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

Report Nos.: 50-259/83-41, 50-260/83-41, and 50-296/83-41

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

Docket Nos.: 50-259, 50-260 and 50-296

License Nos.: DPR-33, DPR-52, and DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection at Browns Ferry site near Decatur, Alabama

Inspectors: James L. Coley for E.H. Girard — 11-28-83
E. H. Girard — Date Signed

James L. Coley — 11-28-83
J. L. Coley — Date Signed

Approved by: J. J. Blake — 11/28/83
J. J. Blake, Section Chief — Date Signed
Engineering Program Branch
Division of Engineering and Operational Programs

SUMMARY

Inspection on October 25-28, and November 1-4, 1983

Areas Inspected

This routine, unannounced inspection involved 83 inspector-hours on site in the areas of licensee action on previous enforcement matters, inservice inspection, IE Bulletins, and inspector followup items.

Results

Of the four areas inspected, no violations or deviations were identified in three areas; one apparent deviation was found in one area (Failure to Take Action to Preclude Recurrence for Violation 81-36-04, paragraph 3.c.).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

G. T. Jones, Plant Superintendent
*J. R. Pittman, Assistant Plant Superintendent
*T. L. Chinn, Compliance Staff Supervisor
*T. W. Jordan, Operations Supervisor
*J. H. Miller, Field Services Supervisor
L. W. Jones, Quality Engineering Supervisor
L. Parvin, Quality Control Supervisor
R. S. Perry, Quality Assurance Engineer
T. B. Schreeder, Level III, NDE Examiner
*O. L. Butler, Level III, NDE Examiner
*R. Latimer, ISI Coordinator
T. Gilbert, ISI Coordinator
J. Fox, Metallurgical Engineer
*R. Cole, Operational Quality Assurance
C. Rozear, Compliance Engineer

NRC Resident Inspector

*C. A. Patterson

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 4, 1983, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the inspection findings with no dissenting comments.

Unresolved Item 259, 260, 296/83-41-01, Conflicts Between Plant and ENDES Material Procurement Requirements, paragraph 7.e.(1)

Deviation 259, 260, 296/83-41-02, Failure to Take Action to Preclude Recurrence for Violation 81-36-04, paragraph 3.c.

Inspector Followup Item 259, 260, 296/83-41-03, Acceptance Requirements for Hanger and Support Settings, paragraph 3.a.

Inspector Followup Item 259, 260, 296/83-41-04, Verification of Adequacy of Rompas Blocks Used for UT Calibrations, paragraph 7.c.

Unresolved Item 259, 260, 296/83-41-05, Material Requisition Discrepancies, paragraph 7.e.(2)

3. Licensee Action on Previous Enforcement Matters

a. (Closed) Violation (259/81-16-01): Failure to inspect and verify spring hanger settings in accordance with ASME Section XI. This item involved the licensee's failure to verify settings for spring hangers, snubbers and shock absorbers as required by ASME Section XI. The licensee's letter of response for this item, dated September 4, 1981, has been reviewed and determined acceptable by Region II. The inspectors discussed the item with the licensee's Level III examiner and examined the corrective actions as stated in the letter of response. The inspection procedure for the hangers and records of hanger inspections were verified as noted in paragraph 5 below. Based on their examination and review, the inspectors concluded that the corrective actions stated in the licensee's response had been implemented.

b. (Closed) Unresolved Item (259/81-16-05): Conflicting electrode control requirements. This item addressed an inspector's concern that (1) the licensee's instructions for electrode control on torus modification welding did not specify how type 7018 electrodes were to be controlled when they were returned within four hours of issue; and (2) the control requirements for 7018 electrodes returned more than four hours after issue as stated in the applicable code, specifications, and instruction, appeared to conflict. The inspectors reviewed the licensee's current 7018 electrode return instructions for torus modification welding and verified their adequacy. From discussions with licensee personnel, the inspectors found no evidence of past inadequate control of electrodes related to the issue raised by this item.

