

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-443/85-17

Docket No. 50-443

License No. CPPR-135

Priority ---

Category A

Licensee: Public Service Company of New Hampshire
1000 Elm Street
Manchester, New Hampshire 03105

Facility Name: Seabrook Station, Unit 1

Inspection At: Seabrook, New Hampshire

Inspection Conducted: May 27 - July 5, 1985

Inspectors: H. M. Wescott, Resident Inspector
Richard S. Barkley, Reactor Engineer

Reviewed by: *AC Cerne*
A. C. Cerne, Senior Resident Inspector

7/24/85
date signed

Approved by: *Robert M. Gallo*
R. M. Gallo, Chief, Projects 2A,
Division of Reactor Projects

7/29/85
date signed

Inspection Summary: Inspection of May 27 - July 5, 1985

Areas Inspected: Routine inspection by the resident inspectors of work activities, procedures and records relative to containment piping penetration certifications, and a review and walkdown of the EFW HVAC system. The inspector also reviewed licensee action on previously identified items, including 10 CFR 50.55(e) reports, an I&E Bulletin, I&E Circulars, unresolved items, violations, and review of the licensee's documentation concerning cold pull of piping in response to an allegation. The inspection involved 118 inspector-hours of Unit 1 activities.

Results: No violations were identified.

DETAILS

1. Persons Contacted

J. O. Azzopardi, QA Engineer (NHY)
D. L. Covill, Field QA Surveillance Manager (NHY)
R. E. Guillette, Assistant Construction QA Manager (NHY)
G. A. Kann, Test Group Manager (NHY)
B. G. Levine, UE&C Management Staff (UE&C)
J. Marchi, Startup QC Manager (NHY)
G. F. McDonald, Construction QA Manager (NHY)
D. Perkins, QA Engineer (NHY)
W. Sanchez, Licensing Engineer (NHY)
J. W. Singleton, Assistant QA Manager (NHY)
D. Turner, QA Engineer (NHY)

2. Plant Inspection Tours (Unit 1)

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 noncompliance with regulatory requirements or 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, and equipment preservation. The inspectors interviewed craft personnel, supervision, and quality inspection personnel as such personnel were available in the work areas.

During the inspection period, an inspector accompanied several members of the Construction Team Inspection (CTI) onsite during various walkdowns of plant systems. The systems included Residual Heat Removal (RHR) system Train B as well as elements of the Heating Ventilations and Air Conditioning (HVAC) systems. The findings of the CTI are documented in Inspection Report 85-15. The inspector accompanied two individuals from the Los Alamos Laboratory performing a Vital Area Analysis for the NRC under an Office of Materials Safety and Safeguards (NMSS) contract and assisted in answering questions they had concerning the project.

An inspector performed a detailed independent review and walkdown of the Emergency Feedwater (EFW) HVAC System to confirm that the as-built configuration agreed with that committed to in the FSAR, Section 9.4.11. The inspector confirmed that the as-built construction agreed with design specifications and has received the appropriate level of Quality Assurance/Quality Control (QA/QC) attention. A spot-check of the cable routing schedule (CASP) for a select group of EFW HVAC control and power cables revealed adequate control and identification of these safety-related circuits. Examination of a UE&C Limited Work Authorization (LWA-1329) used to perform corrective actions required by a Nonconformance Report

(NCR) on Tornado damper (EPA-DP-374) indicated adequate control of the work. NRC review of a UE&C Conditional Release (CR-332) on conduit 3AF/RA revealed adequate control of cable pulling operations. In addition, the inspector performed a spot-check of the preventive maintenance and storage program on the motor for EFW HVAC fan EPA-FN-47A. The review showed adequate and timely maintenance on the motor and proper control of the maintenance schedule. The procedure used to turnover responsibility for this maintenance from UE&C to the station startup group was adequate and well documented.

