

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

Region 1

Report No. 50-354/82-13

Docket No. 50-354

License No. CPPR-120 Priority -- Category A

Licensee: Public Service Electric and Gas Company

80 Park Plaza - 17C

Newark, New Jersey 07101

Facility Name: Hope Creek Generating Station, Unit 1

Inspection at: Hancock's Bridge, New Jersey

Inspection conducted: October 4 - 31, 1982

Inspectors: W. H. Bateman
W. H. Bateman, Senior Resident Inspector

10/27/82
date signed

date signed

date signed

Approved by: L. E. Tripp
L. E. Tripp, Chief, Projects Section 2A

11/3/82
date signed

Inspection Summary:

Unit 1 Inspection of October 4 - 31, 1982 (Report No. 50-354/82-13):

Areas Inspected: Routine unannounced safety inspection by the resident inspector (35 hours) of work in progress including cable tray installation, HVAC ductwork installation, pipe fitup and welding, pipe support and pipe whip restraint welding, service water pipe trench backfill and compaction, reactor vessel internals installation, concrete curing, and structural steel welding. The inspector also made tours of the site, evaluated licensee action on previous inspection findings, reviewed documentation associated with concrete service water pipe, performed support activities for upcoming NRC NDE inspection, and discussed and observed action taken by the licensee to resolve construction deficiency reports.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

Public Service Electric and Gas Company (PSE&G)

A. Barnabei, Site QA Engineer
R. Bravo, Principal Construction Engineer
A. E. Giardino, Project QA Engineer
P. Kudless, Project Construction Manager
G. Owen, Principal Construction Engineer

Bechtel Power Corporation (Bechtel)

A. J. Bryan, Project QC Engineer
W. Dorman, Assistant Project Field Engineer
M. Drucker, Lead Site QA Engineer
R. Hanselman, Lead Welding Engineer
M. Henry, Project Field Engineer
D. Long, Project Superintendent
R. Mackey, Resident Project Engineer
G. Moulton, Project QA Engineer
J. Pfeiffer, Assistant Project Construction QC Engineer
L. Rosetta, Field Construction Manager
D. Sakers, Assistant Project Field Engineer
J. Serafin, Assistant Project Field Engineer
D. Stover, Project Superintendent, Contract Administration
S. Vezendy, Lead Welding QC Engineer

General Electric Installation and Services Engineering (GEI&SE)

R. Burke, Site Project Manager
M. Hart, Site QC Supervisor

General Electrical Nuclear Energy Business Operations (GENEBO)

J. Cockroft, Site Engineer
C. Brinson, Site QA Engineer

J. Rich Steers (JRS)

J. Gagliano, Resident Engineer

2. Site Tour

Routine inspections were made to observe the status of work and construction activities in progress. The inspector noted the presence of and interviewed QC and construction personnel. Inspection personnel were observed performing required inspections and those interviewed were knowledgeable in their work activities. Work items were examined for obvious defects or noncompliance with regulatory requirements or license conditions. Areas inspected included cable tray installation, HVAC ductwork installation, housekeeping, service water pipe backfill and compaction, completed structural steel welds, and storage of material and equipment.

No items of noncompliance were identified.

3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (355/81-05-02): Undersized fillet welds in drywell beam seats. This item was specifically identified as a potential Unit 2 problem but at the exit interview the inspector stated that the investigation of Unit 1 beam seats would be required prior to closure. The investigation of completed Unit 1 beam seat welds resulted in issuance of PDM ECAR F-146. This ECAR documented that upper and lower beam seats installed in the Unit 1 drywell also had undersized fillet welds. As a result of this ECAR, PDM reevaluated the subject fillet weld size requirements. This reevaluation resulted in decreasing the minimum weld size. The final disposition of ECAR F-146 required that the beam seat weld sizes be compared against the new weld size criteria and any undersized welds repaired. The use of the revised weld size criteria resulted in the identification of one weld that was undersized. This weld was reworked and reinspected. The licensee reviewed this deficiency for reportability under the requirements of 10CFR50.55(e) and determined it to be not reportable. The inspector had no further questions and considers the item closed.

(Closed) Unresolved Item (354/82-09-02): The acceptability of bend testing studs other than shear connectors to determine their acceptability for use. Bechtel project engineering evaluated bend testing studs other than shear connectors to an angle of 15° in lieu of weld repairing studs that exhibited less than a 360° weld. Their evaluation determined that it would be acceptable to bend test studs other than shear connectors to determine their acceptability. This determination is reasonable based on AWS D1.1 code acceptability of bend testing studs used as shear connectors to determine their acceptability. Bechtel PQCI C-2.20, Rev. 6, Field Installation/Fabrication of Miscellaneous Steel, reflects the revision made to the inspection criteria to determine the acceptability

of automatically welded studs. In particular it permits the option of bend testing or rewelding. The inspector had no further questions and considers the item closed.

(Closed) Unresolved Item (354/82-11-03): Rust Lick Corrosion Inhibitor in the reactor pressure vessel. GENEBO confirmed in their letter HCS-82-141, dated 10/19/82 to Public Service, that Rust-Lick B-5-J corrosion inhibitor is approved for use in the RPV while installing internals. The inspector had no further questions and considers the item closed.

