

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report No. 50-354/84-06

Docket No. 50-354

License No. CPPR-120

Priority -

Category A

Licensee: Public Service Electric and Gas Company

80 Park Plaza

Newark, New Jersey 07101

Facility Name: Hope Creek Generating Station, Unit 1

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: April 30 - May 4, 1984

Inspectors:

Lewis Narrow  
L. Narrow  
Lead Reactor Engineer

5/24/84  
date

J. H. Raval  
J. H. Raval  
Reactor Engineer

5-24-84  
date

Approved by:

J. P. Durr  
J. P. Durr, Chief  
Materials & Processes Section, EPB, DETP

5/30/84  
date

Inspection Summary: April 30 - May 4, 1984 (Report No. 50-354/84-06)

Areas Inspected: Routine, unannounced inspection by two region based inspectors of work observation and document review of activities related to piping and pipe supports, and related QA/QC activities. The inspection involved 66 hours of direct inspection time on site.

Results: Two violations were identified in one of the two areas inspected: (1) QC acceptance of an improperly installed snubber; and (2) failure to notify QC of removal of a previously accepted snubber (this item was resolved prior to completion of the inspection).

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## Details

### 1.0 Persons Contacted

#### 1.1 Public Service Electric and Gas Company (PSE&G)

F. Barnabei, Principal Engineer, QA  
R. Donges, Lead QA Engineer  
\*C. Fuhrmeister, QA Engineer  
\*A. Giardino, QA Manager, Engineering and Construction  
\*R. T. Griffith, Sr., Principal Staff, QA Engineer  
S. Hilditch, Jr., Lead QA Engineer  
\*P. Kudless, Project Construction Manager  
\*K. McJunkin, Construction  
A. Sternberg, Principal Engineer, QA

#### 1.2 Bechtel Power Corporation (BPC)

A. Albrechtsen, Lead Piping Engineer  
\*A. J. Bryam, Project Construction QC Engineer  
G. Cavallo, Assistant Lead, Piping Engineer  
J. Dahner, Lead Hanger QC Engineer  
\*F. Dykstra, Assistant Lead Piping Engineer  
W. Falvey, QC Inspector  
W. Fidorowicz, Assistant Lead Hanger Engineer  
\*W. Goebel, QA Engineer  
J. Goldsmith, Resident Engineer  
\*N. D. Griffin, Project Field Engineer  
\*R. Mackey, Resident Engineer  
K. Mills, Lead Mechanical QC Engineer  
G. Moulton, Project QA Engineer  
\*B. Mukherjee, Resident Project Engineer  
J. Ranalli, Lead Hanger Engineer  
S. Vezendy, Assistant Project QC Engineer

#### 1.3 General Electric Company (GE)

\*C. T. Brinson, QA  
\*J. M. Cockroft, Site Engineer

\*Denotes personnel present at exit meeting

### 2.0 Facility Tour

The inspectors observed work in progress and completed work in several areas during a general inspection of the plant. Specific areas of work examined included piping and pipe supports. The work was examined for obvious defects or noncompliance with NRC requirements or licensee commitments. Note was taken with regard to required welding documents, the presence of QC inspectors and visual evidence of QC inspections. In addition, the inspector interviewed craft and QC personnel.

No violations were identified.

### 3.0 Snubber Installation

The inspector discussed installation of snubbers with licensee QA personnel and Bechtel (BPC) Field Engineering and QC personnel. Snubbers are installed in accordance with:

- Specification P-410 (Q), "Installation, Inspection and Documentation of Pipe Supports in Nuclear Service",
- Work Procedure SWP/P-132, "Installation and checkout of Pipe Supports", and
- The applicable hanger drawings.

Installation and inspections of all pipe supports, including snubbers, are performed in two phases. Phase 1 is the initial installation of the individual snubbers and Phase 2 is the final setting and adjustment after all supports on a line have been installed. Phase 1 inspection is conducted in accordance with Quality Control Instruction, QCI P-210, "Inspections of Pipe Support Installation". To date, only Phase 1 installation and inspection has been performed.

