

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

Report No. 99900510/79-03

Program No. 51200

Company: United Engineers & Constructors, Inc.
30 South 17th Street
Philadelphia, Pennsylvania 19101

Inspection Conducted: September 10-14, 1979

Inspectors:

R. H. Brickley
for J. R. Costello, Principal Inspector
Program Evaluation Section
Vendor Inspection Branch

10/2/79
Date

R. H. Brickley
for J. M. Johnson, Contractor Auditor
Program Evaluation Section
Vendor Inspection Branch

10/2/79
Date

Approved by:

R. H. Brickley
for C. J. Hale, Chief
Program Evaluation Section
Vendor Inspection Branch

10/2/79
Date

Summary

Inspection on September 10-14, 1979 (99900510/79-03)

Areas Inspected: Implementation of 10 CFR 50, Appendix B, criteria in the areas of design change control, product acceptance, and action on previous inspection findings. The inspection involved sixty-four (64) hours on site by two (2) USNRC inspectors.

Results: In the three (3) areas inspected two (2) deviations were identified in two (2) areas. There were no unresolved items.

Deviations: (1) Design Change Control: Contrary to WPPSS Project Procedures 5 and 33, no record copy of the Specification Approval Form for revision 2 of Specification 9779-113 was filed with Document Control, and Material Requisition No. 228928 was not signed by Project Engineering Management. (2) Product Acceptance: Contrary to UE&C Procedure QA-17, Vendor Nonconformance Reports for Seabrook Station are not retained as part of Vendor Manufacturing Records stored in the Site Construction Office Building.

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DETAILS SECTION I

(Prepared by J. R. Costello)

A. Persons Contacted

- E. J. Baraniak, Piping Engineer
- W. P. Coffey, Electrical Engineer
- A. N. DeAngelis, Supervising Discipline Engineer, Structural
- R. L. Kerstetter, Design Supervisor, Nuclear
- K. A. Laird, Piping Engineer
- *R. C. Lesnefsky, Quality Assurance Engineer
- D. C. Marr, Supervising Engineer, Quality Planning
- A. P. Ricci, Design Supervisor, Instrumentation & Control
- R. B. Rock, Electrical Engineer
- J. J. Rockwell, Design Supervisor, Mechanical Services
- *D. J. Stride, Project Administrator
- J. Wewelawiak, Supervising Engineer, Mechanical Services

*Denotes those present at exit meeting.

B. Action on Previous Inspection Findings

1. (Open) Deviation (Report No. 79-02): Contrary to Chapter 17.1.3 (Design Control) of the WPPSS-PSAR, a specification for the Borated Water Storage Tank (BWST) and the Demineralized Water Storage Tank contained seismic response spectra which had been superseded. UE&C has issued a contract modification to the vendor (Welk Brothers) which requires them to submit revised calculations for the BWST and Demineralized Water Storage Tank that will meet the revised response spectra. These calculations are to be submitted in mid-September.
2. (Closed) Unresolved Item (Report No. 79-02): It is not apparent who is to maintain the Design Review Control Logs, how much detail is to be maintained in the logs and how to determine when a management level design review (DRR) is complete. Administrative Procedure No. 21 (Seabrook Station) was revised on 8-3-79. This procedure now states "When a DRR has been approved with comments and a resubmittal using a new DRR number is not required, the response to the CDE comments will use a project serial memo addressing the DRR serial number as a subject, and a reference, will be used to document the resolution of the comments from a design review. Memorandum serial

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numbers will be recorded to close out the DRR in the control log." The Design Review Control Logs have been updated to show these entries.

3. (Open) Deviation (Report No. 78-04): Contrary to 10 CFR 50, Appendix B, Criterion XVII, and WNP-1 PSAR, some vendor drawings were not reviewed by the UE&C Reliability and Quality Assurance Department. This method of not reviewing all drawings for inclusion of quality requirements appears to be inconsistent with NRC requirements and has been forwarded to NRR/QAB as an item for further consideration.