I&E Information Notices 82-51 and 84-19 identify a generic problem of radiation overexposures at PWR's caused by entries into areas containing the incore neutron monitoring guide tubes. The inspector made inquiries into the measures that would be taken by the licensee to prevent such an occurrence at Seabrook. During a plant tour the inspector noted that large sections of the guide tubes at Seabrook are unshielded and easily accessible. The licensee stated that procedures are being developed to control access to the incore guide tube area and to containment when the system is in use. The inspector reviewed the procedure and was satisfied with the level of attention and detail given the problem. The administrative controls will be reviewed at a time close to initial criticality. The inspector has no further questions on this issue at this time.

3. Licensee Action on Previously Identified Items

- a. (Closed) Violation (50-443/83-20-01) Inadequately secured wiring harnesses. The inspector reviewed the licensee's document package. UE&C's drawing 9763-M-300230, Sheet 27 (Revision 2) indicates that wiring mounting bases used inside of containment be bolted in place and those used outside of containment are to be mounted using an epoxy adhesive with surface preparation by an approved procedure. NCR, 8200187A, calls for repair of wire bundle mounting in the diesel generator electrical panels using a bolted mount with approved mounting procedures. A letter from Panduit to UE&C extends the shelf life of the epoxy (EMA-X) six months beyond expiration date shown on the packaging. This violation is closed.
- b. (Closed) Unresolved Item (50-443/83-20-03) Nonconforming conditions concerning wire tie mounts were not documented. The licensee has reviewed this concern and has added item No. 9 ("Equipment has been inspected internally (accessible areas). All loose items and wire tie downs correctly secured."), to the quality control installation report for electrical equipment installation check list.

This item is resolved.

- c. (Closed) Violations (50-443/83-02-02 and 83-22-03). The licensee did not control and document nonconformance to FSAR and design documents with reference to sliding joint for floor-to-ceiling cable tray supports. The inspector reviewed the licensee's document file for the violations including pertinent NCR's, and response letters to YAEC from UE&C. NRCs 54/5074, 54/5345, and 54/5198 document the nonconforming conditions. FBM No. 1707 identifies the cable tray supports that were reworked to bring them into conformance. Inspections by the resident inspectors have confirmed rework of the sliding joints (i.e. bolt removal) for the floor-to-ceiling strut supports and have identified no nonconforming conditions.

This violation is closed.

- d. (Closed) Unresolved Item (50-443/84-03-02). A program for surveillance/maintenance of electrical penetrations to assure that correct nitrogen pressure is being maintained was not in place. The inspector reviewed the licensee's preventative maintenance program concerning electrical penetrations. The surveillance sheets now contain a note under Special Requirements stating that the minimum pressure is 15 psig, and if the pressure drops below 15 psig, Westinghouse storage instructions should be referred to for further guidance.

This item is resolved.

- e. (Closed) Violation (50-443/84-07-03) Deviations from specified instrument tubing slope criteria authorized by construction manager rather than the responsible design organization. The inspector reviewed design specification 9763-006-46-1, with attached ECA's which address the revisions to be made to the specification concerning changes to the instrument tubing slope criteria. Changes to slope criteria can only be made through the use of ECA's which require engineering approval. ECA usage is controlled by Administrative Procedure (AP-15) for which the licensee has conducted extensive training on program changes.

This violation is closed.

- f. (Closed) Violation (443/84-07-11) CAT Report, (Sections III.B.1 and III.B.2) Nonconforming conditions concerning piping and pipe supports/restraints were not properly documented. The inspector reviewed Pullman Higgins Project Procedure X-4, Issue Date 1-10-85, "Final Inspection", paragraph 5.1.4A. which states that "The area field engineer shall initiate an NCR per procedure XV-2..." The problem of not properly documenting nonconforming conditions appears to have been one of personnel not adhering to procedures. As a result, Pullman Higgins has been providing training sessions to assure proper implementation of Procedure XV-2, Handling of Nonconformances and Limited Work Authorizations. The training has been documented and was reviewed by the inspector.

This violation is closed.

