



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200  
ATLANTA, GEORGIA 30303-1200

August 11, 2022

EA-22-034

Mr. Jim Barstow  
Vice President Nuclear Regulatory Affairs & Support Services  
Tennessee Valley Authority  
1101 Market Street, LP 4A-C  
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT – INTEGRATED INSPECTION REPORT  
05000390/2022002 AND 05000391/2022002 AND EXERCISE OF  
ENFORCEMENT DISCRETION

Dear Mr. Barstow:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Watts Bar Nuclear Plant. On July 25, 2022, the NRC inspectors discussed the results of this inspection with Mr. Anthony Williams and other members of your staff. The results of this inspection are documented in the enclosed report.

No findings or violations of more than minor significance were identified during this inspection.

The Regional Administrator has authorized staff to use IP 50001, Steam Generator Replacement Inspection, to inspect Watts Bar Unit 2 Steam Generator Replacement because the steam generator replacement inspection is an infrequent inspection and outside of the routine reactor oversight program (ROP) baseline inspections.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

A handwritten signature in black ink, appearing to read "Louis J. McKown".

Signed by McKown, Louis  
on 08/12/22

Louis J. McKown, Chief  
Reactor Projects Branch 5  
Division of Reactor Projects

Docket Nos. 05000390 and 05000391  
License Nos. NPF-90 and NPF-96

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: WATTS BAR NUCLEAR PLANT – INTEGRATED INSPECTION REPORT  
05000390/2022002 AND 05000391/2022002 AND EXERCISE OF  
ENFORCEMENT DISCRETION DATED AUGUST 11, 2022

**DISTRIBUTION:**

M. Kowal, RII  
S. Price, RII  
N. Doiley, RII  
RidsNrrPmWattsBar Resource  
RidsNrrDro Resource  
PUBLIC

**ADAMS ACCESSION NUMBER: ML22223A138**

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RII/DRP	RII/DRP			
NAME	W. Deschaine	L. McKown			
DATE	8/11/2022	8/11/2022			

**OFFICIAL RECORD COPY**

**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Numbers: 05000390 and 05000391

License Numbers: NPF-90 and NPF-96

Report Numbers: 05000390/2022002 and 05000391/2022002

Enterprise Identifier: I-2022-002-0020

Licensee: Tennessee Valley Authority

Facility: Watts Bar Nuclear Plant

Location: Spring City, TN 37381

Inspection Dates: April 01, 2022 to June 30, 2022

Inspectors: J. Bell, Resident Inspector  
N. Childs, Senior Project Engineer  
P. Cooper, Senior Reactor Inspector  
W. Deschaine, Senior Resident Inspector  
D. Lanyi, Senior Operations Engineer  
A. Nielsen, Senior Health Physicist  
N. Peterka, Senior Project Engineer  
W. Pursley, Health Physicist  
J. Rivera, Health Physicist  
D. Simpkins, Sr. Tech Training Program Specialist

Approved By: Louis J. McKown, Chief  
Reactor Projects Branch5  
Division of Reactor Projects

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Watts Bar Nuclear Plant, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### List of Findings and Violations

No findings or violations of more than minor significance were identified.

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
EDG	EA-22-034	Failure to Comply with 10 CFR 37 for the Protection of Category 2 Radioactive Material Contained in Contaminated Steam Generators Stored in a Concrete Mausoleum	71124.08	Closed
LER	05000390/2020-001-00	LER 2020-001-00 for Watts Bar Nuclear Plant, Unit 1, Manual Reactor Trip Due to Lowering Steam Generator Level Caused by a Hand Station Failure	71153	Closed
LER	05000390,05000391/2019-002-00	LER 2019-002-00 for Watts Bar Nuclear Plant, Units 1 & 2, Loss of Control Room Emergency Air Temperature Control System Due to Air Filter Failure.	71153	Closed

## PLANT STATUS

Unit 1 operated at or near rated thermal power (RTP) for the entire inspection period.

Unit 2 began the inspection period shutdown for a refueling outage (U2R4) until it was restarted on June 30, 2022. Unit 2 remained in Mode 2 until the end of the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

## REACTOR SAFETY

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Spent Fuel Pool Cooling System on April 19, 2022.
- (2) Auxiliary Building Gas Treatment System (ABGTS) on April 21, 2022.
- (3) Unit 1 Turbine Driven Axillary Feedwater System on June 15, 2022.

#### Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the Unit 1 Containment Spray system (CSS) (areas accessible outside containment) on May 27, 2022.

### 71111.05 - Fire Protection

#### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Cable Spreading Room (Control Building Elevation 729' and 741') on April 7, 2022.
- (2) Intake Pumping Station (IPS) (Elevations 711', 722' and 741') on April 7, 2022.

- (3) Unit 1 Control Rod Drive Equipment Room, Pressurizer Heater Transformer Room, and Miscellaneous Equipment Room (Auxiliary Building Elevations 782' and 786') on April 7, 2022.
- (4) Mechanical Equipment and 480V Transformer Rooms (Auxiliary Building Elevation 772') on April 8, 2022.
- (5) Auxiliary Building Corridor (Elevation 676') on April 8, 2022.

#### 71111.07A - Heat Exchanger/Sink Performance

##### Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Component Cooling System (CCS) Heat Exchanger A & B on June 17, 2022.

#### 71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

##### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during Unit 2 start-up activities on June 29-30, 2022.

##### Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated the following licensed operator requalification simulator scenarios: crew B and crew C on April 21, 2022. Both observations make up one sample.

#### 71111.12 - Maintenance Effectiveness

##### Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) System 235-B - Vital Inverters (Condition Report (CR) 1685567)

#### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

##### Risk Assessment and Management Sample (IP Section 03.01) (2 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Risk assessment for (week of) May 16, 2022, with the Common Station Service Transformer C out of service for planned maintenance.
- (2) Risk assessment for (week of) May 30, 2022, with the A train Main Control Room (MCR) chiller out of service for planned maintenance.

### 71111.15 - Operability Determinations and Functionality Assessments

#### Operability Determination or Functionality Assessment (IP Section 03.01) (2 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) CR 1772929 - Essential Raw Cooling Water (ERCW) pump B-A oil level high.
- (2) CR 1772709 - Emergency Diesel Generator (EDG) 2A1 lube oil circulating pump running hot and a lot of dust/oil buildup on the motor suction.

### 71111.18 - Plant Modifications

#### Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Temporary modification WBN-2-2022-067-001, Isolation of Unit 2 Containment Penetrations for 2A and 2D Upper Compartment Coolers (UCCs) on June 30, 2022.

### 71111.19 - Post-Maintenance Testing

#### Post-Maintenance Test Sample (IP Section 03.01) (2 Samples)

The inspectors evaluated the following post-maintenance testing activities to verify system operability and/or functionality:

- (1) Maintenance Instruction 0-MI-235.002, 120 VAC Vital Inverter Automatic Transfer Test, following replacement of failed diodes and transformers for the Vital Inverter 1-II on May 17, 2022 (Work Order (WO) 122838226).
- (2) Technical Instruction 2-TI-88.01, Primary Containment Vessel Post-Modification Pressure/New Weld Leakage Inspection Test, following reinstallation of the Unit 2 Steel Containment Vessel (SCV) on June 24, 2022 (WO 122343467).

### 71111.20 - Refueling and Other Outage Activities

#### Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated refueling outage Unit 2 R4 activities from April 1, 2022, to June 30, 2022. The inspectors completed inspection procedure Sections 03.01.C, D, and E (This completes one sample)

### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

#### Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) Surveillance Instruction 0-SI-82-19-A, 184 Day Fast Start and Load Test DG 2A-A, on April 20, 2022 (WO 122403523).
- (2) Surveillance Instruction 0-SI-82-6, Loss of Offsite Power with Safety Injection – DG 2B-B, on June 30, 2022 (WO 121876540).

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Surveillance Instruction 1-SI-74-901-A, Residual Heat Removal Pump 1A-A Quarterly Performance Test, on April 22, 2022 (WO 122403484).

Ice Condenser Testing (IP Section 03.01) (1 Sample)

- (1) Surveillance Instruction 2-SI-61-5, 18-month Ice Condenser Lower Inlet Doors Inspection, on June 27, 2022 (WO 121876704).