C. Design Change Control

1. Objectives

The objectives of this area of the inspection were to verify that:

- a. Procedures have been established and implemented for controlling changes to approved design documents.
- b. Design Changes resulting from tests, interference problems, failures of structures, systems or components, disposition of nonconformances, changes in requirements, operating experience and design improvements are:
 - (1) reviewed for the impact of the change
 - (2) documented as to the action taken, and
 - (3) transmitted to all affected persons and organizations.
- c. The design changes are justified and subjected to review and approval by the same groups or organizations as for the original design (see d. below for exceptions).
- d. When responsibility has been changed, the designated organization shall have access to the pertinent information, competence in the specific area of design, and an understanding of the requirements and intent of the original design.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Section 17.2 (UE&C Quality Assurance) of WNP-1 PSAR (Preliminary Safety Analysis Report) amendment 10, plus utility approved PSAR Deviation Requests.

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- b. Implementing procedures to assure that procedural controls had been provided to satisfy QA commitments in the PSAR and to satisfy the intent of the objectives section. These procedures are:
- (1) Quality Assurance Procedure QA-3, Revision 6, Design Control for WPPSS Nuclear Projects No. 1 & No. 4.
 - (2) Quality Assurance Procedure QA-15, Revision 6, Nonconforming Materials, Parts and Components for WPPSS Nuclear Projects No. 1 & No. 4.
 - (3) General Engineering and Design Procedure GEDP-0013, Revision 2, Preparation of Drawings.
 - (4) General Engineering and Design Procedure GEDP-0015, Revision 2, Preparation of Specifications.
 - (5) Quality Assurance Corporate Standard No. III-1, Revision 4, Design Control.
 - (6) WPPSS Nuclear Project Nos. 1 & 4 Project Procedure No. 5, Revision 8, Specifications.
 - (7) WPPSS Nuclear Project Nos. 1 & 4 Project Procedure No. 19, Revision 3, Administering Contractor Waiver Requests.
 - (8) WPPSS Nuclear Project Nos. 1 & 4 Procedure No. 21, Revision 5, Drawing Practices and Approvals.
 - (9) WPPSS Nuclear Project Nos. 1 & 4 Project Procedure No. 33, Revision 1, Change Order Procedure.
- c. Documents to verify implementation of PSAR Quality Assurance Program commitments and to satisfy the intent of the objectives section. These documents are as follows:
- (1) Bidding Documents and Plans and Specifications for Specification No. 9779-148; Containment Piping Penetrations awarded to NISSHO-IWAI. Bid Issue, Revision 0, 5/20/77; Revision 3, 2/14/78.
 - (2) Bidding Documents and Plans and Specifications for Specification No. 9779-145; Anchor Bolts awarded to Bergen Pipe Support. Bid Issue, Revision 0, 3/30/77; Revision 10, 5/31/79.

- (3) Bidding Documents and Plans and Specifications for Specification 9779-40; Butterfly Valves and Operators, awarded to Litton Contromatics. Bid Issue, Revision 0, 12/1/75; Revision 6, 11/1/76.
- (4) Bidding Documents and Plans and Specifications for Specification 9779-124; Packless Diaphragm or Bellows Type Valves, awarded to Dresser. Bid Issue, Revision 0, 11/13/79; Revision 11, 5/16/79.
- (5) Bidding Documents and Plans and Specifications for Specification 9779-113; Emergency Power Sequencing Subsystem awarded to Consolidated Controls. Bid Issue, Revision 0, 2/16/76; Revision 5, 3/5/79.
- (6) Supporting Material Requisitions, Specification Approval Sheets, Project Change Requests, Advance Work Authorizations and Modifications of Contract for the above contract packages and their revisions.
- (7) WPPSS Drawing Revision Report - Unit 1 dated September 1, 1979 for period ending August 24, 1979.
- (8) Drawing 9779-F-503018 Safety Related Controls & Instrument Panel "Y" Arrangement, Revision 01, 1/30/79.
- (9) Drawing 9779-F-805637 Detection System Piping & Instrumentation Diagram - Failed Fuel, Revision 03, 1/5/79.
- (10) Drawing 9779-S-604371 Containment Heating Ventilating & Air Conditioning Ductwork - Arrangement Plan Elevation 479C, Revision 05, 12/1/78.
- (11) Drawing 9779-S-303606 Containment Penetration Area, Elevation 399 SW - Conduit and Ground Plan, Revision 06, January 1, 1979.
- (12) Drawing 9779-S-805280 Containment Piping Penetration Location Plan, Revision 07, 6/1/77.
- (13) Drawing 9779-S-101198 Anchor Bolt Details, Revision 12, 8/29/78.

