



Tennessee Valley Authority, Post Office Box 2000, Soddy Daisy, Tennessee 37384-2000

September 8, 2015

10 CFR 21.21(d)(3)(ii)

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

Sequoyah Nuclear Plant, Unit 1
Facility Operating License No. DPR-77
NRC Docket No. 50-327

Subject: Westinghouse Corporation Deviation From Contract Service

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Part 21, "Reporting of Defects and Noncompliance," the Tennessee Valley Authority is providing the required written notification of a deviation in a basic component associated with procured services for reactor vessel specimen relocation. The enclosure to this letter provides the information required in 10 CFR 21.21(d)(4).

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Mrs. Erin Henderson, Sequoyah Site Licensing Manager, at (423) 843-7170.

Respectfully,

John T. Carlin
Site Vice President
Sequoyah Nuclear Plant

Enclosure: Part 21 Notification of Westinghouse Corporation Deviation From Procurement Specifications

cc: NRC Regional Administrator – Region II
NRC Senior Resident Inspector – Sequoyah Nuclear Plant

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NRR

ENCLOSURE

SEQUOYAH NUCLEAR PLANT (SQN), UNIT 1

**PART 21 NOTIFICATION OF WESTINGHOUSE CORPORATION
DEVIATION FROM PROCUREMENT SPECIFICATIONS**

- (i) Name and address of the individual or individuals informing the Commission.

Mr. John T. Carlin
Tennessee Valley Authority
Vice President, Sequoyah Nuclear Plant Unit 1
Post Office Box 2000
Soddy-Daisy, TN 37384

- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Sequoyah Nuclear Plant, Unit 1
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Basic Component: Westinghouse Electric Company service contract, PO 393260-1 Relocate Reactor Vessel Surveillance Capsules dated July 13, 2012, to relocate reactor pressure vessel surveillance capsules using specific Westinghouse procedure and tooling.

- (iii) Identification of the firm constructing the facility or supplying the basic component that fails to comply or contains a defect.

Westinghouse Electric Company
1000 Westinghouse Drive
Cranberry Township, Pennsylvania 16066

- (iv) Nature of the defect or failure to comply and the safety hazard that is created or could be created by such defect or failure to comply.

TVA contracted with the Westinghouse Electric Company (WEC), in part, to provide relocation of reactor pressure vessel (RPV) material surveillance capsules. The purchase order for relocation services included: relocation of two reactor vessel surveillance capsules in Units 1 and 2; qualified, trained supervision and personnel to perform the relocation; necessary procedures, drawings, and other required documentation; technical review of required revisions of SQN procedures to support the capsule relocation and SQN work documents controlling the capsule relocation; and all necessary and backup tooling to perform the relocation of the samples and activities necessary to process in and utilize the tooling. The purchase order specified that these activities be conducted under the requirement of 10 CFR 21.

During performance of services in the SQN Unit 1 end of cycle (EOC) R19 outage (Fall 2013), the WEC discontinued use of specified tooling and procedure requirements. These changes were made absent formal processes and without notification to TVA until after conduct of the service.

Following the Unit 1 R19 outage and at the beginning of the operating cycle (Fall 2013), SQN operators received alarms multiple times from the Loose Parts Monitoring System. As a result, SQN conducted evaluations for continued operations wherein it was determined that operations could continue and not have adverse effects on the systems, structures and components associated with the reactor coolant system (RCS). A plan for continued monitoring was established, with no additional anomalies identified during the operating cycle.

During the SQN Unit 1 end of cycle (EOC) R20 outage (Spring 2015), inspections of the Unit 1 reactor vessel internals revealed that the RPV material surveillance capsules S and W had become dislodged from their intact designated baskets. The RPV material surveillance capsules were destroyed, and the capsule fragments and their contents had been distributed within the RPV during the operating cycle.

TVA re-evaluated the condition after identifying the physical loose parts that were in the RCS during the previous operating cycle and those parts that potentially remain in RCS during the current operating cycle. TVA concluded that, if left uncorrected, a substantial safety hazard could have been created in the previous operating cycle or could be created in the current operating cycle by the capsule fragments and their content, although the potential is characterized as low. Based on the evaluation the following condition could have or could occur: fuel cladding damage as a result of fretting or localized departure from nucleate boiling from flow reductions; reduced peak clad temperature margin due to blocked and/or reduced flow; RCS pressure boundary damage due to fretting; unanalyzed loads on the RPV and internals created by clearance loss resulting in wear, deformation, or fracture; interference with control rod and rod cluster control assembly operation; and cladding corrosion resulting from chemical interaction of specimen materials.

- (v) The date on which the information of such defect or failure to comply was obtained.

Discovery date: June 3, 2015. The condition was initially reported to the NRC on August 7, 2015, via the Emergency Notification system under Event Notification No. 51298.

- (vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

TVA contracted with WEC to provide relocation of two RPV material surveillance capsules in each Unit at SQN. The capsule relocations for Unit 1 occurred in Fall 2013 and for Unit 2 in Spring 2014, each during an EOC R19 refueling outage. TVA has service contracts with WEC for various technical and field service activities.

- (vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

TVA conducted an extensive foreign object search and recovery initiative to recover the RPV material surveillance capsules and contents prior to concluding the SQN Unit 1 end of cycle (EOC) R20 outage. There is approximately 74 items that remain unaccounted following the refueling outage. These items are believed to be in the vacuum filters used in retrieval of contents or located in the remains of surveillance capsules. Reconciliation of the remaining items is on going. TVA intends to strengthen it's procedure for oversight of supplemental personnel by September 2015. TVA has included requirements for conducting a pull test on future relocated RPV material surveillance capsules.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

None.

- (ix) In the case of an early site permit, the entities to whom an early site permit was transferred.

Not applicable