



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

July 18, 2013

CDR-50-391/2013-01

10 CFR 50.55(e)

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 - CONSTRUCTION
DEFICIENCY REPORT 50-391/2013-01 - COMMERCIAL GRADE
DEDICATION PROGRAM - FINAL REPORT**

- References:
1. TVA letter to NRC dated May 6, 2013, "Watts Bar Nuclear Plant (WBN) Unit 2 - Construction Deficiency Report 50-391/2013-01 - Commercial Grade Dedication Program - Second Interim Report"
 2. TVA letter to NRC dated January 31, 2013, "Watts Bar Nuclear Plant (WBN) Unit 2 - Construction Deficiency Report 50-391/2013-01 - Commercial Grade Dedication Program - Interim Report"

The purpose of this letter is to provide the final report for Construction Deficiency Report (CDR) 391/2013-01 in accordance with 10 CFR 50.55(e) regarding a condition affecting certain equipment and/or components identified within TVA's commercial grade dedication program. This condition represents a significant breakdown of a portion of the WBN Unit 2 Quality Assurance Program. TVA initially notified NRC of this deficiency on January 3, 2013, via Event Notification No. 48646, followed by a first interim report submitted on January 31, 2013 (Reference 2) and a second interim report submitted on May 6, 2013 (Reference 1).

Evaluations and tests have been completed which confirmed that installed commercially dedicated equipment and/or components would have been able to perform their intended safety functions. TVA has determined that no substantial safety hazard exists as a result of this condition.

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

The deficiency was the result of TVA's commercial grade dedication program not being maintained consistent with industry and regulatory standards. Further details of this condition can be found in the updated final CDR 391/2013-01 provided in the enclosure. As previously committed in References 1 and 2, this is the final report for this commercial grade dedication issue.

There are no new 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:

Construction Deficiency Report (CDR) 391/2013-01, Commercial Grade Dedication Program - Final Report

cc (Enclosure):

U. S. Nuclear Regulatory Commission
Region II
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NRC Resident Inspector Unit 2
Watts Bar Nuclear Plant
1260 Nuclear Plant Road
Spring City, Tennessee 37381

ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 REGARDING COMMERCIAL GRADE DEDICATION PROGRAM 10 CFR 50.55(e) CONSTRUCTION DEFICIENCY REPORT (CDR) 50-391/2013-01 FINAL REPORT

DESCRIPTION OF DEFICIENCY

TVA has determined that a condition exists where certain commercially dedicated equipment and/or components have been stored or installed that may not meet the required commercial grade dedication (CGD) process. TVA considers this to have constituted a significant breakdown of a portion of the WBN Unit 2 Quality Assurance Program.

Evaluations and tests have been completed which confirmed that installed commercially dedicated equipment and/or components would have been able to perform their intended safety functions. As a result of these evaluations and/or testing, TVA has determined that no substantial safety hazard exists as a result of this condition.

CAUSE OF THE DEFICIENCY

The root cause of the deficiency 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 process. As a result of this cancellation, the CGD process was removed from the scope of WBN Unit 2 Quality Assurance audits and assessments. 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 construction NRC 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 population of CGD packages potentially applicable to WBN Unit 2. A team of independent and experienced technical personnel was assembled to perform a review of these packages.

Based on the review described above, evaluations and tests have been completed which confirmed that installed commercially dedicated equipment and/or components would have been able to perform their intended safety functions.

Regarding the programmatic aspect of this condition, 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 characteristics necessary to verify that the item would perform its intended safety function (10 CFR Part 21). However, 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.

SAFETY IMPLICATIONS

As a result of evaluations and/or testing described previously, TVA has determined that no substantial safety hazards or impacts to safety-related systems, structures or components were identified regarding this issue.

CORRECTIVE ACTIONS

To address the potential hardware deficiencies, the following actions have been completed or are planned.

1. TVA assembled an independent experienced team of technical personnel and performed a review 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, Closure Report."
2. PEG revised the CGD packages needing technical revision. Some of these procurement package revisions resulted in additional testing of some items. Testing and/or evaluations were completed with favorable results for installed equipment and components. In total, additional tests/inspections were conducted on 1,342 commercial grade items. 1,099 of those tests were destructive in nature, and 243 were non-destructive.
3. Concurrent with the revision of each CGD package, TVA has examined whether the related commercial grade item which was purchased, received and stored, and installed was impacted. No impacts to installed equipment or components were identified.

To address the programmatic aspects of this condition, 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 has 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 have completed EPRI training on CGD programs or were task qualified to perform CGD by TVA's Engineering Support Personnel Training Program.