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

Region I

50-443/80-07 Report No. 50-444/80-07 50-443 Docket No. 50-444 **CPPR-135** Category A License No. CPPR-136 Priority --Licensee: Public Service Company of New Hampshire 1000 Elm Street Manchester, New Hampshire 03105 Facility Name: Seabrook Station, Units 1 and 2 Inspection at: Seabrook, New Hampshire Inspection conducted: June 30-August 1, 1980 Inspectors; Cerne, Reactor Inspector signed date signed date signed Approved by: W. McGaughy Chief, Projects Section, date signed RC&ES Branch Inspection Summary: Inspection on June 30-August 1, 1980 (Report No. 50-443/80-07) Areas Inspected: Routine inspection by the resident inspector of work activities relative to containment and safety-related concrete; safety-related pipe welding, NDE. and support installation; RPV internals storage; and safety-related steel tension set bolting and embed installation. The inspector also performed plant inspection tours and reviewed licensee action on previous inspection findings. The inspection involved 62 inspector hours. including nine offshift hours, by the NRC Resident Inspector. Results: Of the six areas inspected, one item of noncompliance was identified in

one area (Infraction - failure to initiate nonconformance report and review and disposition stud weld nonconforming conditions in accordance with procedural requirements, paragraph 5b).

Inspection on June 30-August 1, 1980 (Report No. 50-444/80-07)

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Areas Inspected: Routine inspection by the resident inspector of work activities relative to safety-related concrete and RPV storage. The inspector also performed plant inspection tours and reviewed licensee action on previous inspection findings. The inspection involved 7 inspector hours by the NRC Resident Inspector. Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

Yankee Atomic Electric Company (YAEC)

F. W. Bean, QA Engineer D. L. Covill, QA Engineer W. J. Gagnon, QA Engineer D. E. Groves, QA Engineer (Westborough) R. E. Guillette, QA Engineer (Westborough) J. H. Herrin, Site Manager (PSNH) *J. J. Lance, ISI Engineer (Westborough) D. A. Maidrand, Project Engieer (Westborough) G. F. McDonald, QA Engineer (Westborough) J. F. Nay, QA Engineer R. P. Pizzuti, Contruction Manager (Westborough) J. W. Singleton, Field QA Manager G. S. Thomas, Start-up Engineer H. E. Wingate, Project Engineer (Westborough) United Engineers and Constructors (UE&C) R. G. Blair, Civil Superintendent A. E. Blocher, Civil Job Engineer *M. Ellis, Structural Engineer (Philadelphia) *G. Hatwal, Structural Engineer (Philadelphia) R. A. Hopley, Field Engineer *A. Hulshizer, Supervisor Structural Engineer (Philadelphia) G. W. Kelly, Piping Superintendent F. A. Long, Assistant QA Engineer R. J. Phelps, Field Superintendent of QA

R. R. Thomas, Office Engineer

L. R. Wade, Assistant Field Superintendent of QA

Perini Power Constructors (Perini)

J. E. McLaughlin, Document Control Chief G. E. Myers, Assistant Supervising QA Engineer

O. R. Oates, QA Building Inspector

A. G. Schroeder, Lead Structural Inspector

R. J. Vachon, QA Building Inspector

Pullman-Higgins (Pullman)

M. Daniels, NDE Technician
R. G. Davis, Field QA Manager
R. R. Donald, QC Supervisor
J. Godleski, QA Records Engineer
C. D. Lyon, QC Inspector
M. MacCrae, QA NDE Engineer
H. Sinclair, Chief Field Engineer
C. Wilkins, NDE Technician

Royal Globe Insurance

J. Anzivino, Authorized Nuclear Inspector

Westinghouse

C. E. Walker, Liaison Engineer

*denotes telephone discussion during the inspection.

2. Plant Tours (Units 1 and 2)

The inspector observed work activities in-progress, completed work and plant status in several areas of the plant during general inspections of the plant. The inspector examined work for any obvious defects or noncompliance 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 inspector interviewed craft personnel, supervision, and quality inspection personnel as such personnel were available in the work areas.

The inspector randomly selected the following drawings from field stick files and checked that the current revision in each case was in use. The UE&C Foreign Print System Client Report-D (June 2. 1980) and Project Drawing Status Report-G1 (June 18, 1980) were reviewed and utilized in this evaluation.

| E&C | Drawings | - 101475 | 101489 |
|-----|----------|----------|--------|
| | | 101470 | 101486 |
| | | 101479 | 101405 |
| | | 101480 | 101565 |
| | | 101492 | 104125 |
| | | 101471 | 310741 |
| | | 101482 | 104076 |
| | | 101483 | 310745 |
| | | 104001 | 310789 |
| | | 104073 | 310794 |
| | | 101690 | |
| | | | |

Bethlehem Steel Drawings (Foreign Prints) - 13562 13000 13132 14269 13178

No items of noncompliance were identified.

