



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-280/84-05 and 50-281/84-05

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry

Inspection at Surry site near Williamsburg, Virginia

Inspector: E. H. Girard
E. H. Girard

3/23/84

Date Signed

Approved by: J. J. Blake

J. J. Blake, Section Chief
Engineering Program Branch
Division of Engineering and Operational Programs

3/26/84

Date Signed

SUMMARY

Inspection on February 6 - 10, 1984

Areas Inspected

This routine, unannounced inspection involved 34 inspector-hours on site in the areas of previously identified enforcement matters; welding and associated nondestructive examination, inspection and enforcement (IE) Bulletins, and boric acid return piping stress corrosion cracking.

Results

Of the four areas inspected, no violations or deviations were identified in three areas; one apparent violation was found in one area (Inadequate corrective action measures, paragraph 3.e).

8405300647 840523
PDR ADOCK 05000280
Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. L. Wilson, Station Manager
- *M. R. Kansler, Superintendent Technical Services
- *R. F. Driscoll, QA Manager
- *F. L. Rentz, QC Supervisor
- *L. J. Curfman, Engineering Supervisor
- *R. H. Blount, II, Engineering Supervisor
- *R. F. Tegethoft, ISI-Corporate
- *J. McAvoy, Staff Engineer
- *E. Holloway, QA NDE Coordinator
- *A. McNeil, Engineer-Surry
- *R. C. Bilyeu, License Coordinator
- *D. Wagaman, QC Supervisor
- H. L. Travis, Corporate NDE Level III

Other licensee employees contacted included QC inspectors.

NRC Resident Inspector

D. K. Burke, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized in discussions with the licensee at the site on February 10 and during a telephone conversation on February 16, 1984. In the discussions the items listed below were described. The inspector was questioned regarding the unresolved item and the violations. The unresolved item was originally identified as a violation in the February 10, 1984 meeting, but as a result of additional discussion and information provided in the February 16, 1984 conversation the item was changed from a violation to an unresolved item.

Unresolved Item, 280, 281/84-05-01, Adequacy of Visual Welding Inspection Procedure, paragraph 3.a.

Violation, 280, 281/84-05-02, Inadequate Corrective Action Measures, paragraph 3.e.

Inspector Followup Item, 280, 281/84-05-03, Missing Hydrostatic Test Report, paragraph 5.

Inspector Followup Item, 280, 281/84-05-04, Boric Acid Return Piping Stress Corrosion Cracking, paragraph 7.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Infraction (281/80-38-01): Visual Weld Inspection Procedure. This infraction identified the licensee's failure to include appropriate quantitative acceptance criteria in the procedure used for visual examination of welds fabricated to meet the original construction codes.

The procedure did not contain acceptance criteria for initial inspections of welds fabricated to original construction codes and did not reference the codes. According to the licensee, the visual weld inspection requirements were contained in the general section of the site welding procedure manual, which was the responsibility of mechanical maintenance. The licensee's response to the infraction dated November 17, 1980, stated that a new procedure, NDT 15.2, had been prepared which provided inspection procedures specific to weldments. The licensee's response was accepted by Region II. In NRC Inspection 280/80-41, 281/80-45, the licensee's procedure was reviewed and determined still unacceptable because of its failure to include all of the attributes that must be visually inspected (e.g., weld reinforcement). In NRC Inspection 280, 281/82-21, the licensee's procedure was again reviewed and was determined adequate to permit the infraction to be closed. However, perhaps inadvertently, the infraction was only closed for Unit 1.

In order to assure that the item was satisfactory for closure for Unit 2 the NRC inspector elected to review the licensee's procedure for adequacy during the inspection addressed in this report. In his review, the inspector determined that the procedure currently applicable to the inspection, QCI-10.5, Rev. 0 (June 1, 1983), was apparently deficient in that acceptance criteria for a number of inspection attributes were not provided in the procedure (e.g. alignment, cold spring, burn through, oxidation, porosity in piping welds and weld profile for AWS D1.1 welds). The licensee stated that the procedure should not be considered deficient in that the procedure was only used for guidance and the actual acceptance criteria were contained in other documents readily available to the welding QC inspectors where the welding inspections were performed. The licensee noted, as an exception to this, that acceptance criteria for the attributes burn through, oxidation, and porosity (in piping) might not be addressed in the other documents referred to but that it was clear to the welding inspectors that these conditions were unacceptable. The NRC inspector indicated that it was not clear to him that this was adequate, but stated that the procedure and practice used in visual weld inspection would be examined further in a subsequent inspection to determine their acceptability. The original violation will be considered closed and the continued concerns relative to this matter will be followed as an unresolved item identified to both Units as 280, 281/84-05-01, Adequacy of Visual Welding Inspection Procedure.