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) The inspectors observed the site's response to an emergency preparedness drill on June 22, 2022. This drill involved a tornado hitting the site and a loss of offsite power, followed by both emergency diesel generators failing which left the site with no AC power leading to a general emergency declaration.

**RADIATION SAFETY**

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated how the licensee identifies the magnitude and extent of radiation levels and the concentrations and quantities of radioactive materials and how the licensee assesses radiological hazards. This included the licensee's assessment of radiological hazards specific to steam generator replacement activities.

Instructions to Workers (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated how the licensee instructs workers on plant-related radiological hazards and the radiation protection requirements intended to protect workers from those hazards. This included observation of pre-job briefings for steam generator replacement activities.

Contamination and Radioactive Material Control (IP Section 03.03) (3 Samples)

The inspectors observed/evaluated the following licensee processes for monitoring and controlling contamination and radioactive material:

- (1) Observed workers exiting the radiologically controlled area (RCA) exit.
- (2) Free release of Unit 2 shield building concrete cutout blast plates.



- (3) Effluent monitoring plans for control of materials released through U2 containment openings due to steam generator replacement activities.

#### Radiological Hazards Control and Work Coverage (IP Section 03.04) (4 Samples)

The inspectors evaluated the licensee's As Low As Reasonably Achievable (ALARA) planning, dose tracking, use of temporary shielding, and control of radiological hazards for steam generator replacement activities and general U2R4 job tasks.

- (1) U2 pressurizer spray line valve actuator work.
- (2) U2 steam generator no. 4 pipe end buffing activities.
- (3) ALARA Plan for Radiation Work Permit (RWP) 2022-276, Steam Generator Replacement Structural Interferences, Pipe Supports, and Replace Steam Generators.
- (4) Temporary Shielding Request 2022-022, Containment Access Facility Shield Wall.

#### High Radiation Area and Very High Radiation Area Controls (IP Section 03.05) (3 Samples)

The inspectors evaluated licensee controls of the following High Radiation Areas and Very High Radiation Areas:

- (1) Spent Resin Tank Valve Gallery Room Locked High Radiation Area (LHRA).
- (2) Tritiated Drain Collector Tank Room LHRA.
- (3) Unit 2 Chemical and Volume Control System (CVCS) Seal Water Return Filter Room LHRA.

#### Radiation Worker Performance and Radiation Protection Technician Proficiency (IP Section 03.06) (1 Sample)

- (1) The inspectors evaluated radiation worker and radiation protection technician performance as it pertains to radiation protection requirements.

#### 71124.08 - Radioactive Solid Waste Processing & Radioactive Material Handling, Storage, & Transportation

##### Radioactive Material Storage (IP Section 03.01) (3 Samples)

The inspectors evaluated the licensee's performance in controlling, labeling and securing the following radioactive materials:

- (1) Radioactive Material Storage Area (RMSA) where the steam generators removed from Unit 2 are stored.
- (2) Two temporary satellite RMSAs inside the protected area that were established for the unit 2 steam generator replacement outage.
- (3) RMSA in warehouse number two outside the protected area.

##### Radioactive Waste System Walkdown (IP Section 03.02) (2 Samples)

The inspectors walked down the following accessible portions of the solid and liquid radioactive waste systems and evaluated system configuration and functionality:

- (1) Spent resin storage tank and associated piping to railroad bay.
- (2) Reverse osmosis units in use at Watts Bar waste packaging area.

Waste Characterization and Classification (IP Section 03.03) (3 Samples)

The inspectors evaluated the following characterization and classification of radioactive waste:

- (1) 2019 and 2021 Dry Active Waste (DAW) 10CFR61 waste stream.
- (2) 2019 Radwaste Resin 10CFR61 Analysis October 9, 2019
- (3) CVCS Waste Stream Generation (February 2022 CVCS Resin L95207) March 3, 2022

Shipment Preparation (IP Section 03.04) (1 Sample)

- (1) The inspectors observed the preparation of radioactive shipment # WBN-22-111, Low Specific Activity

Shipping Records (IP Section 03.05) (3 Samples)

The inspectors evaluated the following non-excepted radioactive material shipments through a record review:

- (1) WBN-22-02, UN2916, Type B package, CVCS Resin
- (2) WBN-21-01, UN2916, Type B package, CVCS Resin
- (3) WBN-20-01, UN2916, Type B package, CVCS Resin

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

OR01: Occupational Exposure Control Effectiveness Sample (IP Section 02.15) (1 Sample)

- (1) November 20th, 2021, to April 4th, 2022.