3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (443/80-04-02): Missing liquid penetrant report and QA Final Check intent. The inspector reviewed the Pullman Liquid Penetrant Examination Report for weld repair RH-160-01, FW F0105R1 and discussed the status of such documents, with respect to permanent record packages, with responsible QA personnel. Pullman Document No. PH-013 (Revision 1), issued on June 30, 1980. clarifies the intent and use of the QA Final Check block on the Field Weld Process Sheets. This instruction also provides guidance regarding the availability of required reports (e.g., NDE reports), their duplication, and the QA Engineer responsibilities for review and accountability of these documents. This item is considered resolved.

(Closed) Unresolved Item (443/80-06-02 and 444/80-06-01): Compliance to Regulatory Guide 1.15. The inspector reviewed a UE&C Memorandum (July 8, 1980) and letters from Owen Steel Company (July 8, 1980) and Bethlehem Steel Corporation (July 16, 1980). Clarification of the reinforcing bar tensile test requirements as part of the respective QA programs was provided. Rated furnace capacities for both Bethelehem and Owen were documented so that the number of tensile tests noted on each Certified Material Test Report per heat could be verified for compliance. Both NRC Regulatory Guide 1.15 and paragraph CC-2331.1 of ASME III, Division 2 are being followed. This item is resolved.

(Closed) Unresolved Item (443/80-06-03 and 444/80-06-02): Treatment and . control over permanent nonsafety welds to safety-related embeds. The inspector reviewed the following UE&C documents relative to this item:

Engineering Change Authorization (ECA) - 01/1053A, C, and D - 01/1786A - 10/0036A

Request for Information (RFI) - 741169A

Engineering disposition allows construction personnel to control the weld dimensions and design, since these are construction aids, provided that the aids will not carry a load after the permanent connections are made. Welds embedded in concrete are taken into account and commitment is made to evaluate the local failure of insert plates, as a potential result of nonsafety clip angle welding. Removal of any of the subject welds is controlled in accordance with UE&C Specification WS-3. The control and evaluaton of such permanent nonsafety welds appear commensurate with any concerns for the safety-related embeds to which they are made. The inspector has no further questions at this time.

4. Unit 1 Containment Wall Placement

The inspector reviewed preplacement procedures, observed portions of the placement operation, and examined inspection reports and documents relative to a Unit 1 containment wall placement (1-CS-1B). During the placement, the general arrangement of rebar and cleanliness of the forms were spotchecked and the availability of QA inspectors was noted. The interface of the top of the concrete with the large containment penetrations was observed to have been handled in a manner which would permit complete embedment of and flow of concrete around those penetration assemblies on future lift placements.

The inspector verified the existence of a cut rebar record, as authorized and required by ECA 01/1490C and evaluated the overall concrete placing operation for pour 1-CS-1B against criteria established in the following documents:

- -- ASME Boiler and Pressure Vessel Code, Section III, Division 2, 1975.
- -- UE&C Specification 13-2.
- -- Perini Field Civil Construction Procedure, FCCP-2, Revision 3.
- -- Perini Field Implementation Procedure No. 10.
- No items of noncompliance were identified.

5. Safety-Related Structures (Units 1 and 2)

a. Tension Set Bolting

The inspector reviewed the structural steel high-strength bolling program using the Tension Set (TS) Threaded Fastener system. The following documents were examined to determine the procedural controls over bolt prequalification, installation, and inspection and to establish an understanding of the relationship between the TS System and the requirements of the AISC specification for Structural Joints Using ASTM A325 or A490 Bolts.

- -- Bristol Industries "Cold Forming Specialties" TS Fastening System Installation Procedure (Report TS1-102).
- -- Perini Field Civil Construction Procedure, FCCP-155, Revision O, with Interim Procedure Changes through IPC 4.

-- Perini Quality Assurance Procedure, QAP 10.8, Revision 3.

The QA program requirements relative to acceptance testing criteria, the designation and adequacy of a job inspection torque, and visual inspection of bolt length to prevent the shanking of the nut were all discussed with QA personnel and the UE&C Supervisory Structural Engineer.

