



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

Report Nos.: 50-259/90-38, 50-260/90-38, and 50-296/90-38

Licensee: Tennessee Valley Authority  
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 1101 Market Street  
 Chattanooga, TN 37402-2801

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, 1990

Inspectors:	<u><i>J. L. Coley</i></u>	<u>1/14/91</u>
		Date Signed
	<u><i>R. C. Chou</i></u>	<u>1/14/91</u>
		Date Signed
Approved by:	<u><i>J. J. Blake</i></u>	<u>1/14/91</u>
	J. J. Blake, Chief	Date Signed
	Materials and Processes Section	
	Engineering Branch	
	Division of Reactor Safety	

SUMMARY

Scope:

This routine, announced inspection was conducted to evaluate TVA's readiness for start-up in the following areas: welding, intergranular stress corrosion cracking (IGSCC), microbiologically induced corrosion (MIC), valve body erosion, and piping supports for large bore and small bore piping.

Results:

Review of radiographs for 1990 pipe welding on Units 1 and 2 revealed excessive weld repairs. Review of TVA's actions taken for the identification and mitigation of IGSCC on Unit 2 and common in accordance with NRC Bulletin 82-03, Generic Letter 84-11 and Generic Letter 88-01 indicated that the licensee has taken the necessary appropriate corrective action. Licensee actions regarding MIC, valve body erosion, and corrective actions taken on small and large bore piping supports revealed that the licensee's efforts in these areas have also been effective. Management was active in assuring quality. One unresolved item was identified involving anchor bolt spacing, paragraph 5.c.

In the areas inspected, violations or deviations were not identified.



## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

R. Baird, Civil Engineer  
P. Baron, Manager - Quality Control (QC)  
\*F. Blackburn, Nuclear Engineering  
\*P. Carrier, Manager, Site Licensing  
\*J. Carlin, Plant Operations  
\*R. Cutsinger, Acting Lead Civil Engineer  
\*J. Davenport, Site Licensing  
\*A. Everitt, Supervisor, Welding Engineer  
\*D. Gruber, Maintenance  
\*E. Hartwig, Project Management  
J. Holloway, QC Mechanical and Welding Inspector  
\*S. Hudgins, Licensing Engineer  
\*J. McCarthy, Unit 3, Licensing Manager  
\*B. Morris, Site Programs  
\*L. Myers, Plant Manager  
\*P. Osborne, Civil Engineer  
C. Pontius, Mechanical Engineer - Modification  
\*M. Reischaman, Supervisor, Mechanical Modifications  
\*J. Rupert, Manager, Engineering  
\*P. Salos, Compliance Engineer  
M. Strickland, QC Mechanical and Welding Inspector  
\*J. Swindell, Unit 3, Restart Manager  
\*J. Wallace, Compliance Engineer

Other licensee employees contacted during this inspection included craftsmen, engineers, mechanics, security force members, technicians, and administrative personnel.

#### NRC Resident Inspectors:

\*W. Bearden, Resident Inspector  
\*K. Ivey, Resident Inspector  
C. Patterson, Senior Resident Inspector

\*Attended exit interview

### 2. Review of Welding

TVA has conducted a welding reassessment program in two basic phases. Phase I consisted of programmatic review of commitments, and procedures for implementing the commitments; Phase II consisted of physical

reinspection of sample welds and weld records. The results of the inspection efforts were used to evaluate the implementation of the written welding program. The reinspection results of the sample welds were also used to determine whether TVA's welding activities in the field met the applicable code requirements and the welds are adequate for service. During both of these phases, TVA identified and categorized deficiencies in the existing welding program, corrected the problems, and implemented changes to prevent recurrence.

An NRC staff inspection of Phase I conducted in April 1987 (Report No. 87-17), determined that the necessary elements existed to translate welding commitments into specifications and drawings. An inspection of Phase II in May and June 1988 (Report No. 88-13), determined that welding was adequately implemented. However, the licensee was asked to address several items noted during the course of the inspection.

The licensee responded to the NRC-identified items in a letter dated January 18, 1989. The NRC staff issued a safety evaluation report (SER) on the Browns Ferry welding activities in section 3.5 of NUREG-1232, Vol. 3, Supplement 1. The staff concluded that the licensee adequately defined and implemented its plant welding program at Browns Ferry. The staff also concluded that the licensee adequately reviewed and addressed concerns related to the Browns Ferry welding program.

