

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-354/85-28

Docket No. 50-354

License No. CPPR-120

Priority --

Category B

Licensee: Public Service Electric & Gas Company
80 Park Plaza - 17C
Newark, New Jersey 07101

Facility Name: Hope Creek Generating Station, Unit 1

Inspection At: Hancocks Bridge, New Jersey

Inspection Conducted: June 10-14, 1985

Inspectors:

Robert A. McBrearty
R. A. McBrearty, Reactor Engineer

July 1, 1985
date

Approved by:

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

July 1, 1985
date

Inspection Summary: Inspection on June 10-14, 1985 (Report No. 50-354/85-28)

Areas Inspected: Routine, unannounced inspection of licensee action on previous inspection findings; PSI activities including observations of work in progress, demonstration of ability to detect cracks in corrosion resistant cladding material, review of procedures, and review of PSI data. The inspection involved 38 hours onsite by one regional based inspector.

Results: No violations were identified.

DETAILS

1. Persons Contacted

Public Service Electric and Gas Company

- *A. Barnabei, Principal Quality Assurance (QA) Engineer
- *R. F. Brandt, Nuclear Plant Services Engineer
- *R. B. Donges, QA Engineer
- *G. L. Duncan, PSI Senior Supervisor
- *A. E. Giardino, Manager QA - Engineering and Construction
- *R. T. Griffith Sr., Principal QA Engineer
- *A.S. Kao, Site Engineer
- *L. Lake, ISI Engineer

Southwest Research Institute (SWRI)

- H. Diaz, NDE Level III
- *E. Feige, Inspection Engineer
- *T. A. Mayces, QA Lead Auditor

General Electric Company (G.E.)

- C. Brinson, QC Supervisor - San Jose

U.S. Nuclear Regulatory Commission

- *L. Briggs, Lead Reactor Engineer
- *J. J. Lyash, Resident Inspector

*Denotes those present at the exit meeting on June 14, 1985.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (85-01-02): Resolution of rusted Reactor Pressure Vessel upper flange stud holes. The inspector reviewed FDDR No. KT 1-341 Revision 0 through 3 inclusive, which documented the actions taken by the GE Co. to determine the extent of damage to the stud holes, and the disposition based on their findings.

Molds were made of the most severely corroded stud holes and based on the molds, all holes except hole number 67 were accepted as is. KT1- 341 Revision 2 required that molds be made of the threads in hole number 67 before and after system hydrostatic test. The molds were sent to G.E. in San Jose, California for evaluation and final disposition. Revision 3 of the FDDR accepted hole number 67 as is based on the determination that the reported damage is within the design margin, and the replications disclosed no visible sign of damage caused by tensioning.

Based on the above this item is considered closed.

(Open) Unresolved Item (83-11-04): Ultrasonic examination of welds with corrosion resistant cladding (CRC). The CRC is associated with 12" diameter, 22" diameter and 28" diameter piping at Hope Creek. During the course of this inspection the licensee demonstrated his ability to detect cracks in 12" diameter samples containing CRC. (See paragraph 4 of this report).

Sections of 22" diameter material and 28" diameter material are being prepared for a similar demonstration by the licensee. This item will remain open pending the performance of a successful demonstration of technique on the larger diameter samples.

3. Procedure Review

The following ultrasonic examination procedure was reviewed by the inspector with regard to ASME Code and regulatory requirements, and, in addition, to technical adequacy regarding parameters which were demonstrated at the EPRI NDE Center at Charlotte, North Carolina to be capable of detecting cracks in CRC piping weld samples:

- SWRI-NDT-800-100 Revision 1, "Manual Ultrasonic Examination of Corrosion - Resistant Clad Piping Welds at Hope Creek";

The inspector's review indicated that applicable code and regulatory requirements were met. The inspector stated that technical adequacy would be based on a practical demonstration of the procedure on CRC piping samples which contained cracks. See paragraph 4 of this report.

No violations were identified.

4. Observations

The inspector observed NDE in progress to ascertain that applicable ASME Code and regulatory requirements were met and that the examinations were performed by qualified personnel in accordance with approved procedures. Ultrasonic examination of the following recirculation system welds were included in the inspector's observations:

- 1-BB-12VCA-014C-3, loop "B", 12" diameter pipe to elbow weld - no CRC
- 1-BB-12VCA-014C-4, loop "B", 12" diameter elbow to pipe weld - no CRC
- 1-BB-12VCA-013G-5, loop "A", 12" diameter pipe to safe end weld - ID/OD CRC

The examinations were done by qualified technicians using approved procedures.

In addition to the above the inspector requested that the technical adequacy of procedure SWRI - NDT-800-100 Revision 1 be demonstrated on samples of CRC piping welds which contained cracks. The licensee had two 12" diameter weld samples available, one of which contained two cracks and the second contained one crack and five notches. At the inspector's request the demonstration was performed in his presence by the SWRI Level II technician who was responsible for performing the CRC examinations in the plant. The demonstration was performed using the same equipment, including transducer, which was used for production examinations. Prior to scanning the cracked samples, the examination system was calibrated on the welded calibration block which is used for production examinations. All cracks were successfully identified in the two samples. Subsequent to the demonstration described above portions of loop "A", 12" diameter pipe to pipe weld 1-BB-12 VCA-013F-2 were scanned to compare the ultrasonic noise level of the production weld with the noise level of the samples. A similar comparison was made of weld 013G-5 with the samples. At the calibrated examination sensitivity, noise level amplitude from each weld and from the samples were found to be similar.

Based on the demonstrated ability to detect cracks, and the observed similarities of acoustic noise in the samples and production welds, the inspector stated that the procedure was acceptable for the examination of 12" diameter CRC piping welds. The licensee stated that 22" diameter and 28" diameter samples, representing the remaining pipe sizes containing CRC at Hope Creek, were being prepared for a similar demonstration and NRC Region I would be notified when the samples were available.

No violations were identified.

5. Data Review

The inspector reviewed data associated with the following 12" diameter recirculation system welds:

Ultrasonic Examination

- 1-BB-12VCA-013F-2,
- 1-BB-12VCA-013H-2,
- 1-BB-12VCA-013H-2LU,
- 1-BB-12VCA-014D-4LD.

Liquid Penetrant Examination

- 1-BB-12VCA-013K-1
- 1-BB-12VCA-013H-2LU
- 1-BB-12VCA-013J-4
- 1-BB-12VCA-013F-1LD
- 1-BB-12VCA-014D-4LD

The review was done to ascertain that findings were properly recorded and evaluated, and that ASME Code and regulatory requirements were met.

The inspector found that the records were complete and that indications were properly recorded and dispositioned.

No violations were identified.

6. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on June 14, 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.