



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

March 11, 2016

10 CFR 50.4  
10 CFR 50.55a

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

Sequoyah Nuclear Plant, Unit 2  
Renewed Facility Operating License No. DPR-79  
NRC Docket No. 50-328

**Subject: Unit 2 Cycle 20 Refueling Outage - 90-Day Inservice Inspection  
Summary Report**

In accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Article IWA-6230 and Code Case N-532-5, the Tennessee Valley Authority is providing the Sequoyah Nuclear Plant (SQN), Unit 2, Inservice Inspection (ISI) Summary Report within 90 days from completion of the Unit 2 Refueling Outage 20 (U2R20). The U2R20 refueling outage ended on December 15, 2015. Accordingly, this report is required to be submitted by March 14, 2016. The report contains the Owner's Activity Report, a list of items with flaws or relevant conditions that required evaluation for continued service (Table 1), an abstract of repair and replacement activities required for continued service due to a flaw or relevant condition (Table 2), and the evaluation of acceptability of inaccessible areas of the steel containment vessel in accordance with 10 CFR 50.55a(b)(2)(ix)(A).

There are no regulatory commitments associated with this submittal. Should you have any questions, please contact Michael McBrearty at (423) 843-7170.

Respectfully,

Christopher J. Schwarz  
Site Vice President  
Sequoyah Nuclear Plant

Enclosure: ASME Section XI Inservice Inspection Summary Report,  
Unit 2 Cycle 20 Refueling Outage

cc (Enclosure):  
NRC Regional Administrator – Region II  
NRC Senior Resident Inspector – Sequoyah Nuclear Plant  
NRC Project Manager - Sequoyah Nuclear Plant

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**ENCLOSURE**

**TENNESSEE VALLEY AUTHORITY  
SEQUOYAH NUCLEAR PLANT, UNIT 2**

**ASME SECTION XI  
INSERVICE INSPECTION SUMMARY REPORT  
UNIT 2 CYCLE 20 REFUELING OUTAGE**

FORM OAR-1 OWNER'S ACTIVITY REPORT

Report Number U2R20

Plant SEQUOYAH NUCLEAR PLANT, P.O. Box 2000, Soddy-Daisy, TN 37384-2000

Unit No. 2 Commercial service date June 1, 1982 Refueling outage no. 20  
(if applicable)

Current inspection interval Third Inspection Interval  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, other)

Current inspection period Third Inspection Period  
(1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>)

Edition and Addenda of Section XI applicable to the inspection plans 2001 Edition, 2003 Addenda

Date and revision of inspection plans November 23, 2015 - 0-SI-DXI-000-114.3, Revision 28

Edition and Addenda of Section XI applicable to repair/replacement activities, if different than the inspection plans Not Applicable

Code Cases used: N-460, N-513-3, N-532-4, N-532-5, N-566-2, N-586-1, N-686-1, N-706-1, N-716-1, N-722-1, N-729-1, N-770-1, N-798, N-800  
(if applicable, including cases modified by Case N-532 and later revisions)

CERTIFICATE OF CONFORMANCE

I certify that (a) the statements made in this report are correct; (b) the examinations and tests meet the Inspection Plan required by the ASME Code XI and (c) the repair/replacement activities and evaluations supporting the completion of U2C20 conform to the requirements of Section XI. (refueling outage number)

Signed [Signature] ISI Program Engineer Date 3/8/16  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by The Hartford Steam Boiler Inspection and Insurance Company of Connecticut have inspected the items described in this Owner's Activity Report, and state that, to the best of my knowledge and belief, the Owner has performed all activities represented by this report in accordance with the requirements of Section XI.  
By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair/replacement activities and evaluation described in this report. Furthermore, neither the Inspector nor his employer shall be liable in manner for personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions 13912 A, N, I  
Inspector's Signature National Board, State, Province, and Endorsements  
Date 3/8/2016

ASME Code Section XI Exception- Reference: TVA Condition Report 1098901, Subject: EPRI NDE Alert 2013-09 for bolting exams and NRC Enforcement Guidance Memorandum (EGM) 14-003 enforcement discretion for the use of generic EPRI bolt and stud NDE procedures when doing ASME Section XI bolting exams.