During this inspection the inspector accessed the adequacy of the licensee's improvements by reviewing radiographs for all ASME Code piping welds fabricated during the year of 1990 and verifying TVA's responsiveness to NRC initiatives by reviewing the licensee's implementation of Generic Letter 90-05 "Guidance For Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping."

a. Review of Radiographs

The following eight welds represented the total population of ASME Code pipe welds fabricated for all Units at Browns Ferry which required radiography during 1990:

<u>Weld Identifications No.</u>	<u>Pipe Diameter</u>	<u>Number of Repairs</u>
RHR-1-005-001	1½ inches	0
RHR-1-005-002	1½ inches	1
RHR-1-002-001	24 inches	1
RHR-1-002-002	24 inches	0
2-RBCCW-004	8 inches	4
2-RBCCW-008	8 inches	4
RHRSW-1-001-006	16 inches	2
RHRSW-1-001-007	16 inches	2

The inspectors review of the radiographs for the above welds revealed that the discrepancies which rejected the above welds were generally lack of weld penetration or lack of fusion. These type of defects and this many repairs indicated, a lack of welding proficiency. During the inspector's exit meeting this item was discussed with plant management. The inspector informed the licensee that several operating plants in Region II have found that due to infrequent welding that it was necessary to provide additional training for welders in order to maintain welding proficiency.

TVA was advised to address this issue since welding will become less frequent and materials, especially in Boiling Water Reactors (BWRs) tend to be detrimentally effected when sensitized by numerous heat cycles. The licensee acknowledged the inspector's concern and stated that this item would be addressed.

b. Implementation of Generic Letter 90-05

Generic Letter 90-05 was issued on June 15, 1990. To date Browns Ferry has not fully implemented the guidance provide in this letter. However TVA's upper tier document for Repair and Replacements of ASME Section XI Components STD-6.10 is presently in the signature concurrence circuit. When this document receives final approval, Browns Ferry Site procedure for Repair and Replacement will be updated. This Generic Letter also requires that when a Unit is in an extended outage of over 30 days applicable non-code repairs will have been replaced with code repairs. Since, Unit 2 presently intends to become operational in February 1991 it was important that TVA address whether any non-code repairs existed on Unit 2 and common. Browns Ferry Maintenance Manager assured the inspector that there are no non-code repairs on Unit 2 and 0.

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

3. Intergranular Stress Corrosion Cracking (IGSCC) Unit 2

NRC has issued Bulletins 82-03 and 83-02 and Generic Letters 84-11 and 88-01 to address the IGSCC problem. TVA's investigation has found that IGSCC is evident to some degree on all three Browns Ferry Units. The IGSCC mitigation options are primarily pipe replacement, weld overlay repairs, induction heating stress improvement (IHSI) and/or hydrogen water chemistry.

The licensee has progressively inspected susceptible welds in the recirculation, core spray, reactor water cleanup inside containment and residual heat removal systems for Units 1, 2, and 3. Unit 1 and 3 were inspected to the requirements of Bulletin 83-02. Mitigation options for Units 1 and 3 will be determined after Unit 2 restart and all inspection efforts are completed on these units.



During this inspection the inspector's focus was to determine whether all IGSCC actions and commitments for Unit 2 were either complete prior to restart or to assure that any exception had been agreed to by NRC's Office of Nuclear Reactor Regulations. TVA's letter of response to GL 88-01 dated August 1, 1988, and letters of supplemental response dated May 22, 1989, June 30, 1989, and July 13, 1990 were reviewed by the inspector. Discussions were also held with cognizant TVA personnel to determine the Unit 2 IGSCC status. In addition, the inspector had previously performed two inspections documented in Region II Inspection Reports 89-05 and 89-34 which dealt with GL 88-01 status for Unit 2 restart.

The inspector's review concluded that TVA has taken the necessary actions to adequately address IGSCC for Unit 2 restart. Mitigating actions taken to-date have included (1) recirculation system inlet safe-ends and 12 inch pipe partial replacement, (2) application of seven weld repair overlays, and (3) induction heat stress improvement (IHSI) on nonresistant welds. Actions remaining to be taken on Unit 2 but approved by NRC include (1) Replacement of the reactor water clean up system piping outside of containment which is scheduled for the cycle six refueling outage, (2) Installation of hydrogen water chemistry which should be complete by mid-cycle, (3) The five untreated welds in non-resistant materials within penetrations, TVA plans to either remove the welds by design or provide leak detection for the system, prior to the conclusion of the next refueling outage. For the six welds in the core spray system where the austenitic stainless steel piping has been replaced by carbon steel piping however, austenitic stainless steel fittings were used. TVA is investigating possibilities for taking some form of mitigating action on these welds however, for the present the welds will be examined per GL-88-01.

