UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-438/82-29 and 50-439/82-29

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

Facility Name: Bellefonte

Docket Nos. 50-438 and 50-439

License Nos. CPPR-122 and CPPR-123

Inspection at Bellefonte site near Scottsboro, AL

Inspectors: E.H. Girard — 11/10/82
E. H. Girard — Date Signed

W. C. Lin — 11/10/82
W. C. Lin — Date Signed

Approved by: J.J. Blake — 11/10/82
J. J. Blake, Section Chief — Date Signed
Engineering Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on October 26-29, 1982

Areas Inspected

This routine, unannounced inspection involved 50 inspector-hours on site in the areas of licensee action on previous enforcement matters, observation of reactor coolant pressure boundary piping welding, safety related pipe support and restraint systems, licensee identified items (10 CFR 50.55(e)), IE Bulletin 79-02, and IE Bulletin 79-14.

Results

In the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   *L. S. Cox, Project Manager
   *F. Gilbert, Construction Engineer
   *H. Johnson, Welding Engineering Unit Supervisor
    F. L. Moses, Mechanical Engineering Unit A Supervisor
   *T. M. Brothers, Hanger Engineering Unit Supervisor
    P. Mercer, Assistant Construction Engineer, Second Shift
   *P. C. Mann, Nuclear Licensing Supervisor
   *D. L. Terrill, Nuclear Engineer
   *D. Hudson, Nuclear Engineer
    J. Guthrie, Welding QC Inspection Supervisor
    K. Lawless, Field Welding Engineering Supervisor
   *J. T. Barnes, Quality Assurance Unit Supervisor
    M. Morgan, Hanger Engineering Unit Group Leader
   *R. G. Delay, Hanger Engineering Unit Assistant Supervisor

   Other licensee employees contacted included QC inspectors, construction craftsmen, and office personnel.

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on October 29, 1982, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the findings with no dissenting comments.

   a. Inspector Followup Item 438,439/82-29-01, Snubber Settings - paragraph 7.c.

   b. Unresolved Item 438,439/82-29-02, Snubber Identification Control - paragraph 7.c.

3. Licensee Action on Previous Enforcement Matters

   (Closed) Violation (438,439/82-23-02): Failure to Follow Procedure for Planning and Performing Inspections and for Controlling Inspection Documentation. Tennessee Valley Authority's (TVA) letter of response dated October 7, 1982, has been reviewed and determined to be acceptable by Region II. The inspectors held discussions with the Nuclear Licensing Supervisor and other cognizant personnel and examined the corrective actions as stated in the letter of response. The inspectors concluded that TVA had

determined the full extent of the subject noncompliance, performed the necessary survey and followup actions to correct the present conditions, and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.

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 7.c.

5. Independent Inspection Effort (92706) - Units 1 and 2

The inspectors conducted a general inspection of portions of the containment and auxiliary buildings to observe activities such as material handling and control, housekeeping, welding, maintenance of identification and protection of piping, and storage. The inspectors noted no instances of significant deviation from the licensee's procedures and requirements.

6. Reactor Coolant Pressure Boundary Piping (Welding) - Observation of Work and Work Activities (55073) - Unit 2

The inspectors selectively observed reactor coolant pressure boundary welding activities to verify compliance with regulatory requirements and FSAR commitments - including the requirements of the applicable code, ASME Section III (74S74). The activities observed by the inspector were with respect to welding observed in progress on reactor coolant system weld 2NC-00031. The welding and related documentation were examined by the inspector to verify that the following were accomplished in accordance with the above noted requirements and commitments and the licensee's implementing QC procedures:

a. Weld identification/location
b. Use of specified welding procedure
c. Weld appearance
d. Welder identification and qualification

Within the areas examined, no violations or deviations were identified.

