



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

May 8, 2017

Mr. Kelvin Henderson  
Senior Vice President  
Nuclear Corporate  
Duke Energy Corporation  
526 South Church Street, EC-07H  
Charlotte, NC 28202

**SUBJECT:** BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2; CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1; AND H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 – ISSUANCE OF AMENDMENTS TO REVISE TECHNICAL SPECIFICATIONS ADOPTING TSTF-522, REVISION 0, "REVISE VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS TO OPERATE FOR 10 HOURS PER MONTH," USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (CAC NOS. MF8422, MF8423, MF8424, MF8425, MF8426, MF8427, MF8428, AND MF8429)

Dear Mr. Henderson:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed amendments:

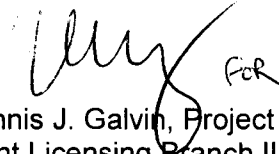
- (1) Amendment Nos. 275 and 303 to Renewed Facility Operating License (RFOL) Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant (Brunswick), Units 1 and 2, respectively;
- (2) Amendment Nos. 289 and 285 to RFOL Nos. NPF-35 and NPF-52 for the Catawba Nuclear Station (Catawba), Units 1 and 2, respectively;
- (3) Amendment Nos. 296 and 275 to RFOL Nos. NPF-9 and NPF-17 for the McGuire Nuclear Station (McGuire), Units 1 and 2, respectively;
- (4) Amendment No. 156 to RFOL No. NPF-63 for the Shearon Harris Nuclear Power Plant (Harris), Unit 1; and
- (5) Amendment No. 252 to RFOL No. DPR-23 for the H. B. Robinson Steam Electric Plant (Robinson), Unit No. 2.

The amendments are in response to your application dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively). The amendments revise technical specification surveillance requirements that currently require operating ventilation systems with charcoal filters for a 10-hour period every 31 days, or at a frequency controlled in accordance with the Surveillance Frequency Control Program. The surveillance requirements are revised to require operation of the systems for 15 continuous minutes every 31 days or at a frequency controlled in accordance with the Surveillance Frequency Control Program. The amendments are consistent with NRC-approved Technical Specifications Task Force (TSTF) Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month," as published in the *Federal Register* on September 20, 2012 (77 FR 58421), with variations due to plant-specific differences.

The related Safety Evaluations are also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

If you have any questions, please contact me at (301) 415-6256 or by e-mail to [Dennis.Galvin@nrc.gov](mailto:Dennis.Galvin@nrc.gov).

Sincerely,

Handwritten signature of Dennis J. Galvin in black ink, with the initials "D.J.G." and "For" written next to it.

Dennis J. Galvin, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-325, 50-324, 50-413,  
50-414, 50-369, 50-370,  
50-400, and 50-261

Enclosures:

1. Amendment No. 275 to Brunswick License No. DPR-71
2. Amendment No. 303 to Brunswick License No. DPR-62
3. Amendment No. 289 to Catawba License No. NPF-35
4. Amendment No. 285 to Catawba License No. NPF-52
5. Amendment No. 296 to McGuire License No. NPF-9
6. Amendment No. 275 to McGuire License No. NPF-17
7. Amendment No. 156 to Harris License No. NPF-63
8. Amendment No. 252 to Robinson License No. DPR-23
9. Brunswick Safety Evaluation
10. Catawba Safety Evaluation
11. McGuire Safety Evaluation
12. Harris Safety Evaluation
13. Robinson Safety Evaluation

cc w/encls:

Mr. Robert T. Simril  
Site Vice President  
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Catawba Nuclear Station  
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York, SC 29745

Mr. Steven D. Capps  
Vice President  
Duke Energy Carolinas, LLC  
McGuire Nuclear Station  
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Mr. William R. Gideon  
Site Vice President  
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Southport, NC 28461

Ms. Tanya Hamilton  
Site Vice President  
Shearon Harris Nuclear Power Plant, Unit 1  
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New Hill, NC 27562-0165

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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 275  
Renewed License No. DPR-71

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Brunswick Steam Electric Plant, Unit 1 (the facility), Renewed Facility Operating License No. DPR-71, filed by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, 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 2.C.(2) of Renewed Facility Operating License No. DPR-71 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 275, are hereby incorporated in the license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 275

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Replace page 6 of Renewed Facility Operating License No. DPR-71 with the attached revised page 6.

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove  
3.6-35

Insert  
3.6-35

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by 2. below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2. above.
2. The licensee shall implement the modifications to its facility, as described in Table S-1, "Plant Modifications Committed," of Duke letter BSEP 14-0122, dated November 20, 2014, to complete the transition to full compliance with 10 CFR 50.48(c) by the startup of the second refueling outage for each unit after issuance of the safety evaluation. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
3. The licensee shall complete all implementation items, except item 9, listed in LAR Attachment S, Table S-2, "Implementation Items," of Duke letter BSEP 14-0122, dated November 20, 2014, within 180 days after NRC approval unless the 180<sup>th</sup> day falls within an outage window; then, in that case, completion of the implementation items, except item 9, shall occur no later than 60 days after startup from that particular outage. The licensee shall complete implementation of LAR Attachment S, Table S-2, Item 9, within 180 days after the startup of the second refueling outage for each unit after issuance of the safety evaluation.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2923 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 275, are hereby incorporated in the license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 203 to Renewed Facility Operating License DPR-71, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 203. For SRs that existed prior to Amendment 203, including SRs with modified acceptance criteria and SRs whose frequency of

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	E.1 -----NOTE----- LCO 3.0.3 is not applicable. ----- Suspend movement of recently irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u> E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.3.1 Operate each SGT subsystem for $\geq 15$ continuous minutes with heaters operating.	31 days
SR 3.6.4.3.2 Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3 Verify each SGT subsystem actuates on an actual or simulated initiation signal.	24 months





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WASHINGTON, D.C. 20555-0001

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 303  
Renewed License No. DPR-62

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Brunswick Steam Electric Plant, Unit 2 (the facility), Renewed Facility Operating License No. DPR-62, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, 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.

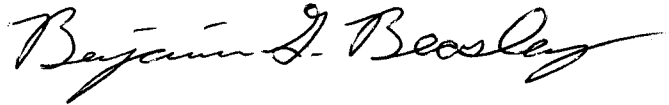
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-62 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 303, are hereby incorporated in the license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 303  
BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2  
RENEWED FACILITY OPERATING LICENSE NO. DPR-62  
DOCKET NO. 50-324

Replace page 6 of Renewed Facility Operating License No. DPR-62 with the attached revised page 6.

