



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

October 15, 2014

Mr. William R. Gideon, Vice President
Duke Energy Progress, Inc.
H. B. Robinson Steam Electric Plant, Unit 2
3581 West Entrance Road
Hartsville, SC 29550

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 - ISSUANCE OF
AMENDMENT REGARDING TECHNICAL SPECIFICATION 3.4.12 CHANGE
FOR THE LOW TEMPERATURE OVERPRESSURE PROTECTION SYSTEM
(TAC NO. MF2718)

Dear Mr. Gideon:

The U. S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 238 to Renewed Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP). This amendment changes the HBRSEP Technical Specification (TS) in response to your application dated September 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13262A008), as supplemented by letter dated April 8, 2014 (ADAMS Accession No. ML14106A370).

The amendment revises the HBRSEP TS 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," with a Note that does not require the surveillance be performed until 12 hours after decreasing the reactor coolant system cold temperature to less than or equal to 350 degrees Fahrenheit, which is the temperature when LTOP operability controlled by TS 3.4.12 is credited. In addition, the note and FREQUENCY requirements are being revised to be consistent with NUREG-1431, Revision 3, "Standard Technical Specifications Westinghouse Plants," dated June 2004.

W. Gideon

- 2 -

A copy of the safety evaluation is enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

Sincerely,

/RA/

Martha Barillas, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

1. Amendment No. 238 to DPR-23
2. Safety Evaluation

cc w/enclosures: Distribution via ListServ



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

DUKE ENERGY PROGRESS, INC.

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 238
Renewed License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Energy Progress, Inc. (the licensee), dated September 10, 2013, as supplemented by letter dated April 8, 2014, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 3.B. of Renewed Facility Operating License No. DPR-23 is hereby amended to read as follows:

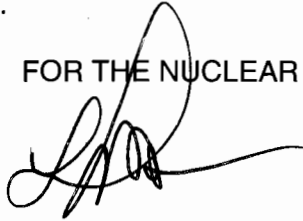
B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 238 are hereby incorporated in the license.

The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 120 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Lisa M. Regner, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Operating License No. DPR-23
and the Technical Specifications

Date of Issuance: October 15, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 238
RENEWED FACILITY OPERATING LICENSE NO. DPR-23
DOCKET NO. 50-261

Replace the following pages of the Renewed Facility Operating License and Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License DPR-23
Page 3

TSs
3.4-34

Insert

License DPR-23
Page 3

TSs
3.4-34

neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or instrument and equipment calibration or associated with radioactive apparatus or components;
 - E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.
3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Section 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- A. Maximum Power Level

The licensee is authorized to operate the facility at a steady state reactor core power level not in excess of 2339 megawatts thermal.
 - B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 238 are hereby incorporated in the license.

The licensee shall operate the facility in accordance with the Technical Specifications.
 - (1) For Surveillance Requirements (SRs) that are new in Amendment 176 to Final Operating License DPR-23, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 176. For SRs that existed prior to Amendment 176, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 176.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.4.12.6 -----Note----- Not required to be performed until 12 hours after decreasing RCS cold leg temperature to $\leq 350^{\circ}\text{F}$. ----- Perform a COT on each required PORV, excluding actuation.</p>	<p>31 days</p>
<p>SR 3.4.12.7 Perform CHANNEL CALIBRATION for each required PORV actuation channel.</p>	<p>18 months</p>



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 238 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-23

DUKE ENERGY PROGRESS, INC.

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated September 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13262A008), as supplemented by letter dated April 8, 2014 (ADAMS Accession No. ML14106A370), Duke Energy Progress, Inc. submitted a license amendment request to revise the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP), Technical Specifications (TSs).

The proposed revision would change TS 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," Surveillance Requirement (SR) 3.4.12.6 with a Note that does not require that the surveillance be performed until 12 hours after decreasing the Reactor Coolant System (RCS) cold leg temperature to less than or equal to 350 degrees Fahrenheit, which is the temperature when LTOP operability controlled by TS 3.4.12 is credited. In addition, the FREQUENCY requirement is modified to 31 days after the initial testing has been proven to be acceptable. The licensee's proposed changes are in accordance with NUREG-1431, Revision 3, "Standard Technical Specifications Westinghouse Plants," dated June 2004 (ADAMS Accession No. ML041830612).

The supplement dated April 8, 2014, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's initial proposed no significant hazards consideration determination as published in the *Federal Register* on June 24, 2014 (79 FR 35803).

