



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-13-114

October 31, 2013

10 CFR 50.4

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3  
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68  
NRC Docket Nos. 50-259, 50-260, and 50-296

Sequoyah Nuclear Plant, Units 1 and 2  
Facility Operating License Nos. DPR-77 and DPR-79  
NRC Docket Nos. 50-327 and 50-328

Watts Bar Nuclear Plant, Unit 1  
Facility Operating License No. NPF-90  
NRC Docket No. 50-390

**Subject: The Tennessee Valley Authority (TVA) Nuclear Power Group Commercial Grade Dedication Recovery Project - October 2013 Status Report**

- Reference:**
1. TVA letter to NRC, "Additional Information Regarding March 28, 2013, Public Meeting With NRC Regarding The Tennessee Valley Authority's (TVA) Commercial Grade Dedication Recovery Project," dated April 30, 2013 (ML13123A163)
  2. TVA letter to NRC "The Tennessee Valley Authority (TVA) Nuclear Power Group Commercial Grade Dedication Recovery Project Plan - July 2013 Status Report," dated July 31, 2013 (ML13220A102)

The purpose of this letter is to provide the Nuclear Regulatory Commission (NRC) staff with the October 2013 Commercial Grade Dedication Recovery Project Quarterly Update. The initial quarterly update was provided to the NRC in Reference 2.

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October 31, 2013

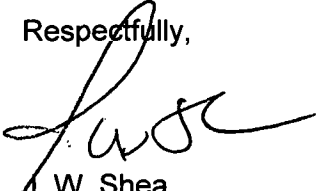
In Enclosure 2 of the Reference 1 letter, TVA provided the NRC with a TVA Nuclear Power Group Commercial Grade Dedication Recovery Project Action Plan Summary that included Commercial Grade Dedication Recovery Project Milestones. In Milestone 4, TVA stated that quarterly updates would be provided to the NRC starting in July 2013 and that the updates would include any failures found in either the installed equipment review or warehouse inventory review along with an evaluation of safety significance of such failures for the installed items.

Enclosure 1 to this letter provides TVA Nuclear Power Group Commercial Grade Dedication Recovery Project - October 2013 Status Report.

Based on progress made to date, the TVA Nuclear Power Group Commercial Grade Dedication Recovery Project is on track to meet the December 2014 completion date, as described in Reference 1. None of the issues identified to date have resulted in the determination that a previously dedicated item is incapable of performing its intended safety function.

There are no new regulatory commitments contained in this letter. Should you have any questions, please contact John Laffrey, at (423) 751-3262.

Respectfully,



J. W. Shea  
Vice President, Nuclear Licensing

Enclosure: Tennessee Valley Authority (TVA) Nuclear Power Group Commercial Grade Dedication Recovery Project - October 2013 Status Report

cc:

NRC Regional Administrator - Region II  
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant  
NRC Senior Resident Inspector - Sequoyah Nuclear Plant  
NRC Senior Resident Inspector - Watts Bar Nuclear Plant

## ENCLOSURE

### Tennessee Valley Authority (TVA) Nuclear Power Group Commercial Grade Dedication Recovery Project - October 2013 Status Report

#### BACKGROUND:

The Commercial Grade Dedication (CGD) Recovery Project Team has identified 22,324 unique Catalog Identifiers (CATIDs) that have been generated for CGD items across the TVA Nuclear Power Group Fleet since September 1995, when significant changes were made to 10 CFR Part 21. Of this population, there are 13,175 unique CATIDs numbers that were generated for CGD items that were either not purchased or not installed. These CATIDs will require additional verification and documented disposition, as appropriate. The CGD Recovery Project Team has determined that the remaining 9,149 unique CATIDs have been either purchased or installed in a TVA nuclear plant and will require evaluation and disposition.

The CGD Recovery Project is evaluating the unique CATIDs in groups where possible. In many cases several CGD packages have been generated for the same unique CATID due to the number of years of plant operations under evaluation.

The status provided below documents the progress to date based on accounting for the applicable number of unique CATIDs. The CGD packages reviewed prior to April 2013, including those reported during the March 2013 NRC meeting, are captured in the number of unique CATIDs accounted for in this letter.

