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U.S. Nuclear Regulatory Commission  
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Gentlemen:

In the Matter of the Application of	)	Docket Nos. 50-390
Tennessee Valley Authority	)	50-391

WATTS BAR NUCLEAR PLANT (WBN) - NRC INSPECTION REPORT NO. 50-390, 391/93-58 -  
REPLY TO NOTICES OF VIOLATION

The purpose of this letter is provide a written response, in part, to NRC Inspection Report 50-390, 391/93-58 dated October 4, 1993, which identified two Notices of Violation and included a request that TVA evaluate the necessity to re-review the results of the Sargent and Lundy Vertical Slice Review (VSR) and other calculations performed outside of approved procedures. The first Violation (A) concerned six examples of activities which were not prescribed by documented procedures or which were not accomplished in accordance with approved procedures. The second Violation (B) concerned the adequacy of engineering calculations performed to resolve VSR issues.

Examples three through six of Violation A involve startup program activities. TVA's response to these items will be included in the response to the startup issues also described in Inspection Reports 50-390, 391/93-43; 50-390, 391/93-53; 50-390, 391/93-61; and 50-390, 391/93-71. As discussed with C. Julian and P. Fredrickson on October 15 and 25, 1993, TVA's response to Startup Program issues is expected to be submitted by November 15, 1993. Enclosure 1 contains TVA's response to examples one and two of Violation A and Violation B. The results of TVA's evaluation of the calculations which support resolution of Sargent and Lundy VSR issues follows the response to Violation B. Enclosure 2 describes the commitments made in this submittal.

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U.S. Nuclear Regulatory Commission  
Page 2

NOV 03 1993

If you should have any questions, contact P. L. Pace at (615)-365-1824.

Very truly yours,



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Enclosures

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ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

VIOLATION A - 50-390, 391/93-58-02, EXAMPLES 1 AND 2

10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures and Drawings," states that activities affecting quality shall be prescribed by documented instructions, procedures and drawings of a type appropriate to the circumstances and shall be performed in accordance with these instructions, procedures, and drawings.

Nuclear Quality Assurance Plan TVA-NQA-PLN89-A, "Procedures and Instructions," Revision 3, Section 6.1, requires that quality-related activities shall be prescribed by documented procedures and instructions appropriate to the circumstances. Section 6.2, "Document Control," requires that quality-related activities be performed in accordance with approved and controlled instructions, procedures, and drawings.

Contrary to the above, activities affecting quality were not prescribed by documented procedures and were not accomplished in accordance with approved procedures:

Site Standard Practice (SSP)-4.05, "NRC Reporting Requirements," Revision 3, Appendix E, paragraph 2.1, states that determinations for potential reportability of adverse conditions in accordance with 10 CFR 50.55(e) are to be performed using screening forms and instructions similar to those contained in that appendix which can be found in key administrative control programs procedures.

1. As of August 31, 1993, SSP-4.05 was not adhered to, in that required instructions for performing potential reportability determinations were not established in administrative control program procedures, documenting nonconforming conditions using work requests, work orders, drawings, and deviations.
2. As of August 31, 1993, SSP 4.05 was not adhered to, in that reportability determinations for test deficiencies were not conducted using the screening forms.

TVA REPLY TO NOTICE OF VIOLATION A - 50-390, 391/93-58-02

Examples 1 and 2 of the subject notice of violation concern the 10 CFR 50.55(e) potential reportability screening of conditions identified in TVA's corrective action program administrative control programs (ACPs). The notice of violation was cited as the failure to adhere to the requirements of SSP-4.05, "NRC Reporting Requirements." SSP-4.05 does not place requirements to address 10 CFR 50.55(e) potential reportability on the ACPs. Instead, SSP-4.05 provides a tool to be used by the ACPs, as appropriate. SSP-3.04, "Corrective Action Program," identifies those ACPs which implement TVA's

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

Corrective Action Program and states that each ACP defines the reportability reviews required.