The inspector also reviewed NRC's Safety Evaluation Reports dated December 8, 1988 and December 21, 1989 for TVA's IGSCC issues and concurs with the evaluations made and TVA's commitments for their resolution. TVA has conducted an extensive effort to mitigate IGSCC at the Browns Ferry site and these efforts continue as current IGSCC events are addressed by industry and the licensee. This was recently demonstrated when supplemental visual examinations were performed by TVA in response to General Electric's Rapid Information Communication Services Information Letter (RICSIL) No. 054 "Core Support Shroud Crack Indications." The results of these supplemental examinations revealed that there were no indications indicative of IGSCC or other reportable indications on the accessible portions of the reactor vessel core support shroud welds on Unit 2.

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





4. Review of TVA's Mitigating Actions Regarding Microbiologically Induced Corrosion (MIC)

TVA has been committed to identifying and controlling MIC at Browns Ferry and MIC has been observed in the following three systems:

- a. High Pressure Fire Protection/Raw Service Water (HPFP/RSW)
- b. Emergency Equipment Cooling Water (EECW)
- c. Residual Heat Removal Service Water (RHRSW)

The Browns Ferry program for MIC includes provisions for detection of MIC bacteria, (nondestructive examination (NDE), leak detection,) repair and evaluation and use of bio-cide and corrosion inhibitors.

A major part of the Browns Ferry MIC control program will be improved monitoring. Retrievable coupons and in line monitors are planned for installation in the susceptible systems to provide information on the condition of systems. In addition, baseline radiography (RT) records have been established on 95 stainless steel welds and baseline ultrasonic testing (UT) has been performed on carbon steel piping to evaluate future changes. The inspector examined TVA mitigating actions for MIC by conducting the following reviews and inspections:

- (1) Reviewed TVA's Program for MIC.
- (2) Reviewed TVA's reply to NRC Generic Letter 89-13 concerning MIC.
- (3) Performed walk down inspections of the chlorination treatment installations and sample monitoring stations.
- (4) Reviewed radiographs taken in 1987 and 1990 of the four worst examples of MIC in welds at Browns Ferry.
- (5) Reviewed radiographs of the four worst defects found as a result of radiographing welds for MIC in systems which had not been previously radiographed.

From the inspector's review of the above, it appears that MIC at Browns Ferry has been minimal and had not compromised the operability of the above system.

TVA's letter to NRC, dated September 29, 1988, submitted TVA's (Browns Ferry) program for MIC. The letter also contained six commitments relating to implementation of their program. The six commitments and their status are delineated below:



- (1) A sampling program to monitor specific plant systems for bacteria on a periodic basis is being developed using plant procedures which will implement engineering requirements. TVA will provide a schedule for completion of this item in a subsequent letter by June 1, 1989.

Status

A schedule for completion of this item was submitted and the item has been completed. A chemistry procedure (CI-128) has been developed and implemented which requires periodic sampling of plant systems for bacteria.

- (2) Retrievable corrosion coupons and monitors are planned for installation to evaluate MIC and the control techniques. TVA will provide a schedule for completion of this item in a subsequent letter to NRC by June 1, 1989.

Status

The plans for installation of corrosion coupons and monitors have been submitted. The submitted plans tied installation to the availability of resources committed to Unit-2 restart. Modifications to permit installation of the corrosion coupons and monitors are in the process of being completed. Installation should be complete by the end of the year, dependent on resources committed to Unit-2 restart.

- (3) A detailed flow verification test (restart test procedure 67) is being performed on the EECW system as part of the unit-2 restart test program.

Status

This item has been completed. The test results are filed in the Restart Test Files.

- (4) Before the Unit-2 restart the RHRSW will be tested by a special test (ST 88025) to verify that the system meets design basis flow requirements.

Status

This item has been completed. The test results are filed in the Restart Test Files.



- (5) Additional UT inspections of the HPFP/RSW piping will be performed to establish the corrosion by Unit-2 restart.

Status

This item has been completed. No readings less than design minimum wall were found.