The snubbers listed below were inspected for conformance to the specifications and applicable hanger drawings. The inspection reports (IR's) also listed below were examined and showed that the snubbers had been inspected by QC in accordance with QCI P-2.10 and accepted.

#### Hydraulic

1-P-BD-011-H03 (50kip) IR No. 762E179-31-P2.10  
1-P-AB-030-H02 (70kip) IR No. 761E965-24-P2.10

#### Mechanical

1-P-BC-088-H24 (#35) IR No. 1-P-BC-94-59-P2.10  
1-P-BC-088-H25 (#100) IR No. 1-P-BC-04-60-P2.10  
1-P-BE-009-H35 (#3) IR No. 1-P-BE-02-54-P2.10

The inspector noted that the end bracket for attachment of snubber 1-P-BE-009-H35 to the support had been rotated 90° from the position shown on the hanger drawing. Rotation of welded beam attachments 90° relative to hanger design detail is permitted by Rev. 13 of Specification P410(Q) as a conditionally authorized field change. However, Rev. 13 had not been approved at the time of acceptance of this Snubber. In addition, conditionally authorized field changes must be submitted to the BPC home office within 2 weeks by a field change notice (FCN). No FCN had been submitted for this change. Prior to completion of the inspection, NCR No. 3879 was issued to identify this nonconformance.

This unauthorized change and its acceptance by QC is a violation. (354/84-06-01).

During discussion of this change, Rev. 13, the inspector was informed that it had been issued as a result of Field Change Request (FCR) No. P-7425 which requested authorizations to rotate welded beam attachments to agree with pipe measurement. As issued, Rev. 13 authorized 90° rotation without any restrictions concerning pipe movement. The inspector was informed that this question had been previously identified and a revised FCR was in preparation.

The inspector had no further questions concerning this item.

#### 4.0 Removal of Accepted Snubber

Paragraph 6.5 of SWP/P-132, Rev. 3, states that the Responsible Field Engineer (RFE) is responsible for notifying QC when rework is required on previously installed and accepted items and provides several methods for providing this notification.

One of the items selected for inspection was mechanical snubber No 1-P-BC-087-H02. Inspection report No. 1-P-BC-05-15-P2.10 showed it to have been inspected and accepted. However, the NRC inspection disclosed that it had been removed without notification to QC. This is a violation (354/84-06-02). Further discussion with BPC representatives and review of documents showed that this type of nonconformance had previously been identified by BPC as a recurring problem and that corrective action was being implemented. Corrective actions included:

- Revision 4 of SWP/P-132 was issued during the inspection. Paragraph 7.12 of this procedure requires use of a three-part Hanger Rework/Removal Card, one part of which is attached to the hanger.
- A BPL memorandum from the Construction Manager to craft supervision requires that rework or removal of a completed hanger will not be performed unless a rework/removal card has been attached.
- Field Engineering performed a survey of completed and accepted snubbers to determine if any others had been removed. One additional snubber was found to have been removed but QC had been notified of its removal.
- A Hanger Rework/Removal Card has been issued and distributed for Snubber 1 P-BC-187-H02.

This items (354/84-06-02) is resolved.

During discussion of the Rework/Removal card the inspector questioned the fact that there was no requirement for determination of the need for temporary supports when a hanger was removed. During the exit meeting it

was agreed that the field engineer preparing the card would make this determination and the BPC representative committed to providing this information on the Hanger Rework/Removal Card. The inspector had no further questions concerning this item.

5. Fit-Up of Pipe Clamps Around Pipe

The inspector questioned the lack of specific requirements for fit-up of pipe clamps around pipe for the ITT Grinnell pipe supports. ITT Grinnell had provided information, at BPC's request, concerning fit-up and inspection of the clamps. However, the inspection method in their letter dated June 27, 1983, states that three measurements should be taken and are acceptable if within tolerance but the tolerance is not provided. This item is unresolved pending clarification of the fit-up and inspection requirements (354/84-06-03).