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove  
3.6-35

Insert  
3.6-35

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by 2. below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2. above.
2. The licensee shall implement the modifications to its facility, as described in Table S-1, "Plant Modifications Committed," of Duke letter BSEP 14-0122, dated November 20, 2014, to complete the transition to full compliance with 10 CFR 50.48(c) by the startup of the second refueling outage for each unit after issuance of the safety evaluation. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.
3. The licensee shall complete all implementation items, except Item 9, listed in LAR Attachment S, Table S-2, "Implementation Items," of Duke letter BSEP 14-0122, dated November 20, 2014, within 180 days after NRC approval unless the 180<sup>th</sup> day falls within an outage window; then, in that case, completion of the implementation items, except item 9, shall occur no later than 60 days after startup from that particular outage. The licensee shall complete implementation of LAR Attachment S, Table S-2, Item 9, within 180 days after the startup of the second refueling outage for each unit after issuance of the safety evaluation.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2923 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 303, are hereby incorporated in the license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications. |

For Surveillance Requirements (SRs) that are new in Amendment 233 to Renewed Facility Operating License DPR-62, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 233. For SRs that existed prior to Amendment 233,

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two SGT subsystems inoperable during movement of recently irradiated fuel assemblies in the secondary containment or during OPDRVs.	E.1 -----NOTE----- LCO 3.0.3 is not applicable. ----- Suspend movement of recently irradiated fuel assemblies in secondary containment.	Immediately
	<u>AND</u> E.2 Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.4.3.1 Operate each SGT subsystem for $\geq 15$ continuous minutes with heaters operating.	31 days
SR 3.6.4.3.2 Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3 Verify each SGT subsystem actuates on an actual or simulated initiation signal.	24 months



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DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 289  
Renewed License No. NPF-35

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. NPF-35, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 2.C.(2) of Renewed Facility Operating License No. NPF-35 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 289, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 285  
Renewed License No. NPF-52

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility), Renewed Facility Operating License No. NPF-52, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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.



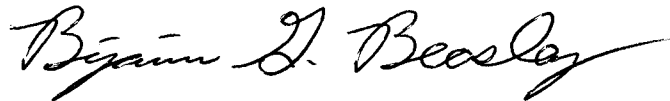
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-52 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 285, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO  
CATAWBA NUCLEAR STATION, UNITS 1 AND 2  
LICENSE AMENDMENT NO. 289  
RENEWED FACILITY OPERATING LICENSE NO. NPF-35  
DOCKET NO. 50-413  
AND LICENSE AMENDMENT NO. 285  
RENEWED FACILITY OPERATING LICENSE NO. NPF-52  
DOCKET NO. 50-414

Replace the following pages of the Renewed Facility Operating Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License

NPF-35, page 4  
NPF-52, page 4

TSs

3.6.10-2  
3.7.10-3  
3.7.12-2  
3.7.13-2

Insert

License

NPF-35, page 4  
NPF-52, page 4

TSs

3.6.10-2  
3.7.10-3  
3.7.12-2  
3.7.13-2

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 289, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than December 6, 2024, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71 (e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

(4) Antitrust Conditions

Duke Energy Carolinas, LLC shall comply with the antitrust conditions delineated in Appendix C to this renewed operating license.

(5) Fire Protection Program

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program that complies with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2013; as supplemented by letters dated January 13, 2015; January 28, 2015; February 27, 2015; March 30, 2015; April 28, 2015; July 15, 2015; August 14, 2015; September 3, 2015; December 11, 2015; January 7, 2016; March 23, 2016; June 15, 2016; August 2, 2016; September 7, 2016; and, January 26, 2017, as approved in the SE dated February 8, 2017. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 285, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than December 6, 2024, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71 (e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

(4) Antitrust Conditions

Duke Energy Carolinas, LLC shall comply with the antitrust conditions delineated in Appendix C to this renewed operating license.

(5) Fire Protection Program

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program that complies with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2013; as supplemented by letters dated January 13, 2015; January 28, 2015; February 27, 2015; March 30, 2015; April 28, 2015; July 15, 2015; August 14, 2015; September 3, 2015; December 11, 2015; January 7, 2016; March 23, 2016; June 15, 2016; August 2, 2016; September 7, 2016; and, January 26, 2017, as approved in the SE dated February 8, 2017. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.6.10.1 Operate each AVS train for $\geq 15$ continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.2 Perform required AVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.10.3 Verify each AVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.4 Verify each AVS filter cooling bypass valve can be opened.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.5 Verify each AVS train flow rate is $\geq 8100$ cfm and $\leq 9900$ cfm.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.6 Verify each AVS train produces a pressure equal to or more negative than -0.88 inch water gauge when corrected to elevation 564 feet.	In accordance with the Surveillance Frequency Control Program

REQUIRED ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One or more CRAVS train(s) heater inoperable.	G.1 Restore CRAVS train(s) heater to OPERABLE status.	7 days
	<u>OR</u> G.2 Initiate action in accordance with Specification 5.6.6.	7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.10.1 Operate each CRAVS train for $\geq 15$ continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.2 Perform required CRAVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.3 Verify each CRAVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.10.4 Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.12.1 Operate each ABFVES train for $\geq$ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.12.2 Perform required ABFVES filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.3 Verify each ABFVES train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.12.4 Verify one ABFVES train can maintain the ECCS pump rooms at negative pressure relative to adjacent areas.	In accordance with the Surveillance Frequency Control Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Verify required FHVES train in operation.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.2 Operate each FHVES train for $\geq 15$ continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.3 Perform required FHVES filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.4 Verify one FHVES train can maintain a pressure $\leq -0.25$ inches water gauge with respect to atmospheric pressure during operation at a flow rate $\leq 36,443$ cfm.	In accordance with the Surveillance Frequency Control Program
SR 3.7.13.5 Verify each FHVES filter bypass damper can be closed.	In accordance with the Surveillance Frequency Control Program





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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 296  
Renewed License No. NPF-9

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. NPF-9, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 2.C.(2) of Renewed Facility Operating License No. NPF-9 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 296, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 275  
Renewed License No. NPF-17