- (6) To determine the rate that MIC is progressing in the stainless steel welds of the EECW system, the welds identified with MIC and possible MIC indications in the 1987 inspection effort will be re-inspected using radiography before Unit-2 restart and during each Unit outage to monitor MIC growth. In addition, a population of the Unit-2 welds which were previously inspected by radiography will be reradiographed prior to Unit-2 restart and during each outage to ensure structural integrity of the system.

Status

This item has been completed. The subject MIC and possible MIC welds have been re-radiographed with no significant indication of growth.

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

5. Licensee Action on Pipe Support Modifications

Reference 1: IE Bulletin 79-02, "Pipe Support Base Plate Design Using Concrete Expansion Anchor Bolts"

Reference 2: IE Bulletin 79-14, "Seismic Analyses For As-Built Safety-Related Piping System"

a. Status

The inspection involved pipe support modifications required to meet IEBs 79-02 and 79-14 before the restart of Unit 2. The last inspection in this area was documented in Inspection Report Nos. 50-259, 260,296/90-26. The licensee has completed approximately 2400 pipe support modifications, which represents about 99 percent of the total to be completed before restart. Approximately 30 supports more are required to be completed. All pipe support modifications are scheduled to be completed by December 1990 to support a fuel load schedule of January 1990.

## b. Walkdown Reinspection

The inspectors randomly selected 36 pipe supports which had previously been inspected and accepted by the licensee construction foreman and QC inspectors. The 36 pipe supports were all in large bore piping for five different safety-related systems located both inside and outside of containment. The walkdown reinspection was completed with assistance from licensee's engineers and a QC mechanical inspector who was also qualified as a welding inspector. The supports were partially reinspected against detail drawings, including the original walkdown sketches, the Design Change Notices (DCNs), and the Field Design Change Notices (FDCNs). They were checked for configuration, identification, fastener/anchor installation, anchor size, anchor type, anchor marking, anchor edge distance, base plate size and thickness, plate warpage, member size, weld sizes, component identification numbers, component sizes and settings, dimensions, oxidation accumulation, maintenance, and damage protection. The supports reinspected during the current inspection are listed below.

Table 1

Walkdown Reinspection Supports (Large Bore)

<u>Item No.</u>	<u>Support No.</u>	<u>Rev. No.</u>	<u>Comment/Discrepancies/ Licensee Remedies</u>
1	0-47B935S0068	001	
2	0-47B935S0094	001	
3	0-47B935S0153	001	
4	0-47B935S0154	001	Pipe support identification number is unclear. Work Request (WR) C035439 was issued to correct it.
5	0-47B935S0156	001	
6	0-47B935S0157	001	
7	1-47B451S0118	001	
8	1-47B451S0122	001	
9	1-47B451S0125	001	
10	1-47B451S0135	002	
11	1-47B451S0136	002	
12	1-47B451S0137	000	
13	1-47B452H0037	001	
14	1-47B452H0038	001	
15	1-47B452R0023	001	
16	1-47B452S0187	003	

<u>Item No.</u> (cont'd)	<u>Support No.</u>	<u>Rev. No.</u>	<u>Comment/Discrepancies/ Licensee Remedies</u>
17	1-47B452S0191	001	The base plate size for item 2 showed 1 3/4" x 15"x 1' - 7" in Bill of Materials. The actual plate size is the 1 3/4"x 19" x 1' -7" shown in Section B191-B191 of the drawing. The licensee will revise the drawing bill of materials and ensure the calculation reflects the as-built condition.
18	2-47B452H0019	002	The connection between the end attachment of the sway strut and the base plate at section C283-C283 did not show the fillet weld size and symbol. The licensee indicated that the weld size and symbol were inadvertently left off during the revision of DCN. The drawings will be revised to reflect this installed fillet weld.
19	2-47B452R0039	002	
20	2-47B452R0040	002	
21	2-47B452S0250	002	
22	2-47B452S0283	002	
23	2-47B454R0010	001	
24	2-47B454R0016	001	
25	2-47B454R0026	001	
26	2-47B454R0031	001	
27	2-47B454R0045	001	
28	2-47B454S0018	001	
29	2-47B454S0031	001	
30	2-47B454S0173	002	
31	2-47B455H0068	000	
32	2-47B455H0070	000	