PR01: Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) Radiological Effluent Occurrences Sample (IP Section 02.16) (1 Sample)

- (1) November 20th, 2021, to March 12, 2022

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Freeze Protection deficiencies identified by the NRC during inspections: CRs 1743977, 1745311, and 1772585. A minor violation was documented in the section of inspection results.

#### 71152S - Semiannual Trend Problem Identification and Resolution

##### Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in third party identified issues in the Corrective Action Program (CAP) that might be indicative of a more significant safety issue. An observation was documented in the section of inspection results.

#### 71153 - Follow Up of Events and Notices of Enforcement Discretion

##### Event Report (IP Section 03.02) (2 Samples)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 2021-001-00 for Watts Bar Nuclear Plant, Unit 2, Automatic Reactor Trip on Main Turbine Trip caused by Main Feed Pump Trip due to Low Condenser Vacuum (ADAMS Accession No. ML21130A027): The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements.
- (2) LER 2019-002-00 for Watts Bar Nuclear Plant, Units 1 & 2, Loss of Control Room Emergency Air Temperature Control System Due to Air Filter Failure (ADAMS Accession No. ML19219A219): The inspectors determined that it was not reasonable to foresee or correct the cause discussed in the LER therefore no performance deficiency was identified. The inspectors did not identify a violation of NRC requirements.

### **OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL**

#### 50001 - Steam Generator Replacement Inspection

During the Watts Bar Unit 2 Spring 2022 refueling outage, all four of the Westinghouse model D3 (Alloy 600) original steam generators (OSGs) were replaced with Westinghouse Model 68AXP (Alloy 690) replacement steam generators (RSGs). This inspection report documents inspection activities completed during the second quarter of 2022, as required by IP 50001, Steam Generator Replacement Inspection.

##### Steam Generator Replacement Inspection (4 Samples 5 Partial)

- (1) (Partial)  
Design Changes and Modifications to Systems, Structures, and Components – 10 CFR 50.59 Review (Sections 02.02.a.1 and 02.02.a.2)

The inspectors reviewed the following engineering design change packages for key design aspects and modifications associated with the SG replacement and verified that changes to the facility as described in the updated final safety analysis report

(UFSAR) were reviewed and documented in accordance with 10 CFR 50.59. The inspectors used IPs 71111.17T and 71111.18 as guidance to complete the reviews.

- 31814-EP-C-001, Temporary Structure and Commodities for Reactor Building Modifications
- 31814-EP-C-002, Temporary Structures and Commodities for Removal and Restoration of the Shield Building Dome and Steel Containment Vessel
- DCA 66308-0707, -0708, -0709, and -0715, Modifications to Shield Building Concrete Dome

(2) Review Radiation Protection Program Controls, Planning, and Preparations (Section 02.02.c) The inspectors reviewed radiation protection program controls, planning, and preparation in the following areas utilizing applicable portions of baseline inspection procedures IP 71124.01, 71124.03, 71124.04, 71124.06, and 71124.08 as guidance:

- As Low As Reasonably Achievable (ALARA) planning
- Dose estimates and dose tracking
- Exposure controls including temporary shielding
- Contamination controls
- Radioactive material management
- Radiological work plans and controls
- Airborne radioactivity effluent controls
- Radioactive waste and material handling, storage, and transportation

These areas are documented in Sections 71124.01 and 71124.08 of this report.

(3) (Partial)  
Welding and Non-Destructive Examination (NDE) Activities (Section 02.03.a)  
The inspectors observed portions of the welding and nondestructive examination (NDE) activities associated with the steam generator (SG) replacement project. These items and activities were inspected utilizing the guidance of IP 71111.08.