#### PROGRESS TO DATE:

By letter dated July 31, 2013 (Agency Documents Access and Management System (ADAMS) Accession No. ML1322A102), TVA submitted the Nuclear Power Group Commercial Grade Dedication Recovery Project Plan - July 2013 Status Report, hereinafter referred to as the July 2013 Status Report.

The July 2013 Status Report reported that 3,591 unique CATIDs had been verified to document that the associate items were either not purchased or not installed. Since July 2013, TVA has completed an additional 5,767 verifications. Based on the CGD Recovery Project Weekly Report dated October 8, 2013, TVA has verified 9,358 CATIDs that were generated for CGD items that were either not purchased or not installed at a TVA operating nuclear plants. Therefore, from the initial population of 13,175 unique CATIDs to be verified, there are 3,817 remaining to be verified.

The July 2013 Status Report also reported the completion of evaluations for 2,154 unique CATIDs associated with purchased CGD item(s) that were either in inventory or installed at a TVA operating nuclear plant. Since that time, TVA has evaluated and dispositioned an additional 632 CATIDs associated with purchased CGD item(s) that were either in inventory or installed at a TVA operating nuclear plant. Based on the CGD Recovery Project Weekly Report dated October 8, 2013, TVA has evaluated and dispositioned a total of 2,786 CATIDs associated with CGD item(s) that are either in inventory or installed at a TVA operating nuclear plant. Therefore, from the initial population of 9,149 CATIDs to be evaluated and dispositioned, there are 6,363 remaining to be evaluated and dispositioned.

Based on the above, the TVA CGD Recovery Project is progressing as planned and scheduled.

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#### UPDATE ON PREVIOUSLY IDENTIFIED ISSUES:

In the July 2013 Status Report, TVA described two issues that were identified during warehouse inventory reviews and entered into the Corrective Action Program.

One issue involved the failed current carrying capacity of two overload heaters that were in inventory. This issue was further evaluated under Problem Evaluation Report (PER) 762570, which determined that the failure was the result of misapplication of the Square D/Schneider Electric Thermal Unit Selection Tables. After detailed discussions with Square D Applications engineers, the correct test current was identified and used in the second round of testing. Since the original test depleted TVA stock, it was necessary to procure new thermal heaters for testing. All new thermal heaters (10) passed the second round of testing.

The first round of testing was performed on thermal heaters (two items) which were purchased in January 1996. The second round of testing was completed on thermal heaters purchased in September 2013. Although there is a seventeen-year gap in the date of manufacture, there are many factors that support the premise that these lots are sufficiently similar to provide reasonable assurance that the dedication testing performed in the second round of testing is representative of the testing results of the initial testing had the correct current been applied. These factors include the fact that there was no change in manufacturer, part number, physical configuration/dimensions, or resistance values. Additionally, the current Thermal Unit Selection Tables for these items, dated May 1998, indicate a very stable design over at least the last fifteen years. Dedication testing performed has verified that configuration/dimensions and resistance values are satisfactory.

The second issue involved failed dimensional tests for four of six copper coupling fittings (CATID BKG441M). This issue was further evaluated under PER 762593, where it was determined that the initial dimensional checks measured a single measurement point for inside diameter and for wall thickness. These dimensional checks were taken from one side of the fitting. A review of ASME Standard B16.22-2012, Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings, was performed to determine the proper dimensional tolerance and inspection methods. ASME B16.22 Table II-1 (Dimensions of Solder-Joint Ends) and Section 9.3 (Ovality of Fitting End) was used to develop dimensional tolerance. ASME B16.22, Section 12.1 (Preferred Gaging Method of Solder-Joint Ends) identifies plain plug and ring gages as the preferred method of gaging diameter tolerances; however, Section 12.2 (Optional Gaging Method of Solder-Joint Ends) was used to perform the inspection, since plain plug and ring gages were not available. Use of direct reading instruments utilized a three point measurement technique for fitting inside diameter and wall thickness, averaged to determine the final value. The three point method also allowed verification of fitting ovality.

Based on the revised dimensional criteria, three of the four fittings that previously failed passed all criteria. The fourth fitting had an average inside diameter dimension for one end (Sample F - End 1), which exceeded the acceptance criteria by 0.006". Civil Engineering evaluated this fitting to determine acceptance of the fitting, as-is. Evaluation of the fitting's excess inside diameter resulted in a joint tensile strength exceeding 70,000 psi. Minimum tensile strength of copper tubing is 36,000 psi; therefore, the joint tensile stress will exceed that

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of the attached tubing when brazed together. All six couplings were, therefore, deemed satisfactory.

