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

CNL-15-152

July 24, 2015

10 CFR 2.201

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

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

SUBJECT: WATTS BAR NUCLEAR PLANT (WBN) UNIT 2 - REPLY TO NOTICE OF VIOLATION (EA-15-075)

Reference: NRC letter dated June 29, 2015, "Watts Bar Nuclear Plant Unit 2 Construction - NRC Integrated Inspection Report 05000391/2015604 and Notice of Violation"

Pursuant to Title 10, *Code of Federal Regulations* (10 CFR) 2.201, Tennessee Valley Authority's (TVA) response to Notice of Violation EA-15-075 is enclosed.

TVA accepts the violation and has developed and implemented corrective actions to ensure the identified discrepancies have been corrected and will not recur.

The enclosure provides TVA's reply to the violation, including a detailed description of the corrective steps taken and the results achieved. TVA achieved full compliance in March 2015 when Engineering completed the assessment of 87 hangers for rebar damage.

There are no new regulatory commitments made in this letter. Should you have questions regarding this response, please contact Gordon Arent at (423) 365-2004.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosure

cc: See Page 2

Enclosure:

Reply to Notice of Violation

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Director, Office of Enforcement
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 2
NRC Project Manager - Watts Bar Nuclear Plant, Unit 2

WATTS BAR NUCLEAR PLANT, UNIT 2
ENCLOSURE
REPLY TO NOTICE OF VIOLATION

Description of the Violation

10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

TVA Procedure MAI-5.1B, Wedge Bolt (WB) Anchor Installation, Revision 21, is the implementing/controlling process for anchor bolt installation, and includes the requirements for drilling the hole to be used for anchor bolt installation.

MAI-5.1 B, Revision 21, Section 6.2.5.A.3, states that unless specifically permitted, reinforcing steel shall not be cut or drilled to install anchors. Site Engineering approval is required to drill through the reinforcing bar.

Contrary to the above, on or about December 1, 2011, contract employees assigned to drill holes for anchor bolt installation willfully drilled into the reinforcing steel of the steam generator housing, a safety-related structure, without notifying Site Engineering, or obtaining their approval as required by TVA Procedure MAI-5.1 B. Specifically, the contract employees damaged reinforcing steel in at least five locations associated with holes drilled under work order 111335067 and work order 111335073.

This is a Severity Level IV cited violation identified as VIO 05000391/2015604-02, Failure to Follow Anchor Bolt Installation Procedure.

TVA Response

Tennessee Valley Authority TVA) does not dispute the facts as described by the Nuclear Regulatory Commission (NRC) and accepts the violation. As noted in the Notice of Violation, the damage to the structure was evaluated and determined not to require repair.

Reason for the Violation:

Watts Bar Nuclear Plant (WBN) Unit 2 contract employees knowingly performed work, outside of the scope of the work order, contrary to TVA procedure MAI-5.1 B, "Wedge Bolt (WB) Anchor Installation." TVA's extent of condition review determined that the inappropriate work was isolated to work activities in Work Orders (WO) 111335067 and 111335073.

Corrective Steps That Have Been Taken And The Results Achieved:

Upon notification of the events and circumstances surrounding this violation, TVA Employee Concerns Program (ECP) personnel initiated case ECP-2013-WC-429-RR, and Problem Evaluation Report (PER) 838631 was generated to enter the concern into the Corrective Action Program. The names of the individuals involved were turned over to the Office of Inspector General (OIG) for their investigation and determination of any legal recourse. Walkdown packages were initiated to inspect the work performed under WO 111335067 and WO 111335073.

- Work Order 111335067 installed reservoir and interconnecting tubing for snubbers on Steam Generators 2 and 3.

- Work Order 111335073 installed reservoir and interconnecting tubing for snubbers on Steam Generators 1 and 4.

An apparent cause evaluation and extent of condition review included the following.

- Interviews with involved personnel.

- A search of work orders performed by involved individuals.

- Walkdown packages to perform rebar scans near potentially affected supports.

The Extent of Condition (EOC) review confirmed the condition was limited to personnel responsible for completing WOs 111335067 and 111335073.

Of a total population of 87 hangers involving the personnel of interest for the drilling and installation of anchor bolts, 57 had no rebar damage based on scans and engineering evaluations. For the remaining 30 hangers, TVA accepted damage at 25 locations as a conservative measure, even though there was no evidence that damage occurred. Five damaged rebar were discovered as a result of the investigation. Each was evaluated by Engineering and determined to not require repair due to safety margin designed into the walls being adequate to accept the damage. Field Change Requests and Drawing Request Authorizations were issued to document both the assumed and confirmed rebar damage.

