

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-354/85-46

Docket No. 50-354

License No. CPPR-120

Priority -

Category B

Licensee: Public Service Electric & Gas Company

80 Park Plaza - 17C

Newark, NJ 07101

Facility Name: Hope Creek Generating Station, Unit 1

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: September 23-30, 1985

Inspector:

R. A. McBrearty, Reactor Engineer

10/18/85
date

Approved by:

J. T. Wiggins, Chief, Materials & Processes Section

10/18/85
date

Inspection Summary:

Inspection on September 23-30, 1985 (Report No. 50-354/85-46)

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings; review of PSI procedures and data; licensee activities regarding the use of visual weld acceptance criteria of NCIG-01. The inspection involved 45 hours onsite by one regional-based inspector.

Results: No violations were identified.

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DETAILS

1. Persons Contacted

Public Service Electric and Gas Company

- *A. D. Barnabei, Principal Quality Assurance (QA) Engineer
- *R. B. Donges, Lead QA Engineer
- *J. F. Duffy, Site Engineer
- *A. E. Giardino, Manager - Station QA
- *R. T. Griffith, Principal QA Engineer
- *S. LaBruna, Assistant General Manager
- *L. F. Lake, ISI Engineer
- *M. LaVecchia, Principal QA Engineer
- *E. J. Maloney, ISI Supervisor
- *M. F. Metcalf, Principal QA Engineer
- *W. J. O'Donnell, Assistant Project Manager/CME
- *J. Zerucha, Startup Director

Bechtel Power Corporation

R. Hanselman, Site Welding Engineer

U.S. Nuclear Regulatory Commission

- *A. R. Blough, Senior Resident Inspector
- *J. J. Lyash, Resident Inspector

*Denotes those present at the exit meeting on September 30, 1985.

2. Licensee Action on Previous Inspection Findings

(Closed) Inspector Follow Item (354/83-15-01): Verification that vessel mechanized ultrasonic tracks are properly installed. Subsequent to completion of the ultrasonic examination of reactor pressure vessel welds, the inspector reviewed selected data associated with the weld examinations which required the use of the tracks in question. The data indicated that the applicable ASME Code requirements were met regarding the required weld examination volume and, therefore, the tracks, as installed, were properly located.

Based on the above, this item is considered closed.

(Closed) Unresolved Item (354/84-15-02): PSI requirements regarding welds in close proximity. The unresolved item questioned whether the PSI requirements could be met for 14" diameter elbow to pipe weld number 5 and 14" diameter pipe to elbow weld number 6 on line number 1-BJ-14DBB-003B due to their close proximity to each other. These are ASME Class 2 welds which require a surface examination and a volumetric examination.

A review of licensee records indicated that volumetric examination and surface examination requirements were met. The volumetric (ultrasonic) examination was performed from the elbow side of each weld and the surface (magnetic particle) examination was performed with a magnetic yoke using the dry powder, continuous method.

The data sheets identified the welds as number 4 and number 5. The apparent discrepancy was questioned by the inspector. He verified that weld numbers were changed on isometric drawing numbers 1-P-BJ-001 & -002 which resulted in the weld which was originally called weld number 5 now being identified as weld number 4 and the original weld number 6 being identified as weld number 5.

Based on the above, this item is considered closed.

(Closed) Unresolved Item (354/85-08-01): Incomplete documentation on radiographic inspection report. The Dravo radiographic inspection report dated 1/4/78 of weld number 1-BC-072-505-233-D failed to address the reason why two of the original films were unacceptable and had to be redone. The licensee has written a memo to file to identify discrepancies within the record and to clarify the record regarding the two additional radiographs. The inspector stated that he had no further questions regarding this item and that the item is considered closed.

(Closed) Unresolved Item (354/85-08-02): The use of Customer Notification Form (CNF) by Southwest Research Institute. The NRC questioned why no CNF was issued regarding the limitation to the ultrasonic examination of weld 1-AE-24DLA-036-6 as documented on Examination Record Sheet number 890027. Licensee Surveillance Report number 85-26 dated 5/11/85 documents the licensee's follow-up of the item. The licensee reviewed approximately 2200 examination records for completed welds and found 70 records which documented limitations to the examination. Four of those, including weld 1-AE-24DLA-036-6, were found to have no CNF issued. Further investigation by the licensee and SwRI indicated that weld 1-AE-24DLA-036-6 was completely examined, and that no limitation to the examination should have been reported.

The inspector found that the four instances where a required CNF was not issued appeared to be isolated cases which happened between September 22, 1983 and October 4, 1983 and which involved feedwater system welds number 1-AE-24DLA-035-3 and -4, and 1-AE-24DLA-036-6. Of these four, further investigation by SwRI and the licensee revealed that two of the conditions originally reported as limitations were not limitations to the examination. The licensee stated that where legitimate limitations do exist, the final report would provide the required details. The inspector had no further questions regarding the matter at this time and the item is considered closed.

(Closed) Unresolved Item (354/85-22-01): Scribe lines on jet pump sensing line. The inspector reviewed the General Electric Company FDDR No. KT1-423, Revision 0, which described and evaluated the reported condition

regarding the presence of scribe lines on jet pump sensing line number 246. Additionally, the inspector reviewed an engineering disposition which provided justification for the disposition of the FDDR.

Based on the above, this item is considered closed.

