

TENNESSEE VALLEY AUTHORITY

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JUL 10 1987

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Attn: Gentlemen:

In the Matter of the)
Tennessee Valley Authority)

Docket Nos. 50-259
50-260
50-296
50-327
50-328
50-390
50-391
50-438
50-439

BROWNS FERRY, SEQUOYAH, WATTS BAR, AND BELLEFONTE NUCLEAR PLANTS - NRC
INSPECTION REPORTS 50-259, 260, 296/86-43; 50-327, 328/86-73; 50-390/86-27,
391/86-26; 50-438, 439/86-11 - RESPONSE TO VIOLATIONS

Enclosure 1 is TVA's response to your letter dated April 27, 1987, to
S. A. White transmitting IE Inspection Report Nos. 50-259, 260, 296/86-43;
50-327, 328/86-73; 50-390/86-27, 391/86-26; and 50-438, 439/86-11 for our
Browns Ferry, Sequoyah, Watts Bar, and Bellefonte Nuclear Plants. The subject
inspection report cited TVA with two violations (Severity Level IV) deemed
applicable to all TVA nuclear plants.

It is TVA's opinion that the circumstances resulting in these violations
reflect a number of the root problems that led to the shutdown of TVA's
nuclear plants. By the submittal of Volume 1 of the Nuclear Performance Plan
(NPP), TVA has previously acknowledged weaknesses in functional areas such as
the corrective action process. Actions taken by TVA, including
standardization of the corrective action program and consolidation of
engineering functions into one organization (Division of Nuclear Engineering),
are described in Volume 1 of the NPP. Also, as noted in Volumes 2 and 3 of
the NPP, a number of special programs have been or are being implemented to
address specific weaknesses (technical and programmatic) identified with the
TVA nuclear program. The successful implementation of these actions serve as
adequate corrective action and recurrence control of these matters.
Enclosure 2 is a list of commitments made by TVA to NRC in responding to these
matters.

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U.S. Nuclear Regulatory Commission

JUL 10 1987

An extension to June 26, 1987, for responding to the violations was confirmed by my letter to you dated May 27, 1987. A further extension to July 10, 1987, for completing the necessary review and internal coordination of this response, was coordinated with and approved by Ken Barr on June 24, 1987.

If you have any questions, please telephone D. L. Williams at (615) 632-7170.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



R. L. Gridley, Director
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Enclosures

cc: See page 3

U.S. Nuclear Regulatory Commission

JUL 10 1987

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ENCLOSURE 1

RESPONSE

NRC INSPECTION REPORT NOS.

50-259,260, 296/86-43; 50-327, 328/86-73;
50-390/86-27, 391/86-26; and 50-438, 439/86-11

GARY G. ZECH'S LETTER TO S. A. WHITE
DATED APRIL 27, 1987

- A. 10 CFR 50, Appendix B, Criterion V, as implemented by TVA's Quality Assurance (QA) Topical Report, TVA-TR75-1A, Rev. 8, paragraphs 17.1.5, 17.1.16, and 17.2.16, provides for the identification and correction of conditions adverse to quality (CAQ). This criteria, implemented by Office of Engineering Procedure (OEP)-17, "Corrective Action," effective June 30, 1985, to July 1, 1986, and Division of Nuclear Engineering Procedure (NEP)-9.1 "Corrective Action", effective July 1, 1986, require that "After a Problem Identification Report/Significant Condition Report (PIR/SCR) form is initiated, [Part A] must be completed and, as applicable, a Potential Generic Condition Evaluation (PGCE) memo issued within 8 calendar days; the generic implication evaluations are to be assessed within 14 calendar days of the date of the PGCE Memo; and corrective action [Part B] must be determined within a maximum of 60 days of issue of the PIR/SCR."

Contrary to the above, as of December 19, 1986, the following CAQs failed to meet these established requirements:

1. SCRBFNEEB8601, Rev. 0, required a generic review of other licensee nuclear sites. However, documents were not found to substantiate that the review was performed.
2. SCRBFNEEB8624, Rev. 0, was determined to be generic. PGCE memos were issued on May 7, 1986. The Sequoyah site did not respond until September 15, 1986, which was in excess of the 14 day requirement.
3. SCRWBNEEB8630, Rev. 1, was determined to be generic. PGCE memos were issued June 10, 1986. Bellefonte responded to the memo on July 2, 1986, (8 days late) and indicated that the condition did exist at that site. SCR SQNEEB8632 was issued for the Sequoyah site in response to the CAQ and this SCR was not dispositioned for corrective action as required within the 60 day timeframe. Browns Ferry responded to the PGCE memo on July 14, 1986 (20 days late).

This is a Severity Level IV Violation (Supplement II).

