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

October 29, 2019

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

SUBJECT: BROWNS FERRY NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000259/2019003 AND 05000260/2019003 AND 05000296/2019003

Dear Mr. Barstow:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Browns Ferry Nuclear Plant. On October 25, 2019, the NRC inspectors discussed the results of this inspection with Steven M. Bono, Site Vice President and other members of your staff. The results of this inspection are documented in the enclosed report.

Two Severity Level IV violations without an associated finding are documented in this report. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement; and the NRC Resident Inspector at Browns Ferry.

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

***/RA/***

Omar R. López-Santiago, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos. 05000259 and 05000260 and 05000296
License Nos. DPR-33 and DPR-52 and DPR-68

Enclosure:
As stated

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SUBJECT: BROWNS FERRY NUCLEAR PLANT – INTEGRATED INSPECTION REPORT 05000259/2019003 AND 05000260/2019003 AND 05000296/2019003 DATED OCTOBER 29, 2019

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| X SUNSI Review | | X Non-Sensitive<br>☐ Sensitive | | | X Publicly Available<br>☐ Non-Publicly Available | |
| OFFICE | RII: DRP | RII: DRP | RII: DRP | RII: DRP | RII: DRP | RII: DRP |
| NAME | NHobbs | MKirk | PMeier | SMonarque | TStephen | OLópez-Santiago |
| DATE | 10/3/2019 | 10/3/2019 | 10/7/2019 | 10/3/2019 | 10/7/2019 | 10/29/2019 |

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

| | |
|---|---|
| Docket Numbers: | 05000259, 05000260 and 05000296 |
| License Numbers: | DPR-33, DPR-52 and DPR-68 |
| Report Numbers: | 05000259/2019003, 05000260/2019003 and 05000296/2019003 |
| Enterprise Identifier: | I-2019-003-0071 |
| Licensee: | Tennessee Valley Authority |
| Facility: | Browns Ferry Nuclear Plant |
| Location: | Athens, Alabama |
| Inspection Dates: | July 01, 2019 to September 30, 2019 |
| Inspectors: | N. Hobbs, Resident Inspector<br>M. Kirk, Resident Inspector<br>P. Meier, Senior Resident Inspector<br>S. Monarque, Project Engineer<br>T. Stephen, Senior Resident Inspector |
| Approved By: | Omar R. López-Santiago, Chief<br>Reactor Projects Branch 5<br>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 Browns Ferry 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

| Unit 2 Main Steam Relief Valves (MSRVs) Lift Outside of Technical Specifications Limits | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Not Applicable | NCV 05000260/2019003-01 Open/Closed | Not Applicable | 71153 |
| A self-revealed Severity Level IV Non-cited Violation (NCV) of Technical Specification (TS) 3.4.3 was identified when the licensee discovered, through as found test results, that four of the 13 MSRVs that were removed for testing had as found lift settings outside of the +/- 3 percent band required for their operability. One was removed during a Spring 2018 forced outage and the other 12 were removed during the Spring 2019 refueling outage. | | | |

| Unit 2 Traversing In-core Probe Purge Header Check Valve Leak Rate in Excess of Technical Specifications Limits | | | |
|---|---|---|---|
| Cornerstone | Significance | Cross-Cutting Aspect | Report Section |
| Not Applicable | NCV 05000260/2019003-02 Open/Closed | Not Applicable | 71153 |
| A self-revealed Severity Level IV NCV of TS 3.6.1.3, Primary Containment Isolation Valves (PCIVs) was identified when the licensee determined that the traversing in-core probe (TIP) header check valve was inoperable for longer than the allowed outage time. | | | |

### Additional Tracking Items

| Type | Issue Number | Title | Report Section | Status |
|---|---|---|---|---|
| URI | 05000296/2019001-04 | Unit 3 Notice of Unusual Event (NOUE) Caused by a Loss of Offsite Power (LOOP) Resulting in a Reactor Scram | 71152 | Closed |
| LER | 05000260/2019-001-00 | LER 2019-001-00 for Browns Ferry Nuclear Plant, Unit 2, Traversing In-core Probe Purge Header Check Valve Leak Rate in Excess of Technical Specifications Limits. | 71153 | Closed |
| LER | 05000260/2019-002-00 | LER 2019-002-00 for Browns Ferry Nuclear Plant Unit 2, Main Steam Relief Valves Lift Settings Outside | 71153 | Closed |

| | | | | |
|---|---|---|---|---|
| | | of Technical Specifications Required Setpoints. | | |
| LER | 05000296/2019-001-01 | LER 296/2019-001-01 for Browns Ferry Nuclear Plant, Unit 3, Automatic Reactor Scram Due to a Turbine Load Reject | 71153 | Closed |