- b. (Open) Unresolved Item (280, 281/83-06-01): Verification of Check Valve Exercising to the Open Position. This item involved concerns regarding the adequacy of the licensee's procedures for exercising check valves to meet the inservice testing requirements of ASME Section XI. The inspector provided cognizant licensee personnel with the NRC position on exercising check valves as described in a internal NRC memorandum from D. G. Eisenhut (Director, Division of Licensing, NRR) to C. E. Norelius (Director, Division of Engineering and Technical Programs, Region III) dated January 3, 1983. The inspector requested that the licensee review his testing and be prepared to discuss its adequacy during a meeting with NRC and contractor personnel to discuss the licensee's inservice testing program that it is anticipated will be held in about two months. It is expected that this item will be resolved during that meeting.

Note: A copy of the Eisenhut memorandum referred to above is included with this report as Attachment 1.

- c. (Closed) Unresolved Item (280, 281/83-06-04): Qualification of Pump and Valve Testing Personnel to VT-4. Based on a code interpretation and discussions with NRC personnel, the inspector accepted the licensee's position that pump and valve test personnel were not required to be qualified to ASME Section XI (80W80) VT-4 examination requirements.
- d. (Closed) Violation (280, 281/83-19-01): MOV Stroke Times. This item involved stroke time limits in valve testing procedures that were inadequate because the acceptance limits were in excess of the maximum stated in the FSAR. The licensee's letter of response dated October 14, 1983, has been reviewed and determined to be acceptable by Region II. The inspector held discussions with the responsible Engineering Supervisor and verified the corrective action stated in the response by examining examples of changes to procedures including the changes in the specific procedures originally cited. Based on his review of the procedure and discussions with the Engineering Supervisor, the inspector concluded that the licensee had determined the extent of the subject noncompliance and performed the necessary survey and followup actions to correct the present conditions and preclude recurrence. The corrective actions indicated in the letter of response have been implemented.
- e. (Closed) Unresolved Item (280, 281/83-19-03): Resolution of ISI Procedural Deficiencies Identified by ASME Inspection Agency. This item involves the NRC inspector's concern that deficiencies identified in the licensee's inservice inspection (ISI) ultrasonic examination procedures be corrected. The subject procedural deficiencies were identified to the licensee in a letter from their ASME Authorized Inspection Agency's Inspection Specialist, dated July 21, 1983. The letter stated that if the deficiencies identified were not resolved, the Code Data Report for the inservice inspection would not be signed by the Inspection Agency's Inspector.

The applicable code for the inservice inspection, as specified by 10 CFR 50.55a(g), is ASME Section XI (here after the "Code").

The Code requires that the licensee obtain and utilize the services of an ASME Authorized Inspection Agency which will employ Inspectors and Inspection Specialists to witness and otherwise verify the acceptability of the licensee's performance of inservice inspections. As record of verification of acceptable inservice inspection, the Code requires the licensee to obtain the signature of the Inspection Agency's Inspector on a Code Data Report for each inservice inspection certifying that the inservice inspection examinations were in accordance with the Code. The Code Data Report and other specified information comprise inservice inspection reports which the Code requires the licensee to submit to the NRC within 90 days of completion of an inservice inspection.

In questioning licensee personnel with regard to the status of the procedural deficiencies that were the subject of this item the NRC inspector was informed that

- The procedural deficiencies had not been resolved
- The Inspection Agency's Inspector had not signed the Code Data Report
- Because the licensee was unable to obtain the Inspector's signature on the Data Report, the inservice inspection reports, required to be submitted to the NRC within 90 days of completion of the inservice inspection, were not submitted within the specified time. On February 10, 1984, over 40 days beyond the Code time limit, the inservice inspection reports had not been submitted to the NRC.