c. (Closed) Violation (259/81-36-04): Inadequate measures taken to assure special processes are controlled. This item documented an inspector's finding that (1) the licensee had not properly evaluated a radiographic indication in a weld, and (2) in subsequent radiography performed on the weld, in response to questioning of the subject indication by an NRC inspector, the wrong area was radiographically examined. The licensee's letter of reponse to this violation, dated February 22, 1982, was reviewed and determined acceptable by NRC Region II. The inspectors examined the licensee's letter of response, and found that the action to preclude recurrence had not been implemented. As stated in their response, the licensee determined that their failure to examine the correct area was primarily caused by inadequate marking of the radiograph layout due to grinding operations in adjacent weld areas. To preclude a repetition of the violation they stated in the response that a procedure to address radiography layout and grinding control would be developed for handling radiography before the next refueling outage. In questioning by the inspectors, responsible licensee personnel stated that this had not been done. Further, the inspectors found that the procedure used in performing radiography,

IL/INC Procedure No. P-582, (June 1, 1982), contains limited non-definitive guidance on placement of location markers. It does not have requirements that would assure adequate definition or recording of locations for future reference. The licensee's failure to develop procedural controls to meet the commitment stated in their response letter is identified as deviation 259, 260, 296/83-41-02, Failure to Take Action to Preclude Recurrence for Violation 81-36-04. The inspectors satisfactorily verified the licensee's other corrective actions. The original violation (81-36-04) is closed.

d. (Closed) Violation (259/83-24-01): Failure to follow IE Bulletin 83-02 for requiring documented training in intergranular stress corrosion cracking, using a cracked thick-wall pipe specimen. The licensee's letter of response dated August 24, 1983, has been reviewed and determined to be acceptable by Region II. The inspectors held discussions with the Level III examiner and examined the corrective actions as stated in the letter of response. The inspectors concluded that the licensee 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.

e. (Closed) Violation (259/83-28-01): Failure of receiving inspection to adequately control welding filler metals. The licensee's letter of response dated September 30, 1983, has been reviewed and determined to be acceptable by Region II. The inspectors examined the corrective actions as stated in the letter of response. The inspectors concluded that the licensee 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.

f. (Closed) Violation (259/83-28-02): Positive Controls Needed for Controlling Tools Used on Stainless Steel. The licensee's letter of response dated September 30, 1983, has been reviewed and determined to be acceptable by Region II. The inspectors held discussions with tool room personnel and examined the corrective actions as stated in the letter of response. The inspectors concluded that the licensee 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.

g. (Closed) Violation (259/83-32-02): Failure to Promptly Report and Confirm Core Spray Piping IGSCC. The licensee's letter of response dated October 6, 1983, has been reviewed and determined to be acceptable by Region II. The inspectors held discussions with the licensee's Compliance Supervisor and examined the corrective actions as

stated in the letter of response. The inspectors concluded that the licensee 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. New unresolved items identified during this inspection are discussed in paragraph 7.e.

5. Inservice Inspection

The inspectors reviewed an inservice inspection (ISI) procedure, reviewed ISI records and repeated selected ISI examinations previously performed by the licensee to determine the licensee's compliance with regulatory requirements and commitments and with IE Bulletin 83-02. The applicable code for the ISI is ASME Section XI (74S75).

a. Review of Procedure (73052B) - Units 1, 2, and 3

The inspectors reviewed the licensee's procedure N-VT-1 (R4), "Preservice and Inservice Visual Examination Procedure", relative to the following:

- Licensee approvals
- Examination methods and extent
- Technical content
- Records requirements

The inspectors questioned the acceptance requirements specified by procedure N-VT-1 for support settings on constant and variable spring type hangers, snubbers and shock absorbers and identified this for followup by an NRC specialist as inspector followup item 259, 260, 296/83-41-03, Acceptance Requirements for Hanger and Support Settings.

b. Review of Records (73755)

(1) Visual Examination Records - Unit 1

The inspectors reviewed visual examination records for the following hangers to determine their compliance with licensee procedure N-VT-1:

- Spring Hanger R-1-H6
- Hydraulic Shock Suppressor RHR-R8
- Variable Spring Hanger RHR-1-H-113

- Constant Force Support MS-1-HB3
- Mechanical Shock Arrestor RHR-R85

(2) Ultrasonic Examination Records - Unit 3

The inspectors reviewed the ultrasonic examination (UT) records for the following welds, which were designated to be examined in accordance with IE Bulletin 83-02, to determine their compliance with the IE Bulletin and the licensee's UT procedure N-UT-25:

