

## Region I

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## DETAILS

### 1. Persons Contacted

#### Northeast Utilities Service Company (NUSCO)

B. Carlson, Assistant Project Engineer (Berlin)  
A. Cooper, Construction Project Specialist  
D. Diedrick, Quality Assurance Manager  
K. Gray, Construction QA Supervisor  
S. Orefice, New Site Construction Superintendent  
J. Powers, Licensing Engineer (Berlin)  
T. Sullivan, Resident Engineer - New Site Construction  
S. Toth, System Superintendent Generation Construction  
R. Vaccaro, QA Construction Technician

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

R. Bernard, Assistant Manager - Field QC (Boston)  
J. Carty, Head Site Extension Engineering Officer  
J. G. Kappas, Superintendent of Construction  
W. MacKay, Resident Manager  
G. Marsh, Senior Engineer, Welding/NDE  
M. R. Matthews, Assistant Superintendent Field QC  
J. Nims, Receiving and Material Controls Technician  
R. Reams, Materials Supervisor  
W. Towne, Receiving and Material Controls Technician  
G. G. Turner, Superintendent, Field QC  
W. Viau, Materials Control Technician  
W. Voss, Field QC Engineer  
R. White, Supervisor - Preventative Maintenance

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

## 2. Licensee Action on Previous Inspection Findings

- a. (Closed) Unresolved item (423/81-03-01): During a previous inspection the west sedimentation basin was observed to be unstabilized, with material eroding in basin walls and sediment flowing to the adjacent marsh. The basin was inspected and was found to be in satisfactory condition. The sedimentation basin walls were reinforced with concrete to stabilize the walls. The inspector also noted that the weirs were recently replaced with new hay. This item is considered resolved.
- b. (Closed) Significant deficiency (423/80-00-08): On March 18, 1981, the licensee informed NRC in a final report that significant repairs are required due to weld joint misalignment of containment flued head penetrations. The repairs were accomplished to meet the requirements of the ASME Section III Code; Subsections NB-4233 & NB-4426. The inspector reviewed the following nonconformance reports (N&D) associated with these repairs:

<u>N&amp;D Number</u>	<u>Date Verified Acceptable By QC</u>
0698	4/27/81
0653	6/30/81
0635	7/28/81
0603	8/24/81
0570	3/30/81
0538	3/27/81
0526	5/5/81
0520	3/27/81
0428	12/4/81
0397	11/5/81

The inspector randomly selected five repaired penetration data packages out of the 29 penetrations repaired. The following are the specific data packages reviewed:

Penetrations # 47, 5, 3, 92 and 23. The data was in compliance with the S&W ASME QA Manual and Specification #2190.520 - 109 requirements.

(Note: NRC inspection of the actual repairs was performed during inspection 423/81-05). No items of noncompliance were identified.

### 3. 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 or license condition. 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 & equipment preservation. No items of noncompliance were identified.

### 4. Safety Related Piping Erection

a. The following weld joints, which were in various stages of welding, located in the containment building were inspected to verify compliance with welding and installation procedures and code requirements:

- (1) 3MSS-030-95-2, Field Weld #3. Final weld pass was completed and grinding was in process prior to nondestructive examination. The inspector observed the grinding and also reviewed the weld history data card. No items of noncompliance were identified.
- (2) 3MSS-030-93-2, Field Weld #8. This weld joint was approximately three-quarters completed. The welding was in accordance with S&W weld technique procedure W21M, Rev. 0. The inspector observed the actual welding and verified that the critical parameters of the weld procedure were followed. The weld data card was also reviewed for compliance with the applicable QA procedures. No items of noncompliance were identified.
- (3) 3RSS-012-22-2, Field Weld #7. This weld joint was undergoing weld repairs. An area of weld was excavated down to the root and was in the process of being welded. The repair was due to radiography finding an area lacking complete fusion. The excavated area was liquid penetrant examined and accepted. The inspector observed some of the welding to ascertain that the repairs were in accordance with requirements of S&W weld repair procedure W12U, Rev. 2. No items of noncompliance were identified.
- (4) 3RCS-031-3-1, Field Weld #5. This weld joint was approximately one-quarter completed. The welding was in accordance with S&W weld technique procedure W13B, Rev. 3. The inspector observed the actual welding and verified that the critical parameters of the weld procedure were followed. The weld data card was also reviewed for compliance with the applicable weld procedure. The inspector also reviewed the monitoring results of weld shrinkage, at the eight locations around the pipe circumference. No items of noncompliance were identified.