2.0 REGULATORY EVALUATION

The RCS is protected against overpressure by control and protective circuits, such as the high-pressure trip and by code relief valves connected to the top of the pressurizer. These power-operated relief valves (PORVs) and code safety valves are provided to protect against pressure surges that are beyond the pressure limiting capacity of the pressurizer spray. A PORV is OPERABLE for LTOP when its block valve is open, the PORV lift setpoint is within the

Enclosure

limit required by the LTOP analyses and testing proves the PORV's ability to open at this setpoint, and motive power is available to the two PORVs and their control circuits. To ensure PORV operability, there are surveillance requirements that verify component condition, line up, setpoint, and capability to actuate. TS Limiting Condition for Operation 3.4.12 provides overpressure protection by specifying a minimum coolant input capability and an adequate pressure relief capability. Surveillance Requirement 3.4.12.6 provides for a channel operational test to verify the PORV lift setpoint is within the allowed maximum limits in the LTOP analyses and, as necessary, adjust the lift setpoint.

The proposed change, which is in accordance with NUREG-1431, Revision 3, "Standard Technical Specifications Westinghouse Plants," dated June 2004, would allow performance of a channel operational test within 12 hours after decreasing RCS cold leg temperature to less than or equal to 350 degrees Fahrenheit and then re-performing the channel operational test every 31 days while in the applicable mode of operation. The 12-hour delay in performing the test provides the operators flexibility in their priorities during the Mode 4 transition activities. The licensee stated that the proposed change is in accordance with NUREG-1431, revision 3. However, the NUREG-1431 has been updated to revision 4. The staff's comparison of NUREG-1431, revision 3 to NUREG-1431, revision 4, finds no significant change in the proposed subject surveillance frequency. Hence, the change is consistent with the current revision of NUREG-1431.

Section 182a of the Atomic Energy Act requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The NRC regulatory requirements related to the content of the TSs are contained in Title 10, *Code of Federal Regulations* (10 CFR), Part 50, Section 50.36, Technical Specifications." The TS requirements in 10 CFR 50.36 include the following categories: (1) safety limits, limiting safety system settings and control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; (5) administrative controls; (6) decommissioning; (7) initial notification; and (8) written reports.

Section 50.36(c)(3) of 10 CFR, "Surveillance requirements," states that, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

The channel operational test ensures that the necessary quality of the LTOP system is maintained by providing assurance that the PORV actuation circuitry is working properly.

The NRC staff evaluated the application to determine if the proposed amendment to the TS is acceptable.

3.0 TECHNICAL EVALUATION

3.1 Summary of Technical Information Provided by Licensee

In its License Amendment Request, the licensee states:

The proposed changes are in accordance with NUREG-1431, Revision 3 and clarify the Channel Operational Test (COT) testing requirements. The COT test

is currently required to be performed along with the plant cooldown process and entry into MODE 4. This places a burden on the operators that could take their attention away from other more critical transitional activities. The proposed changes ensure that the COT testing can be performed in a reasonable time period after entry into MODE 4 during plant cooldown when the plant activities are likely less complicated. The simplification of the FREQUENCY requirement is also in accordance with NUREG-1431, Revision 3 and requires that while in an applicable mode of operation the SR will be performed every 31 days to ensure continued operability. This is the same requirement that is currently approved in the HBRSEP TS.

The previously approved frequency for the SR 3.4.12.6 COT was once within 31 days prior to entering Modes 4, 5, and 6 when the reactor head is on and then every 31 days thereafter. However, when moving from Mode 3 into Mode 4 the LTOP setting can be verified when the RCS cold leg temperature reaches the setpoint which is the Mode 4 entry temperature and the LTOP minimum arming setpoint. At that point the PORV lift setpoint can be reduced to the LTOP setting and the COT can be performed. Based on the requirements of the current approved SR 3.4.12.6 the performance of the COT would be required to take place at the moment the plant is entering Mode 4. This is a burden to the operators and potentially takes their focus away from other more critical activities during that transition.

The proposed change, which is in accordance with NUREG-1431, Revision 3, would allow performance of a COT within 12 hours after decreasing RCS cold leg temperature to \leq [less than or equal to] 350 °F [degrees Fahrenheit] and then re-performing the COT every 31 days while in an applicable mode of operation. The 12 hour delay in performing the test provides the operators flexibility in their priorities during Mode 4 transition activities. In addition, the 12 hour acceptability is based on the limited probability of a low temperature overpressure event during that limited time period. The 31 day frequency after the initial testing has been proven to be acceptable to ensure the LTOP continued operability based on operating experience.

3.2 Summary of NRC Staff Review

The licensee's proposed change would allow the delay of the COT up to 12 hours following entry into Mode 4. Currently the COT must be performed coincident with entry into Mode 4. Although the licensee stated that this revision will eliminate an operational burden by allowing the operators to focus their attention to more critical transitional activities, the proposal would allow the LTOP protection system to be armed for up to 12 hours without having a surveillance to confirm that the PORV actuation channels are operable.