<u>Item No.</u> (cont'd)	<u>Support No.</u>	<u>Rev. No.</u>	<u>Comment/Discrepancies/ Licensee Remedies</u>
33	2-47B455H0077	000	The support rod was loose. WR C035441 was issued to tighten it.
34	2-47B455R0025	001	Three sides of the fillet weld at the connection of the end attachment and the base plate were undersize 1/16" compared to the required 1/4" fillet weld all around shown on the drawings. The licensee will revise drawings and calculations to correct this condition.
35	2-47B455R0026	000	
36	2-47B455S0042	000	

All the support modifications reinspected were found to be acceptable except the minor discrepancies noted on Table 1. The licensee agreed to take the action to resolve the discrepancies.

c. Support Calculation Review

The design calculations listed below on Table II were partially reviewed and evaluated for thoroughness, clarity, consistency, and accuracy. The calculations contained the purpose, assumptions, references, computer programs, design input data, graphics, calculations, summary, conclusion, and attachments.

The computer programs used included: GT strud1 program for the structural member analysis; Baseplate II program for the flexible base plate and anchor bolt analysis; DD Lug Design program for the integrated lug design and analysis; and Conan program for the G-32 anchor bolt spacing violation evaluation analysis.

The attachments included existing pipe support configuration from walkdowns, proposed support modifications or Design Change Notices (DCNs), Employee Concerns checklist, and computer input and output for frame and base plate analyses.



The review included: overall calculation contents, allowable loads used, overstress condition justification if any, standard component capacity and settings, weld sizes and symbols, bolt sizes and lengths, and bolt spacing violations.

Table II

Support Calculation Reviewed

<u>Support No.</u>	<u>Calculation No.</u>	<u>Rev.</u>	<u>Discrepancies/License Remedies</u>
0-47B935S0094	CD-Q0031-892024	1	The allowable loads used for 1/2" self-drilling anchor bolt are wrong and are actually the allowable loads for 1/2" wedge anchor bolt instead. The licensee will revise the calculation to reflect the as-built condition.
0-47B935S0153	CD-Q0031-894438	1	
1-47B451S0118	CD-Q1067-892399	3	
2-47B452R0039	CD-Q2074-882454	2	
2-47B452S0250	CD-Q2074-893298	4	The allowable loads due to spacing violations for 3/4" self-drilling anchor bolts of the adjacent supports were reduced per page 7 of 7, Attachment M. The calculations of the adjacent supports were not reviewed and checked to see if the reduced allowable loads are less than the applied loads.
2-47B452S0283	CD-Q2074-884118	2	This support has a similar spacing violation as the previous support - S0250. But the allowable loads for the adjacent supports were not reduced.
2-47B454R0016	CD-Q2078-883314	1	
2-47B454H0068	CD-Q2073-882192	2	



In general, the design calculations were of good quality except as noted on Table II. During the walkdown reinspection, the inspectors noted that anchor bolt spacing violations for some supports existed. The licensee's engineers stated that all of the anchor bolt spacing violations were checked and the allowable loads reduced by use of the Conan computer program, for the main supports based on the maximum allowable loads utilized by the adjacent anchor bolts which had involved the spacing violations. Therefore, the adjacent support calculations are not required to be revised because the maximum allowable loads are not reduced. This is a logical method and solution. However, the inspectors found that the calculation of support No. 2-47B452S0250 had reduced the allowable loads for the anchor bolts of the adjacent supports. Per telephone conversation on December 20, 1990, the inspectors discussed this problem with the licensee's and Bechtel's Engineers, they indicated that the anchor bolts for the adjacent supports were not reviewed per their practice since the maximum allowable loads used by the adjacent anchors were assumed. They did not notice that the allowable loads for the adjacent anchor bolts were reduced by the Conan computer programs. Pending the licensee's investigation, evaluation, and corrective actions on the Conan Computer Program and affected supports, and correction on the discrepancies shown on Table II, this item is identified as Unresolved Item 50-259,260,296/90-38-01, Conan Computer Program Evaluation and Correction. The resolution of this unresolved item is considered to be a restart item.

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

## 6. Employee Concern Special Program

### a. Description

This program was created by the licensee to resolve the employee concerns on the quality of plant activities and was reviewed in Inspection Report No. 50-259,260,296/90-31. The Small Bore Pipe Support Modification Program was created to resolve the employee concerns on the small bore piping and supports and was a part of Employee Concern Special Program. The inspectors selected supports from a computer list for the completed small bore pipe support modifications and performed a walkdown reinspection to see if the as-built field condition complied to the as-built drawings.