- (5) 3CDS-010-56-2, Field Weld #3. This weld joint was just fitted in place with 4 tack welds holding it in the correct alignment for welding. The field QC inspector had completed his inspection and released it for welding. This particular joint was a modification in accordance with S&W construction revision notice #CDS-514-001. The inspector reviewed the weld data card and also inspected the fit-up of the weld joint. No items of noncompliance were identified.

Note: For the above items (1) - (5), each weldor's performance qualifications were reviewed and verified that they were properly qualified for the particular weld procedure used.

- b. The following weld joints, which were in various stages of welding, located in the ESF Building, were inspected to verify compliance with welding and installation procedures and code requirements:

- (1) 3FWA-003-39-3, Field Welds #4 and 5. Both welds were almost completed. The final pass was in process. The welding was in accordance with S&W weld technique procedure W21U, Rev. 2. The inspector observed the actual welding and verified that the critical parameters of the weld procedure were followed. The weld data card was also reviewed for compliance with the applicable QA procedures. No items of noncompliance were identified.
- (2) 3FWA-003-39-3, Field Weld #6. The consuming of the root weld insert was in process. The inspector observed the consuming of the insert and also the appearance of the welds at the ID and OD of weld joint. The weld data records were also reviewed. No items of noncompliance were identified.
- (3) The inspector observed field modifications to three pipe spools, identified as: 3CCP-018-556-3, 3CCP-024-245-3, and 3CCP-523-54-3A, to be in accordance with S&W construction revision notice #CCP-524-002. The modification consisted of cutting sections of pipe and machining the end weld preps. No items of noncompliance were identified.
- (4) 3QSS-014-26-1, Field Weld #6. This weld joint was approximately three-quarters completed. The welding was in accordance with S&W weld technique procedure W12F, Rev. 3. This particular weld joint was a field modification in accordance with construction revision notice #QSS-5-002. Radiography of Field Weld Joint #1 revealed that a block of wood was inside the pipe. Since it was inaccessible to retrieve the piece of wood, a pipe section had to be cut. A review of welding and weld data card was performed. No items of noncompliance were identified.

- (5) 3FWA-003-45-3, Field Welds #5 and #6. The weld joint #5 had the final weld pass completed, and weld joint #6 was three-quarters completed. The welding was in accordance with S&W weld technique procedure W21U, Rev. 2. The inspector observed the welding and reviewed the weld data card. No items of noncompliance were identified.
- c. The following weld joints, which were in various stages of welding, located in the auxiliary building, were inspected to verify compliance with welding and installation procedures and code requirements:
- (1) 3CHS-003-15-3, Field Weld #2. This weld joint had just been released for welding by S&W quality control inspector. The fit up condition was acceptable. The welding was in process and the gas purge was functioning, with the oxygen content in the pipe at the acceptable level. The inspector observed the consuming of the weld insert and verified that the requirements of S&W weld technique procedure W12F, Rev. 2, were complied with. No items of noncompliance were identified.
  - (2) 3CHS-003-111-3, Field Welds #1 and #2. These two weld joints were on a pipe spool section and the weld joints were being aligned in accordance with the weld procedure W12K, Rev. 1 and drawing requirements. The inspector observed the handling and rigging of the spool piece to verify that undue stresses (cold pull) were not applied by crafts to align the pipe ends. No items of noncompliance were identified.

## 5. Maintenance & Storage

The inspector inspected the indoor and outdoor storage areas to verify that safety related equipment/materials were stored and maintained in accordance with the S&W construction methods procedure (CMP) 1.3 entitled "Material/Equipment Storage" and 1.12, entitled "Material/Equipment Maintenance". The following are the specific areas and results of the inspection:

### a. Northeast Pipe Yard

The inspector verified that pipe was stored off ground and on dunnage, that end caps were on all safety related pipe. The inspector noted two items that required investigation by the A/E, they are as follows:

- (1) An electric cable reel, Kerite Reel No. 7013 was stored in the pipe yard outside of the normal electric cable controlled area. This particular cable reel had the S&W "Accepted for Category I" label affixed to the reel. Further investigation by S&W revealed that the reel was surplus material from the Unit 2 Plant. The licensee stated that a "Surplus" label will be attached to the reel so that it will not be used for Millstone III safety related areas.