3. Findings

a. Deviation

See Notice of Deviation Enclosure Item A.

b. Unresolved Items

No unresolved items were identified in this area of inspection.

- c. After identifying the deviation described in Enclosure A, the inspector was shown audit Report NP-224 in which UE&C had identified that part of the deviation pertaining to Specification Approval Forms with corrective action scheduled for September 28, 1979. This identical finding indicates good correlation of results for similar inspection efforts.

D. Exit Meeting

A meeting was conducted with management representatives at the conclusion of the inspection on September 14, 1979. In addition to the individuals indicated by an asterisk in the Details Sections, those in attendance were:

- L. Bilk, Chief Electrical Engineer, Power
- G. F. Cole, Project Manager, Seabrook
- R. A. Curnane, Vice President Project Support Operations
- E. C. House, Assistant Operations & Controls Manager
- B. D. Redd, Project Engineering Manager, WPPSS
- J. B. Silverwood, Manager Reliability & Quality Assurance
- G. L. Visco, Supervisor Project Central System
- R. J. Vurpillant, Assistant Department Manager, Reliability & Quality Assurance

The inspector summarized the scope and findings of this inspection for those present at the meeting. Management representatives acknowledged the statements of the inspector.

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DETAILS SECTION II

(Prepared by J. M. Johnson)

A. Persons Contacted

H. E. Flora, Supervising Nuclear Engineer
S. M. Klein, Nuclear Engineer
*R. H. Leonard, Assistant Department Manager, R and QA
B. C. Lcw, Supervising QA Engineer, Seabrook
*R. H. Marsh, Manager, Services
*W. R. Morrison, Supervising Engineer, Vendor Surveillance
W. Ziemek, Nuclear Engineer

*Denotes those present at exit meeting

B. Product Acceptance1. Objectives

The objectives of this area of the inspection were to verify that procedures have been established and implemented that provide for:

- a. Requiring supplier verification of compliance with procurement requirements prior to offering the product (item or service) for acceptance.
- b. Documentary evidence that items conform to purchase documents be available at the nuclear facility site prior to installation or use of the item, when applicable.
- c. Verification of documents certifying conformance which meet the following minimum criteria:
 - (1) Identification of the product and the procurement requirements met.
 - (2) Identification of procurement requirements not met with an explanation and means for resolving the nonconformances.
 - (3) Attestation by responsible person whose function and position are described in the QA Program.
 - (4) Description of certification system is contained in the QA Program.
- d. Methods used to accept an item or service from a supplier, such as source verification for items difficult to verify after delivery;