7. Safety-Related Pipe Support and Restraint Systems (50090B) - Units 1 and 2

a. Review of QA Implementing Procedures

The inspectors conducted a general review of QA audit procedures including scope and frequency of audits, audit criteria and reporting requirements; design and field change procedures; and inspection procedures including documentation that quality requirements of materials and components are met prior to installation.

b. Review of Work Procedures

The applicable code for safety-related support and restraint installation is the ASME Boiler and Pressure Vessel Code, Section III, Subsection NF, 1974 Edition plus addenda through summer 1974. The inspectors observed various activities and documents associated with the installation of supports and restraints to determine if code and procedure requirements were being met. The inspectors reviewed the following work procedures pertaining to safety-related pipe support and restraint systems to determine whether they were approved by authorized licensee personnel.

Work Procedures	Approved Date
"Support and Installation of Piping Systems in Category I Structures" (G-43)	03-12-81
"Seismic Support Installation and Inspection" (QCP-6.17)	06-15-82
"Seismic Support Verifications" (QCP-6.13)	07-02-82
"Bolt Anchors Set in Hardened Concrete" (QCP-2.8)	10-20-82
"Material Identification and Marking" (QCP-10.9)	03-05-82

To assure that the type and classification of pipe support and restraint systems complied with approved drawings and/or specifications, the inspectors examined the following hangers:

Hanger Approved Drawing No.	Compliance With Stress Isometric	Compliance With Specification *
1KC-0424 Rev. 2	Yes	Yes
1ND-0525 Rev. 1	Yes	Yes

*Based on Design Criteria Diagram (No. 3BW0612-ND-01 Rev. 9)

The location and spacing specified on the drawings for the above hangers and the corresponding stress isometrics no. 1AW1412-ND-A1 Rev. 4 and No. 1BW1456-KC-G1 Rev. 3 were examined. The locations shown on the isometric drawings had a deviation of 10" from one detail hanger drawing and 12" from the other. They were both, however, within the tolerance as specified in the document. The spacing of both hangers were found acceptable within code requirements.

c. Observation of Work and Work Activities

In the area of dynamic pipe supports, the inspectors examined six (6) mechanical type snubbers in the warehouse, checking shaft travel for smoothness by simulating normal operation by pulling and pushing the snubber shaft, and simulating unit activation by sudden movement. Hanger snubbers tested in the warehouse were as follows:

Snubber Model	Hanger No.	Test Results
PSA-3	1CF-0049 Rev. 2	Acceptable
(Rated Load = 6000#)	2CF-0006 Rev. 3	Acceptable
PSA-1	1CR-0041 Rev. 3	Acceptable
(Rated Load = 1500#)	2NK-0126 Rev. 2	Acceptable
PSA-$\frac{1}{4}$	1NV-1660 Rev. 0	Acceptable
(Rated Load = 350#)	1NV-1741 Rev. 3	Acceptable

In addition, the inspectors observed two installed hangers (No. 1NV-1689 and No. 1NV-0705) for conformance to requirements in the areas of deterioration and corrosion; deformation of materials; tightness of bolts, nuts, and fasteners; cold load settings; bleed hole openings, and connecting joints, etc.

The inspectors selected six (6) spring hangers and observed minimum requirements for hanger rod size, examined spring hanger indicators which show the approximate "hot" and "cold" position of the piping system. The following spring hangers were examined.

Hanger Size	Figure and Type	Hanger No.	Cold Load From Drawing	Results
9	98, B	1NK-0016	1001#	Acceptable
9	82, B	2CA-0157	1060#	Acceptable
11	82, B	0NM-0820	1713#	Acceptable
11	B268, B	2CR-0019	1842#	Acceptable
0	B268, B	1NV-0344	86#	Acceptable
00	B268, B	1NB-2020	39#	Acceptable

In the area of component support structures, the inspectors performed a visual examination of three (3) hangers (Nos. 1RK-001 Rev. 1, 2CA-0117 Rev. 0, and 2CR-0671 Rev. 0) to ascertain whether component support structures were located and installed as specified; the surface of welds met applicable code requirements; materials used in the component support structures were certified by reviewing a certificate of compliance; and the bolting materials were as specified.