The NRC staff reviewed the application to determine if the conversion to NUREG-1431, Revision 3, TS for SR 3.4.12.6 to allow up to a 12 hour period once into MODE 4 before a COT and at a FREQUENCY of 31 days after, was acceptable. The NRC staff verified the licensee's statement that there is a low probability for a low temperature overpressure event within this limited time period. The NRC staff also verified this stated low probability has been qualitatively

consistent with the licensee's operational experience. The NRC staff also reviewed what measures are in place to mitigate an event in which the PORV does not automatically actuate due to failed actuation circuitry.

The NRC staff requested that the licensee provide its technical justification and its safety basis for its proposed change. The licensee stated, in response to Request for Additional Information (RAI) 1 (ADAMS Accession No. ML14106A370), that the Improved Technical Specification 3.4.12 was modified to extend the SR to 12 hours following the MODE change, so that the plant will have the capability to perform a TS-required rapid shutdown, if necessary, without challenging the operators with completing an SR at the time of mode change. The NRC staff determined that the response to RAI 1 was acceptable since it explained that the proposed revision to TS would eliminate a situation that could delay a transition from MODE 3 to MODE 4 in circumstances where a prompt mode transition is required.

The NRC staff requested that the licensee provide additional information regarding the licensee's statement that there is the low probability of a low temperature overpressure event occurrence by describing plant operational experience associated with LTOP events. This included how many LTOP events have occurred, and if any have occurred, whether these events occurred within 12 hours of entry into MODE 4. The licensee provided four LTOP events that have occurred at HBRSEP2 in its response to RAI 2 (ADAMS Accession No. ML14106A370). The first occurrence was on March 30, 1987, when a pressure control valve opened to relieve a reactor coolant pressure transient caused by a malfunction of the "B" charging pump. This event did not occur within 12 hours of entry into MODE 4. On October 16, 1989, a pressure control valve opened to relieve an RCS pressure transient when a residual heat removal (RHR) valve was closed. Closure of this RHR discharge valve isolated the RHR letdown line and a pressure control valve. This event did not occur within 12 hours of entry into MODE 4. On November 2, 1993, the pressurizer power operated relief valve PCV-456 actuated twice to relieve pressure when a reactor coolant pump was started and a low pressure letdown pressure control valve did not respond as expected to the pressure transient. This event occurred coming out of an outage, not within 12 hours of entry into MODE 4. The NRC staff determined that this response to RAI 2 acceptable for these reported events did not occur within 12 hours of entry into MODE 4.

The NRC staff requested the licensee identify any missed or failed initial surveillances within the current completion time (i.e., at the time of MODE change when the LTOP system is required to be operable). Any missed or failed surveillances occurring within the newly proposed 12-hour initial completion time would indicate that the proposed window may not acceptably ensure that the limiting condition of operation, requiring LTOP operability, is met. The licensee stated in response to RAI 3 (ML14106A370), that a current and historical Corrective Action Program search was performed for Nuclear Condition Reports (NCRs) written on missed or failed surveillance tests and no such NCRs were found. Since the licensee's response did not indicate that missed or failed surveillances were being identified during the existing completion time, the NRC staff determined that the response was acceptable insofar as it reasonably assures that the LTOP system will be operable when armed, and during the proposed 12 hours when the system is armed, but a surveillance test may not have been performed.

The NRC staff also reviewed the licensee's request to add a Note to TS SR 3.4.12.6. The RAI responses submitted by the licensee provided adequate information for justification of the

implementation of the new Note. The licensee provided the technical justification and the safety basis for the proposed change. Additional information regarding the low probability of a low temperature overpressure event occurrence related to operational experience associated with LTOP events was provided by the licensee. Identification of any missed or failed surveillances related to TS SR 3.4.12.6 were provided by the licensee as requested. The NRC staff concluded the implementation of this new Note acceptable.

The licensee's responses to the NRC staff RAI provided the information necessary to conclude that the proposed revision to the TS is acceptable. Based on these considerations, the NRC staff reviewed the licensee's analysis provided in section 3.0 of its submittal dated September 10, 2013, and finds that (1) there is reasonably low probability of an LTOP event occurring within 12 hours of entry into MODE 4; (2) the licensee's operating experience is consistent with the stated, low probability; and (3) the licensee has experienced no indications of missed or failed initial surveillances to date, indicating successful operating history with arming the LTOP system. Based on these findings, the NRC staff concludes that there is reasonable assurance that the requirements of 10 CFR Part 50.36(c)(3) will continue to be met. Therefore, the staff finds the proposed change acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes the SRs. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (79 FR 35803). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Matthew T. Hardgrove

Date: October 15, 2014

W. Gideon

- 2 -

A copy of the safety evaluation is enclosed. Notice of Issuance will be included in the Commission's Biweekly *Federal Register* Notice.

Sincerely,

/RA/

Martha Barillas, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

- 1. Amendment No. 238 to DPR-23
- 2. Safety Evaluation

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*** By Memo**

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