The inspector has no further questions on the TS bolting program at this time. No items of noncompliance were identified.

b. Safety-Related Embeds

The inspector noted that several embed plates (Mark APM 123/0503). located near the Unit 1 construction, but not within any identifiable storage area, contained stud weld conditions with incomplete 3600 flash. While ANS D1.1 recognizes this as a nonconforming condition, it allows a bend test to determine the final stud weld acceptability. No documentation was available to indicate that these studs had been bend tested. White markings near each nonconforming weld provided evidence that a site inspector had noted the nonconforming conditions, but the embeds were all stamped with "Accept Tags" and were all apparently available for immediate installation without further insper Subsequent bend testing of the questionable welds producer per of failures.

The inspector informed the licensee that this failure to review or properly disposition a clearly identified nonconforming condition constituted a noncompliance with regard to the requirements of 10 CFR 50, Appendix B, Criterion XV. The inspector also questioned the acceptability of the material control program (vendor QA, procurement and site receiving), which would allow nonconforming material to be not only delivered to the site, but also installed in the plant. (Note: Subsequent investigation by the licensee revealed that a number of nonconforming embeds nad already been installed, prior to identification of this problem by the inspector.)

This item is an infraction (443/80-07-01).

The licensee issued Deficiency Reports (DRs 052 and 053) on this item. A visual inspection of all accessible stud welds on embed plates at the site was directed and vendor surveillance activity in this area was increased. Additionally, the inspector determined in a separate document review that Pullman Procedure XV-2 for the handling of nonconformances by the field did not address the disposition of AWS Code issues. The need for consideration of AWS items arose when the lead responsibility for the installation of AWS embeds, and the associated welding, was transferred to Pullman earlier this year. Since Procedure XV-2 was currently in a draft for revision stage, the inspector received a commitment to include the appropriate requirements in the latest revision and noted such comments on a circulating Document Review Request. He had no further questions on the forthcoming procedural change.

c. Cooling Tower Concrete Repairs

The stripping of forms for a recent Cooling Tower concrete placement revealed a number of voids, located primarily at the beam soffits. The inspector learned that nonconformance reports (NCR) were in the process of being written and indicated to the licensee an intent to followup their disposition, including the corrective action on the cause, at some future time.

Since repair of the "minor" surface voids, not requiring NCR disposition, was in progress, the inspector reviewed the following documents to verify that current repair activities were being accomplished in line with approved procedures.

- -- Perini Field Civil Construction Procedures (with the applicable Interim Procedure Changes)
 - FCCP 2, Revision 3
 FCCP 115, Revision 1
 FCCP 117, Revision 0
- -- Perini Quality Assurance Procedures
 - QAP 10.5, Revision 3
 - QAP 10.10, Revision 4

The above procedures and work were evaluated against the requirements of ASME III, Division 2 and the applicable ANSI N45.2 series documents.

No items of noncompliance were identified.

6. Safety-Related Piping (Unit 1)

a. Welding

The inspector observed welding of the following stainless steel pipe spools:

-- 1-CBS-1226-05, Welds F0502 and F0503

-- 1-RC-58-01, Weld F0101

-- 1-CBS-1214-10, Socket Welds A019-A026

Field Weld Process Sheets, Isometric Drawings, and Weld Rod Stores Requisitions were all checked to verify identification, documentation, and inspection of criteria procedurally required for quality welding. Actual welding conditions and conduct, to include maintenance of the argon purge, interpass temperature checks, weld rod use and control, and other Welding Procedure Specification (WPS) essential variables were spot-checked.

The inspector also noted the presence or availability of QC welding inspectors and checked their inspection verification of hold point items on the weld process sheets. With regard to the socket welds, the fit up technique to maintain socket end gap was demonstrated to the inspector and several as-welded nozzles were inspected for final socket configuration and wall thickness. The QA records approving and documenting a cutting operation on spool piece 1-RC-58-2-601 for field weld F0106 were reviewed and the final weld configuration examined by the inspector.

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

- -- ASME B&PV Code, Sections III and IX, (1977 Winter Addenda).
- -- Pullman General Welding Standard, GSW-III, Revision 2.
- -- Pullman Documents IX-3, Revision 1 and X-9, Revision 4.
- -- Pullman WPS 24-III-8-KI-12, Revision 2.

No items of noncompliance were identified.

b. Nondestructive Examination (NDE)

The inspector witnessed the liquid penetrant examination (LPT) on the Containment Building Spray piping nozzle field welds (1-CBS-1216-07, welds F0714-F0722). He examined the penetrant materials in use and discussed both technique and evaluation with the Pullman Level II technicians. Parameters and activities such as pipe temperature, surface cleanliness, area of interest, penetrant and developer times, evaluation, and the need and sequence for reinspection were all spotchecked. The inspector also reviewed the applicable Field Weld Process Sheets to determine if hold points for these activities had been correctly established. The above items were evaluated against criteria established in the following documents:

-- ASME B&PV Code, Section III and V.