During this inspection , the inspectors observed two (2) mechanical snubbers in the warehouse and found that the actual settings were considerably different from that shown on the hanger drawings to which these snubbers are to be installed. Results were as follows:

Hanger No.	Actual Settings on Snubbers	Required Settings From Drawings
1CF-0049, Sh.2, Rev. 2	Cold Setting = 1.500"	Cold Setting = 2.437"
	Hot Setting 1 = 1.437"	Hot Setting 1 = 2.375"
	Hot Setting 2 = 3.500"	Hot Setting 2 = 4.437"
2CF-0006, Sh.2, Rev. 3	Cold Setting = 1.500"	Cold Setting = 2.437"
	Hot Setting 1 = 1.437"	Hot Setting 1 = 2.375"
	Hot Setting 2 = 3.500"	Hot Setting 2 = 4.437"

The inspectors informed the licensee that they wanted to follow the progress of the above hangers installation pending the final inspection of the correct settings. This matter will be identified as inspector followup item 438,439/82-29-01: Snubber Settings.

The snubber for Hanger No. 2NK-0126 Rev. 2 was examined and the size, rated load, cold and hot settings were completely different from the hanger drawing. The snubber in the warehouse was identified as size PSA-1 with 1000 lbs of rated load. The same snubber mark number shown in the drawing was size PSA-⅛ with 350 lbs of rated load. Licensee personnel indicated that the drawing was revised and the original snubber became surplus. The inspectors indicated that the licensee should develop a better procedure for identifying hanger (snubber) sizes as a result of drawing changes. This matter will be identified as unresolved item 438,439/82-29-02: Snubber Identification Control.

Within the areas inspected, no violations or deviations were identified.

8. Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts - IE Bulletin 79-02 (25528)

At Bellefonte the IEB 79-02 program will be performed by the Hanger Engineering Unit. ENDES suggested to the site that their program for this bulletin be started in November 1982. The inspectors reviewed a rough draft of the IEB 79-02 program plan.

Within the areas inspected, no violations or deviations were identified.

9. Seismic Analysis for As-Built Safety-Related Piping Systems IE Bulletin 79-14 (25529)

The inspectors had discussions with licensee personnel on the program implementation and reviewed the following:

a. Bellefonte Nuclear Plant Units 1 and 2 - program plan for IE Bulletin 79-14, dated August 19, 1981.

b. Walkdown Elements for the 79-14 Program, dated October 18, 1982.

Within the areas inspected, no violations or deviations were identified.

10. Licensee Identified Items (LIIs) (50.55(e)) (92700)

a. (Closed) LII (438,439/80-70-06): Lack of Internal Purge on Two Welds in Chemical Addition and Boron Recovery System. The final report for this item was submitted to Region II in a letter dated February 2, 1982. This item documents the licensee's discovery of several safety-related stainless steel piping welds with inside diameters (IDs) "sugared" (heavily oxidized) as a result of inadequate purge during welding. The licensee's investigation of this item involved an extensive sampling examination and evaluation of piping welds.

As noted in NRC inspection report 438,439/82-23, the NRC Senior Resident Inspector identified several welds to the licensee which they had apparently failed to address in their sampling and evaluation due to an error. There was concern that data from these welds might affect the evaluation conclusions and the required corrective actions. The licensee examined these additional welds and informed the inspector that, while a few additional "sugared" welds were identified, the original conclusions and corrective actions described in their final report were still considered satisfactory.

The inspectors reviewed the final report and the supporting documentation with the licensee's Welding Engineering Unit (WEU) supervisor to ascertain the adequacy of the completed evaluation and to verify completion of the reported corrective actions. This matter is considered closed.

NOTE: For record purposes, this item is also identified 438,439 CDR 80-171.

b. (Closed) LII (439/80-07-09): Welding of Structural Steel Annulus Floor Framing. The final report was submitted on July 26, 1982, and was followed by a supplemental report submitted August 19, 1982. The reports have been reviewed and determined acceptable.

