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SUBJECT: Responds to NRC 900118 ltr re violations noted in Insp Repts  
 50-259/89-53, 50-260/89-53 & 50-296/89-53.

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MAR 05 1990

U.S. Nuclear Regulatory Commission  
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Gentlemen:

In the Matter of )  
Tennessee Valley Authority )

Docket Nos. 50-259  
50-260  
50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - NRC INSPECTION REPORT NOS. 50-259/89-53,  
50-260/89-53, AND 50-296/89-53 - RESPONSE TO NOTICE OF DEVIATION AND NOTICE OF  
VIOLATION

This letter provides TVA's response to the notice of violation transmitted by  
letter from B. A. Wilson to O. D. Kingsley, Jr. dated January 18, 1990. NRC  
cited TVA with two violations and one deviation. TVA admits the first  
violation and the notice of deviation; however, TVA denies both examples 1  
and 2 of the second violation.

Enclosure 1 contains TVA's response to the notice of violation. TVA admits to  
Violation A and attributes the violation to personnel error resulting from the  
unit 2 unit operator's failure to follow procedures. This enclosure also  
addresses the test exceptions (TEs) which are identified in Violation B. TVA  
believes that these TEs did not require a Condition Adverse to Quality Report  
and, therefore, denies Violation B.

Enclosure 2 contains TVA's response to the notice of deviation. TVA notes  
that this deviation involves a self-identified oversight which was corrected  
before the end of the inspection period.

Enclosure 3 contains a discussion of TVA's program to identify and resolve  
single failure issues, as requested by NRC in section 5b of the inspection  
report.

All corrective actions to the cited violations and deviations have been  
completed; therefore, no commitments are contained in this response.

On February 20, 1990, in a telephone conversation with TVA's P. Salas,  
W. S. Little agreed to an extension of the due date of this response to  
March 5, 1990.

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PDR ADCK 05000259  
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MAR 05 1990

If you have any questions, please telephone Patrick P. Carier at  
(205) 729-3570.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



Mark O. Medford, Vice President  
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Enclosures

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ENCLOSURE 1

RESPONSE - BROWNS FERRY NUCLEAR PLANT  
NRC INSPECTION REPORT  
NOS. 50-259/89-53, 50-260/89-53, AND 50-296/89-53  
LETTER FROM B. A. WILSON TO O. D. KINGSLEY, JR.  
DATED JANUARY 18, 1990

Violation A

Technical Specification Section 6.8.1.1.a requires that written procedures shall be established, implemented, and maintained covering system operations.

Plant Managers Instruction 12.12, Conduct of Operations, requires that the operator at the controls and the immediate supervisor must be continuously alert to plant conditions and ongoing activities affecting plant operations, including conditions external to the plant, such as grid stability, meteorological conditions, and change in support equipment status: operational occurrences should be anticipated; alarms and off-normal conditions should be promptly responded to; and problems affecting reactor operations should be corrected in a timely fashion.

Contrary to the above, between 4:00 a.m. and 5:30 a.m. on December 2, 1989, the water level in Unit 2 Spent Fuel Storage Pool overflowed into the ventilation system and leaked onto areas of the reactor building. This resulted when the alarm was not adequately acted upon by control room personnel.

This violation is similar to a violation identified in NRC inspection report 89-35.

TVA's Response

1. Admission or Denial of the Alleged Violation

TVA admits the violation as cited.

2. Reasons For the Violation

This violation is attributed to personnel error. This conclusion is based on the fact that a Unit Operator (UO) failed to follow an alarm response procedure. Additionally, a contributing factor was that an Assistant Unit Operator (AUO) inadvertently failed to close the condensate supply valve to the skimmer surge tank.

On December 2, 1990 the fuel pool cooling (FPC) system's flow increased while operators were adjusting the pump discharge pressure. This increased flow subsequently decreased the level in the skimmer surge tank to the low low level setpoint. Therefore, makeup water was added to the skimmer surge tanks for a specified time. The AUO, who was adding the makeup water, failed to completely close the supply valve. Unknowingly, the supply of water continued to be added to the skimmer surge tank.