REPLY TO EXAMPLE 1

Example 1 concerns two corrective action program ACPs. SSP-2.11, "Drawing Deviation Program," contained a 10 CFR 50.55(e) potential reportability screening form which was not used as intended. SSP-6.02, "Maintenance Management System," neither contained a 10 CFR 50.55(e) potential reportability screening form nor referenced SSP-4.05 for guidance on how to address 10 CFR 50.55(e) potential reportability. These two ACPs are addressed below under Example 1.

Reason for the Violation

- a. Failure to complete the potential reportability screening forms contained in Appendix D to SSP-2.11 was caused by inadequate procedural guidance. The procedure did not contain sufficient information to clearly indicate responsibility for performing or documenting performance of this review. The requirement was generically assigned to anyone who, at any time, determined the validated drawing deviation to be potentially reportable. The procedure was interpreted to mean that the Appendix D was filled out only if a valid drawing deviation was determined to be potentially reportable. Valid drawing deviations are defined as conditions where the actual plant hardware configuration is correct and the drawing requires revision. Since valid drawing deviations were not considered to represent a potentially reportable condition, no potential reportability screening forms had been completed.

Additionally, SSP-2.11 requires that if any time during the processing of a valid drawing deviation it is determined that any one of the other ACPs would be more appropriate for resolving the problem, then the person making that determination shall initiate an appropriate program document. This requirement ensures that only valid drawing deviations are processed by SSP-2.11.

- b. Failure to address 10 CFR 50.55(e) potential reportability in SSP-6.02 was caused by a management decision. Potentially reportable conditions were considered outside the scope of work that could be performed by the work request/work order process.

SSP-6.02 does contain a review for "reportability." However, this review addresses 10 CFR 50.72 and 10 CFR 50.73 reportability reviews to be performed by operations personnel after receipt of an operating license. 10 CFR 50.55(e) potential reportability reviews were not performed by this procedural step.

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

Corrective Steps That Have Been Taken and the Results Achieved

A program evaluation team was formed to evaluate the effectiveness of the ACPs. This team has reviewed all ACPs in the corrective action program. The results of that evaluation will contain recommendations for bringing ACPs into conformance with the requirements of SSP-3.04.

Corrective Steps That Will Be Taken To Avoid Further Violations

1. Valid drawing deviations are not considered to represent a reportable condition under 10 CFR 50.55(e) in that the plant configuration meets design requirements. SSP-2.11 will be revised to state that a 10 CFR 50.55(e) potential reportability screening form is not required to be completed for valid drawing deviations.
2. Conditions which could be potentially reportable under 10 CFR 50.55(e) are outside the scope of work that can be performed by the work request/work order process. SSP-6.02 will be revised to state that a 10 CFR 50.55(e) potential reportability screening form is not required to be completed for work requests/work orders. Also, guidance will be provided in SSP-6.02 either to further define those work activities which can be worked under the work request/work order process or to provide examples of conditions that are representative of a PER which requires a reportability review.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved by December 15, 1993.

REPLY TO EXAMPLE 2

Example 2 concerns one corrective action program ACP. SMP-9.0, "Test Conduct," referred to SSP-4.05 as containing guidance for determining 10 CFR 50.55(e) potential reportability. However, Level III test engineers neither referred to this procedure nor completed the 10 CFR 50.55(e) potential reportability screening form contained therein.

Reason for the Violation

Failure to document reviews of test deficiency notices (DNs) for potential reportability under 10 CFR 50.55(e) was caused by personnel error. SMP-9.0 required that Level III test engineers evaluate DN's for potential reportability in accordance with SSP-4.05. Interviews with Level III test engineers indicate they were answering the reportability question on the DN form from what they remembered about SSP-4.05, Appendix E-1. The test engineers did not refer to SSP-4.05, Appendix E-1, to make their call. The test engineers were looking at the DN form question more as a "reportability" question than as a "potential reportability" question. A contributing cause

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

was the fact that SMP-9.0 did not specifically require a completed SSP-4.05 form to be attached to the DN.

