

official copy

December 20, 1994

Tennessee Valley Authority
ATTN: Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: NRC INSPECTION REPORT NOS. 50-390/94-37 AND 50-391/94-37

Gentlemen:

Thank you for your responses of October 18 and November 11, 1994 to our Notice of Violation (NOV) issued, on September 12, 1994, concerning activities conducted at your Watts Bar facility.

We have completed our review of your October 18 response addressing Examples 1, 3, 4, 5, 6 and 8 of the violation in the NOV. Your response to Example 8 stated that the failure to train all personnel involved in the activity covered by a Problem Evaluation Report (PER), was caused by the failure to do a thorough review during closure of the PER. We believe that the error resulting in the violation was actually made by the personnel performing the corrective action, not by the personnel reviewing the actions taken. If you disagree with this, please respond within 30 days of the date of this letter. The closure review was only an oversight activity that apparently also failed to function as designed; however, no additional response to Example 8 is required. Other than this exception, we have determined that your response to Examples 1, 3, 4, 5, 6 and 8 to be acceptable. We will examine the implementation of your corrective actions during future inspections.

We have also completed our review of your November 11 response in which you denied Examples 2 and 7. Our review has led us to conclude that there are two underlying issues on which we are not in agreement. These two issues are: what is the purpose of pre-operational testing, and what are the appropriate corrective actions for fabrication problems identified during testing.

For the first issue, we believe that the purpose of testing is to demonstrate that the as-built structures, systems and components tested meet or exceed their design basis requirements. It is not the purpose of testing to be a final quality assurance check of construction adequacy. A side benefit of testing is that it may disclose some, but by no means all, deficiencies in fabrication, construction and installation.

When test problems are encountered, they are documented initially by test deficiency notices (TDNs). While TDNs are a part of the corrective action program in a sense, they are not an end in themselves and must be viewed in the context of the entire program. All TDNs must be reviewed and resolved. In some cases this may be an "accept-as-is" disposition; in other instances, it may require a retest; but if the TDN represents a significant condition

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adverse to quality, it must be processed in such a way that root causes are identified, similar problems identified and corrected, and recurrence controls established.

Your response description of TDN evaluation criteria indicated that PERs would not be generated unless a specific TDN delineates condition reportable to the NRC by regulation. We find this too narrow. Quality issues identified by pre-operational testing must be identified and addressed. Significant issues found by testing must be adequately resolved. Adequate resolution includes root cause determination, identification and correction of similar issues, and recurrence control.

Your response stated that quality concerns would be identified on PERs by the TDN trend program or by "field personnel recognizing a pattern of errors developing." However, we note that, in the almost two year existence of the pre-operational test program at Watts Bar, the TDN trend program has never identified an adverse trend that resulted in a nonconformance report issuance. Yet during the last 9 months (January - September) approximately 353 wiring errors were identified by TDNs. Inspection Report 50-390,391/94-37 identified that your trend program was not effective in addressing installation and fabrication errors, citing wiring errors as a large portion of the installation errors identified on TDNs. As stated in that report, this violation was not cited because your own QA assessments had identified the trending program as ineffective and this fact had been documented in SCAR WBSCA940033. A large number of adverse condition documents, NRC violations, and programmatic issues have been identified recently at Watts Bar, many of which document similar, recurring problems. Since the history of your TDN trending program does not provide the assurance of effectiveness, there appears no alternative other than using PERs or SCARs to document significant fabrication and construction issues identified by the testing process.

With respect to Example 2 we have determined that this violation remains as originally stated in the NOV. Our position continues to be that the multiple wiring error deficiencies discussed in Example 2 meet the criterion of an engineering or construction error of a substantial nature, as stipulated in Procedure SMP 14.0, Test Deficiencies. We continue to be particularly concerned over the extent of condition and root cause analysis for those wiring deficiencies identified in vendor-supplied equipment related to the emergency diesel generators (EDGs). We need you to provide a supplemental response describing your review of the origin of these EDG related wiring deficiencies and their extent of conditions.

With respect to Example 7, further review has determined that this example was, in fact, a non-safety related component. Although we continue to believe that the original PER designation of the problem involving this item was correct and that using a TDN to resolve the issue was not proper, we are withdrawing this example. We do note that despite our withdrawal of this example, it provides us with an insight on your system which is not entirely favorable. The transmitter in question was changed out because the installed transmitter had a working pressure of 2000 psig, but the system design exceeded 2375 psig. WBP930112 identified the reason for the deficiency was that the vendor had failed to supply a transmitter in accordance with the

contract specification of 3000 psig. The PER indicated that the quality assurance inspection failed to identify the pressure differences during a vendor inspection. The PER failed to identify any corrective action for the quality error in the vendor inspection. Also, when the transmitter was changed out, the sensing line tubing was connected incorrectly; this incorrect installation was inspected and accepted by QC on June 18, 1993, according to our review of WO 93-10167-00.

We note that your responses of October 18, and November 11, 1994, tend to indicate that you believe that there are few problems with implementation of your corrective action program. In contrast, your self assessment, forwarded by letter dated November 14, 1994, demonstrates that there have been some problems with implementation. We believe that the lesson from these disparate facts is that continuing management vigilance is warranted to assure that all aspects of the corrective action program are effectively implemented.

We appreciate your cooperation in this matter.

Sincerely,

Original Signed By:
J. P. Jaudon

Johns P. Jaudon, Acting Deputy Director
Division of Reactor Projects

Docket Nos. 50-390 and 50-391
License Nos. CPPR-91 and CPPR-92

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