The fuel pool cooling demineralizers were then returned to service and the required system pressure was established. Normally, a level increase in the skimmer surge tank is expected since the water that was added to the spent fuel pool returns to the skimmer surge tank. At this time, the UO assumed that the surge tank high level resulted only from the return to service activity of the fuel pool cooling system. The UO then took action to clear the high alarm by opening a blowdown line from the reactor water cleanup system to the condenser, however, the UO did not assign personnel to the refuel floor during this high alarm condition as required by the ARP. This may have delayed the identification and closure of the open valve. From past experiences, the operator expected the high alarm condition to remain in effect for about 45 minutes. However, before the high alarm cleared, an Assistant Shift Operations Supervisor (ASOS) discovered water coming from the reactor building ventilation ducts.

TVA disagrees that this violation is similar to a violation identified in Inspection Report 89-35. The violation cited in that report involved a situation where the UO did not believe his instrumentation and, therefore, did not take timely actions. Although the present violation involved misinformation being (unknowingly) provided to the UO, it was the UO's failure to fully implement the approved ARP (by not assigning personnel to the refueling floor) which resulted in the violation.

### 3. Corrective Steps Which Have Been Taken and Results Achieved

The immediate steps taken to correct the overflow were: (1) The unit 2 ASOS checked the condensate makeup valve to the skimmer surge tank. The ASOS found the valve hard to turn in the close direction. He then opened the valve one-half turn and was then able to close the valve another four full turns to shut off the condensate makeup water, finally securing the makeup water supply to the skimmer surge tank. (2) The UO continued the blowdown to the condenser to remove excess water from the system. Radiological Control personnel were notified to check the area where the overflow occurred for contamination.

After the initial corrective actions, TVA provided training on this event to on-shift operation groups, including emphasis in adherence to procedures. Appropriate disciplinary action was taken with the unit 2 UO and AUO. A method was provided to ensure positive shutoff of the condensate makeup water to the skimmer surge tank.

These corrective actions will prevent recurrence by making the on-shift operation groups aware of the binding makeup valve by ensuring that the number of turns to open the valve are counted and the same turns are performed when closing the valve. Additionally, full implementation of the alarm response procedure will also preclude a recurrence. The current annunciator upgrade should assist the UO in determining whether corrective actions taken are effective.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

Corrective actions to prevent recurrence of this event have been completed.

5. Date When Full Compliance Will Be Achieved

Full compliance has been achieved.

Violation B

10 CFR 50, Appendix B, criterion XVI requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected.

The licensee's Nuclear Quality Assurance Manual (NQAM), Part I, Section 2.16, Corrective Action, requires that test deficiencies which, by evaluation, indicate that the item does not comply with the license design basis, or which affect plant technical specifications, shall be placed on a CAQR if "accepted-as-is" or "repair" actions are being considered.

Site Directors Standard Practice 3.13, Corrective Action, implements the NQAM requirements.

Contrary to the above, the following two examples of test deficiencies which involved "repair" and "accept-as-is" activities were not addressed as conditions adverse to quality.

EXAMPLE 1

During performance of Restart Test Procedure 2-BFN-RTP-031A, Control Bay Heating Ventilation and Air Conditioning, the Unit 1 and Unit 2 Control Bay chill water flows failed to meet the acceptance criteria. The deficiencies were documented by Test Exception TE-07. The TE was closed with a repair activity, through temporary modification TACF 0-88-002-031, without initiation of a Condition Adverse to Quality Report (CAQR).

TVA's Response

1. Admission or Denial of Example 1

TVA denies this example of violation B.

2. Reasons For the Denial of Example 1

The reason for the denial is that TVA did not consider closure of TE-07 as a "repair" activity under its CAQR procedure. Further, Temporary Alteration Control Form 0-88-002-031 was not used as a basis for closure of TE-07. This TACF is not referenced in the TE-07 test results package and was not a factor in the evaluation or closure of the TE.

Site Director Standard Practice 3.13, "Corrective Action," permits TVA to perform "rework" without the need to generate a CAQR. SDSP 3.13 defines repair and rework as:

Repair - The process of restoring a nonconforming characteristic of an item to a condition such that the capability of an item to function reliably and safely is unimpaired, even though the item still does not conform to the original requirement.

Rework - A process by which a nonconforming item is made to conform to prior specified requirements by completion, remachining, reassembling, or other acceptable corrective means.