This item involved a concern that a welding QC inspector was completing required weld records before the welds were made. Based on their investigation, the licensee reported that it appeared that the QC inspector had failed to perform the required inspections only in an isolated instance.

The NRC inspector discussed the reports with the responsible licensee representatives and reviewed the supporting documentation to verify the adequacy of the investigation and completion of the corrective action.

c. (Closed) LII (438,439/81-01-01): Structural Track for Fuel Transfer Equipment. The final report was submitted on August 14, 1981.

This item involved apparently deficient welds in the fuel transfer track section structural support members. The inspector discussed the matter with responsible licensee representatives, reviewed the report and related documentation, and observed representative examples of the Unit 2 track section welds to verify the adequacy of the licensee's evaluation and corrective action. Based on the review, the report and corrective actions are considered satisfactory and the matter is closed.

NOTE: For record purposes, this item is also identified as 438,439 CDR 80-11.

d. (Closed) LII (438,439/81-18-01): Welding Valves Without Preheat and Unqualified Filler Metal.

The final report was submitted on March 20, 1981. Subsequently, in response to questions raised by NRC inspectors, a revised final report was submitted August 14, 1981 and a second revised final report was submitted on August 3, 1982. The second revised final report has been reviewed and determined acceptable. The inspector held discussions with responsible licensee representatives and reviewed supporting documentation to verify that the corrective actions identified in the report were adequate and complete.

NOTE: For record purposes, this item is also identified as 438 CDR 82-022.

e. (Closed) LII (438,439/82-25-20): ASME Class 1 Hanger Materials Have Linear Indications. This item concerns apparently unacceptable linear and rounded indications found in structural beams and tubes.

The licensee's final report for this item was submitted on November 11, 1981. The report has been reviewed and determined acceptable.

The inspector held discussions with responsible licensee representatives, reviewed supporting documentation, and observed representative samples of the structural materials to verify the adequacy of the licensee's investigation and the completion of the corrective action. Documentation reviewed in addition to the final report included:

(1) ITT Grinnell Report 3057, "Resolution of Surface Indications in M Beams of ASME SA-36 Steel", dated August 28, 1982.

(2) Letter from S. Perreault (ITT Grinnell) to C. A. Chandley (TVA), dated September 18, 1981, providing resuits and conclusions of material supplier's investigation of deficient material.

(3) TVA NCR 1539 dated July 17, 1981.

NOTE: For record purposes, this item is also identified as 438 CDR 81-052 and 493 CDR 81-054.

f. (Closed) LII (439/81-29-06): Atwood and Morrill Valve Deficiency. This item addressed apparent deficiencies discovered in a valve body. The concerns included a linear indication and an undocumented ground area.

The licensee's final report for this item was submitted April 13, 1982. Subsequently, in response to questions posed by an NRC inspector, a revised final report was submitted on August 12, 1982. The revised report has been reviewed and determined acceptable.

The inspector discussed the item with responsible licensee personnel and reviewed supporting documentation to verify the adequacy of the licensee's investigation and the completion of the corrective action.

Documentation reviewed by the inspector in addition to the final report included:

(1) QC Investigation Reports 3706, 3999, and 5744

(2) NCR 5744

NOTE: For record purposes, this item is also identified as 439 CDR 81-004.

g. (Closed) LII (438,439/82-02-01): Welds by Johnson Machine Works on the Revolving Platform. This item was reviewed previously, as described in NRC inspection report 438,439/82-23. As described in that inspection report, the licensee's actions for this item were determined inadequate due to their failure to determine the full extent of the deficient condition, identify and document the cause, and institute all necessary corrective actions. Violation 438,439/82-23-04 was issued as a result

of the findings. The licensee's response to the violation, dated October 7, 1982, was reviewed and accepted by Region II. The response commitments address the inadequacies originally found in the licensee's actions for LII 438,439/82-02-01. LII 438,439/82-02-01 will be closed and the remaining actions required will be verified complete in subsequent inspection of violation 438,439/82-23-04.

NOTE: For record purposes, this item is also identified as 438 CFR 81-072 and 439 CDR 81-070.