Weld No.	Pipe Diameter	System
DSHS-3-15	6-inch	Residual Heat Removal
DSHS-3-19	6-inch	Residual Heat Removal
DHS-3-4	6-inch	Residual Heat Removal
DHS-3-6	6-inch	Residual Heat Removal
KR-3-14	12-inch	Recirculation
KR-3-15	22-inch	Recirculation
KR-3-12	22-inch	Recirculation
KR-3-18	22-inch	Recirculation
KR-3-19	22-inch	Recirculation
TCS-3-405	12-inch	Core Spray
TCS-3-406	12-inch	Core Spray
TCS-3-410	12-inch	Core Spray
TCS-3-421	12-inch	Core Spray
TCS-3-426	12-inch	Core Spray

c. Re-examination of Selected Welds (73753) - Unit 3

The inspectors independently, ultrasonically examined the following selected examples of welds previously examined by the licensee (in accordance with IE Bulletin 83-02) to confirm the adequacy of the licensee's examinations:

Weld No.	Pipe Diameter	System
DCS-3-4	12-inch	Core Spray
DCS-3-14	12-inch	Core Spray
DSCS-3-2	12-inch	Core Spray
DSCS-3-8	12-inch	Core Spray
DSCS-3-9	12-inch	Core Spray

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

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

a. (Open) IEB 83-02: Stress Corrosion Cracking in Thick-Wall, Large Diameter Stainless Steel, Recirculation System Piping at BWR Plants (Units 1 and 3)

A records review and repeat examinations performed by the inspectors relative to this bulletin (for Unit 3) have been described in paragraphs 5.b.(2) and 5.c. above. In addition, the inspectors questioned the licensee on the results of a metallographical examination they undertook on a cut out Unit 1 reactor water cleanup system weld identified as cracked in a Bulletin 83-02 examination. The licensee's metallurgical engineer and Level III examiners stated that metallography on the cut out weld had shown that it was not cracked. They indicated that the source of the UT indications that had led them to believe the weld was cracked had not been definitely determined. One of the Level III examiners stated that he believed that the indication might be due to the configuration and metallurgical structure of the weld at the root. The licensee plans to perform additional metallographical examinations on other welds determined to be cracked when affected piping is replaced.

b. (Open) IEB 83-03: Check Valve Failures in Raw Cooling Water Systems of Diesel Generators (Units 1, 2, and 3)

The licensee's response to this bulletin, dated June 15, 1983, was reviewed by Region II and determined to be inadequate. As described in NRC Inspection Report 259, 260, 296/83-22, Region II discussed the response inadequacy with the licensee and the licensee agreed to provide a revised response by September 25, 1983. The inspectors requested a copy of the revised response from the licensee during this inspection. The licensee indicated that the revised response had not been submitted to the NRC. The matter was discussed with the Plant Superintendent who stated he would have the matter checked on.

7. Inspector Followup Items (IFIs) (92701)

a. (Closed) IFI (259, 260, 296/80-07-01): Status of relief requests. This item was opened for an inspector to followup on determination of the status of the licensee's ISI relief requests. The status of the relief requests has been resolved through issuance of the NRC Safety Evaluation Report covering the licensee's ISI program and relief requests. This was transmitted to the licensee in a letter from D. B. Vassallo (NRC) to H. G. Parris (TVA) dated August 30, 1983.

b. (Closed) IFI (259, 260, 296/82-17-02): Possible undersize welds. This item addressed an inspector's concern that some of the licensee's socket welds might be undersize. The licensee investigated and found that a number of its socket welds were undersize. Based on data obtained in their inspection, the licensee stated that they determined that the undersize condition did not pose any immediate danger. The condition is documented for disposition on corrective action report CAR 82-4G. The inspectors reviewed the data obtained by the licensee and verified CAR 82-4G as addressing the concern. Based on their examination and review of the licensee's actions relative to this item the inspectors are satisfied that it may be closed.

c. (Closed) IFI (259, 260, 296/82-32-04): ISI record inconsistencies. This item addressed an inspector's finding of minor inconsistencies related to records for ISI. The inspectors reviewed the matter with the licensee's Level III examiner and determined that the inconsistencies had been adequately resolved.

