



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

August 31, 2011

Mr. Michael R. Glover  
General Manager, Nuclear Support  
Nuclear Generation  
Duke Energy Carolinas, LLC  
P.O. Box 1006/ECO7H  
Charlotte, NC 28201-1006

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (CATAWBA 1 AND 2),  
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 (MCGUIRE 1 AND 2), AND  
OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (OCONEE 1, 2, AND 3) -  
ISSUANCE OF AMENDMENTS REGARDING CYBER SECURITY PLANS  
BASED ON NUCLEAR ENERGY INSTITUTE 08-09, REVISION 6 (TAC NOS.  
ME4529, ME4530, CATAWBA; ME4531, ME4532, MCGUIRE; ME4533,  
ME4534, ME4535, OCONEE)

Dear Mr. Glover:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 266 to Renewed Facility Operating License NPF-35 and Amendment No. 262 to Renewed Facility Operating License NPF-52 for Catawba 1 and 2, Amendment No. 264 to Renewed Facility Operating License NPF-9 and Amendment No. 244 to Renewed Facility Operating License NPF-17 for McGuire 1 and 2, and Amendment Nos. 378, 380, and 379 to Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55 for Oconee 1, 2, and 3, respectively. The amendments consist of changes to the facility operating licenses in response to your application dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011.

The amendments approve the Cyber Security Plan (CSP) and associated implementation schedule, and revise Paragraph 2.E of Renewed Facility Operating Licenses NPF-35 and NPF-52 for Catawba 1 and 2, Paragraph 2.D of Renewed Facility Operating Licenses NPF-9 and NPF-17 for McGuire 1 and 2, and Paragraph 3.E of Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55 for Oconee 1, 2, and 3, respectively, to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP. The proposed change is consistent with Nuclear Energy Institute (NEI) 08-09, Revision 6, "Cyber Security Plan for Nuclear Power Reactors."

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

M. Glover

- 2 -

If you have any questions, please call me at 301-415-1119.

Sincerely,

A handwritten signature in black ink that reads "Jon Thompson". The signature is written in a cursive, flowing style.

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413, 50-414, 50-369, 50-370,  
50-269, 50-270, and 50-287

Enclosures:

1. Amendment No. 266 to NPF-35
2. Amendment No. 262 to NPF-52
3. Amendment No. 264 to NPF-9
4. Amendment No. 244 to NPF-17
5. Amendment No. 378 to DPR-38
6. Amendment No. 380 to DPR-47
7. Amendment No. 379 to DPR-55
8. Safety Evaluation

cc w/encls: Distribution via Listserv



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

DUKE ENERGY CAROLINAS, LLC

NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 266  
Renewed License No. NPF-35

1. The 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 filed by the Duke Energy Carolinas, LLC, acting for itself, and North Carolina Electric Membership Corporation (licensees), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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. 266, 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. In addition, Paragraph 2.E of Renewed Facility Operating License No. NPF-35 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 266.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to License No. NPF-35  
and the Technical Specifications

Date of Issuance: August 31, 2011



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

DUKE ENERGY CAROLINAS, LLC

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 262  
Renewed License No. NPF-52

1. The 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 filed by the Duke Energy Carolinas, LLC, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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

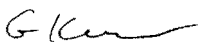
The Technical Specifications contained in Appendix A, as revised through Amendment No. 262, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC, shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 2.E of Renewed Facility Operating License No. NPF-52 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 262.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to License No. NPF-52  
and the Technical Specifications

Date of Issuance: August 31, 2011

ATTACHMENT TO  
LICENSE AMENDMENT NO. 266  
RENEWED FACILITY OPERATING LICENSE NO. NPF-35  
DOCKET NO. 50-413  
AND LICENSE AMENDMENT NO. 262  
RENEWED FACILITY OPERATING LICENSE NO. NPF-52  
DOCKET NO. 50-414

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove

Licenses  
NPF-35, page 4  
NPF-35, page 6  
NPF-52, page 4  
NPF-52, page 6

Insert

Licenses  
NPF-35, page 4  
NPF-35, page 6  
NPF-52, page 4  
NPF-52, page 6

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266 , 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 (Section 9.5.1, SER, SSER #2, SSER #3, SSER #4, SSER #5)\*

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report, as amended, for the facility and as approved in the SER through Supplement 5, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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\*The parenthetical notation following the title of this renewed operating license condition denotes the section of the Safety Evaluation Report and/or its supplement wherein this renewed license condition is discussed.



E. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan," Revision 8 submitted by letter dated May 17, 2007.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 266 .