TVA's Response

1. Admission Or Denial Of The Alleged Violation

TVA agrees the violation occurred subject to clarification of condition details as described below.

2. The Reasons For The Violation

Lack of management attention to timeliness requirements and decentralized control of potentially generic condition evaluations are the primary reasons for this violation.

3. Corrective Steps Taken And Results Achieved

The specific conditions cited by the NRC will be discussed and herein followed by corrective action steps now being implemented.

A. Browns Ferry CAQ SCRBFNNEB8601 (Note: Originally listed in NRC violation as SCRBFNEEB8601)

Revision 0 of this Significant Condition Report (SCR) limited the CAQ to the fact that Main Steam and Feedwater lines are not Seismic Class I and could result in a breach of secondary containment. The Management Review Team (MRT) evaluated the CAQ to be unique to a BWR plant (e.g., Browns Ferry Nuclear Plant (BFN)) and not applicable to a PWR plant. A PGCE was requested but was confined to a BFN review of other systems. The "Remarks" on sheet 2 of the SCR indicated that opinion. The PGCE request was transmitted on April 11, 1986. The BFN answer was transmitted on April 23, 1986. No other TVA sites were requested to respond. With the available information at the time, the MRT decision appeared to be logical and valid.

During the investigation to determine the root cause and corrective action, BFN identified the need to conduct a Final Safety Analysis Report (FSAR) review. As a result, the emphasis on this condition shifted from a concentration on the seismicity of Main Steam/Feedwater lines breaching the secondary containment to questioning the ability of the secondary containment to perform its intended function as described in the BFN FSAR and, further, the effect on piping and penetrations (seals) not being seismic class I where they penetrate the secondary containment. This revised CAQ condition was recorded as Revision 1 to SCRBFNNEB8601 and was issued February 6, 1987.

As described above, the SCR was revised (Revision 1) to include all penetrations and sleeves in secondary containment. This necessitated a corresponding PGCE request to be performed by other TVA sites to review similar FSAR requirements and their implementation for piping and penetrations. SCRBFNNEB8601 R1 was issued by February 6, 1987, and the PGCE was issued to the other TVA sites. The review of this condition for applicability to Watts Bar Nuclear Plant (WBN) resulted in the issuance of SCRWBWBP8780 (Unit 1) and SCRWBWBP8781 (Unit 2). Similar conditions at Sequoyah and Bellefonte have not been identified at this time.

B. Browns Ferry CAQ SCRBFNEEB8624

SCRBFNEEB8624, Revision 0, was determined to be generic, PGCE memorandums were issued on May 7, 1986. Sequoyah Nuclear Plant (SQN) did not respond until September 15, 1986, which was in excess of the 14-day requirement. This response indicated that the subject problem did not exist at SQN because Rosemount No. 1153 transmitters were not used in level instrumentation applications; therefore, no further corrective action was required.

C. Watts Bar CAQ SCRWBNEEB8630, Revision 1

SCRWBNEEB8630 was issued on June 10, 1986; however, the PGCE memorandum was not issued until June 26, 1986. An investigation into this matter revealed that a probable cause for this delay was a change in the Division of Nuclear Engineering (DNE) Electrical Engineering Branch (EEB) method of handling CAQ documents. This revamping gave EEB central staff authority to approve all project electrical related CAQ documents in an attempt to improve overall quality of the reviews. This change in handling CAQs identified by EEB created a temporary increase in work loads.

The potential generic evaluations for SQN and Bellefonte Nuclear Plant (BLN) were both issued within 14 days of the issued date of the PGCE memorandum. In addition, although BFN responded to the Revision 1 PGCE memorandum six days late, Revision 0 of the SCR had previously been evaluated within the required timeframe and had determined that the requirement which created the issue was not applicable to BFN.

For that portion of the violation pertaining to the failure of SQN to establish corrective action within 60 days for SCRSQNEEB8632, the following information is provided. SCRSQNEEB8632 was originally initiated on April 11, 1986, based upon receipt of a PGCE issued by WBN on April 1, 1986, for SCRWBNEEB8630, Rev. 0. Corrective action was established via the SQN Engineering Report (ER) on May 14, 1986; however, Part B of the SQN SCR was not completed within 60 days due to a failure to properly implement procedural requirements as noted above. Part B of the SQN SCR was completed on March 30, 1987, and implementation of corrective action is being scheduled in accordance with SQN restart schedule. It should be noted that both the SQN SCR and ER detail the same corrective action.