## PLANT STATUS

Unit 1 operated at or near Rated Thermal Power (RTP) until August 19, 2019 when the unit was down powered to approximately 50 percent power for river thermal compliance after the loss of cooling towers resulting from a lightning strike. Cooling Towers were restored and the unit returned to RTP on August 20, 2019 and remained there for the rest of the inspection period.

Unit 2 operated at or near RTP until August 19, 2019 when the unit was down powered to approximately 50 percent power for river thermal compliance after the loss of cooling towers resulting from a lightning strike. Cooling Towers were restored and the unit returned to RTP on August 21, 2019 and remained there until September 21, 2019 when the unit was shutdown for a planned outage to make repairs to condensers. The unit was restarted late on September 30, 2019.

Unit 3 operated at or near RTP until August 19, 2019 when the unit was down powered to approximately 70 percent power for river thermal compliance after the loss of cooling towers resulting from a lightning strike. Cooling Towers were restored and the unit returned to RTP on August 20, 2019 and remained there for the rest 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 plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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

### 71111.01 - Adverse Weather Protection

#### External Flooding Sample (IP Section 03.04) (1 Sample)

(1) The inspectors evaluated readiness to cope with external flooding on September 19, 2019.

### 71111.04Q - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

(1) Unit 2 Loop 2 Residual Heat Removal while Loop 1 was out of service on August 27, 2019.

(2) Units 1 and 2, B Control Bay Chiller with A Control Bay Chiller inoperable due to degraded conditions on September 6, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

(1) Unit 3, Fire Area 19, Unit 3 Battery and Battery Board Room on August 20, 2019.
(2) Unit 1, Fire Area 5, Electric Board Room 1A, including 250V Battery Rooms on August 28, 2019.
(3) Units 2 and 3, Fire Area 16-A, Cable Spreading Room B on August 28, 2019.
(4) Unit 1, Fire Area 01-03, Reactor Building Elevation 593 feet North on August 29, 2019.
(5) Unit 2, Fire Area 02-03, Reactor Building Elevation 593 feet North on August 29, 2019.

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

(1) Unit 3 Diesel Generator (DG) Building on September 6, 2019.

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

(1) Unit 3, 3A DG Coolers 3A1 and 3A2 on August 14, 2019.

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 shutdown and cooldown from September 20-21, 2019.

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

(1) The inspectors observed and evaluated a license operator requalification simulator exercise on July 18, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

(1) Units 1, 2, and 3, Screening of the Emergency High Pressure Makeup (EHPM) pumps into the Maintenance Rule.
(2) Unit 3, Function 078-C, Reactor Water Cleanup Area Temperature Indication (a)(1) Evaluation.

Quality Control (IP Section 02.02) (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance activities:

(1) Calibration, control and deficient equipment processes for Measuring and Test Equipment used for safety related systems.

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

(1) Elevated site risk on July 16, 2019, due to Unit 2 HPCI surveillance, B Standby Gas maintenance, and the Spent Fuel Pool cleanout project.
(2) Elevated risk during the week of July 29 to August 2, due to 3A DG extended outage, Unit 3 preferred AC power loss, and a Conservative Operations Alert.
(3) Elevated site risk during the week of August 12 to 16, 2019, due to 480V Load Shed Logic testing on Units 1 and 2 during a Conservative Operations Alert.
(4) Emergent site risk associated with the inability to access the remote shutdown panels on Units 1 and 3 due to a lightning strike on September 10, 2019. (EN 54266)
(5) Elevated site risk on September 16, 2019, due to 3C DG extended maintenance outage during a Conservative Operations Alert.

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

(1) Unit 3, Functional Evaluation for 3B Electric Board Room Chiller on August 16, 2019.
(2) Units 1 and 2, Operability evaluation for Common Accident Signal Logic relays which failed acceptance criteria on July 24, 2019.
(3) Unit 2, Functionality evaluation for 2B Drywell Equipment Drain Sump Pump following trips due to thermal overload on July 13, 2019.
(4) Unit 2, Past Operability Evaluation for the High Pressure Coolant Injection (HPCI) steam line inboard isolation valve failing to coast to its backseat on March 2, 2019.