(4) Activities Associated with Lifting and Rigging (Section 02.03b)  
The inspectors observed and reviewed activities associated with transportation of the SGs, both inside and outside of containment, including examination of the lifting equipment used to perform SG rigging and transport activities. The inspectors verified that these activities were bound by the analyses and evaluations as described in engineering packages 31814-EP-C-004, "Rigging and Transport," and 31814-EP-C-006, "Haul Route and RSG Offload."

(5) (Partial)  
Old and New SG Cutting, Movement, and Reconnection Inside and Outside Containment (Section 02.03.c)  
The inspectors observed various portions of the process of removing the OSGs from their respective SG cubicles through the temporary penetrations in the steel containment vessel (SCV) and shield building to the hydraulic trailer transporter. The inspectors also observed various portions of the sequence of the RSGs being transferred from the hydraulic trailer transporter, upended, lifted, and positioned into their respective cubicles.

(6) (Partial)

Major Structural Modifications to Facilitate SG Replacement (Section 02.03.d)

The inspectors observed several structural modification activities, including removal of sections of the dome of the shield building, removal of sections of the SCV, removal of the top of SG cubicles and their restoration, to verify that the work was done by approved procedures and complied with applicable codes and standards and industry practices.

(7) (Partial)

Containment Access and Restoration of Temporary Containment Opening and Containment Leakage Testing (Section 02.03.e.)

The inspectors observed containment access and restoration activities associated with the two temporary construction openings in both the shield building dome and steel containment vessel, which were approximately 20 feet by 40 feet, for the Unit 2 SG replacement.

The inspectors reviewed drawings and procedures for the installation of concrete reinforcing steel and Bar-Lock splices and procedures for the control of concrete placement activities. The inspectors observed installation of concrete reinforcing steel and installation of Bar-Lock splices to determine if the work was completed in accordance with requirements shown on design drawings.

The inspectors also reviewed local leak rate test procedure 2-TI-88.01, "Primary Containment Vessel Post-Modification Pressure/New Weld Leakage Inspection Test," and observed its implementation to assure ASME code compliance.

(8) Operating Conditions throughout the SGRP Process (Section 02.03.f)

The inspectors routinely inspected the following activities as they occurred throughout this inspection period:

- implementation of radiation protection controls
- implementation of controls for excluding foreign materials in the primary and secondary side of the SGs and in the related RCS openings
- installation, use, and removal of temporary services directly related to steam generator replacement activities

(9) Radiological Safety Plans for Temporary Storage of Retired SGs and Components (Section 02.03.g)

The inspectors reviewed the licensee's controls for storage and security of radioactive waste, including plans for the temporary storage of the retired SGs and their components. This area is documented in Section 71124.08 of this report.

## INSPECTION RESULTS

Enforcement Discretion	Enforcement Action EA-22-034: Failure to Comply with 10 CFR 37 for the Protection of Category 2 Radioactive Material Contained in Contaminated Steam Generators Stored in a Concrete Mausoleum	71124.08
<u>Description:</u> On January 28, 2021, the NRC issued Inspection Report numbers 05000390/2020004 and 05000391/2020004, which documented a violation of 10 CFR Part 37.11 involving obsolete steam generators (Category 2 material, exempt waste) stored in large concrete storage modules. The violation met the criteria for Enforcement Discretion as		

described in Enforcement Guidance Memorandum (EGM) 14-001, "Interim Guidance for Dispositioning 10 CFR Part 37 Violations with Respect to Large Components or Robust Structures Containing Category 1 or Category 2 Quantities of Material at Power Reactor Facilities Licensed Under 10 CFR Parts 50 and 52." The inspectors re-evaluated storage and security of the steam generators and determined that there have been no changes since the last inspection.

Corrective Actions: The licensee has documented the issue in their corrective action program. As specified in EGM 14-001, the application of discretion is authorized until the underlying technical issue is dispositioned through rulemaking or other regulatory action.

Corrective Action References: CR 1769321

Enforcement:

Violation: On January 28, 2021, a violation of 10 CFR Part 37.11 was documented in Inspection Report numbers 05000390/2020004 and 05000391/2020004. The inspectors determined that the previously identified violation remains.

Basis for Discretion: This violation continues to meet the criteria for Enforcement Discretion as described in EGM 14-001.