In addition to the above, TVA management has taken the following actions to increase overall management involvement in the CAQ resolution process:

The Manager of Nuclear Power has issued an April 15, 1987 memorandum to focus management attention on the resolution of unresolved CAQs issued before implementation of Nuclear Quality Assurance Manual (NQAM), Part I, Section 2.16, Corrective Action, Revision 2 and to direct that these conditions be given equal or greater priority than normal production work. Specifically, project teams, composed of responsible individuals from divisions and project work locations, have been selected to review unresolved CAQs and to make determinations regarding validity and relative importance. After segregation and administrative closure of outdated issues, duplicates, CAQs affecting only cancelled plants, or others not needing further attention, the remaining items shall be prioritized based upon their relative importance and where applicable, PGCEs will be appropriately processed to other TVA plants. Plans and schedules are being prepared for disposition of these CAQs in accordance with their relative priority for all TVA nuclear sites. The screening, prioritization, and scheduling was completed for SQN on June 1, 1987. Other TVA sites are expected to complete this review by July 31, 1987.

In addition, the Director of the Division of Nuclear Engineering (DNE) has implemented a biweekly reporting system within DNE to highlight outstanding/late CAQs requiring additional management attention for closure. This reporting system will remain in effect on an "ad hoc" basis until the DNE Director determines that sufficient progress is being made in the timely dispositioning of identified CAQs.

4. Corrective Steps Taken To Avoid Further Noncompliance

As previously described in Volume 1 of the Nuclear Performance Plan, TVA recognizes that the CAQ process has not functioned at an acceptable level of effectiveness. TVA has developed a revised Office of Nuclear Power (ONP) corrective action process designed, in part, to correct the deficiencies noted within this violation. This process was promulgated under TVA's NQAM, Part I, Section 2.16, Corrective Action, and is supported by various site and division implementing procedures. Previous revisions of this part of the NQAM provided for the organizational control of generic reviews. Revision 3 of the NQAM, Part I, Section 2.16 (implemented on July 1, 1987 with exception of WBN where implementation will be by August 3, 1987), requires generic reviews to be completed after root cause analysis and recurrence control actions have been determined, thereby providing for a more effective generic implications assessment.

Also, encompassed within these procedures are more controlled and centralized requirements for the conduct and timing of generic reviews. Specifically, the organization responsible for determining corrective action shall initially review the CAQ for its potential generic impact on other TVA facilities. Subsequent to this initial review for generic implications, significant CAQs (and nonsignificant CAQs deemed to be potentially generic) shall be forwarded to either the Division of Nuclear Safety and Licensing or DNE's Engineering Assurance organization for further review as to the potential for generic implications. This requirement does not circumvent procedural requirements in place which require an evaluation within three days if a CAQR has the potential for affecting operability or have any impact on operability at other plants. In these instances, an immediate notification to the affected plants is initiated. These two organizations, for non-engineering and engineering CAQs, respectively, shall document the basis for not performing a PGCE evaluation or shall ensure the completion of a PGCE evaluation and investigation by applicable TVA nuclear projects.

5. Date When Full Compliance Will Be Achieved

The review of unresolved CAQs for TVA plants other than SQN which were issued before Revision 2 of the NQAM, Part I, Section 2.16 will be completed by July 31, 1987.

- B. 10 CFR 50, Appendix B, Criterion XVI, as implemented by TVA's QA Topical Report, TVA-TR75-1A, Rev. 8, paragraphs 17.1.16 and 17.2.16, "Adverse Conditions and Corrective Actions," requires that conditions adverse to quality be promptly identified and corrected. In the case of the significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, as of December 19, 1986, examples where dispositions of conditions adverse to quality (CAQ) were not sufficient to meet the requirements specified are listed below:

1. BLN 4929 addressed emergency Diesel Generator baseplate, shimplate, and grout damage due to paralleling errors. It was evaluated at Sequoyah and Browns Ferry sites without actually addressing the concern of properly closing the diesel generator output breaker.

2. BLN 1885, identified on September 11, 1984, the failure of numerous expansion shell anchors (SSDS) at the Bellefonte site and was erroneously evaluated to be non-generic to the Watts Bar Plant where a subsequent CAQ (NCR 6511, Rev. 1) had identified similar problems.
3. BLN 2551 identified ASCO solenoid valves which were improperly installed at the Bellefonte site on November 22, 1983. The Potential Generic Condition Evaluation was performed at Watts Bar and was determined to be nonexistent there. NRC Inspection Report 50-390, 391/86-18, dated October 28, 1986, identified the condition did exist at the Watts Bar plant.

This is a Severity Level IV Violation (Supplement II).

TVA's Response

1. Admission Or Denial Of The Alleged Violation

TVA agrees the violation occurred subject to clarification of condition details as described below.

2. The Reasons For The Violation

This violation occurred because of the failure on TVA's part to provide adequate and sufficient problem descriptions and detailed information in the assessment of the potential generic condition as recorded on the PGCE memorandum so that other TVA facilities could properly assess the generic implications of the cited condition(s).