- (2) The inspector noted that there was a large gouge on an elbow of an ASME safety class 2 pipe spool, which was received on material receiving report (MRR) 79P-0482 on 11/21/79. The licensee was informed that the inspector's concern was that the gouge was a stress riser and may also be encroaching on the minimum wall thickness. This item is considered unresolved pending review of licensee's evaluation (423/81-14-01).

b. Northeast Storage Yard

The inspector inspected material/equipment stored in this area to determine that the appropriate level of storage and maintenance as depicted in the requirements are maintained. The following specific items were noted:

- (1) At left and right of the gate, inside the controlled area, there were three Category I items on each side of gate area which were recently covered with protective covering, and they were not plainly marked so that they are easily identified without excessive handling or unnecessary uncovering. The inspector informed the licensee that this is an ANSI N45.2.2 requirement. It appears that the original identification was covered over and an opening in the new covering will be cut at the proper location, to show the identification data of the equipment.
- (2) The inspector noted that the preservative coating for the Category I equipment identified as 3-LWS-EV-1 (Waste Evaporator) was not fully protecting the item from rusting. This was also identified by S&W storage inspector on 7/14/81 and an unsatisfactory inspection report #X100416 was issued at that time. This inspection report also referenced another unsatisfactory report IR #X0000077 for other items with similar conditions. The IR #X0000077 report found the rusting condition on 3/31/80. The inspector also noted that the chiller surge tank (3-CHS-TK-3) referenced in the 3/31/80 inspection report had not been corrected. The inspector informed the licensee that this failure to take prompt action to correct non-conforming conditions is considered an item of noncompliance (423/81-14-05).

c. Lower Northeast Pipe Yard

The inspector inspected material/equipment stored in this area to determine that the appropriate level of storage and maintenance as depicted in the various procedures are maintained. The following specific items were noted:

- (1) Pipe spool piece identified as 3RCS-504-7-1-1 had two small dents that probably occurred during handling or in storage that will need to be dispositioned. This item is considered unresolved (423/81-04-01).
- (2) Pipe spool piece identified as 3RCS-504-3-1-1 has deep circumferential grooves on one end of the pipe that probably occurred during handling. This item is considered unresolved pending review of S&W disposition (423/81-04-01).

Note: Items (1) & (2) above had QC Category I acceptance tags attached to each of the spool pieces.



- (3) The inspector noted that there were two tanks with rust in several areas; apparently the preservative coating was not protecting the base metal. The tanks were identified as 3-CCP-TK-2 (Reactor plant component cooling chemical addition tank) and 3-LWS-TK-1B (High level waste drain tank). S&W had also previously identified this condition and reject tags were on the tanks. A review of inspection report X7050133 and nonconformance report #6708 indicated that for the 3-CCP-TK-2 it had been identified on 3/31/81 as having an unsatisfactory condition; and for the 3-LWS-TK-1B tank, the rusting condition was identified on 4/29/77. The inspector informed the licensee that this was two more examples (See Item b (2)) where corrective action for storage and maintenance was not accomplished in a reasonable time period. (423/81-14-05)

d. Northwest Pipe Storage Yard

The inspector verified that pipe was properly stored on dunnage and end caps installed. The inspector also noted the following conditions:

- (1) The inspector noted a gouge on an elbow of a spool piece identified as 3-MSS-42-54. This spool piece also had a QC Category I acceptance tag. This item is considered unresolved pending review of licensee's evaluation (423/81-14-01).
- (2) The inspector noted that several pieces of stainless steel pipe on racks had their end caps off. A QC reject tag was also found on this rack of pipes. A review of inspection report #X1000079 associated with this reject tag indicated that the S&W QC inspector had identified this unsatisfactory condition on 2/13/81. The inspector informed the licensee that this was another example (see items above) where the corrective action for deficiencies found during storage inspection was not taken (423/81-14-05).
- (3) The inspector noted that just left of the gate on the fence there was a sign stating "Scrap Material", yet there were items located in close proximity to the sign that had QC Category I acceptance tags. For example, the following ASME Class 2 and 3 pipe spools were located near the sign:
  - 3-GWS-9-6-2-3
  - 3-GWS-6-4-2-3
  - 3-CHS-29-1-2-2