F. Reporting to the Commission Deleted by Amendment No. 230

G. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

3. This renewed license is effective as of the date of issuance and shall expire at midnight on December 5, 2043.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By: J. E. Dyer

J. E. Dyer, Director  
Office of Nuclear Reactor Regulation

Attachments:

1. Appendix A – Technical Specifications
2. Appendix B – Additional Conditions
3. Appendix C – Antitrust Conditions

Date of Issuance: December 5, 2003

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 262, 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 February 24, 2026, 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 (Section 9.5.1, SER, SSER #2, SSER #3, SSER #4, SSER #5)\*

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Updated Final Safety Analysis Report, as amended, for the facility and as approved in the SER through Supplement 5, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

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\*The parenthetical notation following the title of this renewed operating license condition denotes the section of the Safety Evaluation Report and/or its supplements wherein this renewed license condition is discussed.

E. Physical Protection

Duke Power Company LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan," Revision 8 submitted by letter dated May 17, 2007.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 262 .

F. Reporting to the Commission Deleted by Amendment No. 226

G. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

3. This renewed license is effective as of the date of issuance and shall expire at midnight on December 5, 2043.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By: J. E. Dyer

J. E. Dyer, Director  
Office of Nuclear Reactor Regulation

Attachments:

1. Appendix A – Technical Specifications
2. Appendix B – Additional Conditions
3. Appendix C – Antitrust Conditions

Date of Issuance: December 5, 2003

Renewed License No. NPF-52  
Amendment No. 262



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. 264  
Renewed License No. NPF-9

1. The 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, filed by the Duke Energy Carolinas, LLC (licensee), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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. 264, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 2.D of Renewed Facility Operating License No. NPF-9 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 264.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to License No. NPF-9  
and the Technical Specifications

Date of Issuance: August 31, 2011



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. 244  
Renewed License No. NPF-17

1. The 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, filed by the Duke Energy Carolinas, LLC (the licensee), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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. 244, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 2.D of Renewed Facility Operating License No. NPF-17 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 244.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to License No. NPF-17  
and the Technical Specifications

Date of Issuance: August 31, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 264  
RENEWED FACILITY OPERATING LICENSE NO. NPF-9  
DOCKET NO. 50-369  
AND  
LICENSE AMENDMENT NO. 244  
RENEWED FACILITY OPERATING LICENSE NO. NPF-17  
DOCKET NO. 50-370

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

<u>Remove</u>	<u>Insert</u>
License Pages	License Pages
NPF-9, page 3	NPF-9, page 3
NPF-9, page 4A	NPF-9, page 4A
NPF-17, page 3	NPF-17, page 3
NPF-17, page 5	NPF-17, page 5



- (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 3411 megawatts thermal (100%).
  - (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 264, 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.

D. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 264.

E. Deleted by Amendment No. 233.

- (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 3411 megawatts thermal (100%).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 244, 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.

4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

C) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

D. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 244 .

E. Deleted by Amendment No. 215.

F. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

G. In accordance with the Commission's direction in its Statement of Policy, Licensing and Regulatory Policy and Procedures for Environmental Protection: Uranium Fuel Cycle Impacts, October 29, 1982, this renewed operating license is subject to the final resolution of the pending litigation involving Table S-3. See, Natural Resources Defense Council v. NRC, No. 74-1586 (D.C. cir. April 27, 1982).

H. The licensee is authorized to receive from the Oconee Nuclear Station, Units 1, 2, and 3, possess, and store irradiated Oconee fuel assemblies containing special nuclear material, enriched to not more than 3.24% by weight U-235 subject to the following conditions:

- a. Oconee fuel assemblies may not be placed in the McGuire Nuclear Station, Unit 1 and 2, reactors.
- b. Irradiated fuel shipped to McGuire Nuclear Station, Units 1 and 2, from Oconee shall have been removed from the Oconee reactor no less than 270 days prior to shipment.



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 378  
Renewed License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility), Renewed Facility Operating License No. DPR-38 filed by the Duke Energy Carolinas, LLC (the licensee), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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-38 is hereby amended to read as follows:

B. Technical Specifications

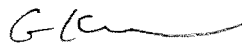
The Technical Specifications contained in Appendix A, as revised through Amendment No. 378, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 3.E of Renewed Facility Operating License No. DPR-38 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 378.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to Renewed Facility  
Operating License No. DPR-38  
and the Technical Specifications

Date of Issuance: August 31, 2011



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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 380  
Renewed License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Oconee Nuclear Station, Unit 2 (the facility), Renewed Facility Operating License No. DPR-47 filed by the Duke Energy Carolinas, LLC (the licensee), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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-47 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 380, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 3.E of Renewed Facility Operating License No. DPR-47 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 380.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to Renewed Facility  
Operating License No. DPR-47  
and the Technical Specifications

Date of Issuance: August 31, 2011





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

DUKE ENERGY CAROLINAS, LLC

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 379  
Renewed License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Oconee Nuclear Station, Unit 3 (the facility), Renewed Facility Operating License No. DPR-55 filed by the Duke Energy Carolinas, LLC (the licensee), dated August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 set forth in 10 CFR Chapter I;
  - 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 hereby amended by page 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-55 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 379, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. In addition, Paragraph 3.E of Renewed Facility Operating License No. DPR-55 is hereby amended with additional text to read as follows

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 379.