In the July 2013 Status Report, TVA further described a Quality Assurance (QA) finding regarding the Conditional CGD process that was entered into the TVA Corrective Action Program. The description included a reference to PER 579298. TVA recently discovered that the first two digits of the PER number were inadvertently transposed. Therefore, the correct PER number is 759298. The QA Finding was evaluated and dispositioned in accordance with the Corrective Action Program. The resolution of PER 759298 impacts the scope of the CGD Recovery Project as detailed below.

In July of 2013, NPG Corporate QA performed a fleet wide audit (SSA1313) of the CGD process. The audit revealed that maintenance did not adequately perform and/or document the performance of conditional dedication checks in one of seventeen work order (WO) packages. As a result, the ability of safety related equipment to perform its intended safety function was in question. All of the WO packages in question were reviewed, operability evaluations performed as required and technical evaluations generated which determined that all items in questions were capable of performing their intended safety function and therefore acceptable as is.

The subsequent Root Cause Analysis determined that the process controls (i.e. the written instructions in procedures, on forms, on tags, and in Maximo) used to implement the conditional dedication checks lacked sufficient information needed to ensure successful completion of the tasks. The process controls did not specify who was responsible for the actions, implied actions rather than commanded actions, and did not require a sign-off to ensure the actions were completed. The lack of adequate instructions placed plant personnel in an error-likely situation of relying on knowledge-based actions rather than rule-based actions. As a result, components were installed on safety related systems without the performance and/or documentation of conditional dedication checks.

TVA is conducting an extent of condition evaluation to review the work orders associated with installed items that were conditional dedicated dating back to 1995. The results of this effort will be addressed as part of the CGD Recovery Project.

#### RECENTLY IDENTIFIED ISSUES:

Four testing failures were identified during warehouse inventory reviews and entered into the Corrective Action Program.

Problem Evaluation Report 793398 was initiated to identify and address the failed current clearing time test of one of fifteen Ferraz Shawmut fuses (CATID BDH517E) that were in inventory. The failed fuse was sequestered following the destructive test. The remainder of the test batch was also sequestered. In accordance with the CGD Recovery Project Plan, further evaluation is underway to determine the details of the testing performed and the impact to the item's ability to perform its intended safety function.

Problem Evaluation Report 794799 was initiated to identify and address testing of a SOR Inc. pressure switch (CATID BXA282G) that failed to meet the established acceptance criteria for configuration, operating response, repeatability, and weight critical characteristics. The failed pressure switch was returned to the site and is sequestered for further evaluation. The

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remaining lot of materials is on hold for disposition purposes, to preclude possible issue and use in the plant. In accordance with the CGD Recovery Project Plan, further evaluation is underway to determine the details of the configuration, operating response, repeatability and weight criteria and the impact to the item's ability to perform its intended safety function.

Problem Evaluation Report 793399 was initiated to identify and address failed threading testing of one of four Parker Hannifin brass tubing tee fittings (CATID CKA398K) that were in inventory. The failed brass tee was sequestered. CATID CKA398K was originally a conditionally dedicated item with fit up as part of the conditional dedication activities. Had the tee fitting been issued to the plant, based on installation practices, the threading discrepancy would have likely been identified during installation and the part would not have been installed and another tee would have been used. In accordance with the CGD Recovery Project Plan, further evaluation is underway to determine the details of the testing performed and the impact to the item's ability to perform its intended safety function.

Problem Evaluation Reports 784385 and 793529 were initiated to identify and address a failed flash point test for one of five cans of Mometive hydraulic fluid (CATID CKJ806N) that were in inventory on hold since January 2013. The sampled flash point result was 500 degrees Fahrenheit, which did not meet the required flash point of greater than 527 degrees Fahrenheit. The can of hydraulic fluid that failed the flash point test has been appropriately sequestered. The four cans of hydraulic fluid in inventory remain on hold. Five other cans from this lot of hydraulic fluid were issued to other TVA nuclear plants prior to placement of the Commercial Grade Item hold in January 2013. In accordance with the CGD Recovery Project Plan, further evaluation is underway to determine the details of the testing performed and the impact to the item's ability to perform its intended safety function.