The licensee stated that this area will be better defined and/or segregated.

e. Transmission Line Storage Area

Stored in this area was heating and ventilating items, reinforced steel, and material left over from containment fabrication. No items of non-compliance were identified.

f. Warehouse #2 Weld Storage Area

An inspection was conducted to determine that welding material was stored in accordance with the S&W construction procedure CMP 1.3-3.79. No items of noncompliance were identified, but the inspector noted that 3 hermetically sealed cans were badly dented at the bottom of the sealed end. The



materials involved were E8018 and E7018 electrodes. Stone & Webster had the cans tagged so that their condition can be evaluated.

g. Warehouse #2 Level B Storage Area

- (1) The inspector noted the storage condition for the Conax electrical containment penetration assemblies (Purchase Order #247). The inspector also reviewed the vendor's manual storage instructions and the S&W equipment storage history cards for the penetrations to verify that they were stored and maintained in accordance with the requirements. No items of noncompliance were identified.
- (2) The inspector inspected four 4160 volt GE clad switch gear panels received on material receiving report #81-4195 on 5/4/81 for purchase order #010. The equipment was identified as NJS-US-6A; -6B; -7A and -7B. The inspector noted that these panels had strip heaters installed but there was no wiring to connect them to a power source. A review of the S&W equipment storage history cards indicated that the panel heaters were inspected every three months (7/10/81 & 10/9/81) as required. These cards incorrectly indicated that the heaters were energized. The licensee was informed that this improper storage and maintenance of safety related equipment constitutes an item of noncompliance (423/81-14-02).
- (3) The inspector observed that one of the covers of the G.E. 4160 V. circuit breakers received on MRR 80-1271 for purchase order #010 was missing. S&W took immediate corrective action and recovered the circuit breaker.

h. Warehouse #1 Level A Storage Area

The inspector inspected the following items in this area and also reviewed the equipment storage history cards associated with the following equipment:

3-CES-MCB-MBB (Main Control Board, section 8)  
 Westinghouse SPIN #NEU-NIELCA (Nuclear Instrument Power Range)  
 Westinghouse SPIN #NEU-ELSELCC-01 (Rod Drive Control Cabinet)  
 Westinghouse SPIN #NEU-CPELRC-01 (Rod Control Power Cabinet)

No items of noncompliance were identified.

i. Warehouse #4 Level C Storage Area

The inspector inspected various Category I supports stored in this area to verify that the storage requirements were complied with. No items of noncompliance were identified.

j. Warehouse #5

The inspector inspected several Category I pipe hangers, supports and snubbers stored in this area. The inspector noted that the mechanical snubbers manufactured by Pacific Scientific Inc. were stored out of

containers on pallets. The vendors storage instructions PHD-7594-1 recommends that storage should be in original shipping containers, and if not, the pivot pins on snubbers should be removed and placed in plastic bags. S&W stated that the vendor concurs (verbally) with their method of storage. The inspector informed the licensee that this is unresolved pending review of vendor's written concurrence or revised storage instructions (423/81-14-03).

k. Warehouse #7

This area had primarily ASME items such as small bore piping, tubing, fittings, valves, nuts and bolts. The control and storage of items was exceptionally good. The required traceability of heat and code numbers for ASME items was also inspected. No items of noncompliance were identified.

l. Warehouse #6

The inspector examined the following items and also their equipment history cards to verify that the storage requirements were complied with:

- Hydraulic snubbers, manufactured by Paul Monroe Hydraulics and received on MRR 81-5810 and for purchase order #127.
- Diesel generators units A & B, manufactured by Fairbanks Morse and received on MRR 81-6091 for purchase order #241.

No items of noncompliance were identified.