TE-07 documented low flows for the units 1 and 2 control bay chilled water pumps. Therefore, maintenance requests (MRs) were generated. The test director applied the instructions given in SDSP 3.13 Section 6.2.1 which state: "Normal preventative or corrective maintenance, rework operational wear, minor damage, and expected end-of-life cycle failures of items are not considered CAQRs." In addition, as stated above, SDSP 3.13 distinguishes between "rework" and "repair" and this activity was clearly a rework activity because the maintenance requests were written to rework the pump (e.g., replace the impeller - not to restore the pump impeller and then reinstall it in the pump). Since pump maintenance appeared to be the problem, correctable by a rework activity, no "repair" actions were taken.

Maintenance was performed on the chilled water pumps and TE-07 was retested. This test resulted in a failure of the chilled water system to supply minimum required flow to all components. In accordance with the requirements of SDSP-12.1, "Restart Test Program," this deficiency was required to be documented by a TE, and the test director elected to write a new TE. TE-10 was generated to track and disposition the deficiency. TE-10 is still an open deficiency and is currently undergoing evaluation as required by SDSP-3.13. Thus, TE-07 was processed as a failed test package; no acceptance criteria were signed off and no credit was taken for that test data.

TE-07 was signed as closed by the RTP Manager on December 19, 1988, and submitted for JTG review and final closure per procedural requirements. TACF 0-88-002-031 is recorded on TE-10 because the removal of the TACF would be required before attempting a retest.

Therefore, TVA promptly addressed and resolved TE-07 in compliance with Appendix B, Criterion XVI in accordance with applicable TVA procedures.

### 3. Corrective Steps Which Have Been Taken and Results Achieved

No corrective steps were required to achieve full compliance.



4. Corrective Steps Which Will Be Taken to Avoid Further Violations

No additional corrective steps are required to ensure full compliance.

5. Date When Full Compliance Will Be Achieved

TVA believes that it has maintained full compliance, based on its proper implementation of SDSP 3.13.

Example 2

During performance of post modification test PMT-161, after installation of new shutdown board room emergency cooling units for shutdown board rooms C & D, the cooling units tripped prior to obtaining the required test data for the cooling capacity calculations. Because of this, the acceptance criteria could not be verified. Test exception EN-8 was written and dispositioned as acceptable without meeting the acceptance criteria because the test would require additional heat load to be added in the room. Although previous testing of the old cooling units had been conducted using Technical Instruction TI-81, Shutdown Board Room Emergency Cooling System Performance Check, this test exception was dispositioned without issuance of a CAQR for an "accept as is" condition. The shutdown electrical boards are required to be operable by plant Technical Specifications 3.9.A, since they provide electrical power to equipment used to mitigate accidents.

1. Admission or Denial of Example 2

TVA denies this example of violation B.

2. Reasons for the Denial of Example 2

The reason for the denial is that TVA does not consider the resolution of test exception in EN-8 as an "accept-as-is" situation under its CAQR procedure. This is based on the fact that in August 1987 Ellis and Watts conducted a performance test that exceeded the test requirement of the PMT-161, "Shutdown Board Room HVAC System."

TE EN-8 was written against postmodification test PMT-161, "Shutdown Board Room HVAC System," step sequences 5.8.2, 5.8.4, and 5.9.2, 5.9.4, because there was insufficient heat load available to make the unit shutdown board room air conditioning units operate in a continuous cooling mode. They would run briefly then shutdown; consequently, no useful performance test data could be obtained.

In accordance with site procedure SDSP 17.2, "Post Modification Test Program," EN-8 was submitted to NE for evaluation and disposition. NE determined that postmodification testing on the A/C units' cooling capacity was unnecessary since a performance test on the A/C units conducted by Ellis and Watts met or exceeded the test requirement of the PMT. NE issued a final approval memorandum for PMT-161 test results and indicated that EN-8 was acceptable.

SDSP-3.13, Section 4.0 defines "accept-as-is" as:

a hardware disposition which may be imposed for a CAQ when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements, including performance, maintainability, fit, and safety even though the item does not conform to approved design requirements.

The shutdown board room A/C units' performance was not due to a hardware disposition. Since the review of Ellis and Watts' test data revealed there was no discrepancy with the original design requirements, no basis existed for imposing an "accept-as-is" disposition on EN-8.

3. Corrective Steps Which Have Been Taken and Results Achieved

No corrective steps were required to achieve full compliance.

4. Corrective Steps Which Will Be Taken to Avoid Further Violations

No additional corrective steps are required to ensure full compliance.

5. Date When Full Compliance Will Be Achieved

TVA believes that it has maintained full compliance, based on its proper implementation of SDSP 3.13.