(5) Units 1 and 2, Operability evaluation for failure to meet an acceptance criteria for the 480V Load Shedding Logic System Functional Test on August 14, 2019.
(6) Unit 3, Operability evaluation of 3D Diesel Generator output breaker failing to close on September 18, 2019.

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post maintenance tests:

(1) Units 1, 2, and 3, B Standby Gas Treatment (SBGT) surveillance following maintenance on July 20, 2019.
(2) Unit 1, Post maintenance testing (PMT) of Core Spray (CS) Loop I motor operated valve breakers and time delay relay replacements following planned preventative maintenance the week of July 9, 2019.
(3) Unit 2, Review of EPU Test Data associated with TI-131, Feedwater Level Control System.
(4) Unit 3, PMT of Emergency Diesel Generator (EDG) 3A following biennial maintenance during the week of August 5, 2019.

71111.20 - Refueling and Other Outage Activities

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

(1) (Partial)
Unit 2 forced outage for main condenser tube leak repair from September 20 to September 30, 2019. The residents observed unit shutdown, drywell closeout, Foreign Material Exclusion (FME) controls. The unit transitioned to Mode 2 (Startup) shortly before midnight on September 30, 2019. The inspection of this outage will be completed in the fourth quarter of 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (4 Samples)

(1) Reactor Core Isolation Cooling (RCIC) System rated flow surveillance on July 10, 2019.
(2) Unit 2, HPCI System rated flowrate surveillance on July 16, 2019.
(3) Units 1 and 2, 480V Load Shedding Logic System Functional test (Division II) on August 13-16, 2019.
(4) Units 1, 2 and 3, 0-SI-4.5.C.1(A3) - RHRSW Pump A3 Inservice Test (IST) Group A Quarterly Pump Test Increased Frequency on July 15, 2019.

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

(1) Unit 3 Emergency Plan drill conducted with the plant initially in Mode 4 on August 7, 2019.

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (3 Samples)

(1) Unit 1 (July 1, 2018 - June 30, 2019)
(2) Unit 2 (July 1, 2018 - June 30, 2019)
(3) Unit 3 (July 1, 2018 - June 30, 2019)

MS09: Residual Heat Removal Systems (IP Section 02.08) (3 Samples)

(1) Unit 1 (July 1, 2018 - June 30, 2019)
(2) Unit 2 (July 1, 2018 - June 30, 2019)
(3) Unit 3 (July 1, 2018 - June 30, 2019)

MS10: Cooling Water Support Systems (IP Section 02.09) (3 Samples)

(1) Unit 1 (July 1, 2018 - June 30, 2019)
(2) Unit 2 (July 1, 2018 - June 30, 2019)
(3) Unit 3 (July 1, 2018 - June 30, 2019)

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

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

(1) Root Cause for CR 1497448 Unit 3 Turbine Load Reject Scram, Revision 1. This is the final inspection needed to close URI 05000296/2019001-04 Unit 3 Notice of Unusual Event (NOUE) Caused by a Loss of Offsite Power (LOOP) Resulting in a Reactor Scram.
(2) The inspectors reviewed the licensee's implementation of its corrective action program related to Problem Identification & Resolution associated with Unit 2 Extended Power Uprate.

71153 - Followup of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (3 Samples)

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

(1) LER 05000260/2019-002-00 Main Steam Relief Valves Lift Settings Outside of Technical Specifications Required Setpoints (ADAMS accession: ML19199A333)

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 circumstances surrounding this LER are documented in the Results Section.

(2) LER 05000296/2019-001-01 Automatic Reactor Scram Due to a Turbine Load Reject (ADAMS accession: ML19189A125)
The inspectors reviewed the updated LER submittal. No additional findings or violations were identified. The previous LER submittal was reviewed in Inspection Report 05000259, 260, 296/2019-002.

(3) LER 05000260/2019-001-00 Traversing In-core Probe Purge Header Check Valve Leak Rate in Excess of Technical Specifications Limits (ADAMS accession: ML19142A361)
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 circumstances surrounding this LER are documented in the Results Section.

## OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

71004 - Power Uprate

Summary of Power Uprate Inspection Samples Contained in this Report:

Identification and Resolution of Problems (Unit 2) (1 sample)

(1) Problem Identification and Resolution related to EPU (Section 71152)

## INSPECTION RESULTS

| | | |
|---|---|---|
| Unresolved Item (Closed) | Unit 3 Notice of Unusual Event (NOUE) Caused by a Loss of Offsite Power (LOOP) Resulting in a Reactor Scram URI 05000296/2019001-04 | 71152 |
| Description: The loss of excitation on the Auto-Voltage Regulator (AVR) on the Browns Ferry Unit 3 Main Generator caused the main generator output and 500kV switchyard breakers to open due to a sudden increase in output current. Additional inspection was required to determine if there were performance deficiencies associated with this event. The review of the LER associated with this event was documented in Browns Ferry Integrated Inspection Report 05000259, 260, 296/2019002 (ML19224B824) as a Green Finding (05000296/2019002-01). All three of the required inspections for this issue have been completed and this URI is now closed.<br><br>Corrective Action Reference(s): Condition Report 1497448 | | |

| Unit 2 Traversing In-core Probe Purge Header Check Valve Leak Rate in Excess of Technical Specifications Limits | | | |
|---|---|---|---|
| Cornerstone | Severity | Cross-Cutting Aspect | Report Section |
| Not Applicable | Severity Level IV<br>NCV 05000260/2019003-02<br>Open/Closed | Not Applicable | 71153 |

A self-revealed Severity Level IV Non-cited Violation (NCV) of Technical Specification (TS) 3.6.1.3, Primary Containment Isolation Valves (PCIVs) was identified when the licensee determined that the traversing in-core probe (TIP) header check valve was inoperable for longer than the allowed outage time.

Description: The licensee submitted LER 05000260/2019-001-00 which was associated with a Unit 2 local leak rate test failure of a primary containment penetration for the TIP system. This issue was discovered on March 23, 2019 while performing a required surveillance test (SR) prior to the restart of the unit following the refueling outage. Troubleshooting determined that the TIP purge header check valve, 2-CKV-76-653, was leaking by such that the test volume could not be pressurized for penetration X-35F. This was an indication that the valve was likely stuck in the open position. The licensee performed a cause evaluation and determined that the apparent failure mechanism for the valve being in the stuck open position was due to debris in the valve body. The licensee determined that the TIP purge header check valve was inoperable from March 31, 2017 (beginning of cycle) to March 2, 2019 (beginning of refueling outage). The inspectors reviewed the licensee event report and determined that the report adequately documented the summary of the event including the cause and the potential safety consequences. The inspectors also reviewed other licensee documents, including past surveillance's, work orders and condition reports to determine if there were any performance deficiencies associated with this event.

Corrective Actions: The licensee replaced the failed check valve on March 31, 2019 and successfully tested the valve in accordance with the requirements. The licensee has corrective actions to implement a design change to all three units. This design change will add an additional check valve in series to provide duel barrier containment isolation.

Corrective Action References: CR 1501555

Performance Assessment: The NRC determined this violation was not reasonably foreseeable and preventable by the licensee and therefore is not a performance deficiency.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance. Traditional Enforcement is being used in accordance with the Interim Guidance for Dispositioning Severity Level IV Violations with No Associated Performance Deficiencies (ML18158A220).

Severity: This violation is characterized as a Severity Level IV NCV based on its similarity to SLIV example 6.1.d.1 in the Enforcement Policy.

Violation: Browns Ferry Nuclear Plant, Unit 2 TS Subsection 3.6.1.3, 'Primary Containment Isolation Valves (PCIVs),' Condition C, required that with one or more penetration flow paths with one PCIV inoperable, that the flow path be isolated within 4 hours. Condtion E requires that the unit be in Mode 3 within 12 hours and in Mode 4 within 36 hours if Condition C is not met. Contrary to the above, 2-CKV-76-653, TIP purge header check valve, was inoperable from March 31, 2017 to March 2, 2019. The flow path was not isolated within four hours, and the unit did not enter Mode 3 and Mode 4 within 12 hours and 36 hours, respectively, for failing to meet Condition C.