3. Visual Weld Acceptance Criteria

By letter to NRR dated July 31, 1985, the licensee requested permission to adopt the provisions of Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants (VWAC). Revision 2. This document was prepared by the Nuclear Construction Issues Group (NCIG) and is considered by the NRC to be a technically acceptable approach for visual inspection of structural weldments (and other non-ASME class structures) of nuclear power plants under the purview of American Welding Society Standard D1.1.

The licensee prepared a training program for the Quality Control inspectors, and was in the process of conducting training sessions for those QC inspectors during the course of this inspection. Additionally, inspection criteria were provided to the QC inspectors in the form of Appendix D to Specification 10855-C-130(Q), Revision 11.

The inspector attended a training session for QC inspectors during which the new criteria were explained, and limitations to use of the criteria were discussed. Additionally, he reviewed Appendix D to the C-130 specification to ascertain compliance with the new criteria.

The inspector found that the licensee's training program followed the NCIG Training Manual for Inspectors of Structural Welds at Nuclear Power Plants Using the Acceptance Criteria of NCIG-01, and that Appendix D to the C-130 specification included the information necessary for the performance of a meaningful visual inspection of applicable welds.

No violations were identified.

4. Review of PSI Implementing Procedures

The following nondestructive examination NDE procedures were reviewed by the inspector with regard to ASME Code and regulatory requirements:

- SwRI-NDT-200-1, Revision 55, "Liquid Penetrant Examination, Color Contrast Method"
- SwRI-NDT-300-1, Revision 23, "Dry Powder Magnetic Particle Examination"
- SwRI-NDT-300-2, Revision 30, "Fluorescent Magnetic Particle Examination"
- SwRI-NDT-600-15, Revision 55, "Manual Ultrasonic Examination of Pressure Vessel Welds"

- SwRI-NDT-600-18, Revision 34, "Manual Ultrasonic Examination of Pressure-Retaining Studs and Bolts 2 Inches or Greater in Diameter Containing Access Holes"
- SwRI-NDT-600-30, Revision 14, "Manual Ultrasonic Examination of Pressure-Retaining Welds in Heat Exchangers"

Southwest Research Institute procedure 300-2, Revision 30, limits to the outside surface only the magnetic particle examination of reactor pressure vessel closure head nuts. ASME Section XI does not specifically exclude from examination any available surface of the closure head nuts.

The inspector reviewed licensee records of the closure head nuts to ascertain that ASME Code preservice inspection requirements were met. Fabrication inspection records verified that a surface examination of all surfaces of the nuts was performed by the part fabricator. The inspector found that this examination fulfills the ASME Section XI PSI requirements. The inspector visually examined the closure head nuts to verify that they were the items which were represented by the fabricator's inspection reports. He had no further questions regarding the matter at this time.

The remaining procedures were found to comply with ASME Code and regulatory requirements.

No violations were identified.

5. Preservice Inspection (PSI) Data Review

The inspector reviewed data associated with the following welds to ascertain that findings were properly recorded and evaluated, and that ASME Code regulatory and procedural requirements were met:

Reactor Pressure Vessel Mechanized Ultrasonic Examination

- Weld RPV1-N1A, Recirculation System nozzle to shell weld at 0°, Examination #325
- Weld RPV1-W16-5, Meridional weld at 202.5°, Examination #277A, 277B, 277C

Reactor Pressure Vessel Manual Ultrasonic Examination

- Main Steam System nozzle to shell welds RPV1-N3A, -N3B, -N3C and -N3D

Manual Ultrasonic Examination

- Weld 1-BJ-10DBB-003A-2, High Pressure Coolant Injection System (HPCI), 10" diameter pipe to elbow weld
- Weld 1-BJ-10DBB-003A-4, HPCI 10" diameter pipe to elbow weld

- Weld 1-BJ-14DBB-003B-4, HPCI 14" diameter elbow to pipe weld
- Weld 1-BJ-14DBB-003B-5, HPCI 14" diameter pipe to elbow weld
- RHR Heat Exchanger weld AE-205-RHX-W1A

Magnetic Particle Examination

- Weld 1-BJ-10DBB-003A-2 and -4
- Weld 1-BJ-14DBB-003B-4 and -5

The inspector's review included examination record sheets, calibration record sheets, indication resolution record sheets and plots of ultrasonic indications.

The inspector found that Code, regulatory and procedural requirements were met with one exception. Ultrasonic examination records of weld 1-BJ-10DBB-003A-2 documented an indication equal to 80% of DAC which was detected during the 45° shear wave examination. A note on the examination record sheet stated that the indication was investigated. The governing ultrasonic examination procedure 600-41, Revision 8, required that reflectors which produce a response greater than 50% of DAC must be evaluated by a Level II or Level III individual to determine the shape, identity and location of the reflector. Aside from the note on the record sheet, no further evidence of the evaluation or disposition of the indication was available at the time of this inspection. This is considered unresolved pending the availability of documentation regarding evaluation and disposition of the indication and NRC review of the documentation (354/85-46-

No violations were identified.

6. Unresolved Items

Unresolved items are items about which more information is required to ascertain whether they are acceptable, violations or deviations. An unresolved item is discussed in paragraph 5.

7. Exit Interview

The inspector met with licensee representatives denoted in paragraph 1 at the conclusion of the inspection on September 30, 1985. The inspector summarized the purpose and the scope of the inspection and the findings. At no time during this inspection was written material provided by the inspector to the licensee.