## ENCLOSURE 2

RESPONSE - BROWNS FERRY NUCLEAR PLANT  
NRC INSPECTION REPORT  
NOS. 50-259/89-53, 50-260/89-53, AND 50-296/89-53  
LETTER FROM B. A. WILSON TO O. D. KINGSLEY, JR.  
DATED JANUARY 18, 1990

### Deviation

The following deviation was identified during a Nuclear Regulatory Commission (NRC) inspection conducted on November 15 - December 18, 1989.

By letter dated April 1, 1988, the licensee notified the NRC that a LER would not be submitted under number 259/88-04. The letter stated that the information that would have been reported in the LER would be included in Special Report 88-01.

Contrary to the above, in October 1989, licensee reviews of the initiating conditions identified that the special report was not sent to the NRC. These reviews also determined that the conditions were reportable and LER 259/89-25 was issued. Failure to submit the special report is considered a deviation from a commitment to the NRC.

This deviation is applicable to all three units.

### TVA's Response

#### 1. Reason for the Deviation

This deviation was caused by the failure to identify a commitment contained in TVA's letter dated April 1, 1988.

At the time of the writing of the April 1988 letter, LERs were written by the Plant Operations Review Staff while the LER commitments were tracked by the Site Licensing group. LER commitments are generally contained in the LER text, gleaned from the LER text, and subsequently added to the tracking system. The LER cover letter normally contains only the LER title and reportability requirements, not commitments. In this instance the cover letter of the April 1, 1988 letter stated that an LER would not be prepared and the LER information would be included in a special report, thereby creating the unusual circumstance of placing a commitment in the cover letter. Given this unusual circumstance, the commitment was not picked up and added to the tracking system.

#### 2. Corrective Steps Which Have Been Taken and Results Achieved

On September 20, 1989, the responsibility for writing 30-day report (i.e., LERs) transferred from Plant Operations Review Staff to Site Licensing. This change of responsible organizations unified into one organization the duties of the 30-day report requirements and tracking of commitments made to the NRC. This should help to prevent recurrence of similar deviations.

With respect to this specific commitment on October 3, 1989, TVA identified that the special report had not been submitted. Furthermore, the condition in question was deemed reportable. Consequently, on November 2, 1989, TVA provided NRC with an LER for the June 27, 1986 event.

Additionally, in response to a violation in NRC Inspection Report 89-27, BFN has committed to advise NRC by letter in cases where it is determined through subsequent evaluation that a Licensee Event Report is not required to be submitted under 10 CFR 50.73 after an Emergency Notification System report is made. This commitment will serve to improve communications between BFN and NRC on those items which are conservatively reported but are later determined not to be reportable.

Thus, the current practice of BFN Site Licensing is that all commitments, including those to submit Special Reports, must be documented on Tracking and Reporting Open Items load sheets and signed as accepted by responsible managers. The documentation and acceptance of commitments must be completed prior to BFN Site Licensing Manager's approval of the submittal and its issuance. This practice ensures that commitments are appropriately tracked at the time the submittal is issued.

3. Corrective Steps Which Will Be Taken to Avoid Further Deviation.

No further corrective steps are needed to preclude further deviations.

4. Date When Full Compliance Will Be Achieved

Full compliance was achieved on November 2, 1989.



ENCLOSURE 3

RESPONSE - BROWNS FERRY NUCLEAR PLANT  
NRC INSPECTION REPORT  
NOS. 50-259/89-53, 50-260/89-53, AND 50-296/89-53  
LETTER FROM B. A. WILSON TO O. D. KINGSLEY, JR.  
DATED JANUARY 18, 1990

NRC Concern

In section 5.b of Inspection Report 89-53, NRC requested that TVA address the question of what programs are in place to identify single failure issues.

TVA Response

The program in place to address single failure issues is the design baseline verification program (DBVP). The applicability of single failure criteria was addressed by the DBVP and is discussed for each system in BFN's Design Basis Document.

A Single Failure Design Criteria Document (BFN 50-729) for the analysis of the design of fluid and electrical systems and subsequent design changes was developed to promote a general understanding of single failure requirements and was issued in June 1987 as part of the DBVP.

TVA has discussed this program with NRC and understands that the NRC finds the DBVP program acceptable for this purpose. The program was presented to the NRC as part of a closure package for unresolved item 259,260,296/89-11-02, single failure criteria. In reference to this item, in Inspection Report 89-35 NRC notes that it "considered the actions taken by the licensee to be appropriate."