### b. Walkdown Reinspection

The inspectors randomly selected 13 pipe supports which had previously been inspected and accepted by the licensee construction foreman and QC inspectors. The 13 pipe supports were in two different safety-related systems located both inside and outside of



containment. The walkdown reinspection was completed with assistance from licensee's engineers and a QC mechanical inspector who was also qualified as a welding inspector. The supports were partially reinspected, for the modified parts and work, against detail drawings, including the Design Change Notices (DCNs) and the Field Design Change Notices (FDCNs). They were checked for configuration, identification, fastener/anchor installation, anchor size, anchor type, member size, weld sizes and symbols, U-bolts, clearances, repair for the oversized bolt holes, component sizes, and dimensions. The supports reinspected are listed below. In general, the modifications in supports are considered to be acceptable compared to the applied drawings such as DCN or FDCN.

Table III

Walkdown Reinspection Small Bore Supports

<u>Item No.</u>	<u>Support No.</u>
1	2-01-801-1-01-035
2	2-01-801-1-01-036
3	2-01-801-1-01-037
4	2-01-801-1-01-038
5	2-01-801-1-01-040
6	2-01-801-1-01-041
7	2-01-801-1-01-042
8	2-01-801-1-01-043
9	2-67-859-1-01-023
10	2-67-859-1-01-024
11	2-67-859-1-01-025
12	2-67-859-1-01-026
13	2-67-859-1-01-NEW





## 7. Action on Previous Inspection Finding (92701, 92702)

- a. (Closed) Inspector Followup Item (IFI) 50-260/90-26-01, Clearance Problems for Pipe Supports Around Recirculation Pumps

This problem was discovered during a walkdown reinspection related to the pipe support modifications. This concerned that the recirculation pump movement during the operation will cause the hydraulic snubber to bind. The inspectors discussed this problem with the licensee's engineers and reviewed the information provided. CAQR BFP 900283 was issued by the licensee to evaluate this problem. After reviewing 12 snubber supports around the recirculation pumps, the licensee modified two snubber supports 2-47B408-S0047 and 2-47B408-S0063 to correct the deficiencies as documented in FDCN F10284 and F10418, respectively. Snubber support 2-47B408-S0062 was found to have an adequate clearance in the field and the calculation, had been revised in Revision 5, to reflect the field condition. In order to check the binding during the operation, the licensee is establishing a procedure, Document No. TI-190, "Test Scoping Document for Hot Thermal Expansion" to walk down the supports and check clearances during the reactor startup and reactor at rated temperature and pressure. The licensee's engineers agreed to include all 12 snubber supports in the walkdown list instead of the eight snubber supports planned in the draft. The licensee had taken the adequate action for this problem based on the evaluation and procedure establishment. Therefore, this item is considered closed.

Note: The following two items had been closed in NRC, Region II Inspection Report 50-259,260,296/90-29. However, both items were re-reviewed by the inspector and NRC's closure statement modified to verify that generic applications of problems had also been verified by TVA.

- b. (Closed) IFI 260/90-18-03, "RHR Valve Body Erosion"

The inspectors re-examined this item to determine if the two valves identified had been addressed by TVA in their investigation of valve erosion per GE RICSIL-034 and NRC Information Notice 89-01. The subject two valves were found to have been identified as a result of the investigation and therefore the issue has been generically examined.

- c. (Closed) URI 50-259,260,296/89-34-01, "Introspect-98 Software has Apparent Circular Scan Depth Calculation Error"

The inspector re-examined this item to determine if TVA had verified whether the defective scan feature for the Introspect-98 had been used on all Units at Browns Ferry or at any other TVA site. TVA response to this question was that the feature had only been used on



Unit 2. The inspector also noted that TVA had committed in their first reply to not use this scan feature. However, the defective software problem has been corrected and this feature can now be used if desired.

#### 8. Exit Interview

The inspection scope and results were summarized on December 14, 1990, with those persons indicated in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. The licensee was informed by the inspectors on December 21, 1990 on the unresolved item shown below. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

(Closed) IFI 50-260/90-26-01, "Clearance Problems for Pipe Supports Around Recirculation Pumps" - Paragraph 7.a.

(Open) Unresolved Item 50-259,260,296/90-38-01, "Conan Computer Program Evaluation and Correction" - Paragraph 5.c.

