



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

July 18, 2013

10 CFR 2.201

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2
NRC Docket No. 50-391

SUBJECT: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 - REPLY TO NOTICE OF VIOLATION (EA-13-019) 391/2013611-01, -02, AND -03 RELATED TO TVA'S COMMERCIAL GRADE DEDICATION PROGRAM

Reference: NRC letter dated June 18, 2013, "Notice of Violation and Proposed Imposition of Civil Penalty \$70,000, NRC Inspection Report Number 05000391/2013614"

The purpose of this letter is to provide a reply to Notice of Violation (EA-13-019) 391/2013611-01, -02, and -03. The enclosure provides TVA's reply to this violation.

Payment of the civil penalty in the amount of \$70,000 was made via Electronic Funds Transfer on July 18, 2013.

There are no new regulatory commitments made in this letter.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 18th day of July, 2013.

If you have any questions, please contact me at (423) 365-1260 or Gordon Arent at (423) 365-2004.

Respectfully,

Raymond A. Hruby, Jr.
General Manager, Technical Services
Watts Bar Unit 2

Enclosure:

Reply to Notice of Violation

IED1
NRR

U.S. Nuclear Regulatory Commission
Page 2
July 18, 2013

cc (Enclosure):

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NRC Resident Inspector Unit 2
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**WATTS BAR NUCLEAR PLANT, UNIT 2
ENCLOSURE
REPLY TO NOTICE OF VIOLATION**

Description of the Violation 391/2013611-01

“10 CFR 50, Appendix B, Criterion III, “Design Control,” requires, in part, that measures be established to assure that applicable regulatory requirements are correctly translated into specifications, drawings, procedures, and instructions; and that measures be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, or components (SSCs).

10 CFR 21.3 defines the dedication process to be undertaken to provide reasonable assurance that a commercial grade item to be used as a basic component will perform its intended safety function and, in this respect, is deemed equivalent to an item designed and manufactured under a 10 CFR 50, Appendix B, QA program. This assurance is achieved by identifying critical characteristics of the items and verifying their acceptability by inspections, tests, or analysis. 10 CFR 21.3 defines critical characteristics, in part, as those important design, material, and performance characteristics of a commercial grade item that, once verified, will provide reasonable assurance that the item will perform its intended safety function.

Contrary to the above, prior to December 2, 2011, the applicant failed to assure that 10 CFR Part 21 regulatory requirements for commercial grade dedication (CGD) were correctly translated into specifications, drawings, procedures, and instructions; and failed to adequately establish measures for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the SSCs. Specifically, the applicant failed to translate the 10 CFR 21.3 definition of “critical characteristics” into NEDP-8, “Technical Evaluation for Procurement of Materials and Services,” Rev. 0018, which resulted in insufficient measures for the selection of material, parts, and equipment essential to safety-related functions. As such, TVA was not verifying critical characteristics for all safety-related items procured for the Watts Bar, Unit 2 facility, starting from the resumption of construction activities in 2008. A still undetermined number of these items were installed in the facility.”

TVA Response 391/2013611-01:

TVA admits that this violation occurred.

Reason for the Violation:

The root cause of the violation was determined to be that TVA’s CGD program had not been maintained consistent with industry and regulatory standards. Contributing to this cause was the cancellation of the initial Bechtel CGD procedure early in the Unit 2 Completion Project when it was found that credit could be taken for CGD packages for a number of items previously prepared under the TVA Nuclear Power Group CGD process. As a result, the CGD process was removed from the scope of WBN Unit 2 Quality Assurance audits and assessments performed by Bechtel. An additional contributing cause was found to be that the Procurement Engineering Group (PEG) had

not been trained to prepare CGD packages in accordance with current industry standards.

Problem Evaluation Report (PER) 403095 was initiated by WBN Unit 2 Engineering following a routine NRC construction inspection to document NRC-identified errors in implementing Nuclear Engineering Department Procedure (NEDP) 8, "Technical Evaluation for Procurement of Materials and Services," with respect to the CGD process. The PER identified twelve (12) packages with potential deficiencies that raised NRC concerns about the CGD process.

