



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

May 2, 2022

Ms. Nicole Flippin
Site Vice President
H.B. Robinson Steam Electric Plant
Duke Energy Progress, LLC
3581 West Entrance Road, RNPA01
Hartsville, SC 29550

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT – INTEGRATED INSPECTION
REPORT 05000261/2022001

Dear Ms. Flippin:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at H.B. Robinson Steam Electric Plant. On April 18, 2022, the NRC inspectors discussed the results of this inspection with Ms. Laura Basta, Plant Manager, 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.

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 that reads "David E. Dumbacher".

Signed by Dumbacher, David
on 05/02/22

David E. Dumbacher, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No. 05000261
License No. DPR-23

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: H.B. ROBINSON STEAM ELECTRIC PLANT – INTEGRATED INSPECTION REPORT 05000261/2022001 DATED MAY 2, 2022

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DATE	04/28/2022	05/02/2022	05/02/2022		

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

Docket Number: 05000261

License Number: DPR-23

Report Number: 05000261/2022001

Enterprise Identifier: I-2022-001-0028

Licensee: Duke Energy Progress, LLC

Facility: H.B. Robinson Steam Electric Plant

Location: Hartsville, SC

Inspection Dates: January 01–March 31, 2022

Inspectors: M. Fannon, Senior Resident Inspector
J. Walker, Resident Inspector

Approved By: David E. Dumbacher, Chief
Reactor Projects Branch 3
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 H.B. Robinson Steam Electric 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

None.

PLANT STATUS

Unit 2 operated at or near rated thermal power for the entire 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," conducted routine reviews using IP 71152, "Problem Identification and Resolution," 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

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures and high winds for the following systems:

Steam driven auxiliary feedwater (SDAFW) and emergency diesel generator (EDG) fuel oil storage and transfer on January 10–13, 2022.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) 'B' EDG during 'A' EDG maintenance on January 6, 2022
- (2) 'A' EDG prior to fast speed start test on February 2 and 3, 2022
- (3) 'C' component cooling water (CCW) on March 15, 2022
- (4) 'A' and 'B' station batteries on March 22 and 23, 2022

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

- (1) The inspectors evaluated system configurations during a complete walkdown of the auxiliary feedwater system on February 28–March 3, 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) fire zone 5, CCW room on January 4, 2022
- (2) fire zone 3, safety injection (SI) pump room on January 31, 2022
- (3) fire zone 4, charging pump room on February 8, 2022
- (4) fire zone 6, motor driven auxiliary feedwater (MDAFW) on March 2, 2022
- (5) fire zone 22, main control room on March 22, 2022

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 03.01) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) SI pump room on January 11–20, 2022

71111.07A - Heat Exchanger/Sink Performance

Annual Review (IP Section 03.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) 'A' EDG jacket water heat exchanger

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 a reduction in power to 97 percent for a MDAFW surveillance test, SDAFW surveillance test, and the subsequent return to full power on March 8, 2022.

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

- (1) The inspectors observed and evaluated an annual licensed operator requalification exam on March 2, 2022.

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) 'C' CCW with a known outboard seal leak (Nuclear Condition Report [NCR] 2413835)

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) 'A' EDG during maintenance activities (Work Order [WO] 20460356 and 20423045)

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (5 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) dedicated shutdown diesel generator (DSDG) automatic start failure on January 5, 2022
- (2) 'A' EDG fuel oil leak repair on January 6, 2022
- (3) 'B' residual heat removal (RHR) maintenance activities on January 18, 2022
- (4) 'A' EDG two-year overhaul from February 21 through 23, 2022
- (5) steam generator pressure protection channel testing schedule change due to inclement weather on March 30, 2022

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (3 Samples)

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

- (1) NCR 2410799, DSDG failed to automatically start during surveillance test
- (2) NCR 2416880, 'A' EDG fuel injector number 11 found leaking
- (3) NCR 2413835, increased leakage on the 'C' CCW outboard seal

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Engineering Change (EC) 418883, 'E' deep well pump installation
- (2) EC 269423, DSDG auto-start feature addition

71111.19 - Post-Maintenance Testing

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

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

- (1) OST-401-1, 'A' EDG slow start following fuel oil return header hose replacement on January 6, 2022
- (2) OST-252-2, 'B' RHR valve test following maintenance activities on January 18, 2022
- (3) OST-401-1, 'A' EDG slow start following two-year overhaul on February 23, 2022
- (4) WO 20507942, 'B' service water booster pump operation verification following maintenance activities on March 22, 2022

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) (3 Samples)

- (1) OST-409-1, 'A' EDG fast speed surveillance test on February 3, 2022
- (2) MST-003, overpower and over temperature protection channel testing on March 16, 2022
- (3) MST-013, steam generator water level protection channel testing on March 28, 2022

Inservice Testing (IP Section 03.01) (2 Samples)

- (1) OST-202, SDAFW system component test on March 8, 2022
- (2) OST-251-1, 'A' RHR pump and component test on March 9, 2022

71114.06 - Drill Evaluation

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

- (1) The inspectors observed and evaluated an emergency preparedness drill on January 26, 2022. The drill involved a steam generator tube rupture on the 'B' steam generator, a trip of the 'A' CCW pump, main steam line break, failure of the SDAFW pump, and large break loss of coolant accident.

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

The inspectors evaluated:

- (1) The inspectors observed and evaluated an emergency preparedness training evolution on March 9, 2022. The training evolution involved a small break loss of coolant accident that continued to increase in size to a large break, a loss of an emergency electrical bus, unavailability of both containment spray trains, and a leak of the waste gas decay tank resulting in a radiological release.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

(1) January 1–December 31, 2021

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

(1) January 1–December 31, 2021

BI02: RCS Leak Rate Sample (IP Section 02.11) (1 Sample)

(1) January 1–December 31, 2021

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) NCR 2416880, 'A' EDG cylinder fuel oil injector leak

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On April 18, 2022, the inspectors presented the integrated inspection results to Ms. Laura Basta, Plant Manager, and other members of the licensee staff.