6. Cadwelding

The inspector observed cadwelding being conducted inside the containment and verified compliance with the S&W construction methods procedure (CMP) 6.1, specification #999 and quality standard 9.11. The cadwelding being performed was for the fuel cavity liner concrete walls. The inspector inspected several of the completed production welds for voids and also a recently completed "sister" splice. A review of the cadwelder's qualification report and his production summary and production testing cycle records was also done. The following S&W inspection reports for the cadwelds inspected on 11/19 and 20/81 were reviewed:

- IR #S1005537 - Final cadweld inspection report, dated 11/20/81
- IR #S1005538 - In-process inspection report, dated 11/19/81

Also, the test results for "sister" splice #T-20284 was reviewed. No items of noncompliance were identified.

7. Cable Raceway Erection

- a) The inspector inspected Category I cable tray supports being erected in the control building, ESF and containment. The inspector verified that the cable tray supports were welded in accordance with S&W weld procedure technique W70G, Revision 4, and engineering specification E350 requirements. No items of noncompliance were identified.

- b) During inspection of the welding of cable tray supports inside the containment, the inspector noticed that the containment liner may be bowed in a localized area, beyond the containment erection specification #C-109 acceptance criteria. The approximate location of this area is at, Azimuth 290<sup>0</sup>-300<sup>0</sup> and elevation 75-80 ft. The NRC inspector was informed that the containment as-built dimensions have not been performed as yet, and that this area will be measured when the as-builts measuring is in process. This item is considered unresolved pending review of the as-built dimensions of containment (423/81-14-04).
- c) During an inspection of the welding of supports inside the control building, the inspector noticed that locking devices were not used for the cable tray vertical adjustable connector plates. (Note: used whenever there is a slight change in elevation of trays from the horizontal position). Since locking devices are used on other types of connections, the inspector approached the S&W craft foreman with this concern. The foreman directed the inspector to S&W engineering and design coordination report (E&DCR) #P-E-3429. This E&DCR gave the details for installing the T.J.Copes vertical adjustable connector plates (Q37-02CV), but did not detail the locking devices (nuts & lock washers). The NRC inspector informed S&W field QC of this condition. S&W engineering superseded P-E-3429 and issued E&DCR #F-E-6436 which now addresses the locking devices. The engineering instructions now state that locking devices are at the option of the construction organization. The inspector had no further questions at this time.

#### 8. Receipt Inspection

The inspector observed the receipt inspection of four - 42" butterfly valves, identified as: 3HVU-CTV-32A, -B and 33A & B. The inspector verified that the handling, identification, inspection and documentation was in accordance with the S&W receipt inspection procedures CMP 1.2-12.77 & QS-7.1ML. No items of noncompliance were identified.

#### 9. Location of Embeds Spent Fuel Pad Plates

The inspector observed the locating of several of the Embed Spent Fuel Pad Plates in the fuel building. The locations are critical and are depicted on Drawings EV-3S-2 and EV-3A-4. The individual plates are welded to structural embeds. No items of noncompliance were identified.

#### 10. Welding of Fuel Transfer Canal Liner

The inspector observed the welding on the fuel transfer canal liner as a result of modification, which was on S&W construction revision notice #CH-SFP-1-012. The welding was in accordance with weld technique procedure W76C, Revision 1. The inspector noticed several arc strikes on the "concrete" side of the liner plate. The S&W erection specification #2214.730-952 does not address arc strikes on the "concrete" side of the liner plate. A discussion was held with S&W field QC to verify that all arc strikes will be removed prior to concreting. The inspector was assured that they would, and removal had commenced during this inspection period. No items of noncompliance were identified.

11. Seismic Welding of Electrical Motor Control Centers to Floor Embeds

The inspector observed the welding of the following motor control center panels to the embeds in accordance with weld procedure technique W70T, Revision 1:

- R PCC Water Pump MCC (3CCP-P1C)
- R PCC Water Pump MCC (3CCP-1B)
- Safety Injection Pump MCC (3SIH-P1B)
- RIR Pump MCC (3RHS-P1B)

No items of noncompliance were identified.

12. 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.

13. 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. Unresolved items disclosed during the inspection are discussed in paragraphs 5 & 7.