Disciplinary actions were taken against the responsible individuals where violations of procedures and/or processes took place, and were referred to OIG for their investigation.

During 2012, TVA was performing 10 CFR 50.7 and 50.9 Safety Conscience Work Environment (SCWE) training for everyone on the project. This training is relevant to this event because it reinforces a culture in which safety issues can be raised without fear of reprisal, discusses the 'chilling effect', and reiterates the importance of procedure adherence.

Related Corrective Actions:
In January 2013, due to other similar events, management directed a work stoppage of anchor bolt installation. Craft personnel work on drilling and installing anchor bolts was stopped, and anchor bolt installation retraining was conducted with emphasis on strict procedure use and adherence. This retraining also focused on criteria for contacting Engineering and obtaining Engineering authorization before drilling into rebar or other embedded features, emphasized that bending of bolts is not procedurally allowed and that scanning for rebar must occur prior to boring holes in concrete for anchor bolt installation. Additionally, a directive was issued and disseminated to applicable craft personnel to provide requirements for personnel to perform rebar scanning prior to boring holes for anchor bolts.

As a result of a previous TVA willful violation (EA-12-021) and subsequent alternate dispute resolution resulting in a Confirmatory Order by the NRC, TVA has taken a significant number of actions addressing expectations for assuring work activities are performed and documented in a complete and accurate manner. Specifically, the following actions were taken.

- The Chief Nuclear Officer and the Senior Vice President of Nuclear Construction issued a joint communication to all Nuclear Power Group and Nuclear Construction employees regarding expectations for assuring work activities are performed and documented in a complete and accurate manner.

- The executive management expectations (above) were reinforced through the use of fleet wide posters and communications. These communications specifically discussed 10 CFR 50.9, Completeness and Accuracy of Information, willful violations, and the consequences of non-compliance.

- TVA revised the existing Nuclear Power Group (NPG) procedure, NPG-SPP-01.2, "Administration of Site Technical Procedures," to reinforce the requirements of 10 CFR 50.9 and the need to ensure complete and accurate documentation of work completion steps.

- TVA provided initial 10 CFR 50.9 training in 2012 (manager, supervisor and craft-level) to employees at all Nuclear Construction sites.

- TVA provided refresher 10 CFR 50.9 training in 2014 (manager, supervisor and craft-level) to WBN Unit 2 employees, which will continue every two years through 2016, or until construction is complete.

- TVA enhanced existing 10 CFR 50.9 related general employee training (GET) for new employees joining Nuclear Power Group and Nuclear Construction, and updated the associated annual requalification training.

- Within six months of issuance of the Confirmatory Order and prior to July 1, 2013, TVA performed checks of the WBN Unit 2 construction contractors and subcontractors via the Employee Concerns Program (ECP), to identify scheduling pressure issues. Surveys were taken in December 2012 and May 2013. Issues identified were and continue to be addressed commensurate with safety and in accordance with TVA's Corrective Action Program.

In 2013, TVA performed effectiveness reviews of actions taken and actions planned, including those taken in response to the ECP checks described above. Based on the results of the effectiveness review, TVA implemented appropriate corrective actions.

Project Oversight:
Broader project oversight activities are also continually being performed to assess WBN Unit 2 performance. These activities include the following:

- Independent Project Assurance organization established and began performing assessments in Summer 2012.

- Work environment (cultural risk) assessment was initiated in conjunction with OIG in January 2013. The purpose of this assessment is to improve dialogue, build trust and a better work environment, identify potential risks to the project, and help ensure the project is completed in accordance with regulatory requirements.

- Nuclear Construction Review Board was established in April 2012. The board performs independent review / assessments in selected focus areas including nuclear safety culture work environment and safety concerns.

- The OIG staff is located on site. Senior project management routinely interfaces with OIG staff as issues are identified and requests assistance with investigations as needed.

- Independent Project Review Team was established. The team provides insight to the TVA Nuclear Oversight Committee from independent nuclear experts and provides an independent perspective of nuclear safety culture.

Corrective Steps That Will Be Taken:
TVA will continue to provide refresher 10 CFR 50.9 training (manager, supervisor and craft-level) to WBN Unit 2 employees every two years through 2016, or until construction is complete.

Date When Full Compliance Will Be Achieved:
TVA achieved full compliance in March 2015 when Engineering completed the assessment of 87 hangers for rebar damage.