After further inspection, eight (8) packages were found to be acceptable, and no additional actions were determined to be needed for these packages. The remaining four (4) packages identified by the NRC were determined to require additional testing and inspection prior to use at WBN Unit 2. When additional issues were identified during a subsequent NRC inspection, TVA decided to conduct a review of the CGD packages potentially applicable to WBN Unit 2. A team of independent and experienced technical personnel performed an extent of condition review of CGD packages to determine whether the packages met industry standards. The results of this review were documented in "Commercial Grade Dedication Program Corrective Action Program Detailed Review Closure Report, May 16, 2012."

Based on the conditions documented in the above report, TVA performed a further detailed evaluation of the CGD packages which confirmed that, upon completion of testing, the installed components would have been able to perform their intended safety function had the condition remained uncorrected.

Regarding the programmatic aspect of this violation, TVA determined that NEDP-8, "Technical Evaluation for Procurement of Materials and Services," did not adequately reflect the definition of critical characteristics included in 10 CFR Part 21. The NEDP-8 definition described critical characteristics for acceptance as those selected to verify that the item received was the item specified (EPRI NP-5652) instead of verifying that the item would perform its intended safety function (10 CFR Part 21). TVA determined, however, that in many cases, other procedural requirements in NEDP-8 ensured that the required critical characteristics for design were selected based on safety functions and failure modes.

Corrective Steps That Have Been Taken And The Results Achieved:

To address the potential hardware deficiencies associated with this violation, the following actions have been completed.

1. TVA assembled an independent, experienced team of technical personnel and performed a review of the population of CGD packages potentially used by the WBN Unit 2 project. The team reviewed each package against industry practices and regulatory requirements and proposed a disposition for each package. The results of this review were documented in "Commercial Grade Dedication Program Corrective Action Program Detailed Review Closure Report, May 16, 2012."
2. Based on the further detailed evaluation of the CGD packages described above, the PEG revised those CGD packages as necessary and completed testing and/or evaluations to confirm that the installed components would have been

able to perform their intended safety function had the condition remained uncorrected. As a result, no safety significance can be attributed to this condition.

3. Concurrent with the revision of each CGD package, TVA examined whether the related commercial grade item which was purchased, received and stored, and installed had been impacted. No impacts to installed components were identified.
4. An extent of condition review found no other TVA procedures implemented by the Bechtel WBN Unit 2 project which did not receive Bechtel QA oversight.
5. An extent of cause evaluation review confirmed that no PEG functions (beyond CGD) experienced shortfalls or inadequacies in implementation.
6. TVA reviewed the Replacement Items Program (RIP) Corrective Action Program Plan (CAP) and found no commercially dedicated material within the scope of the RIP CAP.

To address the programmatic aspects of this violation, the following actions have been completed:

1. TVA created and staffed a Corporate Program Manager, PEG, position which reports directly to the General Manager of Engineering Design. TVA revised NEDP-20, "Conduct of the Engineering Organization," to include roles and responsibilities for this position.
2. TVA revised NEDP-8 to correct the deficient definition of critical characteristics and provide additional guidance on performing commercial grade dedications.
3. WBN Unit 2 Project PEG personnel completed EPRI training on CGD programs or were task qualified to perform CGD by TVA's Engineering Support Personnel Training Program.
4. Bechtel engineering procedure, "Commercial Grade Dedication," was issued to ensure the CGD process is audited or assessed. A Quality Assurance surveillance/audit schedule for the project CGD package process was also issued.

Corrective Steps That Will Be Taken:

No further actions are considered necessary.

Date When Full Compliance Will Be Achieved:

TVA considers the CGD program to be in full compliance at this time.

Description of the Violation 391/2013611-02

“10 CFR 50.55(e)(4)(iii) states that, “The holder of a facility construction permit subject to this part, combined license, or manufacturing license, who obtains information reasonably indicating that the quality assurance program has undergone any significant breakdown discussed in paragraph (e)(3)(iii)(C) of this section must notify the Commission of the breakdown in the quality assurance program through a director or responsible officer or designated person as discussed in paragraph (4)(v) of this section.”

10 CFR 50.55(e)(5) requires the notification required by 10 CFR 50.55(e)(4), be filed, initially, to the NRC Operations Center within 2 days following receipt of the relevant information, and to the NRC Document Control Desk within 30 days of receipt of the information.

