



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

September 15, 2021

**LICENSEE:** Tennessee Valley Authority

**FACILITY:** Watts Bar Nuclear Plant, Unit 2

**SUBJECT:** SUMMARY OF AUGUST 19, 2021, PARTIALLY CLOSED MEETING WITH TENNESSEE VALLEY AUTHORITY TO DISCUSS MID-CYCLE OUTAGE CONTINGENCIES (EPID L-2021-LRM-0067)

On August 19, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff held a partially closed meeting with representatives of Tennessee Valley Authority (TVA or the licensee) to discuss potential mid-cycle outage contingencies and steam generator (SG) tube locking as a basis for reducing burst probability at Watts Bar Nuclear Plant, Unit 2 (Watts Bar). The meeting notice and agenda for this meeting, dated July 27, 2021, are available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21218A015. A list of attendees is enclosed. No regulatory decisions were made at this meeting.

During the licensee's public presentation (ADAMS Accession No. ML21229A199), it described the current licensing basis for the Watts Bar, Unit 2, SG program regarding tube inspections. Watts Bar, Unit 2, was previously approved to use the alternate SG tube repair criteria applicable specifically to outer diameter stress corrosion cracking (ODSCC) at the tube-to-tube support plate intersections in Westinghouse Electric Company (Westinghouse) designed SGs having drilled-hole tube support plates (TSPs) and alloy 600 tubing described in Generic Letter (GL) 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes Affected by Outside Diameter Stress Corrosion Cracking." During the Unit 2 Cycle 3 refueling outage, TVA employed the GL 95-05 alternate repair criteria. TVA stated that the condition monitoring requirements were met for all degradation mechanisms except for the conditional burst probability in SG number 3. This led TVA to request a license amendment that would permit the use of alternate probabilities of detection for indications less than 3.2 volts, greater than or equal to 3.2 volts and less than 6 volts, and greater than or equal to 6.0 volts. The NRC approved the amendment on February 9, 2021 (ADAMS Accession No. ML21027A167). TVA subsequently requested an amendment to apply a temperature adjustment to the voltage growth rate for the GL 95-05 alternate repair criteria. The NRC approved this amendment on June 24, 2021 (ADAMS Accession No. ML21161A239). These amendments enabled Watts Bar, Unit 2, to operate until September 11, 2021, when it will conduct a mid-cycle inspection to determine the structural and leakage integrity of the SG tubes.

The licensee then described its overall contingency strategy for the mid-cycle outage. TVA stated that if the results are as expected, based on the condition monitoring and operational assessment (CMOA), and support continued operation until the planned SG replacement in March 2022, then no additional contingencies will be needed. However, TVA is working with Westinghouse on TSP locking/displacement contingency if the CMOA does not support an additional 6 months of operation until the replacement outage. "Locking" of a TSP would limit the displacement of that TSP during a main steam line break, thereby minimizing contribution to probability of burst. The modification of TSPs would be accomplished placing sleeves in the

inner diameter of certain SG tubes to create bulges above and below the TSP. TVA stated that this modification itself will be implemented under Section 50.59 of Title 10 of the *Code of Federal Regulations* process. However, the analysis based on displacement is an exception to the GL 95-05 methodology and requires a license amendment request. The NRC questioned why the modification would not require an amendment. TVA stated that the sleeve it would use is not a leak-limiting sleeve and that tubes fitted with these sleeves will be plugged and taken out of service. TVA noted that TSP locking had been previously approved for use at South Texas Project, Unit 2, in March 2001.

The TSP displacement/locking modification was discussed in detail during the closed portion of the meeting.

Please direct any inquiries to me at 301-415-1627 or [Kimberly.Green@nrc.gov](mailto:Kimberly.Green@nrc.gov).

/RA/

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Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-391

Enclosure:  
List of Attendees

cc: Listserv

LIST OF ATTENDEES

AUGUST 19, 2021, PUBLIC PORTION OF PARTIALLY CLOSED MEETING WITH

TENNESSEE VALLEY AUTHORITY

REGARDING MID-CYCLE OUTAGE CONTINGENCIES

**Name**

**Organization**

Kim Green	U.S. Nuclear Regulatory Commission (NRC)
Luke Haeg	NRC
Dave Wrona	NRC
Steve Bloom	NRC
Paul Klein	NRC
Greg Makar	NRC
Binoy Desai	NRC
Al Butcavage	NRC
Wes Deschaine	NRC
Jeremy Dean	NRC
Paula Cooper	NRC
Ed Miller	NRC
Allen Hiser	NRC
Russ Wells	Tennessee Valley Authority (TVA)
Kim Hulvey	TVA
Ron Rogers	TVA
Tony Brown	TVA
Jeremy Mayo	TVA
Dean Baker	TVA
John Pope	TVA
Dave Goetcheus	TVA
Robert Chappo	Westinghouse Electric Company, LLC (Westinghouse)
Jim Smith	Westinghouse
Michael Bradley	Westinghouse
John Carlson	Westinghouse
Gary Whiteman	Westinghouse
Tyler Bro	Westinghouse

Enclosure

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TENNESSEE VALLEY AUTHORITY TO DISCUSS MID-CYCLE OUTAGE  
CONTINGENCIES (EPID L-2021-LRM-0067) DATED SEPTEMBER 15, 2021

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**ADAMS Accession No.: ML21253A087**

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NAME	KGreen	RButler	DWrona	KGreen
DATE	9/10/2021	9/13/2021	9/14/2021	9/15/2021

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