Enforcement Action: This violation is being treated as an non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

| Unit 2 Main Steam Relief Valves (MSRVs) Lift Outside of Technical Specifications Limits | | | |
|---|---|---|---|
| Cornerstone | Severity | Cross-Cutting Aspect | Report Section |
| Not Applicable | Severity Level IV<br>NCV 05000260/2019003-01<br>Open/Closed | Not Applicable | 71153 |

A self-revealed Severity Level IV NCV of TS 3.4.3 was identified when the licensee discovered, through as found test results, that four of the 13 MSRVs that were removed for testing had as found lift settings outside of the +/- 3 percent band required for their operability. One was removed during a Spring 2018 forced outage and the other 12 were removed during the Spring 2019 refueling outage.

Description: The Browns Ferry Unit 2 TS 3.4.3 required 12 of the 13 MSRVs to be operable while in Modes 1, 2, and 3. On May 29, 2019, the Tennessee Valley Authority was notified of as-found testing results that three Main Steam Relief Valves (MSRVs) from Unit 2 were outside the +/- 3 percent setpoint band required for operability. It was determined that these MSRVs failed due to corrosion bonding to the valve seat as a result of its platinum anti-corrosion coating flaking off. Previously, on April 27, 2018, MSRV BFN-2-PCV-001-0041 had been declared inoperable due to excessive leakage. Failure of this MSRV was caused by a delamination of a portion of the platinum anti-corrosion coating which led to the leak. More than one MSRV was considered to be inoperable during the entire operating cycle and longer than permitted by Technical Specifications. The affected valves remained capable of maintaining reactor pressure within American Society of Mechanical Engineers code limits. All thirteen of the MSRV pilot valves have been replaced during the Unit 2 Spring 2019 refueling outage. The previous corrective action from LER 50-259/2018-007-00 to perform nitrogen leak testing prior to platinum coating had not yet been implemented for these valves. This continues to be the corrective action to prevent recurrence. In addition, an improved method of applying the platinum to the pilot discs will now be used which provides a more consistent and forgiving finish on the pilot valve seating surface.

Corrective Actions: The licensee replaced a leaking pilot valve on MSRV BFN-2-PCV-001-0041 during a Spring 2018 forced outage. The licensee replaced the other 12 MSRVs during the Spring 2019 refueling outage. The licensee has corrective actions to ensure that pilot discs are prepared for platinum coating in accordance with the revised procedure and vendor recommendations. The currently installed refurbished valves had platinum coatings applied in accordance with the revised procedure, and as-left values were verified to be within +/- one percent of their setpoints.

Corrective Action References: CRs 1286467, 1410577, and 1521190.

Performance Assessment: The NRC determined this violation was not reasonably foreseeable and preventable by the licensee and therefore is not a performance deficiency.

Enforcement: The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance. Traditional Enforcement is being used in accordance with the Interim Guidance for Dispositioning Severity Level IV Violations with No Associated Performance Deficiencies (ML18158A220).

Severity: This violation is characterized as a Severity Level IV NCV based on its similarity to SLIV example 6.1.d.1 in the Enforcement Policy.

Violation: Browns Ferry Nuclear Plant, Unit 2 TS Subsection 3.4.3, 'Safety/Relief Valves (S/RVs),' Condition A, required that with one or more required S/RVs inoperable, that the unit be in Mode 3 within 12 hours and Mode 4 in 36 hours. Contrary to the above, three required S/RVs were inoperable from March 29, 2017 to March 2, 2019, and the unit did not enter Mode 3 and Mode 4 in 12 hours and 36 hours, respectively.

Enforcement Action: This violation is being treated as an non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

**EXIT MEETINGS AND DEBRIEFS**

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

- On October 25, 2019, the inspectors presented the integrated inspection results to Steven M. Bono, Site Vice President and other members of the licensee staff.