In further questioning, the licensee informed the NRC inspector that the reports required to be submitted for a 1982 Unit 1 inservice inspection had also not been submitted to the NRC because an Inspection Agency Inspector had refused to sign the Data Report. This was identified by the licensee for disposition on their Deviation Report S1-84-38 dated January 26, 1984. Licensee personnel indicated that the procedural deficiencies and resulting lack of signoff and Data Report submittal referred to above had not been documented on a Deviation Report or any licensee form for prompt identification and disposition. The inspector noted that the licensee's failure to promptly correct the procedural deficiencies and other nonconformance with Code requirements described above was a violation of the requirements of 10 CFR 50, Appendix B, Criterion XVI.

This violation is identified 280, 281/84-05-02, Corrective Action Measures.

Unresolved Item 280, 281/83-19-03 is considered closed as the concern is addressed by violation 280, 281/84-05-02 above.

It was not clear to the inspector whether the licensee had not established adequate procedures and responsibilities for obtaining prompt corrective action for the conditions noted or whether there had not been proper implementation.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. A new unresolved item identified during this inspection is discussed in paragraph 3.a.

5. Welding and Associated Nondestructive Examination (55700 and 57700) - Unit 1

The inspector reviewed records of welding and nondestructive examination (NDE) to verify their compliance with licensee commitments and NRC requirements, including the requirements of the applicable code, ASME Section XI (80W80). The records reviewed included the documentation associated with work performed on USAS B31.1 piping replacement on Maintenance Reports (MRs) S1312302031 and S1308221723 (both Chemical and Volume Control System). The records were reviewed to specifically determine that there had been:

- a. Proper sequencing of welding and NDE operations
- b. Proper welding procedure
- c. Correct NDE performed when required
- d. Verification of acceptability per IWA-7220 of ASME Section XI
- e. Hydrostatic test performed
- f. Controlled issuance of welding material

The licensee was unable to provide the hydrostatic test report for MR1312302031, although the MR indicated it had been acceptably performed. The work had been performed recently and licensee personnel indicated the report was probably in transit. The inspector stated the report would be verified in a subsequent inspection and identified the matter for followup as inspector followup item 280, 281/84-05-04, Missing Hydrostatic Test Report.

The inspector noted in reviewing the records for MR 1308221723, that it involved replacement of piping that had undergone stress corrosion cracking. The inspector discussed this matter extensively with cognizant licensee personnel.

6. Status of Inspection and Enforcement Bulletins (IEB) (92703)

- a. (Closed) IEB 83-03: Check Valve Failures in Raw Water Cooling Systems of Diesel Generators (Units 1 and 2)

The inspector has reviewed the licensee's response letter for this bulletin dated June 8, 1983, and has determined that the requested actions of the bulletin have been acceptably addressed. The inspector discussed the matter with responsible engineering personnel and reviewed supporting documentation to verify the adequacy of the response. The matter is considered closed.

- b. (Closed) IEB 83-05: ASME Nuclear Code Pumps and Spare Parts Manufactured by the Hayward Tyler Pump Company (Units 1 and 2)

This bulletin required a response from the licensee only if they had pumps or parts supplied by the Hayward Tyler Pump Company. No response was received from the licensee. Cognizant licensee personnel, in response to questioning by the inspector, confirmed that the Surry plant had no pumps or pump parts manufactured by Hayward Tyler Pump Company.

7. Boric Acid Return Piping Stress Corrosion Cracking (92706) - Unit 1

The licensee informed the inspector that the cracking identified in this piping was apparently due to build up of chlorides. Other pertinent information obtained included:

- Effected piping and fittings were 2" Sch 10 socket weld
- Piping materials were stainless steel types 304, 304L, and 316L
- Cracks were found at all (8) welds checked and at one area of mechanical damage
- Cracking did not occur in type 316L stainless but did occur in 304 and 304L
- Cracking appeared to start as intergranular and change to transgranular
- Cracks were near but primarily outside of the weld and heat affected zone
- Based on dynamic tests, piping strength was not seriously degraded
- Material from the ID of the pipe showed 100 ppm chloride
- Some cracks are through wall but are not continuous around the pipe

The licensee plans to monitor the remaining associated piping and will take and evaluate additional samples in mechanical tests. Several actions are under consideration for the future, including replacement of all potentially affected piping with type 316L stainless steel. The licensee also plans to examine the boric acid storage tank which is in a similar potential location for possible chloride buildup which could induce cracking. The inspector identified the piping corrosion and cracking as inspector followup item 280, 281/84-05-05, Boric Acid Return Piping Stress Corrosion Cracking.