- g. (Closed) Unresolved Item (50-443/84-18-01) Heater not energized for pump motor No. 51-P-6B and could not determine that heaters for pump Nos. RH-P-8A, 8 B, and CS-P-2A, 2B were energized. The inspector reviewed a UE&C "TRAINOGRAM" No. U-C-MO-GP-0006, dated 6-26-85, with an attached training attendance sheet indicating that training had been given on checking equipment to assure that heaters are energized. The preventative maintenance record has been annotated to assure that the heaters are energized.

This item is resolved.

- h. (Closed) Unresolved Item (50-443/84-23/3-1) Integrated Design Inspection. Containment spray pump (CBS-P-9B) was immersed in water due to flooding caused by a break in hydro test equipment. All changed parts were replaced by licensee repair order. Subsequently, the inspector observed containment spray pump "B" in operation. The pump output pressure was at approximately 325 psig with piping and valving in the test configuration in accordance with TPI-62-F02, Revision 2, Test No. 1-PT-12.1, Revision 1, "Containment Spray System Operational Test." The pump motor had been dried and meggered and found to be satisfactory. The pump was operated for approximately 50 hours. No adverse effects were apparent.

This item is closed.

- i. (Closed) Violation (50-443/85-01-02) Boundary Identification Package (BIP) CS-M-5, containing two valves (RC-LCV-459 & 460) for which NCR 82/397A was applicable, was turned over from Construction Management to the STD without the required NCR corrective action listed as an incomplete item on the IIL. Also, the instrument air flex hoses for these two valves had not yet been replaced per the disposition to the NCR and no documented evidence was available to identify these valves as nonconforming or to assure that corrective action per the NCR would be completed.

The inspector reviewed NCR 82/397 Rev. B, which was reworded and added "IE solenoid list". The flex hoses for valves RC-LCV-459 and 460 are in the process of being replaced. This item was also added to the IIL. In addition, Interim Procedure Change (IPC) No. 2, approved 6-28-85 changed an Administrative Site Procedure (ASP-3), paragraph 5.5.1.3 to read "The DOS/DFS shall provide dispositions to NRCs/DRs which are specific to the problem to assure compatibility with design requirements. The disposition shall not be generic. However, the DOS/DFS shall evaluate the NCR//DR for generic implications and retrofit requirements." Since the primary cause of this violation was the issuance of an NCR with a generic disposition not correlated to the affected items, the change to procedure ASP-3, prohibiting generic NCR dispositions, appears to adequately address the problem from a programmatic standpoint.

This violation is closed.

- j. (Closed) Violation (50-443/85-03-01). Safety related electrical equipment not properly identified. The inspector reviewed the licensee's document package containing the NCR, ECA, and Work Request indicating that identification of the subject electrical equipment either has been completed or is scheduled and is being tracked. The inspector verified a sample of the marking tags, identified as completed per the licensee's written response to the Violation dated 5-23-85, SBN-805. In addition Procedure ASP-4 has been revised to assure that electrical equipment has been properly identified at turnover.

This violation is closed.

- k. (Closed) Construction Deficiency Report (CDR 82-00-14). Potential seal leakage in ASCO solenoid valves used on Posi-Seal butterfly valves. The inspector reviewed the licensee's documentation package concerning the subject CDR. NCR-1712 indicates that the twenty-six ASCO solenoid valves used on the Posi-Seal butterfly valves have been lubricated and accepted by UE&C's QA/QC. The corrective action for this CDR is considered to be consistent with the licensee's final report to NRC Region I, dated 6-10-85, SBN-820.

This CDR was also reported pursuant to the requirements as 10 CFR 21 by the vendor. This CDR is closed.

- l. (Closed) Construction Deficiency Report (CDR 83-00-06). Service and circulation water pumphouse structural inadequacy. The inspector reviewed ECA's 01/5000B, 01/4979E, and 01/02374B, which provided for additional structural support by adding corbels and columns, and repairs to the cracked slabs in the service and cooling water pumphouse. Review of QA/QC records indicate that the modifications were completed satisfactorily. The inspector visually examined a section of one of the reinforced concrete slabs, added to the Unit 2 pumphouse bay, and noted installation of the aforementioned corbel and column design. The ECAs, records and visual inspection confirm implementation of the structural modification discussed in the licensee's final report to NRC Region I, dated 6-13-85, SBN-827.