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility), Renewed Facility Operating License No. NPF-17, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 2.C.(2) of Renewed Facility Operating License No. NPF-17 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 275, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2  
LICENSE AMENDMENT NO. 296  
RENEWED FACILITY OPERATING LICENSE NO. NPF-9  
DOCKET NO. 50-369  
AND LICENSE AMENDMENT NO. 275  
RENEWED FACILITY OPERATING LICENSE NO. NPF-17  
DOCKET NO. 50-370

Replace the following pages of the Renewed Facility Operating Licenses and the Appendix A Technical Specifications (TSs) with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

License

NPF-9, page 3  
NPF-17, page 3

TSs

3.6.10-2  
3.7.9-4

Insert

License

NPF-9, page 3  
NPF-17, page 3

TSs

3.6.10-2  
3.7.9-4

- (4) 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 calibration or associated with radioactive apparatus or components;
  - (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproducts and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2, and;
  - (6) Pursuant to the Act and 10 CFR Parts 30 and 40, to receive, possess and process for release or transfer such byproduct material as may be produced by the Duke Training and Technology Center.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I 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:
- (1) Maximum Power Level

The licensee is authorized to operate the facility at a reactor core full steady state power level of 3469 megawatts thermal (100%).
  - (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 296, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.
  - (3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than June 12, 2021, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- (4) 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 calibration or associated with radioactive apparatus or components;
- (5) Pursuant to the Act and 10 CFR Parts, 30, 40 and 70, to possess, but not separate, such byproducts and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2; and,
- (6) Pursuant to the Act and 10 CFR Parts 30 and 40, to receive, possess and process for release or transfer such by product material as may be produced by the Duke Training and Technology Center.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or thereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at a reactor core full steady state power level of 3469 megawatts thermal (100%).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 275, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than March 3, 2023, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement as revised on December 16, 2002, described above, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4), following issuance of this renewed operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59, and otherwise complies with the requirements in that section.

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE	FREQUENCY
SR 3.6.10.1 Operate each AVS train for $\geq 15$ continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.2 Perform required AVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.10.3 Verify each AVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.4 Verify each AVS filter cooling bypass valve can be opened.	In accordance with the Surveillance Frequency Control Program
SR 3.6.10.5 Verify each AVS train flow rate is $\geq 7200$ cfm and $\leq 8800$ cfm.	In accordance with the Surveillance Frequency Control Program



SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Operate each CRAVS train for $\geq$ 15 continuous minutes.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.2 Perform required CRAVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.9.3 Verify each CRAVS train actuates on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.9.4 Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program.	In accordance with the Control Room Envelope Habitability Program



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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 156  
Renewed License No. NPF-63

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Shearon Harris Nuclear Power Plant, Unit 1 (the facility), Renewed Facility Operating License No. NPF-63, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, 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.

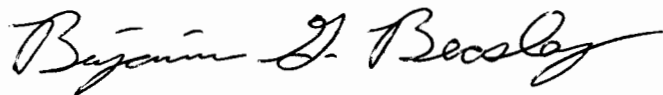
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-63 is hereby amended to read as follows:

- (2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 156, are hereby incorporated into this license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 156  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
RENEWED FACILITY OPERATING LICENSE NO. NPF-63  
DOCKET NO. 50-400

Replace page 4 of Renewed Facility Operating License No. NPF-63 with the attached revised page 4.

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

3/4 7-15

3/4 7-17

3/4 9-14

Insert

3/4 7-15

3/4 7-17

3/4 9-14

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I 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.

(1) Maximum Power Level

Duke Energy Progress, LLC, is authorized to operate the facility at reactor Core power levels not in excess of 2948 megawatts thermal (100 percent rated core power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 156, are hereby incorporated into this license. Duke Energy Progress, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

Duke Energy Progress, LLC shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Initial Startup Test Program (Section 14)<sup>1</sup>

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Steam Generator Tube Rupture (Section 15.6.3)

Prior to startup following the first refueling outage, Carolina Power & Light Company\* shall submit for NRC review and receive approval if a steam generator tube rupture analysis, including the assumed operator actions, which demonstrates that the consequences of the design basis steam generator tube rupture event for the Shearon Harris Nuclear Power Plant are less than the acceptance criteria specified in the Standard Review Plan, NUREG-0800, at 15.6.3 Subparts II (1) and (2) for calculated doses from radiological releases. In preparing their analysis Carolina Power & Light Company\* will not assume that operators will complete corrective actions within the first thirty minutes after a steam generator tube rupture.

<sup>1</sup> The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

\*On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

## PLANT SYSTEMS

### 3/4.7.6 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

#### LIMITING CONDITION FOR OPERATION (Continued)

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- c. During movement of irradiated fuel assemblies or movement of loads over spent fuel pools.
  - 1. With one CREFS train inoperable for reasons other than an inoperable CRE boundary, restore the inoperable CREFS train to OPERABLE status within 7 days or immediately initiate and maintain operation of the remaining OPERABLE CREFS train in the recirculation mode; or immediately suspend movement of irradiated fuel.
  - 2. With both CREFS trains inoperable for reasons other than an inoperable CRE boundary, or with the OPERABLE CREFS train required to be in the recirculation mode by Action c.1., not capable of being powered by an OPERABLE emergency power source, immediately suspend all operations involving movement of irradiated fuel assemblies or movement of loads over spent fuel pools.
  - 3. With one or more CREFS trains inoperable due to inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies or movement of loads over spent fuel pools.

#### SURVEILLANCE REQUIREMENTS

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- 4.7.6 Each CREFS train shall be demonstrated OPERABLE:
- a. At the frequency specified in the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 continuous minutes with the heaters operating;
  - b. At the frequency specified in the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following significant painting, fire, or chemical release in any ventilation zone communicating with the system by:
    - 1. Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980; and

## PLANT SYSTEMS

### 3/4.7.7 REACTOR AUXILIARY BUILDING (RAB) EMERGENCY EXHAUST SYSTEM

#### LIMITING CONDITION FOR OPERATION

---

3.7.7 Two independent RAB Emergency Exhaust Systems shall be OPERABLE.\*

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one RAB Emergency Exhaust System inoperable, restore the inoperable system to OPERABLE status within 7 days\*\* or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two RAB Emergency Exhaust Systems inoperable due to an inoperable RAB Emergency Exhaust System boundary, restore the RAB Emergency Exhaust System boundary to OPERABLE status within 24 hours. Otherwise, be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

#### SURVEILLANCE REQUIREMENTS

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4.7.7 Each RAB Emergency Exhaust System shall be demonstrated OPERABLE:

- a. At the frequency specified in the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 continuous minutes with the heaters operating;
- b. At the frequency specified in the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following significant painting, fire, or chemical release in any ventilation zone communicating with the system by:
  1. Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the unit flow rate is 6800 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980;
  2. Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, has a methyl iodine penetration of  $\leq$  2.5% when tested at a temperature of 30°C and at a relative humidity of 70% in accordance with ASTM D3803-1989.