In the course of the above review the inspectors found that Rompas Blocks used by the licensee for ultrasonic examination calibrations, had not all been certified or otherwise clearly demonstrated as having proper dimensions for the calibrations. The licensee's Level III examiner stated that all of the Rompas Blocks would be confirmed to have satisfactory dimensions by January 1, 1984. The inspectors informed the licensee that inspector followup item 259, 260, 296/83-41-04, Verification of Adequacy of Rompas Blocks Used for UT Calibrations, would be opened to followup and verify the licensee's confirmation of Rompas Block adequacy.

d. (Closed) IFI (259, 260, 296/83-32-01): Transducer for IGSCC Examinations on Small Diameter Piping. This item was opened to followup on the licensee's use of a ¼ x ¼ transducer for UT on small diameter piping for detection of intergranular stress corrosion cracking (IGSSC). This was a different transducer than originally qualified for IGSCC examinations (on large diameter pipe) conducted in accordance with IEB 83-02. The inspectors have reviewed the licensee's use of the ¼ x ¼ transducer further and are satisfied that its use does not warrant any special concern.

e. (Open) IFI (259, 260, 296/83-14-02): Verification of adequate close out actions for delinquent CARs and DRs. This item was opened for followup on the adequacy of corrective actions specified and taken by the licensee in closing out a large number of delinquent Corrective Action Reports (CARs) a Discrepancy Reports (DRs). In following up the item during this inspection, the inspectors reviewed dispositions stated on selected CAR examples and examined records related to receipt and issuance of materials - an area in which CARs had previously identified nonconformances. These areas were reviewed and examined to verify compliance with NRC regulations and implementing licensee procedures. The inspectors findings relative to the subject areas are described below:

(1) Review of Selected CAR Dispositions

The inspectors reviewed the dispositions on the following CARs:

CAR No.
81-51-OT
81-63-OT
81-74-OT
82-26-FS

82-29-P
82-34-P
82-103-FS
82-113-FS
82-485
82-498R1
82-508
83-21
83-78
83-79
82-46
83-151

From their review of CARs (e.g., CARs 81-51-OT, 81-63-OT and 83-151) and discussions with licensee personnel, the inspectors noted a particular problem that recurred and apparently had not been satisfactorily resolved. The problem is that the materials procurement requirements of the engineering design division (ENDES) and the plant (particularly for plant designated QA Level I items) are in conflict and materials procurements made to ENDES requirements are sometimes rejected by plant QA. The inspectors were informed that action had been initiated to resolve this problem, as documented in TVA memorandum of July 22, 1983 - "Minutes of Meeting With Concerned Personnel on NCIs Issued at the ECN Warehouse" (identified MEDS-OQA-830722-707). The inspectors review of the problem during the inspection did not reveal any violation of NRC requirements. However, the inspectors consider that further review is warranted to assure that:

- The ENDES procurement procedures adequately implement NRC requirements

- Any safety significant differences between plant and ENDES requirements are promptly corrected

This matter was identified to the licensee as unresolved item 259, 260, 296/83-41-01, Conflicts Between Plant and ENDES Material Procurement Requirements.

(2) Receipt and Issuance of Materials

The inspectors selectively reviewed the records related to receipt and issuance of materials for use in safety-related modifications conducted to Work Plans 10277-R1 (Core Spray System) and 10255 (CRD System). The work covered by these plans had been completed and the completed Work Plans were about to be reviewed by a quality assurance engineer. The inspectors found a number of examples of unsatisfactory material requisitions (Form 575) included with the plans. One requisition was missing (it was later found and included with the Plan), others had incorrect activity numbers, some were issued for other work (and referenced

other Work Plans and Engineering Change Notices), and still others referenced incorrect contract item numbers for the items covered. The safety significance of these discrepancies was limited, in that subsequent checks indicated no use of improper materials and it appeared that the discrepancies would have been detected and corrected through the planned QA reviews. The inspectors were informed that all Work Plans for safety-related modifications were being reviewed by QA. The inspectors were concerned, however, that the number of discrepancies detected might be indicative of a trend and that the quality assurance engineers were not performing their intended audit or surveillance function, but were taking on more direct responsibilities for the accuracy of the documentation reviewed. This concern was identified unresolved item 259, 260, 296/83-41-05, Material Requisition Discrepancies. Region II will conduct additional reviews related to this matter in a subsequent inspection to determine whether the indicated concerns should be considered a violation.