



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

Report Nos. 50-438/81-14 and 50-439/81-14

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

Facility: Bellefonte

Docket Nos. 50-438 and 50-439

License Nos. CPPR-122 and CPPR-123

Inspection at Bellefonte site near Scottsboro, Alabama

Inspector *R. V. Wilcox, Jr.* for
J. D. Wilcox, Jr.

6/2/81
Date Signed

Approved by *D. R. Quick*
D. Quick, Section Chief, Division of
Resident and Reactor Project Inspection

6/2/81
Date Signed

SUMMARY

Inspection on April 1-30, 1981

Areas Inspected

This routine, announced inspection involved 152 inspector-hours on site in the areas of construction surveillance, Quality Control Investigation Report (QCIR) review, licensee action on previous inspection findings, housekeeping review, hanger drawing review, system flushes and spent fuel storage racks.

Results

Of the 8 areas inspected, no items of noncompliance or deviations were identified in 7 areas; 1 item of noncompliance was found in 1 area (Violation - inadequate hanger drawing design).

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DETAILS

1. Persons Contacted

Licensee Employees

- *W. Dahnke, Project Manager
- *F. Gilbert, Construction Engineer
- *G. Blackburn, General Construction Superintendent
- *D. Freeman, Electrical Engineer Supervisor
- *L. McCollun, Instrument Engineer Supervisor
- T. Brother, Hanger Engineer Supervisor
- *F. Moses, Mechanical Engineer Supervisor
- J. Olyniec, Civil Engineer Supervisor
- J. T. Walker, Assistant Construction Engineer
- *L. Jackson, Assistant Construction Engineer
- *J. Barnes, QA Supervisor
- *F. Huffman, Assistant Construction Engineer
- *W. Pickens, OCRU Supervisor
- H. Johnson, Welding Engineering Unit
- D. Bridges, Electrical Engineering Unit
- *B. Thomas, Assistant Construction Engineer
- *W. Capley, Instrument QC Supervisor
- *R. Willis, Instrument Engineering Supervisor
- *T. Price, ENDES
- *I. Heatherly, ENDES
- *D. Terrill, Power Reg. Staff
- *D. Smith, Welding Engineering Supervisor
- *P. McGrew, Assistant Electrical Engineer Supervisor
- *B. Sammons, Engineering Aide

Other licensee employees contacted included 12 construction craftsmen, 7 technicians, 4 mechanics, 2 security force members, and 12 office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 30, 1981, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

Not inspected.

- a. (Closed) Unresolved Item 50-438/81-07-01 and 50-439/81-07-02, "Immediate notification of management to QA audit deficiencies". The

resident inspector reviewed the site QA unit's memorandum of 3/10/81 concerning their unresolved item. In addition, during the review of QA audit #BN-G-81-03, "Disposition and Documentation of Engineering Change Notices and Field Change Packages", the resident inspector determined that appropriate site management was immediately notified of deficiency #1 to the site audit finding. TVA is in full compliance and no further action is required to this unresolved item.

- b. (Closed) Unresolved Item 50-438/81-07-03, "Design minimum wall thickness for pipe section", TVA site Mechanical Engineering Supervisor submitted two memoranda from Mr. C. Fulwider to Mr. F. Moses, dated 4/1/81, pertaining to this unresolved item to the resident inspector. These memoranda technically evaluated the corrosion/erosion allowances on the 8" feedwater and containment spray piping. The calculations for the above piping section were reviewed and determined satisfactory. TVA is in full compliance and no further action is required to this unresolved item.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraph 7.

5. Independent Inspection Effort - Construction Surveillance

The inspector spent most of his time in direct surveillance of hardware in the field which includes the following areas:

(Unit 1 Reactor Building) Witnessed portions of installing sump screens and grating in emergency sumps 'A' and 'B', installing decay heat removal, feedwater, reactor building spray, main steam, component cooling water, spent fuel cooling, core flooding makeup and purification, temporary chemical cleanup and waste disposal piping; installing steam generator bumpers and snubber plates; tensioning upper steam generator supports; installing main steam and feedwater pipe whip restraints; performing surge-line weld preparation and fitup; installing reactor coolant whip restraint caps; and installing local instrument panels in the instrument room.

(Unit 2 Reactor Building) Witnessed portions of welding reactor coolant system piping, installing and welding stainless steel liners in refueling canal; installing large core flooding, decay heat removal, reactor building spray, waste disposal, feedwater, component cooling water, control rod drive cooling and spent fuel cooling piping; installing steam generator snubber plates and bumpers, installing reactor coolant pump case supports; performing fitup of supports, shear bars, and miscellaneous hardware for pressurizer and installing cable trays and supports.

(Auxiliary Building) Witnessed portions of installing Unit 1 new fuel elevator; installing chemical addition and boron recovery, startup and recirculation, component cooling, feedwater, main steam, waste disposal, auxiliary steam, makeup and purification, spent fuel handling, auxiliary feedwater and reactor building spray piping; installing spent fuel cooling, and decay heat removal hangers, piping and valves; installing pipe supports in Unit 1 & 2 main steam valve room 'A'; installing cable trays and supports, exposed conduit and supports, local instrument panels and tubing at various locations and pulling and terminating cables.

