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

Report Nos.: 50-438/84-08 and 50-439/84-08

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

Docket Nos.: 50-438 and 50-439

License Nos.: CPPR-122 and CPPR-123

Facility Name: Bellefonte 1 and 2

Inspection at Bellefonte site near Scottsboro, Alabama

Inspector: W. B. York for
J. W. York — Date Signed 4/25/84

Approved by: P. E. Fredrickson
Caudle A. Julian, Section Chief
Division of Reactor Projects — Date Signed 4/25/84

SUMMARY

Inspection on March 1-31, 1984

Areas Inspected

This routine, announced inspection involved 100 inspector-hours on site in the areas of independent inspection efforts, IE Bulletin 81-03 and licensee identified items.

Results

Of the three areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*L. Cox, Project Manager
*B. Thomas, Quality Manager
*R. Young, Construction Engineer
*B. Painter, General Construction Superintendent
*J. Barnes, Section Supervisor OQA
*D. Smith, Compliance Supervisor, Nuclear Power
*P. Mann, Nuclear Licnesing Supervisor
*R. Ives, Nuclear Licensing Unit

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 3, 1984, with those persons indicated in paragraph 1 above. The licensee cknowledged the inspection findings.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort (92706)

The inspector examined the welding on HVAC supports performed before the appropriate welders were trained on interpretation of drawing weld symbols (early 1981). Three sheet metal welders were selected for examination of their welding (weld symbols SAAW, SABL, and SABX). The inspector reviewed the weld record cards for 90 welds and noted that the welder was required to sign the card although this is not a requirement of the appropriate code for HVAC supports (American Welding Society Code D1.1).

The following hangers were reinspected by the inspector and licensee mechanical and welding QA inspectors. The following results were obtained:

Reactor Building

HVAC Hanger No.	Discrepancies
IVX-295	Not type hanger shown on drawing
IVX-296	Some welds not per drawing
IVX-299	None
IVH-378	Undersized welds
IVH-379	Undersized welds
IVH-382	Undersized welds
IVH-384	Undersized welds

Auxiliary Building

HVAC Hanger No.	Discrepancies
OVC-1740	Field weld undersize, perimeter welds not 6"-12" (six inches of weld on twelve inches centers)
OVC-1741	Perimeter welds 3"-12" (6"-12" required)
OVC-1751	Fillet weld undersize
OVC-1752	Perimeter welds 5"-12" (6"-12" required)
OVC-1753	Perimeter welds 5"-12" (6"-12" required), Ends not welded
OVC-914	Undercut on perimeter weld
OVC-915	None
OVC-916	None
OVC-917	Weld different from drawing, perimeter weld 5"-12" (6"-12" required)
OVC-295	None
OVC-300	Perimeter welds 4"-8" and 4"-11" (6" on 12" required)
OVC-304	Undersize fillet weld, ends not welded
OVC-305	Undersize fillet weld, ends not welded

The welds on the HVAC hangers examined were performed during 1978 and 1979 and before the welders had taken a training course in drawing weld symbols. It appears that the welders did not understand the perimeter weld requirements for six inches of weld on twelve inches centers. Before mid-1980 the welders and welding inspectors were not using fillet weld gages to measure the welds. Audits have show that this situation was corrected after mid-1980. The licensee had previously identified this problem through nonconformance reports (NCR's) Nos. 1173, 1968, and 1888. This condition was reported to the NRC on July 22, 1982 under licensee identified item (LII) Nos. 50-438/82-49 and 50-439/82-44. This LII covered not only HVAC supports but electrical cable tray supports and miscellaneous structural features. All welds identified under the scope of this LII were inspected by the licensee and the results have been forwarded to Engineering Design (EN DES) for evaluation.

In regard to Hanger No. 1VX-295 not being the type shown on the drawing, the inspector reviewed field change request No. M-5099 and weld map change request No. 17570 which allowed the type of hanger that was actually installed in the field.

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

6. IE Bulletin 81-03 - Flow Blockage of Cooling Water to Safety Components by Corbicula SP. (Asiatic Clam) and Mytilus SP. (Mussel) (92703)

The licensee's response and required action for this bulletin, dated July 8, 1981 has been reviewed by the Region II staff and considered acceptable. This bulletin is closed.

7. Licensee Identified Items - Unit 1 (992700)

a. (Open) LII, CDR 50-438/84-23 and 50-439/84-22, Overpressurization of Emergency Raw Cooling Water Piping Because of two Mechanical Failures. The first interim report dated March 29, 1984 stated in part:

> During a hydrostatic test on February 16, 1984, a temporary pressure gauge snubber and relief valve failed and resulted in an overpressurization of a portion of the essential raw cooling water (ERCW) system. The pressure gauge has been calibrated on February 14, 1984, and was used to set the relief valve at 235 lb/in^2g on the same date.
>
> During the hydrostatic test, a small double-acting, air-driven pump was used to pressurize the system to 90 lb/in^2g. The pressure was then raised to 100 lb/in^2g by several strokes of the pump and at this time the overpressurized portion of the system was checked for leaks, with none occuring. The valve was opened, and the pump was started. When the pressure was near 180 lb/in^2g,

it was noted that the pressure was increasing at an excessive rate. At that point, the pump was shut off, and the valve between the pump and test was closed before the indicated pressure reached 230 lb/in^{2}g.

Due to a significant lag in the response of the pressure gauge the pressure indication continued to increase (above 235 lb/in^{2}g) and efforts were initiated to relieve the pressure (since the relief valve had apparently failed). By the time the pressure was relieved, the gauge had begun to level off at approximately 480 lb/in^{2}g. Although the coils on AHU 1VA-MAHU-198-B and associated KE (ERCW) system piping between valves 1KE-VHAC-280 and 1KE-VHDC-242-B were subject to a pressure estimated at 480 to 500 lb/in^{2}g, they are only hydrostatically qualified to a pressure of 300 lb/in^{2}g.

The inspector reviewed hydrostatic test procedure package No. 1KE-H-53 used for this test and noted that the appropriate test steps had been signed. Calibration records dated February 14 and February 16 indicated that the pressure gage met the acceptance criteria. The inspector viewed the tested piping, and discussed the test with the responsible engineer, QC inspector and the Authorized Nuclear Inspector (ANI) who witnessed a part of the test. No apparent discrepancies were noted. Review for item closure will be conducted after issuance of final report.

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

b. The inspector reviewed the progress status of the following LII's:

CDR#	NCR#	Title
438/84-17 439/84-16	BLNBLP8403	Incorrect data on ITT Grinnel pipe support data sheets
438/84-16	2938	Setting of shutdown voltage for vital inverters by International Power Machines
438/84-18 439/84-17	QES-84-1-A	Generic implications reviews by CONST project
438/84-15	2815	Defective amplifiers in safety related panels manufactured by EL-TEX
438/84-19 439/84-18	2857	Defects in RPV stud holes

438/84-20 439/84-19	BLNBLP8404	ITT Grimmel pipe supports designed with sway struts instead of required gaps
438/84-21 439/84-20	BLNBLP8405	Incorrect insulation weights for IPS piping
438/84-22 439/84-21	GENQEB8401	Retrievability of vendor records
438/84-23 439/84-22	2879	Overpressurization of ERCW piping because of two mechanical malfunctions
438/84-24 439/84-23	2922	Stiffeners not installed to revised drawing requirements