify that the incorporation requirement of S&W Procedure NEAM-38 has been adhered to. This procedure requires that after the sixth "change to be incorporated" E&DCR has been issued against a particular design document, it shall be revised within 4 months of the issuance of the sixth E&DCR. As of January 14, 1983, there were four design documents that were delinquent and according to the A/E are currently being revised. The specific documents are SP-281, BZ-019A, SP-611, and EV-010C. The inspector did not have any further questions on this matter, but informed A/E and licensee that this area will be monitored at a subsequent inspection.

6. Plant Tours

The inspector observed work activities in progress, completed work and construction status in several areas of the plant. The inspector examined work for any obvious defects or noncompliance with regulatory requirements of license conditions. Particular note was taken of the presence of Quality Control Inspectors and Quality Control evidence such as inspection records, material identification, nonconforming material identification, housekeeping and equipment preservation during the plant tours.

The following was observed:

- Electrical junction boxes identified as AB-1071 and AB-1010, which are mounted and located at elevation 50' in the auxiliary building, appear to be encroaching on the seismic "rattle" space between the containment and auxiliary buildings. The inspector informed the licensee, and S&W issued an inspection report IR-E3000324 for this potential unsatisfactory condition. This item is considered unresolved (423/83-02-01).
- Craftsmen were removing the grout layer at the edges of base plate for the charging pumps. When crafts were questioned as to why they were doing this, they informed the inspector that the exposed grout on the base plate had hairline cracks. The grout was being replaced with a concrete layer. S&W Field QC was unaware that this rework was being performed. Investigation by S&W Field QC indicated that construction was concerned with the appearance only. The grout supplier's instructions state that hairline cracks occasionally appear on exposed shoulders of base plates, and that cracks do not have structural significance and do not detract from the nonshrink vertical support. The inspector had no further questions on this matter.
- Inspector noted that in the auxiliary building, at elevation 42', containment electrical penetrations IIC-1, IIC-5, and IC-1 did not have pressure gauges to indicate an adequate nitrogen purge. S&W showed the inspector a copy of design change F-E-8044 which allowed gauges to be removed during welding or when there are other construction activities in the area which may result in damage to the gauges. The inspector reviewed various documents to verify compliance with design change and vendor requirements. The following specific information was obtained:

<u>Penetration No.</u>	<u>Date Welding Completed</u>	<u>Date Gauge Re-Installed And Penetration Tested</u>
IIC-5	10/14/82	1/11/83
IIC-1	10/2/82	"
IC-1	12/15/82	"

The inspector was also informed that damage to gauges has been extensive, and S&W is currently awaiting receipt of an order for gauges that has been placed. This area will be inspected during subsequent plant tours.

- The inspector noted that a S&W Field QC Inspector was opening safety-related Gould motor control center (MCC) panels and inspecting the circuit breaker mechanical interlock assemblies. It appears that either cracking or complete breaking of a major plastic component of the assembly is occurring and S&W is performing a 100% inspection of all assemblies. During this inspection period, a total of 505 assemblies was found to be either cracked or broken. This item is considered unresolved pending review of licensee's evaluation of reportability in accordance with 10 CFR 50.55(e) requirements (423/83-02-02).

Also during this tour, the inspector noted that the upper portion of the MCC panels were uncovered (Note: no cable pulling activities were on-going) and construction dust and dirt was accumulating. Immediate corrective action was taken. The panels were cleaned and plastic covering was draped over the panels.

- During observation of instrument tubing installation, the inspector noted that the bracket bolting material appeared to be inadequate since machine screws instead of bolts were being used. The inspector discussed this with the craft foreman who stated that the work force had run out of the required bolts and were using machine screws on a temporary basis. Review of the design documents (S&W drawings BZ-600 series) revealed that although bolting material size and torque requirements are specified, type of material and locking device requirements are not. When the inspector discussed this with the licensee, he learned that NUSCo QA Audit A40618 has also identified the same deficiencies. This item is unresolved pending review of Audit A40618 and associated closeout requirements (423/82-02-03).
- The inspector noted that feed water isolation valve 3FWS-V-32 stored in main steam valve building was not covered and protected from nearby construction activities. Dust, dirt, and saw dust was accumulating on valve. Licensee took immediate corrective action, and the valve was cleaned and covered.

7. Inspection of Work Activities Associated with Pressurizer Shield Wall

The inspector observed ongoing and completed work for the pressurizer shield wall which consisted of cadwelding, installation of reinforcing steel and Nelson studs. No violations were identified; however, the inspector had one concern. The completed Nelson stud welds met the requirements of AWS D.1.1; that is, they have a full 360° fillet, but the inspector noted that the majority of the fillets just met the requirement. There were very narrow fillets on the top portion of the studs, indicating that the welders (two) did not have good control of the process. The licensee agreed with the inspector that the welders should be retained. This item will be inspected during subsequent inspections (423/82-02-04).

8. Pipe Welding Activities

The following weld joints in various stages of completion were inspected for compliance with ASME Section III Code, S&W Specification No. 968 and various S&W weld technique sheets:

<u>Weld Joint Identification</u>	<u>Weld Techniques</u>	<u>Location</u>
3CCE-002-17-3, Field Weld #18	W-3-02, Rev. 0	Aux. Building
3FWS-006-61-2, " " #6 & 12	W-3-02, Rev. 0	MS Valve Building
CI-MSS-35, " " #1	" "	" " "
CI-MSS-36, " " #3	" "	" " "

No violations were identified.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of non-compliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4 and 6.

10. 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.