6. Safety Related Piping - Observation of work and Record Review:

One core spray system loop from pump C001 A to the first isolation valve inside the drywell was selected for review of the installation of piping, valves and supports. This loop was selected as a representative sample of the safety related piping systems outside the reactor coolant pressure boundary (RCPB). The licensee's contractor, Bechtel Power Corporation (BPC), provided the following estimated completion status for the entire core spray system:

- a. Large pipe: 99% complete
- b. Supports: 83% complete
- c. Small pipe: 64% complete

The inspector performed a walk-down inspection for the system loop and examined the installed equipment to verify the conformance with the system isometric drawing, P&ID, support system drawings of spring hangers, mechanical shock arrestors, sway struts, equipment specifications, and vendor valve drawings. The inspectors concurred that conformance with requirements of the above documents was acceptable for installed equipment. The inspector reviewed NCR - 1838 for "hardened washer" installation requirements for the installed mechanical shock arrestors. The loop had eleven (11) mechanical shock arrestors which require rework per NCR-1838. The licensee stated that rework was being implemented and NCR-1838 was open at present stage of construction.

The QC records for the core spray system were maintained as in-process records due to the continued installation efforts. The inspector audited the licensee's specific work plan/procedures for receipt, storage and handling, maintenance, installation and checkout of pipe supports for process pipe systems. The inspector concluded that the installed equipment was in compliance with the above documents.

No violations were identified.

7. Full Flow Test Line Design Verification:

The licensee was requested to provide the full flow test line and common discharge line design calculations for NRC review to verify the design adequacy for the stated flow conditions per FSAR. The licensee agreed to provide the calculations for NRC review. This item is considered unresolved pending the licensee's demonstration of the design adequacy of the full flow test line (354/84-06-04).

8.0 QA Surveillances and Audits (Licensee/Bechtel):

The licensee's and Bechtel's QA surveillances and monitoring audits relating to the safety related equipment were reviewed and discussed with cognizant personnel.

Bechtel QA is required to schedule an audit once a year per activity; however, they demonstrated that the audits are scheduled twice a year for assigned activities. The inspector reviewed audit 24-1-7, "Large Piping and Valve in Process Control" and reviewed the Quality Action Requests (QAR's) for implementation of the corrective actions and found them satisfactorily resolved.

The licensee schedules surveillance bi-monthly for an assigned activity. Any adverse findings in surveillances are resolved by issuing Corrective Action Requests (CARs) to Bechtel QA and in return Bechtel QA issues QARs upon completion of implementation of corrective actions, the licensee is formally informed of their resolution. The inspector audited the following surveillances and found them satisfactorily resolved:

- a. No. S-B-2, ASME Pipe Supports (NF), dated 1/14/83
- b. No. S-B-13, Protection of "Q" Piping and Equipment and Housekeeping, dated 12/27/83.

The licensee schedules audits once a year or more, of Bechtel and sub-contractor activities. The audit findings are processed and resolved similar to the surveillance findings, described above. In the audit summary, the licensee also includes the "Observations" for Bechtel/sub-contractors resolutions, for the activity audited. The licensee is formally informed regarding the observations resolution. The inspector reviewed the following licensees audits and concluded that the QA Program for piping was adequately addressed:

- a. H-308, fabrication and installation of pipe hangers (10/28-12/12/83)
- b. H-276, pipe welding (12/21/82-1/11/83)

No violations were identified.

#### 9.0 Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, violations or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 5.

#### 10.0 Exit Interview

An exit interview was held on May 4, 1984, with members of the licensee's staff and contractors as denoted in Paragraph 1. The inspector discussed the scope and findings of the inspection. At no time during this inspection was written material provided to the licensee by the inspectors.