This CDR is closed.

- m. (Closed) Potential Construction Deficiency Report (CDR 84-00-01). Concerning deficiencies with nut and bolting material installation in the cooling tower fan assemblies. The licensee has determined that the deficiencies were not reportable pursuant to 10 CFR 50.55(e) requirements as stated in their final report to NRC Region I, dated 6-3-85, SBN-811. The inspector reviewed DR No. 505, dated 11/4/83, indicating that the installation was acceptable with back-up documentation to be provided by Ceramic Cooling Tower Co. at time of turnover.

This potential CDR is closed.

4. Review of I&E Bulletin and Circulars

- a. (Closed) I&E Bulletin (82-02) "Degradation of threaded fasteners in the reactor coolant pressure boundary of PWR plants." The inspector reviewed the licensee's documentation referencing the subject bulletin. Westinghouse Nuclear Service Division, Technical Bulletin, NSD-TB-83-06, provides guidance as to thread lubricant and torquing requirements to be used. In addition, PSNH, New Hampshire Yankee Division, in an Intra-company business memo, dated 10-30-84, states that, "The increased trend of these failures has led the Atomic Industrial Forum (AIF) to form a special task force on bolting in cooperation with the Metal Properties Council (MPC). It appears that implementation of the Westinghouse guidance adequately addresses the problem, to date, identified in this Bulletin. Licensee interest and involvement in any future results/recommendations arising from the AIF/MPC efforts appears evident.

This bulletin is closed.

- b. (Closed) I&E Circular (78-06) "Potential common mode flooding of ECCS equipment rooms at BWR facilities." Although the subject circular concerns only BWR facilities, the licensee requested that UE&C perform a study to determine that Seabrook (a PWR) did not have a similar problem.

The UE&C "Moderate Energy Line Break Study" (MELB), Revision 4, was transmitted to the NRC Division of Licensing (NRR) on 6/25/85 and discussed analysis of flooding events in the ECCS vaults, as well as other safety-related areas of the plant. Prior NRC Inspection (reference: Inspection Report 443/84-17, paragraph 7b) has reviewed the MELB and identified adequate consideration of common mode flooding and design steps to prevent and mitigate such events. This circular is closed.

- c. (Closed) I&E Circular (78-08) "Environmental qualification of safety related electrical equipment at nuclear power plants." The inspector reviewed UE&C, Memorandum dated 3/28/85, MM No. 25814A stating that the environmental qualification documentation reviews performed by UE&C and the review and EQ File package preparation presently being performed by Impel Corporation have or will address all the concerns raised by IE Circular 78-08 and other similar bulletins on EQ (77-05, 77-05A, 77-06, 78-02, 78-04). Adequate tracking of equipment qualification status was confirmed by prior NRC inspection (Inspection Report 443/84-03). This circular is closed.
- d. (Closed) I&E Circular (78-18) "UL Fire Test." The inspector reviewed UE&C's letter to YAEC, dated 4-9-85, SBN-93325, with attached response to the subject circular which discusses the UL Fire Test as applicable to Seabrook, and states that PVC insulated cables are not used on this project. This circular is closed.