(General) Witnessed portions of sandblasting and applying protective coatings.

6. Quality Control Investigation Reports (QCIR) Review

The resident inspector reviewed the description and recommended disposition to the following QCIRs:

<u>QCIR No.</u>	<u>Date</u>	<u>Title</u>
9016	4/4/81	Work Release #16913
9367	4/15/81	1" 90° Elbow
9611	4/25/81	6" Pipe
9629	4/27/81	Hanger #INS 1138SH3

No violations or deviations were identified.

7. Nonconforming Condition Report (NCR) Review

The resident inspector reviewed the item description, nonconformance description, recommended disposition and action required to prevent recurrence for the following NCR's:

<u>NCR No.</u>	<u>Date</u>	<u>Title</u>
1435	4/9/81	120V Class 1E power supplies
1434	4/7/81	480V AC power panels
1426	4/3/81	Flowmeters
1423	4/1/81	High pressure fire protection
1424	4/1/81	NAVCO pipe assemblies

All of the above NCR's were determined as being a non-significant condition. Bellefonte Quality Control Procedure BNP-QCP-10.4, Rev. 8, paragraph 4.4,

identifies significant criterion as: "A condition adverse to quality shall be determined to be significant if the condition requires one or more of the following":

- (1) Significant investigation to determine the cause of the condition.
- (2) Significant redesign, repair, or rework of an item.
- (3) Significant evaluation of the QA/QC program implementation.
- (4) Significant evaluation for determining generic implication.

One or more of these conditions exist in the above noted NCR's. This item is identified as Unresolved Item 50-438/81-14-01, "Significant Nonconforming Condition Report", pending TVA evaluation of this condition.

8. Housekeeping Inspection

The resident inspector reviewed the following housekeeping deficiency reports for deficiencies identified and action taken to correct these deficiencies:

<u>Deficiency Report No.</u>	<u>Date</u>
560	4/9/81
561	4/11/81
562	4/11/81

These housekeeping inspections were handled in accordance with Bellefonte's Quality Control Procedure BNP-QCP-10.27, Rev. 3.

No violations or deviations were identified.

9. Hanger Drawing Review

During the hanger inspection performed on NRC Report numbers 50-438/81-11 and 50-439/81-11, the resident inspector identified the use of the symbol (N) in the X, Y, Z direction movement block on numerous hanger detail drawings. The Hanger Engineering Supervisor at Bellefonte was contacted by the resident inspector several times during the month of March for an explanation of the meaning of the symbol (N). A preliminary explanation was given on April 3, 1981, by Site Hanger Engineering Group. On this same date, TVA's Knoxville Group (W. D. Carson/Bellefonte Mechanical Design Project), initiated a Division of Engineering Nonconformance Report number, BLN BLP 8109, identifying the following condition: The Bellefonte Alternate Criteria states that in it's development a seismic displacement limit of 1

inch was imposed. This means that alternately analyzed piping has a possibility of moving a total of 1 inch plus any thermal movement during a seismic event. Some seismic restraints may be designed so that the pipe does not have sufficient clearance to move in an unrestrained direction without contacting the support structure. If this happens, the support would be subjected to a load that had not been considered in its design. TVA site hanger group identifies the symbol (N) as: A symbol used in the movement column of the table of support and/or the support detail sheet indicating that a consideration was given in the design of the support for pipe movement in the direction indicated and is of no consequence in performing QC inspections. Review by the resident inspector between March 23 - April 2, 1981, revealed that hanger drawing numbers IKE-MPHH 3375, Rev. 2, and IKE-MPHG-3380, Rev. 1, denoted the symbol (N) in the Z direction of the movement block. Further review revealed that these hangers did not have the required 1 inch thermal movement clearance in the related direction, nor was there a design load in that direction noted on the applicable drawing.

The results of the hanger drawing review indicates that the persons developing the detail hanger drawing did not know the meaning of the symbol (N). This is identified as Violation 50-438/80-14-02, "Inadequate Hanger Drawing Design".

10. System Flushes

The resident inspector reviewed the heating ventilation and air conditioning VKM1 system flush procedure for completeness and adequacy. During the review, it was noted that the procedure needed some clarification on the requirement of ANSI N45.2.1-1973. In paragraph 3.1.4 of this ANSI, a check is required to ensure there is no evidence of organic contamination on the screen. The Mechanical Engineering Group immediately clarified the flush procedure to ensure compliance with the above noted ANSI.

No violation or deviation was identified in this area.

11. Spent Fuel Storage Racks

The resident inspector reviewed the following TVA memoranda:

<u>BLP #</u>	<u>Date</u>	<u>Subject</u>
810407 019	4/7/81	High-Density Fuel Storage Rack
810414 013	4/14/81	Spent Fuel Storage Racks

These memoranda initiated the need to obtain B&W review of Westinghouse stress analysis and concurrence of storage fuel in the subject racks. This is identified as Inspector Follow-up Item 50-438/81-14-03 and 50-439/81-14-01, "B&W Concurrence to High Density Fuel Storage Racks".