4. Review of Nonroutine Events Reported by the Licensee

- A. On July 2, 1982, the licensee reported a potential significant construction deficiency in accordance with the requirements of 10CFR50.55(e) involving potential deleterious effects caused by the corrosion inhibitor used in the emergency diesel generator cooling system on the solder used to stake locking nuts on thermostatic valve override assemblies by Robertshaw. By letter dated 9/15/82, the licensee reported that their evaluation had determined this issue to be reportable and stated the corrective action would be to provide swaged locking on the adjustment nut. During this inspection report period, the licensee informed the inspector that the nuts would be fastened in place by use of cotter pins in lieu of swaged locking. The inspector will continue to follow this issue until rework is complete. (354/82-00-04)
- B. On September 17, 1982, the licensee reported a potential significant construction deficiency in accordance with the requirements of 10CFR50.55(e) involving intrusion of cement grout of unknown quantity into the air gap between the free standing containment drywell and the exterior concrete shield wall. During this inspection report period mapping of the extent of the grout intrusion was completed. Two field sketches, FSK-C-442 and FSK-C-443, were issued to graphically show the location and boundaries of the grout. The inspector monitored these mapping activities in addition to hydrolasing activities to remove grout from penetration J-34. Nutech and Bechtel are reviewing the extent of the grout intrusion and determining if grout removal will be required. The inspector will continue to monitor this issue until final resolution. (354/82-00-06)

5. Reactor Vessel Internals - Observation of Work and Work Activities

Welding of CRDM housings to RPV stub tubes and in process and final NDE of those welds continued during this inspection report period. Welding and NDE of Core Spray pipe supports to the inside vessel wall also

continued. The inspector monitored these activities on a sampling basis. The inspector also verified that vessel internal cleanliness was acceptable, stainless steel wire brushes were in use, test equipment was calibrated, and restrictions on eating, drinking, and smoking were enforced.

No items of noncompliance were identified.

6. Safety Related Piping and Supports - Observation of Work and Work Activities

The inspector observed work in progress and completed work involving installation and welding of ASME III Class 2 and 3 piping. The particular attributes checked were provisions for maintaining internal pipe cleanliness, methods in use to handle and fitup pipe, achievement of proper fitup prior to welding, use of qualified welders and procedures, and presence of obvious weld defects such as undercut, overgrind, excessive reinforcement, and arc strikes. A small number of arc strikes were identified by the inspector who informed the field welding department of their location. The inspector also noted the existence of approved QCIR's adjacent to joints being welded. These QCIR's were individually reviewed to ensure signoff status was consistent with the completed work. When appropriate, the inspector verified that the requirements stated on a QCIR, such as type of filler metal, weld procedure, and NDE, were being adhered to.

The inspector also observed work in progress and completed work on safety related pipe supports. The particular attributes inspected included weld quality, attachment point to safety related steel or concrete structure, blocks installed in spring hangers, correct size of threaded rod, support spacing, completeness of hanger assembly including full thread engagement of nuts and use of proper nut locking arrangements, application of ASME III Subsection NF Code stamp, shear lugs present where required, interference problems, and location of hanger clamps on pipe to ensure field and shop welds not obstructed. The inspector observed that safety related pipe supports were used to support main steam and feedwater piping in the turbine building. Because the structural steel in the turbine building to which the supports were attached is not considered safety related, the inspector asked for the location of the safety related cutoff boundary ("Q" boundary) for each system. Bechtel project engineering referred the inspector to Bechtel drawing M-41-1. This drawing showed the "Q" boundary to be at the second valve from the outside of the drywell. Based on this information the inspector determined that "Q" supports were in use to support non-"Q" piping. This is apparently a design conservatism.

No items of noncompliance were identified.

7. Safety Related Piping - Review of Quality Records

The piping used in the service water system to connect the service water intake structure to the power block is 36" prestressed concrete Lock Joint pipe manufactured by Interpace Corporation. The PSAR states this pipe will be concrete reinforced pipe with bell and spigot type joints. The use of the prestressed pipe reflects growth in state-of-the-art methods to manufacture underground concrete pipe and is not considered a discrepancy. The concrete pipe is presently being installed and buried.

The specification that governed purchase of the pipe is Bechtel Specification C-051(Q), Rev. 2, Purchase of Category I Buried Service Water Pipe. Paragraph 6 of this specification listed documentation requirements for many of the products used in manufacture of the pipe. The inspector reviewed the records for several pipe lengths to ensure the records were retrievable and complete. The particular lengths of pipe involved were part of Material Receiving Records (MRR's) 52503 and 52537. Two questions resulted from this review:

- (1) A laboratory test report from Atlantic Cement Co. indicated the alkali content (sodium equivalent) of the cement to be .62%. This exceeded the maximum limit of .6% stated in C-051(Q). The inspector questioned this discrepancy and was told that the .62% was rounded off to .6% as only accuracy to the tenths place was required by specification. Additionally, the inspector was informed that the aggregate used was not reactive.
- (2) Certified material test reports (CMTR's) were required for material used to manufacture bell rings. The inspector could not locate the CMTR's for this material. The status of the material used to manufacture the bell rings is unresolved pending receipt and review of the CMTR's associated with the material. (354/82-13-01)

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items or items of noncompliance. An unresolved item identified during the inspection is discussed in paragraph 7.

9. Exit Interview

The inspector met with licensee and contractor personnel at periodic intervals during this inspection report period. At these times the inspector summarized the scope and findings of his inspection activities.