\* The RAB Emergency Exhaust Systems boundary may be opened intermittently under administrative controls.

\*\* The 'A' Train RAB Emergency Exhaust System is allowed to be inoperable for a total of 14 days only to allow for the implementation of design improvements on the 'A' Train ESW pump. The 14 days will be taken one time no later than October 29, 2016. During the period in which the 'A' Train ESW pump supply from the Auxiliary Reservoir or Main Reservoir is not available, Normal Service Water will remain available and in service to supply the 'A' Train ESW equipment loads until the system is ready for post maintenance testing. Allowance of the extended Completion Time is contingent on meeting the Compensatory Measures and Conditions described in HNP LAR submittal correspondence letter HNP-16-056.

## REFUELING OPERATIONS

### 3/4.9.12 FUEL HANDLING BUILDING EMERGENCY EXHAUST SYSTEM

#### LIMITING CONDITION FOR OPERATION

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3.9.12 Two independent Fuel Handling Building Emergency Exhaust System Trains shall be OPERABLE.\*

APPLICABILITY: Whenever irradiated fuel is in a storage pool.

ACTION:

- a. With one Fuel Handling Building Emergency Exhaust System Train inoperable, fuel movement within the storage pool or crane operation with loads over the storage pool may proceed provided the OPERABLE Fuel Handling Building Emergency Exhaust System Train is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorber.
- b. With no Fuel Handling Building Emergency Exhaust System Trains OPERABLE, suspend all operations involving movement of fuel within the storage pool or crane operation with loads over the storage pool until at least one Fuel Handling Building Emergency Exhaust System Train is restored to OPERABLE status.
- c. The provisions of Specification 3.0.3 are not applicable.

#### SURVEILLANCE REQUIREMENTS

---

4.9.12 The above required Fuel Handling Building Emergency Exhaust System trains shall be demonstrated OPERABLE:

- a. At the frequency specified in the Surveillance Frequency Control Program by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 continuous minutes with the heaters operating;
- b. At the frequency specified in the Surveillance Frequency Control Program or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following significant painting, fire, or chemical release in any ventilation zone communicating with the system by:
  1. Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the unit flow rate is 6600 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.

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\* The Fuel Handling Building Emergency Exhaust System boundary may be opened intermittently under administrative controls.





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

DUKE ENERGY PROGRESS, LLC

DOCKET NO. 50-261

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

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 252  
Renewed License No. DPR-23

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the H. B. Robinson Steam Electric Plant, Unit No. 2 (the facility), Renewed Facility Operating License No. DPR-23, by Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC, dated September 27, 2016, as supplemented by letters dated November 22, 2016, and April 20, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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. 252, 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 issuance and shall be implemented within 120 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: May 8, 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 252  
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
RENEWED FACILITY OPERATING LICENSE NO. DPR-23  
DOCKET NO. 50-261

Replace page 3 of Renewed Facility Operating License No. DPR-23 with the attached revised page 3.

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove  
3.7-28

Insert  
3.7-28

- 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. 252, 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.

3.7 PLANT SYSTEMS

3.7.11 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.11 The FBACS shall be OPERABLE and operating.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The FBACS inoperable during movement of irradiated fuel assemblies in the fuel building.	A.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate the FBACS for $\geq 15$ continuous minutes with the heaters operating automatically.	31 days
SR 3.7.11.2	Perform required FBACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 275 AND 303 TO

RENEWED FACILITY OPERATING LICENSE NOS. DPR-71 AND DPR-62

DUKE ENERGY PROGRESS, LLC

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

By letter dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively), Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC (the licensee), requested changes to the technical specifications (TSs) for Brunswick Steam Electric Plant, Units 1 and 2 (BSEP). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or the Commission)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed changes would revise surveillance requirements (SRs) that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating every 31 days. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation every 31 days.

Changes were proposed for TS 3.6.4.3, "Standby Gas Treatment (SGT) System." In particular, SR 3.6.4.3.1, which currently requires operating the system for at least 10 continuous hours with heaters operating every 31 days, would be changed to require at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days.

The licensee stated that the license amendment request is consistent with NRC-approved TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421), as part of the consolidated line item improvement process.

The supplemental letter dated April 20, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 17, 2017 (82 FR 4929).

## 2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design-basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system, as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gases.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating every 31 days. These requirements are based on NRC staff guidance for testing air filtration and adsorption systems that has been superseded. New NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent. Plants that test ventilation system adsorption at a relative humidity of 95 percent do not require heaters for the ventilation system to perform its specified safety function, and the bracketed phrase "with heaters operating" is not included in the SRs.

The licensee has proposed revising SRs that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating every 31 days. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67; 10 CFR Part 100; and 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria 19, 41, 42, 43, and 61.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 stated that, "Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." The purpose of this position was to minimize the moisture content in the system and thereby enhance efficiency in the event the system was called upon to perform its design-basis function. Testing requirements for air filtration and adsorption systems currently require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every 31 days. The current STS Bases explain that operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

Subsequently, the NRC staff was informed that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935) and Errata, dated August 23, 1999 (ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm that their charcoal testing protocols accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers. BSEP TS 5.5.7, "Ventilation Filter Testing Program (VFTP)," requires testing charcoal adsorbers in a manner to account for the effects of moisture on the adsorber's ability to capture gaseous activity.

Therefore, the NRC staff updated RG 1.52 (ADAMS Accession No. ML011710176) in June 2001 to include this new information. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs 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 LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1433, "Standard Technical Specifications – General Electric BWR/4 Plants."

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3. Consistent with RG 1.52, Revision 3, the proposed change would require at least 15 minutes of system operation with heaters operating. Therefore, the NRC staff found that the proposed change is consistent with guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed change adopts the TS format and content, to the extent practicable, contained in the changes made to NUREG-1433, "Standard Technical Specifications – General Electric BWR/4 Plants," by TSTF-522. Therefore, the NRC staff found that the proposed change is consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed change to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The



proposed change reduces the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure the adsorbers would capture gaseous activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's Ventilation Filter Testing Program. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the Ventilation Filter Testing Program, is sufficient to justify operability of the system and all its components. The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed change is acceptable.