**DOCUMENTS REVIEWED**

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.01 | Corrective Action Documents | CR 1425000, 1478269, 1544189 | | |
| | Procedures | 0-AOI-100-3 | Flood Above Elevation 558' | Revision 48 |
| | | MPI-0-000-INS001 | Inspection of Flood Protection Devices | Revision 17 |
| 71111.04Q | Drawings | 0-021021-PD-1 | Liquid Chiller | Revision 1 |
| | | 2-47E811-1-NFPA805 | NFPA 805 Flow Diagram Residual Heat Removal System | Revision 001 |
| | Procedures | 0-GOI-300-1/ATT-11 | Attachment 11 Control Bay Operator Round Log | Revision 235 |
| | | 0-OI-31 | Control Bay and Off-Gas Treatment Building Air Conditioning System | Revision 155 |
| | | 2-OI-74/Attachment 1 | Valve Lineup Checklist Unit 2 | Revision 142 |
| | | 2-OI-74/Attachment 3 | Electrical Lineup Checklist | Revision 142 |
| 71111.05Q | Procedures | FPR-Volume 2 | Fire Protection Report Volume 2 | Revision 65 |
| 71111.06 | Calculations | NDN00099920070031 | BFN Probabilistic Risk Assessment - Internal Flooding Analysis | Revision 2 |
| | Corrective Action Documents | CR 1544094 | | |
| | Drawings | 3-47W587-1 | Mechanical Drains & Embedded Piping | Revision 4 |
| 71111.07A | Calculations | MDQ0082000016 | Diesel Generator Jacket Water Cooler Capacity and Tube Plugging | Revision 2 |
| | Engineering Evaluations | | Eddy Current Examination Results for Diesel Generator Coolers 3A1 and 3A2 | |
| | Procedures | 0-TPP-ENG-389 | Raw Water Fouling and Corrosion Control | Revision 3 |
| | | MCI-0-082-CLR001 | Standby Diesel Engine Water Coolers Disassembly, Inspection, Rework, and Reassembly | Revision 40 |
| | Work Orders | WO 120001166 | | |
| 71111.11Q | Miscellaneous | OPL175S432 | | |
| | Procedures | NPG-SPP-17.8.3 | Simulator Exercise Guide Development and Revision | Revision 9 |
| | | NPG-SPP-17.8.4 | Conduct of Simulator Operations | Revision 6 |
| | | NPG-SPP-22.206 | Verification Program | Revision 5 |
| | | OPDP-1 | Conduct of Operations | Revision 44 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| 71111.12 | Corrective Action Documents | CR 153249, 1531960, 1533447, 1536857, 1536866, 1536867, 1536869, 1536870 | | |
| | Engineering Evaluations | | Evaluation of EHPM pump system requiring entry into the Maintenance Rule Program | Revision 0 |
| | Miscellaneous | | Unit 3 RWCU Area Temperature Indication (a)(1) Plan Function 078-C | Revision 0 |
| | | BFN-50-7007 | Emergency High Pressure Makeup Pump System Design Criteria Document | Revision 1 |
| | | BFN-50-7069 | Reactor Water Cleanup System Design Criteria Document | Revision 11 |
| | Procedures | NPG-SPP-03.4 | Maintenance Rule Performance Indicator Monitoring, Trending and Reporting - 10CFR50.65 | Revision 3 |
| | | NPG-SPP-06.4 | Measuring and Test Equipment | Revision 4 |
| | | SII-0-MTE-00-001 | Instrumentation and Controls Standards Lab M&TE Post-Use Instruction | Revision 4 |
| 71111.13 | Corrective Action Documents | CR 1548094 | 8 hour event notification # 54266 was made to the NRC | 09/11/2019 |
| | Miscellaneous | EN 54266 | Unanalyzed Condition Due to Lightning Strike | Revision 0 |
| | Procedures | 1-AOI-100-2 | Control Room Abandonment | Revision 23 |
| | | 1-FSS-16-2 | UNIT 1 ABANDONMENT Control Building EL 593', 606', 617' and 635' | Revision 6 |
| | | BFN-ODM-4.18 | Protected Equipment | Revision 22 |
| 71111.15 | Corrective Action Documents | CR 1491145 | | |
| | | CR 1532340 | | |
| | | CR 1535101 | | |
| | | CR 1541401, 1541460, 1541523 | | |
| | | CR 1550275, CR 1509728, CR 1261546 | | |
| | Drawings | 3-45E766-16 | Wiring Diagram 4160V Shutdown Aux Power Schematic Diagram | Revision 21 |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | Engineering Evaluations | CR 1541042 | AC step not met during 0-SR-3.8.1.8(II) | |