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receiving inspection for items which are simple and standard; Supplier Certificate of Conformance for items that do not involve direct inspection by the purchaser; post installation test at the site if the item must be installed to verify its quality characteristics; and when services only are involved, technical verification of data produced and/or review of objective evidence of conformance to procurement document requirements.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Preliminary Safety Analysis Report (PSAR) for Seabrook Station 1 & 2: Section 3.1 (Conformance to AEC Design Criteria); Question 17.13 concerning commitments to Reg. Guides and ANSI Standards and Answer 17.13; Table 3.2-1 listing Category I equipment; Subsections 17.2.2 (UE&C QA Program), 17.2.7 (Control of Purchased Material, Equipment and Services), 17.2.15 (Nonconforming Materials, Parts and Equipment), 17.2.16 (Corrective Action), 17.2.17 (QA Records), and 17.1.17 (Yankee Atomic Section on QA Records). These were examined to determine program commitments.
- b. UE&C QA Manual for Seabrook Station: Procedures QA-2-1 (identifying applicable ANSI Standards), QA-15 (Nonconformances), QA-17 (QA Records), and QA-7-1 and 7-2 (Control of Purchased Material, Equipment and Services). These were examined to determine procedural requirements and their implementation of project commitments.
- c. UE&C QA Manual - Corporate Standards: QA-7-2 (Supplier Surveillance).
- d. Standard QA Attachment for Seabrook Station (QAS-I) to determine standard QA requirements imposed on suppliers of quality-related equipment/services.
- e. Documents related to acceptance of equipment for shipment from the vendor's fabrication plans for contract 238-3 for Containment Spray Pumps and Drives from Bingham-Willamette for Project 9763:
 - (1) Vendor Surveillance Check Plans indicating hold/witness points, documentation review requirements, and data package requirements
 - (2) UE&C QC Inspection Reports: No. 2 (witness of hydrotest); No. 3 (witness of performance and NPSH tests for pumps Nos. 14210477 and 14210478); No. 4 (witness of hydrotest and

review of radiographs for pumps Nos. 14210479 and 14210480); No. 5 (witness of performance tests for pumps Nos. 14210479 and 14210480); No. 6 dated January 16 and 17, 1979 (final inspection but no Shipping Release Tag or Quality Shipping Release issued because ASME Code inspector had not signed data reports).

- (3) Telex dated January 26, 1979, from B.C. Low authorizing shipment of four (4) containment spray pumps without Quality Shipping Release Tags. (This is authorized by Procedure QA-7-2.)
 - (4) Audit NH-100 of Bingham-Willamette dated 7/15/76 with 11 findings.
 - (5) Bingham-Willamette Variation Notices Nos. 1 and 2.
 - (6) Telex dated January 17, 1979, indicating no cooling water required for containment spray pump bearing housings because pumpage temperature will not exceed 250^o F for more than two hours. As recommended, 300 SSU (at 100^o F) oil will be used in the bearings instead.
 - (7) Vendor document packages for pumps Nos. 14210477, 14210478 and 14210479 including: data concerning Westinghouse motors; Performance Curves, RT and other NDE reports, Heat-Treatment Charts, Defect Records and Charts, Material Certification, Bingham-Willamette Certificate of Conformance, and Code Data Reports. Note that data for heat exchangers is not included, and that pumps were shipped without heat exchangers (seal oil coolers) which will be supplied in about a month by report.
 - (8) Telex No. 360-517 requesting a Bingham-Willamette service engineer at Seabrook site on August 21 and 22 to supervise pump installation.
- f. Documents related to the acceptance of equipment for shipment from the vendor's fabrication plant for contract 248-9 for Containment Spray nozzles from Spray Engineering Company for Project 9763:
- (1) UE&C Vendor Surveillance Check Plan issued to Spraco for 802 spray nozzles for 2 units.
 - (2) UE&C Shop Inspection Report No. 1 dated June 24, 1977, for Final inspection, audit of documentation and preparation for shipment. Inspection included 10% inspection for cleanliness, identification of heat numbers, material control numbers and serial numbers and indicated fabrication,

machining workmanship and quality appeared satisfactory. Vendor Surveillance Shipping Release Tags (Quality Shipment Release) made out authorizing shipment.

