

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

Region I

Report No. 50-423/80-02

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 No. 3

Inspection at: Millstone Unit 3, Waterford, Connecticut

Inspection conducted: April 1-2, 1980

Inspectors: A. C. Cerne  
A. C. Cerne, Reactor Inspector

4/22/80  
date signed

A. A. Varela  
A. A. Varela, Reactor Inspector

4/22/80  
date signed

Approved by: R. W. McGaughey  
R. W. McGaughey, Chief, Projects Section  
RC&ES Branch

date signed  
5/9/80  
date signed

Inspection Summary:

Inspection on April 1-2, 1980 (Report No. 50-423/80-02)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of licensee action on previous inspection findings, concrete activities for an Intake Structure wall, pressurizer rigging and installation into containment, the long-term storage of the RPV and internals, and plant inspection-tours. The inspection commenced at 6:15 a.m., outside the normal dayshift working hours at the site and involved 27 inspector-hours onsite by two NRC regional based inspectors. Results: No items of noncompliance were identified.

## DETAILS

### 1. Persons Contacted

#### Northeast Utilities Service Company (NUSCO)

- \*A. D. Cooper, Construction Specialist
- T. W. Deshefy, Resident Civil Engineer
- K. W. Gray, Supervisor of Construction QA
- \*R. A. Hastings, Construction QA Specialist
- D. Housington, Civil Engineer
- \*S. R. Toth, System Superintendent/Generation Construction

#### Stone and Webster Engineering Corporation (S&W)

- W. B. Anderson, Assistant Superintendent, Field QC
- \*\*H. Baghai, Senior Engineer Associate (Boston)
- W. Baker, Storage and Maintenance Supervisor
- \*\*W. Daley, Principal Piping Engineer (Boston)
- R. P. Hagerman, Field QC Engineer
- \*B. L. Holsinger, Field QC Engineer
- \*J. G. Kappas, Superintendent of Construction
- \*R. H. Lane, Superintendent of Construction Services
- \*\*J. Lebruto, Mechanical Engineer (Boston)
- A. Morales, QC Batch Plant Inspector
- W. Orr, Senior QC Engineer
- \*A. M. Prusi, Assistant Resident Engineer
- H. J. Shippee, Chief Welding Supervisor
- \*G. G. Turner, Superintendent, Field QC
- W. Viau, Material Controller

\* denotes those present at the exit interview.

\*\* denotes telephone conversation during the inspection.

### 2. Plant Tours

The inspectors observed work activities in-progress, completed work and plant status in several areas of the plant during general inspections of the plant. The inspectors examined work for any obvious defects or non-compliance with regulatory requirements or license conditions. Particular note was taken of presence of quality control inspectors and quality control evidence such as inspection records, material identification, nonconforming material identification, housekeeping and equipment preservation. The inspectors interviewed craft personnel, supervision, and quality inspection personnel as such personnel were available in the work areas.

One inspector noted certain apparently nonstandard construction conditions in various areas of the plant. He verified that each had been approved and documented where required, and he reviewed the justification for acceptance of each case, as follows:

- a. Flange plate connections for the containment annulus pipe rack framing are welded to wall embeds such that an unwelded overhang exists. -- Approval for a maximum of 2 inches of overhang is provided by S&W Engineering and Design Coordination Reports (E&DCRs) P-S-1947 and P-S-1976.
- b. Power struts welded to embedded rebar supports are being used to support hangers for safety-related piping. -- These pipe supports are temporary construction aids, and as such, they meet all erection requirements of S&W Specification 968 (Revision 1) with Addendum 1.
- c. A temporary angle attachment had been welded to the containment quench spray permanent pipe support structural steel. -- S&W Quality Standard QS-9.2, Revision C, as amended for the Millstone Unit 3 project by QA Department Procedure Request Form E-31-1, and S&W E&DCR P-J-2683 indicate the specific requirements for such temporary welds. Applicable ASME Boiler and Pressure Vessel (Section III) Code boundaries are recognized.
- d. Snipe holes have been eliminated from the junction of the stiffener plates and base plate welds, meeting from triaxial directions, on various large component support structural steel pieces. -- S&W Vendor Information Request 0719 from Thames Valley Steel Corp. allows deletion of these snipe holes on the basis of structural integrity and functionality of design.

The inspector also checked the S&W Drawing Record Log to insure that certain drawings noted in their field locations were the most current revisions. He reviewed the specification requirements for use of tools on stainless steel material and welds. He interviewed supervisory and QC personnel concerning field controls over these tools and the current administrative controls in effect over non-ASME weld technique sheets issued to the field. The adequacy of such controls and their need to be procedurally defined were discussed with licensee management personnel.

Another inspector conducted an additional plant inspection-tour of concrete placement preparation and repair activities and the status of rock anchor installation. Craft personnel were observed within the containment building preparing interior concrete walls and slabs and concrete preparations were also observed for the circulating water pump house walls. During a tour within the containment building, repairs to concrete were observed. The

repairs appeared minor and apparently were required because of localized rebar congestion. Concrete honeycomb and voids were readily repairable, without excessive concrete removal, were reported by QC as deficiencies, and were evaluated by engineering. The inspector was informed that use of grout was approved for future congested locations to avoid honeycomb and voids. During the tour the inspector verified that additional rock anchors had been installed in the service building foundation prior to base mat construction.

No items of noncompliance were identified.