Corrective Steps That Have Been Taken and the Results Achieved

1. As an interim action, DNs generated between August 26, 1993, and September 16, 1993 were routed to Site Licensing for performance of potential reportability screening and/or reportability evaluation under the criteria for 10 CFR 50.55(e).
2. DNs generated before August 26, 1993, are being sent to Site Licensing for performance of potential reportability screening and/or reportability evaluation under the criteria for 10 CFR 50.55(e). The review of these DNs is scheduled to be complete by March 31, 1994.

Corrective Steps That Will Be Taken To Avoid Further Violations

Change Notice 2 to SMP-9.0, Revision 16, specifies that a copy of DNs will be sent to Site Licensing for reportability review in accordance with SSP-4.05. This procedural step means that Site Licensing will perform potential reportability screening and/or reportability evaluation on incoming DNs under the criteria for 10 CFR 50.55(e). Change Notice 2 became effective on September 16, 1993.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved by March 31, 1994.

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

VIOLATION B - 50-390, 391/93-58-03

10 CFR 50, Appendix B, Criterion III, "Design Control," states that "measures shall provide for verifying or checking the adequacy of design, such as the performance of design reviews, by the use of alternate or simplified calculational methods..."

TVA Nuclear Quality Assurance Plan, TVA-NQA-PLN89-A, Revision 3, dated January 1, 1993, Section 7.4. cites ANSI N45.2.11-1974, Quality Assurance Requirements for the Design of Nuclear Power Plants, as the applicable standard for mandatory control of design processes. Section 4.2 of ANSI N45.2.11-1974 states: "Design analyses...shall be performed in a planned, controlled, and correct manner."

Contrary to the above, as of August 31, 1993, calculational methods used for design analysis were not implemented in a planned, controlled and correct manner in that the following four calculations contained examples of incorrect assumptions, unverified assumptions, an inadequate bounding analysis, and informal practices not defined in accordance with controlled procedures:

1. EPM-LB-090889 Revision 0, as addressed in discrepancy report (DR) 39.
2. WCG-E-085 Revision 0, as addressed in DR 17.
3. EPM-FM-320889, Revision 0, as addressed in DR 16.
4. The informal calculation documenting adequacy of soft seat material as addressed in DR 15.

These incorrect assumptions in the calculations contributed to incomplete information in decisions regarding plant equipment, and in the case of calculation EPM-FM-320889 resulted in failure to secure the position, after air flow balancing, of adjustable louvers serving safety related areas.

TVA REPLY TO NOTICE OF VIOLATION B - 50-390, 391/93-58-03

Reason for the Violation

The violation occurred as a result of inadequate engineering evaluation of some Sargent & Lundy Vertical Slice Review (VSR) concerns. The individuals responsible for evaluating the subject VSR concerns did not take the appropriate measures to ensure that the calculations they performed or reviewed totally bounded all situations which may require analysis by calculation(s).

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

Corrective Steps That Have Been or Will Be Taken and the Results Achieved

As described in Inspection Report 390, 391/93-58, the technical issues associated with each of the examples cited in the violation have been addressed by TVA.

To address the extent of condition of the violation, TVA initiated an evaluation of closed engineering VSR items to determine if further deficiencies exist. The evaluation is being conducted in accordance with Engineering Sample Plan Number SP930803, "Sampling of Closed Vertical Slice Discrepancy Reports Owned by Nuclear Engineering." Based upon the results of this evaluation, TVA will establish that either 1) an adequate level of confidence exists that the closed VSR issues have been addressed in a manner such that there are no safety concerns or 2) additional problems potentially exist and further efforts are required by TVA to ensure that previous VSR issues which involve calculations have been adequately resolved. If additional problems are identified, TVA will supplement this response to describe the actions required.

Corrective Steps Taken to Avoid Further Violations

The deficiencies identified with the subject VSR calculations occurred before the completion of corrective actions associated with the DBVP CAP. Corrective actions associated with the DBVP CAP have since been implemented to ensure that conservative, comprehensive calculations are performed in accordance with approved procedures. Evaluations of these corrective actions have shown them to be effective in preventing similar errors in current calculations. Open VSR items which are to be addressed by engineering are dispositioned in accordance with the procedures and expectations currently established. Based upon this, TVA considers that the actions taken as described in the DBVP CAP are sufficient to ensure that VSR issues remaining to be closed will be adequately addressed.