Contrary to the above, in May 2012 the applicant obtained information reasonably indicating that the quality assurance program had undergone a significant breakdown which could have produced a defect in a basic component and did not notify the Commission. The applicant submitted an initial event notification report to the Headquarters Operations Officer on January 3, 2013 (Event Notification Report 48646), and two interim reports on January 31, 2013, and May 6, 2013 (ML13037A455 and ML13129A176). None of these reports explicitly acknowledged or stated that a significant programmatic breakdown had occurred.”

TVA Response 391/2013611-02:

TVA admits that this violation occurred.

Reason for the Violation:

This violation resulted from a misinterpretation of the applicable regulation (10 CFR 50.55(e)) that occurred in the early to mid 1990s. This was a latent issue contained in the reporting procedure from that time frame. When the Unit 2 reporting procedure, PP-13, R0, “Reporting Requirements,” was developed, it was based upon the WBN Unit 1 reporting procedure that was used in that time period. This procedure interpreted a significant programmatic breakdown as not being reportable unless a confirmed example of a substantial safety hazard existed.

Corrective Steps That Have Been Taken And The Results Achieved:

TVA revised Procedure PP-13, “Reporting Requirements” to correct this misinterpretation.

TVA performed an extent of condition review of category “A” and “B” level PERs, as well as category “C” level trend and extent of condition PERs, since the start of the Unit 2 Completion project to determine whether any other instances of potential significant programmatic breakdowns occurred. The review resulted in one additional PER that requires reporting under 10 CFR 50.55(e) for a significant breakdown in a portion of the Quality Assurance Program.

Corrective Steps That Will Be Taken:

No further actions are considered necessary.

Date When Full Compliance Will Be Achieved:

TVA considers the reporting program to be in full compliance at this time.

Description of the Violation 391/2013611-03

"10 CFR 50 Appendix B Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that in the case of a significant condition adverse to quality (SCAQ), the cause of the condition is determined and corrective action taken to preclude repetition. The identification of a SCAQ, the cause of the condition, and the corrective action taken shall be documented and reported to the appropriate levels of management.

TVA procedure NC-PP-3, "Watts Bar Unit 2 Corrective Action Program," Rev. 15, paragraph 3.2.2.15 requires that, "If during the development of the corrective action plan, extent of condition, apparent cause or RCA, the condition is found to be more significant than initially reported or additional scope needs to be added to the problem description, then the PER shall be returned for screening and PRC/CCMRC review for upgrading." Additionally, the Appendix A definition of a Significant Condition Adverse to Quality includes, "A programmatic or process breakdown that...places doubt on the integrity of the affected program."

Contrary to the above, the breakdown in the CGD process was not identified as a SCAQ following the May 2012 extent of condition review. It was not until December 6, 2012, after prompting by NRC inspectors, that the applicant rescreened the issue to adequately reflect that it was a significant condition adverse to quality."

TVA Response 391/2013611-03:

Admission Or Denial Of The Alleged Violation:

TVA admits that this violation occurred.

Reason for the Violation:

The reason for this violation results from personnel error. Personnel failed to complete an action assigned by the Construction Completion Management Review Committee (CCMRC) to return the PER to the CCMRC once it was recognized that the extent of condition review indicated that additional issues existed with the CGD program. In addition, as described in the subject violation above, TVA's corrective action procedure also requires the return of the PER to the CCMRC, if during various stages of PER development, different or more extensive than original issue(s) are identified.

When WBN PER 403095 was initially screened, the PER was categorized as a Level C PER. At that time, the CCMRC assigned an action to return the PER for further screening when the extent of condition was completed. This action was documented in the notes section of the PER and was not made a corrective action of the PER.

When the independent, experienced team of technical personnel issued their report entitled, "Commercial Grade Dedication Program Corrective Action Program Detailed Review Closure Report," dated May 16, 2012, documenting the team's detailed review of the CGD issue, personnel failed to return PER 403095 to the CCMRC as previously instructed. This failure did not allow further CCMRC screening to evaluate the issues found.

Corrective Steps That Have Been Taken And The Results Achieved:

PER 403095 was rescreened on December 6, 2012, and upgraded to a Level A PER. PERs 653080 and 653083 were written to document untimely completion of the CCMRC action.

Tracking of open actions assigned by the CCMRC was changed to ensure that a list of assigned actions are tracked to closure and reviewed by the CCMRC weekly.

Corrective Steps That Will Be Taken:

No further actions are considered necessary.

Date When Full Compliance Will Be Achieved:

TVA considers the corrective action program to be in full compliance at this time.