The regulation at 10 CFR 50.36 states, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the TS 5.5.10, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendments on April 24, 2017. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change 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 published in the *Federal Register* on January 17, 2017 (82 FR 4929). 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 Contributor: M. Hamm

Date: May 8, 2017



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 289 AND 285 TO

RENEWED FACILITY OPERATING LICENSE NOS. NPF-35 AND NPF-52

DUKE ENERGY CAROLINAS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively), Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC (the licensee), requested changes to the technical specifications (TSs) for Catawba Nuclear Station, Units 1 and 2 (CNS). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or the Commission)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed changes would revise surveillance requirements (SRs) that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the Surveillance Frequency Control Program (SFCP). The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

Changes were proposed for TS 3.6.10, "Annulus Ventilation System (AVS)"; TS 3.7.10, "Control Room Area Ventilation System (CRAVS)"; TS 3.7.12, "Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)"; and TS 3.7.13, "Fuel Handling Ventilation Exhaust System (FHVES)." In particular, SRs 3.6.10.1, 3.7.10.1, 3.7.12.1, and 3.7.13.2, which currently require operating the respective systems for at least 10 continuous hours with heaters operating at a frequency controlled in accordance with the SFCP, would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The licensee stated that the license amendment request is consistent with NRC-approved TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421), as part of the consolidated line item improvement process.

The supplemental letter dated April 20, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change

the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 17, 2017 (82 FR 4929).

## 2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design-basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system, as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gases.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating at a frequency controlled by the SFCP. These requirements are based on NRC staff guidance for testing air filtration and adsorption systems that has been superseded. New NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent. Plants that test ventilation system adsorption at a relative humidity of 95 percent do not require heaters for the ventilation system to perform its specified safety function, and the bracketed phrase, "with heaters operating," is not included in the SRs.

The licensee has proposed revising SRs that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the SFCP. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67; 10 CFR Part 100; and 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria 19, 41, 42, 43, and 61.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 stated that, "Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." The purpose of this position was to minimize the moisture content in the system and thereby enhance efficiency in the event the system was called upon to perform its design-basis function. Testing requirements for air filtration and adsorption systems currently require operating the heaters in the respective ventilation and filtering systems for at least

10 continuous hours every 31 days. The current STS Bases explain that operation of heaters for 10 hours eliminates moisture on the charcoal adsorbers and HEPA filters.

Subsequently, the NRC staff was informed that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935) and Errata, dated August 23, 1999 (ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm that their charcoal testing protocols accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers.

Therefore, the NRC staff updated RG 1.52 (ADAMS Accession No. ML011710176) in June 2001 to include this new information. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to minimize the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects are already accounted for in the Ventilation Filter Testing Program by performing testing at a relative humidity of 95 percent. CNS TS 5.5.11, "Ventilation Filter Testing Program (VFTP)," requires testing charcoal adsorbers in a manner to account for the effects of moisture on the adsorber's ability to capture gaseous activity. Therefore, the licensee proposed to remove the requirement to operate heaters from SRs 3.6.10.1, 3.7.10.1, 3.7.12.1, and 3.7.13.2.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs 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 LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants."

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3 guidance in the STS, as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3. Consistent with RG 1.52, Revision 3, the proposed change would require at least 15 minutes of system operation. Therefore, the NRC staff found that the proposed change is consistent with guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed change adopts the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431 by TSTF-522. Therefore, the NRC staff found that the proposed change is consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed change to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed change reduces the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure that the adsorbers would capture gaseous activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's Ventilation Filter Testing Program by performing testing at a relative humidity of 95 percent. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the Ventilation Filter Testing Program, is sufficient to justify operability of the system and all its components. The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed change is acceptable.

The regulation at 10 CFR 50.36 states, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the TS 5.5.14, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

#### 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 on April 24, 2017. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes 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 published in the *Federal Register* on January 17, 2017 (82 FR 4929). 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 Contributor: M. Hamm

Date: May 8, 2017



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 296 AND 275 TO

RENEWED FACILITY OPERATING LICENSE NOS. NPF-9 AND NPF-17

DUKE ENERGY CAROLINAS, LLC

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

1.0 INTRODUCTION

By letter dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively), Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC (the licensee), requested changes to the technical specifications (TSs) for McGuire Nuclear Station, Units 1 and 2 (MNS). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or the Commission)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed changes would revise surveillance requirements (SRs) that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the Surveillance Frequency Control Program (SFCP). The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

Changes were proposed for TS 3.6.10, "Annulus Ventilation System (AVS)," and TS 3.7.9, "Control Room Area Ventilation System (CRAVS)." In particular, SRs 3.6.10.1 and 3.7.9.1, which currently require operating the respective systems for at least 10 continuous hours with heaters operating at a frequency controlled in accordance with the SFCP, would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The licensee stated that the license amendment request is consistent with NRC-approved Traveler TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421) as part of the consolidated line item improvement process.

The supplemental letter dated April 20, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 17, 2017 (82 FR 4929).



## 2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design-basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system, as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gases.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating at a frequency controlled by the SFCP. These requirements are based on NRC staff guidance for testing air filtration and adsorption systems that has been superseded. New NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent. Plants that test ventilation system adsorption at a relative humidity of 95 percent do not require heaters for the ventilation system to perform its specified safety function, and the bracketed phrase, "with heaters operating," is not included in the SRs.

The licensee has proposed revising SRs that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the SFCP. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67; 10 CFR Part 100; and 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria 19, 41, 42, 43, and 61.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 stated that, "Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." The purpose of this position was to minimize the moisture content in the system and thereby enhance efficiency in the event the system was called upon to perform its design-basis function. Testing requirements for air filtration and adsorption systems currently require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every 31 days. The current STS Bases explain that operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

Subsequently, the NRC staff was informed that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935), and Errata, dated August 23, 1999 (ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm their charcoal testing protocols accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers.