Date When Full Compliance Will Be Achieved

The engineering sample of calculations used to support closure of VSR issues is scheduled to be completed by November 15, 1993. If further corrective actions are required as a result of this evaluation, they will be identified and scheduled in accordance with the TVA Corrective Action Program.

SUPPLEMENTAL INFORMATION FOR NOTICE OF VIOLATION B - 50-390, 391/93-58-03

As part of the response to Notice of Violation B - 50-390, 391/93-58-03, NRC requested that TVA provide an evaluation of the necessity to re-review the results of the Sargent and Lundy VSR and other calculations performed outside of approved procedures. The requested information is provided below.

ENCLOSURE 1  
WATTS BAR NUCLEAR PLANT (WBN)  
UNITS 1 AND 2  
REPLY TO NOTICES OF VIOLATION  
INSPECTION REPORT 50-390, 391/93-58

The deficiencies discussed in the violation are similar to the problems which form the basis for implementing the calculation verification activities described in the DBVP CAP. As described in the DBVP CAP, rather than review all calculations performed for WBN, TVA elected to ensure that a minimum set of calculations were available to support the design basis of the plant. The calculations needed to establish the design basis are designated "essential" and are subject to verification activities. The calculation verification activity, referred to as the Calculations Activity in the DBVP CAP, involves an extensive effort of identifying, statusing, and evaluating the technical adequacy, revising and regenerating, as required, those essential calculations that are necessary to establish or support, as a minimum, the safety-related plant systems or design features required to meet 10CFR50 Appendix A General Design Criteria. TVA believes that the systematic approach to the DBVP Calculation Activity provides programmatic assurance that the WBN design basis is supported by technically adequate calculations. Calculations performed to resolve individual VSR concerns were not designated as "essential calculations" since they are either bounded by or did not meet the definition for essential calculations. Therefore, TVA will perform a further review of VSR items as indicated in this response.

Based upon the findings identified during review of the calculations used to support closure of VSR issues, TVA initiated an evaluation of closed engineering VSR items to determine if further deficiencies exist. The evaluation is being conducted in accordance with Engineering Sample Plan Number SP930803, "Sampling of Closed Vertical Slice Discrepancy Reports Owned by Nuclear Engineering." Based upon the results of this evaluation, TVA will determine whether additional review is required of the results of the Sargent and Lundy VSR and other calculations performed outside of verification activities. If additional problems are identified, TVA will supplement this response to describe the actions required.

ENCLOSURE 2  
WATTS BAR NUCLEAR PLANT  
REPLY TO INSPECTION REPORT 50-390, 391/93-58  
LIST OF COMMITMENTS

The following commitments were made in this submittal:

VIOLATION A - 50-390, 391/93-58-02

1. SSP-2.11 will be revised to state that a 10 CFR 50.55(e) potential reportability screening form is not required to be completed for valid drawing deviations. The procedure revision is scheduled to be complete by December 15, 1993.
2. SSP-6.02 will be revised to state that a 10 CFR 50.55(e) potential reportability screening form is not required to be completed for work requests/work orders. Also, guidance will be provided in SSP-6.02 either to further define those work activities which can be worked under the work request/work order process or to provide examples of conditions that are representative of a PER which requires a reportability review. The procedure revision is scheduled to be complete by December 15, 1993.
3. The potential reportability screening and/or reportability evaluation, under the criteria for 10 CFR 50.55(e), of DNs generated before August 26, 1993, is scheduled to be complete by March 31, 1994.
4. The program team ACP effectiveness study will be issued by November 15, 1993.

VIOLATION B - 50-390, 391/93-58-03

1. The engineering sample of calculations used to support closure of VSR issues is scheduled to be completed by November 15, 1993.
2. If further corrective actions are required as a result of the engineering evaluation described in item 1, TVA will supplement this response to describe the actions.