- g. Documents related to the acceptance of equipment for shipment from the vendor's fabrication plant for Contract 15-2 for Containment Equipment Hatch and Personnel Lock from PDM (Pittsburgh-Des Moines) for Project 9763:
- (1) Vendor Surveillance Check Plan to PDM on February 7, 1977.
 - (2) Audit Report No. NH-144 of PDM Neville Island facility.
 - (3) Vendor Surveillance Shop Inspection Reports Nos. 15 through 18, covering witness of soap bubble leak test, review of radiographs, visual examination and documentation review.
 - (4) Shop Inspection Report No. 19 dated October 23, 1978, covering final inspection and release of shop orders 14691 for Unit 1.
 - (5) Shop Inspection Report No. 20 dated November 3, 1978, covering final inspection and release of shop order 14692 for Unit 2. Quality Shipment Release was issued.
- l. Documentation related to vendor surveillance activities for Contract 15-1 for Containment Steel Liner for PDM (Pittsburgh-Des Moines Steel) for Project 9763 (Note that PDM contract scope includes both fabrication and installation; hence the containment liner will not be finally accepted by UE&C until after site erection and testing):
- (1) Audit Report No. NH-42 dated March 5, 1975, indicating that PDM will sub the fabrication of the containment liner (except sumps and pits) to IHI (Ishikawajimr-Harima Heavy Industries Co. Ltd.) and surveillance over IHI fabrication to Inteco (International Inspection Company, Ltd.) UE&C stated that surveillance of IHI and Inteco is a PDM responsibility. Hence, UE&C did not perform direct surveillance, but audited PDM and performed detailed documentation reviews of IHI document packages and radiographs of knuckle welds and penetration welds.
 - (2) Audit Report No. NH-57, reviewing the status of Level 2 Surveillance at IHI and includes several findings; Audit Report No. NH-101, including 20 findings; Verification Audit No. NH-101A; and Audit Report No. NH-214.

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- (3) Letter dated September 1, 1977, from J. Titano (UE&C NDE Level 3), indicating continuing UE&C review of IHI radiographs at PDM; and letter dated June 21, 1977, from J. Titano indicating review of replacement radiographs for previously rejected IHI radiographs (cf. UE&C CAR (Corrective Action Request) No. SS008 concerning density requirements for radiographs, and Revision 1 to CAR SS008).
 - (4) UE&C Inspection Reports dated January 12, 1976, (inspection of first shipment from IHI) and August 24, 1977, and Vendor Notification Reports (VNR) Nos. 2363 and 2365.
 - (5) Vendor Surveillance Inspection Report No. 28, dated June 6 and 8, 1979, completing UE&C review of IHI Data Packages at PDM and issuing a partial Quality Shipment Release for IHI document packages only.
- j. Documentation related to acceptance of services supplied under Contract 5-1 for Civil Testing Facility and Services by PTL (Pittsburg Testing Laboratory) for Project 9763 (Note that surveillance of PTL activities is done at the site by UE&C Field QA and records were not available in Philadelphia):
- (1) Audit Report No. NH-234 dated November 29, 1978, indicating eleven (11) findings, and acceptance of responses dated April 10, 1979.

3. Findings

- a. In this area of the inspection, one deviation was identified. (See Notice of Deviation, Item B). Concerning this deviation, note that for this project Vendor Nonconformance Reports dispositioned "use-as-is" and "repair" are not included or required to be in the vendor data packages (vendor manufacturing records) by purchase orders or Vendor Surveillance Check Plans (see Procedure QA 7-2). Requirements of Procedure QA-17 are not being implemented as to the method of retention of Vendor Nonconformances (use-as-is and repair) as QA Records designated for lifetime retention. No other method of retention is designated procedurally to assure maintenance and retrievability, although Seabrook PSAR commits to both ANSI N45.2.9 and N45.2.13.
- b. No unresolved items were identified.
- c. During the inspector's selection of procurements to examine and their safety designations, it was noted that the purchase order list for Project 9763 did not indicate the Spent Fuel Bridge

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and Hoist as Category I (Seismic I), whereas Table 3.2-2 of the PSAR for Seabrook did list these as Category I (Seismic I). Further review showed that PSAR Amendment 5, Section 9.1.1.3, changed this crane from Seismic I to non-Seismic Category I, but the change was inadvertently missed in Table 3.2-2. During the course of the audit, a "Record of PSAR Design Deviations" was generated to correct the internal discrepancy within the PSAR and to assure that the needed editorial correction to Table 3.2-2 has been identified, approved, and will appear in the FSAR (Final Safety Analysis Report).

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