4. This license amendment is effective as of the date of its issuance. The implementation of the CSP, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee on August 16, 2010, as supplemented by letters dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, and approved by the NRC staff with this license amendment. All subsequent changes to the NRC-approved CSP implementation schedule will require prior NRC approval pursuant to 10 CFR 50.90.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to Renewed Facility  
Operating License No. DPR-55  
and the Technical Specifications

Date of Issuance: August 31, 2011

ATTACHMENT TO LICENSE AMENDMENT NO. 378  
RENEWED FACILITY OPERATING LICENSE NO. DPR-38  
DOCKET NO. 50-269  
AND  
TO LICENSE AMENDMENT NO. 380  
RENEWED FACILITY OPERATING LICENSE NO. DPR-47  
DOCKET NO. 50-270  
AND  
TO LICENSE AMENDMENT NO. 379  
RENEWED FACILITY OPERATING LICENSE NO. DPR-55  
DOCKET NO. 50-287

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

Remove Pages

Licenses

License No. DPR-38, page 3  
License No. DPR-38, page 10  
License No. DPR-47, page 3  
License No. DPR-47, page 10  
License No. DPR-55, page 3  
License No. DPR-55, page 10

Insert Pages

Licenses

License No. DPR-38, page 3  
License No. DPR-38, page 10  
License No. DPR-47, page 3  
License No. DPR-47, page 10  
License No. DPR-55, page 3  
License No. DPR-55, page 10

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 378, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. This license is subject to the following antitrust conditions:

Applicant makes the commitments contained herein, recognizing that bulk power supply arrangements between neighboring entities normally tend to serve the public interest. In addition, where there are net benefits to all participants, such arrangements also serve the best interests of each of the participants. Among the benefits of such transactions are increased electric system reliability, a reduction in the cost of electric power, and minimization of the environmental effects of the production and sale of electricity.

Any particular bulk power supply transaction may afford greater benefits to one participant than to another. The benefits realized by a small system may be proportionately greater than those realized by a larger system. The relative benefits to be derived by the parties from a proposed transaction, however, should not be controlling upon a decision with respect to the desirability of participating in the transaction. Accordingly, applicant will enter into proposed bulk power transactions of the types hereinafter described which, on balance, provide net benefits to applicant. There are net benefits in a transaction if applicant recovers the cost of the transaction (as defined in ¶1(d) hereof) and there is no demonstrable net detriment to applicant arising from that transaction.

1. As used herein:

- (a) "Bulk Power" means electric power and any attendant energy, supplied or made available at transmission or sub-transmission voltage by one electric system to another.
- (b) "Neighboring Entity" means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing owning or operating, or proposing to own or operate, facilities for the generation and transmission of electricity which meets each of

- 3) The licensee shall maintain appropriate compensatory measures in place until completion of all modifications and implementation items delineated above.

E. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 378.

- F. In the update to the UFSAR required pursuant to 10 CFR 50.71(e)(4) scheduled for July, 2001, the licensee shall update the UFSAR to include the UFSAR supplement submitted pursuant to 10 CFR 54.21(d) as revised on March 27, 2000. Until the UFSAR update is complete, the licensee may make changes to the programs described in its UFSAR supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.
- G. The licensee's UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 27, 2000, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than February 6, 2013.
- H. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
  1. Pre-defined coordinated fire response strategy and guidance
  2. Assessment of mutual aid fire fighting assets
  3. Designated staging areas for equipment and materials
  4. Command and control
  5. Training of response personnel

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 380, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. This license is subject to the following antitrust conditions:

Applicant makes the commitments contained herein, recognizing that bulk power supply arrangements between neighboring entities normally tend to serve the public interest. In addition, where there are net benefits to all participants, such arrangements also serve the best interests of each of the participants. Among the benefits of such transactions are increased electric system reliability, a reduction in the cost of electric power, and minimization of the environmental effects of the production and sale of electricity.

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1. As used herein:

- (a) "Bulk Power" means electric power and any attendant energy, supplied or made available at transmission or sub-transmission voltage by one electric system to another.
- (b) "Neighboring Entity" means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing owning or operating, or proposing to own or operate, facilities for the generation and transmission of electricity which meets each of

- 3) The licensee shall maintain appropriate compensatory measures in place until completion of all modifications and implementation items delineated above.

E. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

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- F. In the update to the UFSAR required pursuant to 10 CFR 50.71(e)(4) scheduled for July, 2001, the licensee shall update the UFSAR to include the UFSAR supplement submitted pursuant to 10 CFR 54.21(d) as revised on March 27, 2000. Until the UFSAR update is complete, the licensee may make changes to the programs described in its UFSAR supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.
- G. The licensee's UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 27, 2000, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than February 6, 2013.