### 3. Licensee Action on Previous Inspection Findings

(Closed) Deviation (423/79-05-01): Heat input controls on stainless steel welding. The inspector reviewed S&W Weld Procedure W-100B Technique Sheets W12B (Revision 2), W12E (Revision 2), W12G (Revision 1), and W22F (Revision 2) and spot-checked other P8 material weld technique sheets. The current revisions of these techniques have included the specification of minimum travel speed, amperage, and voltage used in the welding process, in addition to the already specified electrode size, to control heat input. The inspector also verified that the applicable QC inspection reports list attributes for surveillance of these newly added heat input control parameters.

In addition to the establishment of the above heat input controls, the licensee indicated that the corrosion tests, which the monitoring of heat input was intended to replace, were actually made for applicable welding procedures in accordance with Regulatory Guide 1.44. The results of these tests are available for NRC review.

This item is resolved.

(Closed) Unresolved item (423/80-01-01): Excessive gap between stiffener and transverse flange weld. The inspector examined the Thames Valley Steel Drawing Sheet No. 99 (Revision 2), re-inspected the actual field conditions, and discussed the interpretation of requirements with QC personnel. Since the stiffeners are positioned askew to the line of the weld of the clip connector on the beam's bottom flange, the gap between the weld line and stiffener varies depending at what point the measurement is made. The inspector agrees that an engineering interpretation of the tolerance shown on the drawing implies that measurement should be made at the connection's working point. At that point, design tolerances are not exceeded.

This item is resolved.

#### 4. Observation of Concrete Placement in Pump House

##### Placement Preparation

The circulating water pump house walls were observed in preparation for continued concrete construction. An intermediate wall at the 7.5 line was noted ready and approved by QC for concrete placement above elevation -18 construction joint to -8. The inspector independently verified the adequacy of the construction joint preparation, rebar size, spacing clearance and form work as conforming to requirements identified in S&W drawings EC-14, series A and B and the specifications.

##### Mixing, Delivering, Placing, Curing

The inspector observed concrete placement by pumping for the pump house wall, pour #C-5051. He determined that work and inspection activities are being accomplished according to applicable specifications, codes, standards and procedures in the following areas:

- proper mix specified and delivered
- duration of concrete mixing
- pumping equipment and transmission pipe maintained the concrete properties
- concrete testing met acceptance criteria performed by qualified personnel using calibrated equipment
- temperature control of mix and forms conform to requirements for cold weather concrete
- adequate crew, placement technique and consolidation were observed
- finishing, construction joint preparation, curing and winter enclosure/temperature were observed

##### Batch Plant Operation

Batch plant operation and QC inspection were observed and noted for the following:

- accuracy of weight scales
- qualified inspector verified batch weights, moisture compensation and batch tickets for ingredient weights of specified concrete mix #402, (4,000 psi)

- produced batches met requirements at placement for slump, temperature and air
- requests from the point of placement to raise air content indicated excellent communication, control and coordination between construction engineering and QC

No items of noncompliance were identified.

## 5. Pressurizer Rigging and Installation

### a. Procedure Review

The inspector reviewed the S&W Field Construction Procedure for Pressurizer Installation, FCP-280, Revision 1. He noted that the pressurizer pick had been designated a Class A lift under generic S&W procedures and that the Equipment Lift Record Card had been approved and was available.

The responsible lead QC engineer was interviewed regarding planned inspection and surveillance activities. The inspector examined the in-process inspection report and verified that pre-lift documentation requirements had been met.

The following documents were reviewed to determine if all procedural, pre-lift requirements had been accomplished and documented:

- S&W Quality Standard QS-13.1, Revision B
- S&W Construction Methods Procedure for Rigging and Equipment Maintenance, February 1980

No items of noncompliance were identified.

- b. Installation of the pressurizer tank, weighing about 110 tons, within the containment building was observed to be controlled and QC verified for conformance to S&W procedure FCP-280. The tank was horizontally transported for a distance of about 200 yards by a 200 ton crawler crane under adequate supervision. The tank erection, lift over top of the containment liner (presently at spring line), and installation within the containment building were handled by a special ring crane. Adequate supervisory control and QC verification were evident throughout the various stages of the pressurizer rigging and handling.

No items of noncompliance were identified.

6. Reactor Pressure Vessel (RPV) and Internals Storage

The inspector observed the storage condition of the RPV and various internal components located onsite under a long-term storage program. He noted that the RPV head closure studs had been returned to the supplier and this was documented on S&W Returned Material Report RMR 78-952. Certain storage and maintenance and QC personnel were interviewed regarding equipment inspection and documentation status. The inspector reviewed the following Equipment Storage History Cards to verify the timely conduct of inspections and adequate coverage of required maintenance activities.

<u>Card No.</u>	<u>Item</u>
10451	RPV
10452	RPV Head
10424	Lower Internals Assembly

The above inspection areas were evaluated against criteria established in the following documents:

- S&W Field Construction Procedure for the Equipment Storage History Card FCP-121, Revision 3.
- Westinghouse Nuclear Service Division NSSS Component Receiving and Storage Criteria, Volume I for Mechanical Equipment, March 1976.
- Westinghouse letters dated September 7, 1978 on the RPV inspection plan and October 9, 1978 on the RPV storage.

No items of noncompliance were identified.

7. Exit Interview

At the conclusion of the inspection on April 2, 1980, a meeting was held at the Millstone Unit 3 site with representatives of the licensee. Attendees at this meeting included personnel whose names are indicated by notation (\*) in paragraph 1. The inspection summarized the results of the inspection as described in this report.