| | | EWR19EEB077116 | Re-evaluate Thermal Overlaod Heater Size for 2-MTR-077-00148, Drywell Equipment Drain Sump Pump 2B | 07/16/2019 |
| | Operability Evaluations | POE for CR 1494872 | HPCI Steam Line inboard isolation valve failed to backseat | Revision 0 |
| | Procedures | 0-GOI-300-2 | Electrical | Revision 156 |
| | | 0-SR-3.8.1.8(II) | 480V Load Shedding Logic System Functional Test (Division II) | Revision 18 |
| | | 3-SR-3.8.1.1(3D) | Diesel Generator 3D Monthly Operability Test | Revision 62 |
| | | NPG-SPP-06.9.1 | Conduct of Testing | Revision 12 |
| | | OPDP-8 | Operability Determination Process and Limiting Conditions for Operation Tracking | Revision 25 |
| | Work Orders | WO 120799438, WO 120416768, WO 118504760 | | |
| 71111.19 | Corrective Action Documents | CR 1523831 | | |
| | | CR 1533033 | | |
| | | CR 1533448 | | |
| | Procedures | 0-SR-3.6.4.3.1 | Standby Gas Treatment System Train Operation | Revision 23 |
| | | 0-SR-3.6.4.3.2(B VFTP) | Standby Gas Treatment Filter Pressure Drop and In-Place Leak Tests - Train B | Revision 19 |
| | | 1-SR-3.3.5.1.5(CS I) | CSS Logic Time Delay Relay Calibration (Loop I) | Revision 12 |
| | | 1-SR-3.5.1.6(CS I) | Core Spray Flow Rate Loop I | Revision 23 |
| | | ECI-0-000-BKR008 | Testing and Troubleshooting of Molded Case Circuit Breakers and Motor Starter Overload Relays | Revision 108 |
| | | EPI-0-000-MCC001 | Maintenance and Inspection of 480VAC and 250VDC Motor Control Centers | Revision 84 |
| | | MPI-0-000-ACT001 | Preventative Maintenance for Limitorque Operators | Revision 55 |
| | | Work Order 119700327 | 3-SR-3.8.1.1(3A) - Diesel Generator '3A' Monthly Operability Test | Revision 0 |
| | Work Orders | 119958290, 119959389, 116481308, 119958291, | | |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | 120527759, 119359982, 119696200 | | |
| | | WO 119696881 | | |
| | | WO 120151834 | | |
| 71111.22 | Corrective Action Documents | CR 1435016 | | |
| | | CR 1531321 | | |
| | | CR 1532964 | | |
| | | CR 1533085 | | |
| | | CR 1534084, 1513428 | | |
| | | CR 1540726, 1540731, 1540733, 1541042, 1541414 | | |
| | Procedures | 0-SR-3.8.1.8(II) | 480V Load Shedding Logic System Functional Testing (Division II) | Revision 18 |
| | | 2-SR-3.5.1.7 | HPCI Main & Booster Pump Set Developed Head & Flow Rate Test at Rated Reactor Pressure | Revision 81 |
| | | 2-SR-3.5.3.3 | RCIC System Rated Flow at Normal Operating Pressure | Revision 71 |
| | Work Orders | WO 119602977 | | |
| | | WO 119698618 | | |
| | | WO 120454005, 119596805, 119248500 | | |
| 71114.06 | Miscellaneous | | BFN August 2019 Training Drill package | Revision 0 |
| 71151 | Miscellaneous | | Maintenance hours records for Units 1, 2, and 3 Residual Heat Removal Service Water and Emergency Equipment Cooling Water systems | 07/01/2018 - 06/30/2019 |
| | | | Run demand records for Units 1, 2, and 3 Residual Heat Removal Service Water and Emergency Equipment Cooling Water systems | 07/01/2018 - 06/30/2019 |
| | | | Units 1,2 and 3 June Derivation Reports for Residual Heat Removal Systems (PLE, UAI and URI) | 07/01/2018 - 06/30/2019 |
| | | | Units 1,2 and 3 June MSPI Margin Reports for Residual | 07/01/2018 - |

| Inspection Procedure | Type | Designation | Description or Title | Revision or Date |
|---|---|---|---|---|
| | | | Heat Removal Systems | 06/30/2019 |
| 71152 | Corrective Action Documents | | CR 1497448 Unit 3 Turbine Load Reject Scram | Revision 1 |
| | | | CR 1497448 Unit 3 Turbine Load Reject Scram | Revision 0 |
| | | CR 1497448 | Root Cause Charter and progress reports from March 11, 2019 to June 22, 2019. | |
| | Procedures | NPG-SPP 22.300 | Corrective Action Program | Revision 16 |