3. Corrective Steps Taken And Results Achieved

The specific conditions cited by the Commission shall be discussed herein, followed by corrective action steps now being implemented.

- A. BLN CAQ BLN 4929

A PGCE memo was sent to SQN and BFN on May 7, 1987 requesting that the root cause concern be reviewed. This request has resulted in both plants finding the potential existing for similar occurrences. This has been documented by SQN Condition Adverse to Quality Report (CAQR) SQP870943 and BFN Problem Identification Report (PIR) BFNEEB8729. WBN had previously documented this concern on PIR WBNEEB8656.

- B. BLN CAQ BLN 1885

The excessive failure rate of SSDS identified in BLN 1885 was investigated and the cause determined to be local surface deficiency of concrete, not SSD hardware deficiencies. WBN NCR 6511 (Rev. 1) covered anchors installed in floor toppings and is considered to be unrelated to the condition documented by BLN 1885.

TVA Construction Specification G-32 requires pull-testing of SSDS on all projects. Pull-test results are recorded and all excessive failure rates are analyzed as they occur. The cause is identified and corrective action is taken as required. As this is a continual action on all projects for acceptance of SSDS and the BLN 1885 concern was

identified due to G-32 tests, a generic review of BLN 1885 would not have resulted in any further investigation by the other projects. Since TVA Construction Specification G-32 is sufficient to identify any similar conditions, a generic review of BLN 1885 is not required. In summary, this incident in TVA's view does not constitute a violation of procedure.

C. BLN CAQ BLN 2551

BLN CAQ 2551 was issued after discovering that vendor specifications for orientation of ASCO solenoid valves had not been effectively recorded on TVA engineering drawings for BLN; as such, field installation procedures did not adequately reflect these vendor requirements. Specific corrective action for BLN 2551 required the Division of Engineering Design (now DNE) to issue Engineering Change Notice (ECN) 2878 to revise solenoid mounting details on control valve drawings to reflect correct vendor specifications for orientation. These drawings were used as a basis to check valve orientation for correct function/replacement. Work was completed by May 29, 1985.

On May 7, 1987, BLN Engineering Project issued a memorandum requesting completion of the BLN 2551 investigation to BFN, SQN, and WBN. From that request, the following investigation results are presented:

BFN

Several models of ASCO solenoid valves identified as in service at BFN (including 206-Series, 8300, 8302, and 8042-series solenoids) had previously required vertical and upright orientation. This requirement (specified on ASCO assembly drawings and installation and maintenance instructions) has been clarified by ASCO as having a $\pm 45^\circ$ tolerance. It has not been established that orientation of ASCO solenoids to within the specified tolerance described above has been achieved at BFN. As such, PIR BFNEEB8728 has been issued to track and disposition this problem.

SQN

PIR SQNEEB87121 was issued to track and disposition this issue.

WBN

In response to the violation cited by NRC in inspection report 50-390, 391/86-18, WBN has initiated CAQ's SCRWBNEB8715 (WBN Unit 1), SCRWBNEB8716 (WBN Unit 2) and W-415P to disposition this problem. Specific corrective action is further detailed in TVA's response to the cited violation (reference letter from J. A. Domer to NRC dated June 29, 1987).

For additional information on programmatic corrective action, refer to TVA's response to violation A.

4. Corrective Steps Taken To Avoid Further Noncompliance

Refer to TVA's response to violation A. In addition, it should be noted that all examples cited by the NRC in this violation involved Division of Nuclear Construction (DNC) NCRs. Procedure OEP-17, Corrective Action, was revised in March 1986 to require a generic implications review by DNE for DNC NCRs sent to DNE for dispositioning.

As a further enhancement to the corrective action program, The Division of Nuclear Quality Assurance is developing a standardized root cause analysis procedure. Training will be provided on this procedure throughout ONP before its implementation. This action is not considered to be a restart or relicensing requirement for TVA's nuclear plants.

5. Dates When Full Compliance Will Be Achieved

Refer to TVA's response to violation A.

The schedule for full implementation of the standardized root cause analysis enhancement procedure for the corrective action program is currently expected to be January 31, 1988.

ENCLOSURE 2

RESPONSE

NRC INSPECTION REPORTS NOS.

50-259, 260, 296/86-43; 50-327, 328/86-73;
50-390/86-27, 391/86-26; and 50-438, 439/86-11

List of Commitments Made in Enclosure 1

1. BFN, WBN, and BLN to complete the review by July 31, 1987, of outstanding CAQs (issued before NQAM, Part 1, Section 2.16, Revision 2) to determine validity and to prioritize for disposition.
2. Revision 3 of the NQAM, Part I, Section 2.16 at WBN will be implemented by August 3, 1987.
3. Enhancement procedure (standardized root cause analysis) for the corrective action program is to be implemented by January 31, 1988.