Therefore, the NRC staff updated RG 1.52 (ADAMS Accession No. ML011710176) in June 2001 to include this new information. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to minimize the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects are already accounted for in the Ventilation Filter Testing Program by performing testing at a relative humidity of 95 percent. MNS TS 5.5.11, "Ventilation Filter Testing Program (VFTP)," requires testing charcoal adsorbers in a manner to account for the effects of moisture on the adsorber's ability to capture gaseous activity. Therefore, the licensee proposed to remove the requirement to operate heaters from SRs 3.6.10.1 and 3.7.9.1.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs 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 LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants."

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3. Consistent with RG 1.52, Revision 3, the proposed change would require at least 15 minutes of system operation. Therefore, the NRC staff found that the proposed change is consistent with guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed change adopts the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431 by

TSTF-522. Therefore, the NRC staff found that the proposed change is consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed change to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed change reduces the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure that the adsorbers would capture gaseous activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's Ventilation Filter Testing Program by performing testing at a relative humidity of 95 percent. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the Ventilation Filter Testing Program, is sufficient to justify operability of the system and all its components. The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed change is acceptable.

The regulation at 10 CFR 50.36 states, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with TS 5.5.14, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendments on April 24, 2017. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change 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 published in the *Federal Register* on January 17, 2017 (82 FR 4929). 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 Contributor: M. Hamm

Date: May 8, 2017



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 156 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-63

DUKE ENERGY PROGRESS, LLC

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively), Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC (the licensee), requested changes to the technical specifications (TSs) for Shearon Harris Nuclear Power Plant, Unit 1 (HNP). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or the Commission)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed changes would revise surveillance requirements (SRs) that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the Surveillance Frequency Control Program (SFCP).<sup>1</sup> The SRs would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

Changes were proposed for TS 3/4.7.6, "Control Room Emergency Filtration System"; TS 3/4.7.7, "Reactor Auxiliary Building (RAB) Emergency Exhaust System"; and TS 3/4.9.12, "Fuel Handling Building Emergency Exhaust System." In particular, SRs 4.7.6.a, 4.7.7.a, and 4.9.12.a, which currently require operating the respective systems for at least 10 continuous hours with heaters operating at a frequency controlled in accordance with the SFCP, would be changed to require at least 15 continuous minutes of ventilation system operation at a frequency controlled in accordance with the SFCP.

The licensee stated that the license amendment request is consistent with NRC-approved TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421), as part of the consolidated line item improvement process.

<sup>1</sup> Subsequent to the first two submittals associated with this license amendment request, on November 29, 2016, the NRC approved HNP Amendment No. 154 (ADAMS Accession No. ML16200A285), which revised the HNP TSs by relocating specific surveillance frequencies, including the surveillance frequencies for the HNP SRs discussed in this license amendment request, to an SFCP. Accordingly, this safety evaluation refers to the HNP SFCP.

The supplemental letter dated April 20, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 17, 2017 (82 FR 4929).

## 2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design-basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system, as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gases.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating at a frequency controlled by the SFCP. These requirements are based on NRC staff guidance for testing air filtration and adsorption systems that has been superseded. New NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent.

The licensee has proposed revising SRs that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating at a frequency controlled in accordance with the SFCP. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation with heaters operating at a frequency controlled in accordance with the SFCP.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67; 10 CFR Part 100; and 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria 19, 41, 42, 43, and 61.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 stated that, "Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." The purpose of this position was to minimize the moisture content in the system and thereby enhance efficiency in the event the system was called upon to perform its design-basis function. Testing requirements for air filtration and adsorption systems currently

require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every 31 days. The current STS Bases explain that operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

Subsequently, the NRC staff was informed that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935), and Errata, dated August 23, 1999 (ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm their charcoal testing protocols accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers.

Therefore, the NRC staff updated RG 1.52 (ADAMS Accession No. ML011710176) in June 2001 to include this new information. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to minimize the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects are already accounted for in the HNP SRs 4.7.6.b.2, 4.7.6.c, 4.7.7.b.2, 4.7.7.c, 4.9.12.b.2, and 4.9.12.c, by performing testing at a relative humidity of 70 percent.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs 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 LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants."

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3. Consistent with RG 1.52, Revision 3, the proposed change would require at least 15 minutes of system operation with heaters operating. Therefore, the NRC staff found that the proposed change is consistent with guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed change adopts the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431 by

TSTF-522. Therefore, the NRC staff found that the proposed change is consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed change to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed change reduces the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure that the adsorbers would capture gaseous activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's SRs by performing testing at a relative humidity of 70 percent. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes with heaters operating, consistent with RG 1.52, Revision 3, in conjunction with the existing SRs, is sufficient to justify operability of the system and all its components. The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed change is acceptable.

The regulation at 10 CFR 50.36 states, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the TS 6.8.4.n, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the North Carolina State official was notified of the proposed issuance of the amendment on April 24, 2017. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on January 17, 2017 (82 FR 4929). Accordingly, the amendment meets 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 amendment.

## 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Hamm

Date: May 8, 2017



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 252 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-23

DUKE ENERGY PROGRESS, LLC

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

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated September 27, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16273A042), as supplemented by letters dated November 22, 2016, and April 20, 2017 (ADAMS Accession Nos. ML16327A325 and ML17110A086, respectively), Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC (the licensee), requested changes to the technical specifications (TSs) for H. B. Robinson Steam Electric Plant, Unit No. 2 (RNP). Specifically the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC or the Commission)-approved Technical Specifications Task Force (TSTF) Improved Standard Technical Specifications (STS) Change Traveler TSTF-522, Revision 0, "Revise Ventilation System Surveillance Requirements to Operate for 10 hours per Month" (ADAMS Accession No. ML100890316), dated March 30, 2010.

The proposed changes would revise surveillance requirements (SRs) that currently require operating the ventilation system for at least 10 continuous hours with the heaters operating every 31 days. The SRs would be changed to require at least 15 continuous minutes of ventilation system operation every 31 days.

Changes were proposed for TS 3.7.11, "Fuel Building Air Cleanup System (FBACS)." In particular, SR 3.7.11.1, which currently requires operating the system for at least 10 continuous hours with heaters operating automatically every 31 days, would be changed to require at least 15 continuous minutes of ventilation system operation with heaters operating automatically every 31 days.

The licensee stated that the license amendment request is consistent with NRC-approved TSTF-522. The availability of this TS improvement was announced in the *Federal Register* on September 20, 2012 (77 FR 58421), as part of the consolidated line item improvement process.