- e. (Closed) I&E Circular (79-04) "Loose locking nut on Limitorque valve operators." The inspector reviewed Seabrook Station General Test Procedure GT-E-33 Revision II, "Motor Operated Valves". The references listed (2.12) address NRC I&E Circular 79-04. Step 7.1 of this GT-E requires that the staking of the locknut be verified and documented on a checklist provided. This circular is closed.
 - f. (Closed) I&E Circular (79-05) "Moisture leakage in stranded wire conductors." The inspector reviewed UE&C's Memorandum, dated 5-15-85 MM#26324A, stating that the subject circular had been reviewed and it was concluded that moisture penetration problems will not occur at Seabrook because the electrical connection methods for class IE equipment do not allow a pressure differential to exist. This circular is closed.
 - g. (Closed) I&E Circular (79-11) "Design/construction interface problems." The inspector reviewed Attachment 3 to UE&C's letter to YAEC, dated 4-3-85, SBN-93255. Seabrook Unit 2 is a "slide along" concept which is a design duplicate of Unit 1. This concept has avoided the problems of a mirror image design. Interface controls between the design organization and the construction organization have been established and implemented for drawings and specifications sent to the site. Design changes are made in accordance with AP-15 which provides for engineering review. This circular is closed.
 - h. (Closed) I&E Circular (80-01) "Service advice for General Electric induction disc relay." The inspector reviewed Seabrook General Test Procedure, GT-E-20, paragraph 6.4, which specifically addresses I&E Circular 80-01. This circular is closed based on adequate consideration of the subject matter.
 - i. (Closed) I&E Circular (80-22) "Confirmation of Employee Qualifications." The inspector reviewed UE&C letters with an attached copy of the Circular that was sent to site subcontractors for their acknowledgement. UE&C has an established policy for screening professional employees, which provides confirmation of the technical qualifications of the designers/engineers employed by the A/E. The UE&C professional screening policy meets the intent of the recommendation provided by Circular 80-22. This circular is closed.
5. Follow-up Of An Allegation Concerning Excessive Cold Pull Of Pressurized Surge Line.

By NRC Region I letter, dated 1/4/85, the licensee was informed of an allegation that the pressurizer surge line may have been fit-up and welded with an excessive amount of cold pull used for alignment. The licensee was requested to review this issue, specifically with regard to field weld F0103 on the subject line (RC-49-01) and take action as necessary.

The inspector reviewed the licensee's file of the investigation/inspection concerning the pressurizer surge line cold pull allegation. The file indicated that weld F0102 was the closure weld on line RC-49-01 and not F0103 as alleged. The licensee determined this by interviewing personnel directly involved with the welding and fit-up of line RC-49-01 and by reviewing field weld process records. The inspector further reviewed signed statements made by personnel directly involved indicating that no cold pull beyond allowable limits had occurred. Documents indicate that the final closure weld required mitering at the weld joint to obtain proper fit-up. Visual examinations were made, by both licensee and NRC inspectors, of the closure weld and surrounding areas and no apparent use of excessive force was evident. The inspector also reviewed a statement signed by the alleged indicating concurrence with the licensee's investigation/inspection.

The inspector concurs with the licensee's determination that no cold pull beyond established limits had been induced. No unacceptable conditions were identified.

While the allegation was not substantiated, the licensee's investigation confirmed that certain piping lines may have been omitted from consideration in their 10 CFR 50.55(e) review of "Cold Pulling of Pipe," for which a final report (SBN-666) was issued by the licensee to NRC Region I on 6-11-84. In subsequent licensee correspondence (SBN-769, dated 2-25-85, and SBN-784, dated 3-29-85), the licensee committed to assessing any possible "inadvertent cold pull on these lines." This 50.55(e) item (CDR 82-00-13) is therefore reopened, pending completion of the licensee review, resubmittal of an additional report to the NRC, and further NRC follow-up.

6. Review of Containment Penetration (Flued Heads) QA Records

The inspector reviewed UE&C's specification No. 9763-006-248-34, dated 2-28-85, Fabrication of Forged Nuclear Containment Penetrations For PSNH Seabrook Station Units 1 and 2. Further review of UE&C's vendor surveillance reports dated from 11-78 through 6-81, indicated that heat treatments, NDE and dimensional records, and CMTRs were acceptable. The inspector also reviewed UE&C's Quality Shipment Releases and three randomly selected Material Certification Documentation Packages provided by National Forge Company. The packages contained transcripts of serialized material certification reports traceable to the original chemical analysis, mechanical properties, heat treatment, and NDE with copies of the original NDE test report. The purchase order requires that the vendor maintain and distribute QA documentation in accordance with the subject specification.

No violations were identified.

7. 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. An exit meeting was conducted on July 5, 1985 to discuss the inspection findings during the period. During this inspection, the NRC inspectors received no comments from the licensee that any of their inspection items or issues contained proprietary information. No written material was provided to the licensee during this inspection.