-- Pullman LPT Procedure IX-PT-1-W77, Revision 2.

No items of noncompliance were identified.

c. Soluble Purge Dam Use

Based upon identification at the Perry nuclear site of a potential problem involving the loss of solubility of Mono-Sol water soluble purge dam material when heated, the inspector reviewed the progammatic control over the use of such material at Seabrook. The inspector determined that utilization of the subject material was already being controlled by YAEC and UE&C because of concerns over organic fouling of certain components in dry systems or systems difficult to flush. These controls include a listing of systems and lines where soluble purge dams should not be used and the requirement for UE&C construction to approve each intended use of the material.

Notification to the licensee of the potential heat effect problems involved with the soluble purge dam use resulted in a commitment in writing that a field instruction be prepared providing guidelines on the material usage in systems where weld preheat or post-weld heat treatment could cause loss of solubility. The procedural specification of such guidelines coupled with the current requirement for case by case approval of soluble purge dam usage provide assurance that the potential for problems is being adequately controlled at Seabrook.

The inspector has no further questions on this issue at this time.

d. Pipe Supports

The inspector checked the in-place welded condition and configuration of the following pipe supports and compared them to their Pullman detail drawings:

-- 4385-RG-3 -- 58-SG-19

In the case of the first support, field welds 1 through 10 had been completed and signed off as acceptable on the Field Weld Process Sheet. For the second support the entire Process Sheet was complete. In the case of both supports, however, the Support Inspection Checklists requiring verification of final support installation (Pullman Procedure X-4) to the drawings, were open. During visual examinations of these hangers, the inspector noted a number of conditions (e.g., weld length, size, and position) which appeared at variance with the drawing details. He also developed certain questions on tolerances, welding with limited accessibility, and documentation of nonconforming conditions. Discussion of these findings with the licensee indicated that, even though all nonconforming items may have been discovered on the final hanger inspection and documented on the Support Inspection Checklist, certain of these conditions should have been flagged during the weld inspector's Process Sheet examination.

Pending clarification of the licensee's position with regard to each condition identified and each question asked by the inspector, the status of the present as-built condition and the acceptability of the inspection process for each of these two hangers remain unresolved (443/80-07-02).

7. RPV and Internals Storage (Units 1 and 2)

The inspector examined the storage condition and access controls for the Unit 2 Reactor Pressure Vessel (RPV) and Head and the Unit 1 Core Barrel and Upper Internals package. Storage levels were verified in line with ANSI N45.2.2 and vendor requirements. The cleanliness, covering, atmospheric controls, and orientation of the components within their storage buildings were all checked. The Monthly Preventive Maintenance (PM) Inspection Report for the RPV was examined by the inspector immediately prior to the scheduled PM activities.

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

- -- Seabrook Station PSAR. Section 5.
- -- Westinghouse NSSS Component Receiving and Storage Criteria.
- -- Westinghouse (NAH-7.30) Recommended Reactor Vessel and Head Storage Maintenance Procedure.

No items of noncompliance were identified.

8. Electrical Inspection (Unit 1)

The inspector examined several areas of cable tray installation in the Equipment Vault. Welding activities for the attachment of power strut material to the structural steel in the Control Building were witnessed, and final weld configurations evaluated with regard to the typical details

of UE&C Drawing M300229, Sheet T30. The inspector also observed some newly installed power strut embeds in the Primary Auxiliary Building and determined that required stud removal had been accomplished in accordance with ECA 0310777A.

No items of noncompliance were identified.

9. Potential 50.55(e) Item Closure

The licensee informed the inspector on June 19, 1980 of a potentially reportable item under 10 CFR 50.55(e) regarding Westinghouse W-2 switches. On July 18, 1980 the licensee reported that an investigation had determined that none of the subject switches are in use or planned for use at Seabrook Station. This item is closed.

The inspector discussed with the licensee the means by which adequate tracking of quality concerns is maintained when identification of an item has been made by other than the licensee. In the case of NRC items (Bulletins, Circulars), YAEC Project Policy No. 13 provides for quality controls. However, in the case of vendor identified items (i.e., Part 21 reports), the licensee revealed no formal tracking system has been established, as the vendor's program is relied upon to preclude use of deficient material. While the inspector had found no examples of quality problems caused by the current system, the licensee did agree that a more formal system for tracking Part 21 items would be beneficial and commitment was made to establish a licensee tracking mechanism. The inspector identified no items of noncompliance in this area, but indicated that this subject would be given a more rigorous inspection at some future time.

10. 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. An unresolved item disclosed during the inspection is discussed in Paragraph 6.d.

11. 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.