The supplemental letter dated April 20, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on January 17, 2017 (82 FR 4929).

## 2.0 REGULATORY EVALUATION

One of the reasons air filtration and adsorption systems are required at nuclear power plants is to lower the concentration of airborne radioactive material that may be released from the site to the environment due to a design-basis event. Lowering the concentration of airborne radioactive materials can mitigate doses to plant operators and members of the public in the event of a design-basis event. A typical system consists of ventilation ductwork, fans, dampers, valves, instrumentation, prefilters or demisters, high efficiency particulate air (HEPA) filters, heaters, and activated charcoal adsorbers. These systems are tested by operating the systems and monitoring the response of the overall system, as well as individual components. Laboratory tests of charcoal adsorbers are also performed to ensure the charcoal adsorbs an acceptable amount of radioactive gases.

Current testing requirements for the air filtration and adsorption systems state that the systems should be operated for at least 10 continuous hours with heaters operating every 31 days. These requirements are based on NRC staff guidance for testing air filtration and adsorption systems that has been superseded. New NRC staff guidance states that at least 15 continuous minutes of ventilation system operation with heaters operating every 31 days is acceptable for those plants that test ventilation system adsorption at a relative humidity of less than 95 percent. Plants that test ventilation system adsorption at a relative humidity of 95 percent do not require heaters for the ventilation system to perform its specified safety function and the bracketed phrase, "with heaters operating," is not included in the SRs.

The licensee has proposed revising the SR that currently requires operating the ventilation system for at least 10 continuous hours with the heaters operating automatically every 31 days. The SR would be changed to require at least 15 continuous minutes of ventilation system operation with the heaters operating automatically every 31 days.

In its April 20, 2017 letter, the licensee described how the Fuel Building Air Clean-Up System (FBACS) heaters are tested, including the testing of the heaters while operating automatically:

The FBACS system contains a duct-mounted electric heating coil that provides humidity control to enhance the efficiency of the carbon adsorber. The power supply to the heater box and exhaust fan (HVE-15A) is energized by a switch at the local control panel. Once the exhaust fan establishes air flow, an air flow sensing switch energizes the heater controls. During the performance of SR 3.7.11.1 (monthly when the TS is applicable), Operations personnel verify power to the heaters via local indication in accordance with (IAW) Operations Procedure (OP)-906, "Heating, Ventilation, and Air Conditioning." Power to the heaters ensures that the three stages of heater output will automatically modulate based on feedback from a duct-mounted pneumatic humidity sensor located between the heater and the carbon adsorber. This ensures the moisture content of the air stream reaching the carbon adsorbers is below 70% relative humidity (RH).

The FBACS heater is also tested per TS 5.5.11, Ventilation Filter Testing Program (VFTP). Per TS 5.5.11.e, the heaters for the FBACS must be demonstrated to maintain the filter inlet air at less than or equal to 70% RH when tested IAW ANSI/ASME N510-1975. Visual inspections, a PowerOff continuity test using an ohmmeter, and a Power-On circuit test using an ammeter are performed with results provided back to the VFTP engineer. Satisfactory results are required as a prerequisite in Engineering Surveillance Test (EST)-022,

"Once-Per-Cycle FBACS Performance Test." EST-022 also performs the air flow testing, differential pressure testing, Spent Fuel Pool Room negative pressure checks, and HEPA/Carbon filter testing to ensure operability of the FBACS system prior to refueling activities.

The regulatory requirements for the design and testing of these systems are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67 and 10 CFR Part 100.<sup>1</sup> RNP received its construction permit in 1967 and was licensed for operation in July 1970. On July 11, 1967, the Atomic Energy Commission published for public comment in the *Federal Register* (32 FR 10213) a revised and expanded set of 70 draft General Design Criteria (hereinafter referred to as the "draft GDC"). On February 20, 1971, the Atomic Energy Commission published in the *Federal Register* (36 FR 3255) a final rule that added Appendix A to 10 CFR Part 50, "General Design Criteria for Nuclear Power Plants" (hereinafter referred to as the "final GDC"). Differences between the draft GDC and final GDC included a consolidation from 70 to 64 criteria. As discussed in the NRC Staff Requirements Memorandum for SECY-92-223, "Resolution of Deviations Identified during the Systematic Evaluation Program," dated September 18, 1992 (ADAMS Accession No. ML003763736), the Commission decided not to apply the final GDC to plants with construction permits issued prior to May 21, 1971, which included RNP. At the time of the promulgation of Appendix A to 10 CFR Part 50, the Commission stressed that the final GDC were not new requirements and were promulgated to more clearly articulate the licensing requirements and practice in effect at that time. Each plant licensed before the final GDC were formally adopted was evaluated on a plant-specific basis, determined to be safe, and licensed by the Commission.

Based on a review of the RNP Updated Final Safety Analysis Report (UFSAR), Section 3.1, "Conformance with General Design Criteria," and the licensee's application, the NRC staff identified the following draft GDC as being applicable to the proposed amendment.

RNP UFSAR, Section 3.1.2.11, "Control Room" (GDC 11), states that:

The facility shall be provided with a Control Room from which actions to maintain safe operational status of the plant can be controlled. Adequate radiation protection shall be provided to permit continuous occupancy of the Control Room under any credible post-accident condition or as an alternative, access to other areas of the facility as necessary to shut down and maintain safe control of the facility without excessive radiation exposures of personnel.

RNP UFSAR, Section 3.1.2.62, "Inspection of Air Cleanup Systems" (GDC 62), states that:

Design provisions shall be made to the extent practical to facilitate physical inspection of all critical parts of containment air cleanup systems, such as ducts, filters, fans, and damper.

RNP UFSAR, Section 3.1.2.63, "Testing of Air Cleanup Systems Components" (GDC 63), states that:

<sup>1</sup> The model safety evaluation for TSTF-522 identifies the applicable 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criteria as 19, 41, 42, 43, and 61. Since RNP is a draft GDC plant, the corresponding draft GDC from the RNP UFSAR are identified.

Design provisions shall be made to the extent practical so that active components of the air cleanup systems, such as fans and dampers, can be tested periodically for operability and required functional performance.

RNP UFSAR, Section 3.1.2.64, "Testing Air Cleanup Systems" (GDC 64), states that:

A capability shall be provided to the extent practical for onsite periodic testing and surveillance of the air cleanup systems to ensure (a) filter bypass paths have not developed and (b) filter and trapping materials have not deteriorated beyond acceptable limits.