**ASME SECTION XI  
INSERVICE INSPECTION SUMMARY REPORT  
SEQUOYAH NUCLEAR PLANT UNIT 2 CYCLE 20 REFUELING OUTAGE**

**TABLE 1**

**ITEMS WITH FLAWS OR RELEVANT CONDITIONS THAT  
REQUIRED EVALUATION FOR CONTINUED SERVICE**

Examination Category and Item Number	Item Description	Evaluation Description
B-P, B15.10	RC Loop 3 Letdown Flow valve, SQN-2-FCV-062-0069-A, Leak with small amounts of dry discolored boron on the body to bonnet bolting.	N-566-2 Evaluation, Assuming maximum probably corrosion damage shows negligible wear, affected studs and nuts have no visible corrosion damage, WO 117381236 retightened.
C-H, C7.10	Safety Injection System, CCP Flow Element, SQN-2-FE-063-0029, small amount of dry white boric acid found on the orifice plate	Visual inspection indicated none of the bolts were exposed to leakage. Bolting is stainless steel. Leak was stopped under WO 117380277.
C-H, C7.10	Seal Water isolation test connection, SQN-2-VLV-062-0715, dry white boron was found between the body and end cap connections.	None of the 8 studs were exposed to leakage. Bolting is stainless steel. Leak is not active.
F-A, F1.20C	Component ID 2-MSH-342, Variable Spring Support, improper setting on support, both spring hangers out of range (NOI 2-SQ-445)	Design basis spring setting tolerance is 10% in accordance with SQN-DC-V-24.2. The as-found spring setting remains acceptable and meets design basis requirements.
F-A, F1.20C	Component ID 2-MSH-344, Variable Spring Support, improper setting found on support. (NOI 2-SQ-443)	The as found setting was outside the design tolerance of 10%. Work Order 117379624 reset the spring in accordance with the drawing. Successive exam performed.
F-A, F1.40	Component ID 2-CRDH-1, CRDM Seismic Support, Loose jam nuts and 3 cotter pins were easily removed, (NOI 2-SQ-441)	The loose jam nut is inconsequential since the opposite jam nut remains adequate to prevent rotation. This does not render the tie-rod non-functional and is acceptable. Cotter pins, while loose, remain functional in preventing clevis pins from dislodging. This condition does not render tie-rods non-functional and is also acceptable. Procedure 0-MI-MRR-068-000.0 corrected these conditions.
F-A, F1.40	Component ID RVH-1, Reactor Vessel support, 3 loose nuts (NOI 2-SQ-442)	Maximum anchor load calculation determined that as found loose nuts are acceptable and both RV supports remain fully functional.

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**TABLE 2**

**ABSTRACT OF REPAIRS, REPLACEMENTS, OR CORRECTIVE MEASURES  
REQUIRED FOR CONTINUED SERVICE**

Code Class	Item Description	Description of Work	Date Completed	Repair/Replacement Plan Number
No Applicable Repair/Replacement activities occurred during this period.				

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**REPORTING REQUIRED BY 10 CFR 50.55a(b)(2)(ix)(A)  
ASME Section XI, Subsection IWE  
Steel Containment Vessel Inspection Program**

10 CFR 50.55a(b)(2)(ix)(A) requires reporting of the degradation assessment for inaccessible areas when conditions are identified in accessible areas during the performance of the ASME Section XI, Subsection IWE Steel Containment Vessel (SCV) Inspection Program that could indicate the presence of or result in degradation to such inaccessible areas.

The conditions identified during the Unit 2 Cycle 20 refueling outage on the SCV in an accessible area were determined to be acceptable and do not affect the degradation assessment for inaccessible areas.