



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-259/84-51, 50-260/84-51, and 50-296/84-51

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 Conducted: December 10-14, 1984

Inspector:

J. J. Coley

J. J. Coley

1/9/85

Date Signed

Approved by:

J. J. Blake

J. J. Blake, Section Chief
Engineering Branch
Division of Reactor Safety

1/9/85

Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 33 inspector-hours on site in the areas of data review and evaluation, observation of work and work activities for Generic Letter 84-11, independent inspection effort, and followup on items of noncompliance.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Licensee Employees Contacted

- *J. A. Coffey, Site Director
- *G. T. Jones, Plant Manager
- *J. E. Swindell, Superintendent - Operating/Engineering
- *J. R. Pittman, Superintendent - Maintenance
- J. H. Rinne, Modifications Manager
- *O. L. Butler, Inservice Inspection Engineer
- *J. Whitaker, Inservice Inspection Engineer
- *H. E. Queen, Inservice Inspection Level II Examiner
- J. Nebrig, Assistant Modifications Manager

Other licensee employees contacted included technicians and office personnel.

NRC Resident Inspectors

- *G. L. Paulk, Senior Resident Inspector
- *C. A. Patterson, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 14, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

- a. (Open) Violation 50-259/84-31-01, Failure to establish QC hold points and to use qualified visual examiners for performing dimensional verifications on critical systems, structures, and components. The inspector reviewed TVA's revised Special Mechanical Maintenance Instruction 14.4.1.3-1 for Overlay Weld repairs. S.M.M.I. 14.4.1.3-1 had been revised to include the necessary QC hold points. However, the inspector's review revealed several unclear areas in the new instruction. The licensee was requested to re-examine and clarify the instruction. This item will be reverified on a subsequent inspection.
- b. (Open) Violation 50-259/84-31-01, Quality assurance breakdown in work performed on Unit 1 overlay repair welds. The licensee's corrective action for this violation was to provide training for modifications personnel which covered the procedures to be followed to initiate instruction changes and the incorporation of QC hold points in the instructions. The inspector requested to see training rosters for this

training and asked to discuss the content of the retraining with TVA's training coordinator. This individual was unavailable due to prior training commitments. This item will therefore be verified on a subsequent inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort - Units 2 and 3 (92706)

- a. The inspector held discussions with the licensee's Modification Manager concerning TVA's plans for performing induction heat stress improvement (IHSI) and overlay weld repairs/replacement on Unit 2 class 1 stainless steel welds which were examined in accordance with Generic Letter 84-11. TVA's tentative plans are as follows:

- (1) IHSI will be performed by General Electric (GE). This work is scheduled to start on January 8, 1985. TVA will re-examine twenty-five percent of the stainless steel welds (four inches and greater) following IHSI. The sample will be selected from those welds which required recording/evaluation of indications. Any additional welds needed to complete the 25 percent sample will be from weld locations shown to have the highest propensity for cracking.
- (2) Overlay weld repairs/replacement is scheduled to start on March 1, 1985. TVA has replacement jet pump instrument nozzles for Unit 2 and specifications have been developed for replacement. However, TVA is also prepared to overlay repair the jet pump instrument nozzles and other welds requiring overlay repair. Final decisions as to which welds will be repaired or replaced and who will perform the work have not been determined at this time.

- b. During the inspector's visit, the licensee reported that a 3/4 inch drain-line on the body of recirculation valve 68-33 had developed a leak upstream of the isolation valve on Unit 3. The inspector investigated this problem and found that the weld connecting the 3/4 inch pipe to valve No. 68-537 had developed three pin-hole leaks. The inspector discussed the licensee's plans for repair of these leaks with the cognizant engineering branch. The licensee's repair instruction provides for the complete removal of the existing fillet weld. After rewelding the pipe to the valve, the licensee's instructions required that visual and liquid penetrant examinations be performed.

Within the areas examined, no violation or deviation was observed.

6. Generic Letter 84-11 (Unit 2)

On April 19, 1984, NRC issued Generic Letter 84-11 to all licensees of operating reactors, applicants for operating license, and holders of construction permits for boiling water reactors. This letter addressed the problem that inspections conducted at several boiling water reactors (BWRs) revealed intergranular stress corrosion cracking (IGSCC) in large diameter recirculation and residual heat removal piping. These inspections were conducted pursuant to IE Bulletins 82-03, Revision 1, and 83-02 and the NRC August 26, 1983 Orders. The letter expressed the Commission's opinion that the results of the above inspections mandated an ongoing program for similar reinspection at all operating BWRs. The Generic Letter also described those actions which licensees should take to provide an acceptable response to the IGSCC concern.

In TVA's letter of response to Generic Letter 84-11, dated June 7, 1984, TVA committed to inspect one hundred percent of all stainless steel welds greater than 4 inches in diameter before induction heat stress improvement (IHSI) and a sample size of twenty-five percent following IHSI. Examinations performed in accordance with Generic Letter 84-11 would be conducted by examiners who were certified by either the IE Bulletin 83-02 Demonstrated Capability Process, or the EPRI-NDE Center training and testing process, using procedures developed for the detection of IGSCC. On December 10, 1984, the inspector arrived at the Browns Ferry site to observe work activities in process and to review the licensee's evaluations of recorded data for the above examinations. The following areas were examined by the inspector:

a. Observation of Work and Work Activities - (73753B)

The inspector observed the licensee perform evaluations, to determine whether reported indications on sweep-o-let welds KR-2-36 and KR-2-14 were in fact cracked. These welds had been examined and reported cracked during examinations in accordance with IE Bulletin 82-03. The inspector observed the licensee performing examinations using a 60 degree angle beam transducer and a WSY-70 degree "Creeping Wave" transducer. Techniques used for evaluation using both transducers confirmed the indications as cracks. In addition, the inspector re-examined the indications using a 45° dual element transducer to observe the position of the indications as related to the center of the welds. The licensee however, considered the indications still under evaluation at the conclusion of the inspection trip because TVA's Level III examiner had not sized the indication and TVA-Chattanooga was still requesting supplemental information.

In addition to the reinspections observed above, the inspector also observed the examination of weld No. DS-RHR-2-4.

Within the areas examined, no violation or deviation was observed.

b. Data Review and Evaluation (73755B)

The inspector reviewed TVA completed data for examinations performed in accordance with Generic Letter 84-11. All data reviewed consisted of welds which TVA had recorded indications requiring evaluation. The following examination records including evaluation plots, strip charts and calibration records were reviewed:

<u>Weld ID Number</u>	<u>TVA Examination Report No.</u>
JP-2-1A	#0278
JP-2-1B	#0280
DRWC-2-4	#0294
DRWC-2-1A	#0407
DSCS-2-14	#0296
DCS-2-10	#0396
DRWC-2-1	#0406
DSRHR-2-5	#0404
DSRHR-2-5A	#0405
DRWS-2-1A	#0407
DSRWC-2-1	#0408
DRHR-2-6	#0545
DRHR-2-17	#0413
RECIRC-KR-2-37	#0581
RECIRC-GR-2-17	#0584

The above examination records were reviewed to ascertain whether the following requirements were met:

- (1) The examination unit calibration data sheets show no major deviations between initial and final calibrations.
- (2) Collected examination data and any recordable indications are properly recorded to permit accurate evaluation and documentation.
- (3) Evaluation of examination data performed by a Level II or Level III examiners who were certified by either the IE Bulletin 83-02, Demonstrated Capability Process or the EPRI-NDE Center training and testing process.
- (4) Evaluation of examination data complies with the NDE procedure.

Within the areas examined, no violation or deviation was observed.