Minor Violation

71152A

Minor Violation: Watts Bar procedure 0-PI-OPS-1-FP, "Freeze Protection," is a quality related procedure which ensures that freeze protection measures have been installed around the site prior to freezing temperatures occurring. The inspectors identified a performance deficiency and associated minor violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to ensure that activities affecting quality, such as freeze protection of safety related components, shall be prescribed by adequate procedures. Specifically, licensee procedure 0-PI-OPS-1-FP, "Freeze Protection," lacks adequate guidance to install freeze protection measures around the Unit 1 and 2 Refueling Water Storage Tanks (RWST) and Main Feed Water (MFW) sensing lines.

Screening: The inspectors determined the performance deficiency was minor. While the 0-PI-OPS-1-FP lacks adequate guidance for installation of freeze protection measures at locations identified by the inspectors, the station does have heat trace over the safety related transmitters at these locations that ensures they would not freeze.

Enforcement: TVA has established corrective actions to correct the conditions described prior to the onset of next winter. This failure to comply with 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Observation: Semi Annual Trend Observation

71152S

The inspectors reviewed Watts Bar's corrective action program for trends that might be indicative of more significant safety issues. The inspectors reviewed condition reports, level one assessments, system health reports, and control room/panel deficiencies. In particular, the inspectors evaluated the condition reports generated during the first half of 2022 to identify any negative trends in equipment and procedure use and adherence, as well as problem identification and resolution. The inspectors determined that the issues were evaluated by licensee's staff for potential trends at a low threshold and resolved within the

scope of the corrective action program. The inspectors did not identify any findings as a result of this inspection.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On July 25, 2022, the inspectors presented the integrated inspection results to Mr. Anthony Williams and other members of the licensee staff.
- On April 15, 2022, the inspectors presented the Radiation protection inspection exit meeting inspection results to B. Jenkins and other members of the licensee staff.

## DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
50001	Miscellaneous		U2R4 OSG Encapsulation, Rig-Out, and Transport Communication Plan	Spring 2022
50001	Radiation Work Permits (RWP)	22251002	U2R4 - SGR Specific Activities - HIGH RADIATION AREAS - U2 Lower Containment	04/12/2022
71111.04	Corrective Action Documents	Condition Report	1713247, 1779286	
71111.04	Drawings	0-47W855-1-ISI	Mechanical Flow Diagram, Spent Fuel Pool Cooling and Cleaning System	Revision 85
71111.04	Drawings	1-47W803-1,2	Flow Diagram Feedwater/Auxiliary Feedwater	Revision 1
71111.04	Miscellaneous		Containment Spray Heat Exchanger 1B-B Eddy Current Examination Report	November 2021
71111.04	Miscellaneous		Unit 1 Containment Spray Health Report Scorecard	04/1/2021
71111.04	Miscellaneous		Unit 1 Containment Spray Health Report Scorecard	4/13/2022
71111.04	Miscellaneous		Containment Spray Heat Exchanger 1A-A Eddy Current Examination Report	September 2018
71111.04	Miscellaneous	47W611-72-1	Electric Logic Diagram	12
71111.04	Miscellaneous	Flow Diagram 1-47W812-1	Containment Spray System	29
71111.04	Miscellaneous	WBN-SDD-N3-3B-4002	System Description - Auxiliary Feedwater System	Revision 33
71111.04	Procedures	0-SI-30-7-A	Auxiliary Building Gas Treatment System Pressure Test Train A	Revision 3
71111.04	Procedures	0-SOI-30.06	System Operating Instruction - Auxiliary Building Gas Treatment System	Revision 6
71111.04	Procedures	0-SOI-78.01	System Operating Instruction - Spent Fuel Pool Cooling and Cleaning System	Revision 37
71111.04	Procedures	1-SOI-3.02	System Operating Instruction - Auxiliary Feedwater System	Revision 28
71111.04	Procedures	1-SOI-72.01	System Operating Instruction - Containment Spray System	0004
71111.04	Work Orders	Work Orders	118684822, 118684824, 121967428, 122196583	
71111.05	Fire Plans	WBN Prefire Plans	AUX-0-676-01, Rev. 3; AUX-0-772-01, Rev. 1; AUX-0-772-02, Rev. 5; AUX-0-772-03, Rev. 5; AUX-0-772-01, Rev. 1; AUX-0-786-01, Rev. 2; CON-0-729-01, Rev. 2; IPS-0-711-	



Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			01, Rev. 2; IPS-0-728-01, Rev. 3	
71111.05	Miscellaneous		WBN FHAR, Part 1 – Introduction, Table I-1 Summary Compliance Fire Protection	Revision 59
71111.11Q	Miscellaneous	SEG 3-OT-SRT-WOG3, Part A	WOG3 E-0, ES-1.1, ECA-0.0	Revision 0
71111.11Q	Procedures	2-GO-1	Unit Startup From Cold Shutdown To Hot Standby	Revision 34
71111.11Q	Procedures	2-GO-2	Reactor Startup	Revision 18
71111.11Q	Procedures	2-GO-3	Unit Startup From Less Than 4% Reactor Power to 30% Reactor Power	Revision 14
71111.11Q	Procedures	2-PET-201	Initial Criticality and Low Power Physics Testing	Revision 6
71111.11Q	Procedures	OPDP-1	Conduct of Operations	Revision 54
71111.18	Engineering Changes	WBN-2-2022-067-001	Temporary modification - Isolation of Unit 2 Containment Penetrations for 2A and 2D Upper Compartment Coolers (UCCs)	Revision 2
71111.19	Corrective Action Documents	Condition Report	1766257	
71111.19	Procedures	0-MI-235.002	120 VAC Vital Inverter Automatic Transfer Test	0010
71111.19	Work Orders		122838226	
71111.22	Corrective Action Documents	1770894	2A Diesel Generator DG Jacket WTR Level/Pressure Lo Alarm (Alarm window 213-C) locked in	
71111.22	Procedures	0-SI-82-19-A	184-Day Fast Start and Load Test DG 2A-A	Revision 36
71111.22	Procedures	0-SOI-982.03	System Operating Instruction - Diesel Generator (DG) 2A-A	Revision 22
71111.22	Procedures	1-SI-74-901-A	Residual Heat Removal Pump 1A-A Quarterly Performance Test	Revision 33
71111.22	Procedures	1-SOI-74.01	System Operating Instruction - Residual Heat Removal System	Revision 20
71111.22	Work Orders	122403484; 122403523		
71114.06	Miscellaneous		2022 WBN June Quarterly Training Drill Package	6/22/2022
71124.01	Corrective Action Documents	CR 1763178		04/08/2022
71124.01	Corrective Action Documents	CR 1764551		
71124.01	Corrective Action	CR 1769342		04/13/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents			
71124.01	Miscellaneous		U2R4 Outage Release Plans	Spring 2022
71124.01	Miscellaneous		U2R4 Radiation Protection Outage Plan	Spring 2022
71124.01	Procedures	NPG-SPP-05.1	Radiological Controls	Rev. 0015
71124.01	Procedures	NPG-SPP-05.18	Radiation Work Permits	Rev. 0009
71124.01	Procedures	RCI-100	Radiological Controls	Revision 0056
71124.01	Radiation Work Permits (RWPs)	22251002	U2R4 - SGR Specific Activities - HIGH RADIATION AREAS - U2 Lower Containment	04/12/2022
71124.08	Corrective Action Documents Resulting from Inspection	CR 1769069		04/12/2022
71124.08	Corrective Action Documents Resulting from Inspection	CR 1769321		04/13/2022
71124.08	Miscellaneous		U2R4 OSG Encapsulation, Rig-Out, and Transport Communication Plan	Spring 2022
71124.08	Procedures	RCDP-101	10-CFR-61 Waste Characterization	Revision 0000
71124.08	Radiation Surveys	PO #34750303	Development of Waste Stream/Distribution for July 2019 DAW	06/27/2019
71124.08	Radiation Surveys	PO #5871028	Development of Waste Stream/Distribution for DAW Composite Smears 2021	05/24/2021
71124.08	Shipping Records	NRC Form 541 WBN-21-114	Uniform Low Level Radioactive Waste Manifest for Ice Melt Shipment	11/30/2022
71124.08	Shipping Records	NRC Form 541 WBN-21-116	Uniform Low Level Radioactive Waste Manifest for Ice Melt Shipment	11/30/2021