RNP UFSAR, Section 3.1.2.65, "Testing of Operational Sequence of Air Cleanup Systems" (GDC 65), states that:

A capability shall be provided to test initially under conditions as close to design as practical, the full operational sequence that would bring the air cleanup systems into action, including the transfer to alternate power sources and the design air flow delivery capability.

RNP UFSAR, Section 3.1.2.69, "Protection Against Radioactivity Release from Spent Fuel and Waste Storage" (GDC 69), states that:

Provisions shall be made in the design of fuel and waste storage facilities such that no undue risk to the health and safety of the public could result from an accidental release of radioactivity.

NRC Regulatory Guide (RG) 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants" (ADAMS Accession No. ML003740139), was published in March 1978 to provide guidance and criteria acceptable to the NRC staff for licensees to implement the regulations in 10 CFR related to air filtration and adsorption systems.

Regulatory Position 4.d of Revision 2 of RG 1.52 stated that, "Each ESF [engineered safety feature] atmosphere cleanup train should be operated at least 10 hours per month, with the heaters on (if so equipped), in order to reduce the buildup of moisture on the adsorbers and HEPA filters." The purpose of this position was to minimize the moisture content in the system and thereby enhance efficiency in the event the system was called upon to perform its design-basis function. Testing requirements for air filtration and adsorption systems currently require operating the heaters in the respective ventilation and filtering systems for at least 10 continuous hours every 31 days. The current STS Bases explain that operation of heaters for 10 hours would eliminate moisture on the charcoal adsorbers and HEPA filters.

Subsequently, the NRC staff was informed that 10 continuous hours of system operation would dry out the charcoal adsorber for a brief period of time but, following heater de-energization, the level of moisture accumulation in adsorbers would rapidly return to the pre-test level. The NRC staff found this information persuasive and subsequently issued NRC Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal," dated June 3, 1999 (ADAMS Accession No. ML082350935), and Errata, dated August 23, 1999 (ADAMS Accession No. ML031110094). GL 99-02 requested licensees to confirm their charcoal testing protocols

accurately reflected the adsorber gaseous activity capture capability. GL 99-02 also requested licensees to account for the effects of moisture accumulation in adsorbers.

Therefore, the NRC staff updated RG 1.52 (ADAMS Accession No. ML011710176) in June 2001 to include this new information. RG 1.52, Revision 3, Regulatory Position 6.1 states, "Each ESF atmosphere cleanup train should be operated continuously for at least 15 minutes each month, with the heaters on (if so equipped), to justify the operability of the system and all its components."

One of the reasons for the previous 10-hour requirement for ventilation system operation with heaters operating was to minimize the effects of moisture on the adsorber's ability to capture gaseous activity. However, these effects are already accounted for in the Ventilation Filter Testing Program. RNP TS 5.5.11, "Ventilation Filter Testing Program (VFTP)," requires testing charcoal adsorbers in a manner to account for the effects of moisture on the adsorber's ability to capture gaseous activity.

The NRC's regulatory requirements related to the content of the TSs are contained in 10 CFR 50.36. The regulations at 10 CFR 50.36 require that the TSs include items in the following categories: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) SRs; (4) design features; and (5) administrative controls. SRs 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 LCOs will be met.

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants."

### 3.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3, guidance in the STS as modified by TSTF-522, and the regulatory requirements of 10 CFR 50.36.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in RG 1.52, Revision 3. Consistent with RG 1.52, Revision 3, the proposed change would require at least 15 minutes of system operation with heaters operating automatically. Therefore, the NRC staff found that the proposed change is consistent with guidance in RG 1.52, Revision 3.

The NRC staff evaluated the licensee's proposed change against the applicable regulatory guidance in the STS, as modified by TSTF-522. The proposed change adopts the TS format and content, to the extent practicable, contained in the changes made to NUREG-1431 by TSTF-522. Therefore, the NRC staff found that the proposed change is consistent with guidance in the STS, as modified by TSTF-522.

The NRC staff compared the proposed change to the existing SRs, as well as the regulatory requirements of 10 CFR 50.36. The existing SRs provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. The proposed change reduces the amount of required system operational time from 10 hours to 15 minutes. The 10-hour operational requirement for heaters was based on using the SR to eliminate moisture in the adsorbers and thus ensure that the adsorbers would capture gaseous

activity. As discussed in Section 2.0 of this safety evaluation, the effects of moisture on the adsorber's ability to capture gaseous activity are now accounted for in the licensee's Ventilation Filter Testing Program. Since the SRs are no longer relied upon to ensure that the effects of moisture on the adsorber's ability to capture gaseous activity are accounted for, the 10-hour heater operational requirement is unnecessary. The NRC staff found that reducing the required minimum system operation time to 15 minutes, consistent with RG 1.52, Revision 3, in conjunction with the Ventilation Filter Testing Program, is sufficient to justify operability of the system and all its components. The NRC staff found that the proposed SRs meet the regulatory requirements of 10 CFR 50.36 because they provide assurance that the necessary quality of ventilation systems and components will be maintained and that the LCOs will be met. Therefore, the NRC staff concludes that the proposed change is acceptable.

The regulation at 10 CFR 50.36 states, "A summary statement of the bases or reasons for such specifications ... shall also be included in the application, but shall not become part of the technical specifications." The licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the TS 5.5.14, "Technical Specifications (TS) Bases Control Program." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes corresponding to the proposed TS changes. The NRC staff determined that these TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," dated July 22, 1993 (58 FR 39132).

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendment on April 24, 2017. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on January 17, 2017 (82 FR 4929). Accordingly, the amendment meets 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 amendment.

#### 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Hamm

Date: May 8, 2017



**SUBJECT:** BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2; CATAWBA NUCLEAR STATION, UNITS 1 AND 2; MCGUIRE NUCLEAR STATION, UNITS 1 AND 2; SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1; AND H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 – ISSUANCE OF AMENDMENTS REVISING TECHNICAL SPECIFICATIONS ADOPTING TSTF-522, REVISION 0, “REVISE VENTILATION SYSTEM SURVEILLANCE REQUIREMENTS TO OPERATE FOR 10 HOURS PER MONTH,” USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (CAC NOS. MF8422, MF8423, MF8424, MF8425, MF8426, MF8427, MF8428, AND MF8429) DATED MAY 8, 2017

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