H. Mitigation Strategy License Condition

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- (a) Fire fighting response strategy with the following elements:
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  2. Assessment of mutual aid fire fighting assets
  3. Designated staging areas for equipment and materials
  4. Command and control
  5. Training of response personnel

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 379, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

C. This license is subject to the following antitrust conditions:

Applicant makes the commitments contained herein, recognizing that bulk power supply arrangements between neighboring entities normally tend to serve the public interest. In addition, where there are net benefits to all participants, such arrangements also serve the best interests of each of the participants. Among the benefits of such transactions are increased electric system reliability, a reduction in the cost of electric power, and minimization of the environmental effects of the production and sale of electricity.

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1. As used herein:

- (a) "Bulk Power" means electric power and any attendant energy, supplied or made available at transmission or sub-transmission voltage by one electric system to another.
- (b) "Neighboring Entity" means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing owning or operating, or proposing to own or operate, facilities for the generation and transmission of electricity which meets each of



- 3) The licensee shall maintain appropriate compensatory measures in place until completion of all modifications and implementation items delineated above.

E. Physical Protection

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan" submitted by letter dated September 8, 2004, and supplemented on September 30, 2004, October 15, 2004, October 21, 2004, and October 27, 2004.

Duke Energy Carolinas, LLC shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 379.

- F. In the update to the UFSAR required pursuant to 10 CFR 50.71(e)(4) scheduled for July, 2001, the licensee shall update the UFSAR to include the UFSAR supplement submitted pursuant to 10 CFR 54.21(d) as revised on March 27, 2000. Until the UFSAR update is complete, the licensee may make changes to the programs described in its UFSAR supplement without prior Commission approval, provided that the licensee evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.
- G. The licensee's UFSAR supplement submitted pursuant to 10 CFR 54.21(d), as revised on March 27, 2000, describes certain future inspection activities to be completed before the period of extended operation. The licensee shall complete these activities no later than February 6, 2013.
- H. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

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  2. Assessment of mutual aid fire fighting assets
  3. Designated staging areas for equipment and materials
  4. Command and control
  5. Training of response personnel



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 266 TO RENEWED FACILITY OPERATING LICENSE NPF-35

AMENDMENT NO. 262 TO RENEWED FACILITY OPERATING LICENSE NPF-52

AMENDMENT NO. 264 TO RENEWED FACILITY OPERATING LICENSE NPF-9

AMENDMENT NO. 244 TO RENEWED FACILITY OPERATING LICENSE NPF-17

AMENDMENT NO. 378 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 380 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-47

AND

AMENDMENT NO. 379 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-55

DUKE ENERGY CAROLINAS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-369 AND 50-370

OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3

DOCKET NOS. 50-269, 50-270, AND 50-287

1.0 INTRODUCTION

By letter dated August 16, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102300168), as supplemented by letters dated September 27, 2010 (ADAMS Accession No. ML102730622), March 7, 2011 (ADAMS Accession No. ML110680303), April 15, 2011 (ADAMS Accession No. ML11109A074), and August 9, 2011, (ADAMS Accession No. ML11224A017), Duke Energy Carolinas, LLC (Duke Energy, the licensee), submitted a license amendment request (LAR) for changes to the facility operating licenses for the Catawba Nuclear Station, Units 1 and 2 (Catawba 1 and 2), McGuire Nuclear

Station, Units 1 and 2 (McGuire 1 and 2), and Oconee Nuclear Station, Units 1, 2, and 3 (Oconee 1, 2, and 3). Included in that LAR was a request for approval of the licensee's Cyber Security Plan (CSP) and implementation schedule for Catawba 1 and 2, McGuire 1 and 2, and Oconee 1, 2, and 3, as required by Title 10 of the *Code of Federal Regulations* (10 CFR), Part 73, Section 73.54, "Protection of digital computer and communication systems and networks."

The amendments would approve the CSP and associated implementation schedule, and revise Paragraph 2.E of Renewed Facility Operating Licenses NPF-35 and NPF-52 for Catawba 1 and 2, Paragraph 2.D of Renewed Facility Operating Licenses NPF-9 and NPF-17 for McGuire 1 and 2, and Paragraph 3.E of Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55 for Oconee 1, 2, and 3, respectively, to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP. The proposed change is generally consistent with Nuclear Energy Institute (NEI) 08-09, Revision 6, "Cyber Security Plan for Nuclear Power Reactors."

The U.S. Nuclear Regulatory Commission (NRC) staff provided the licensee with requests for additional information (RAIs) regarding the NRC staff's concerns with the CSP. The letter dated April 15, 2011, supplemented the LAR to address several items including: 1) the scope of systems identified in the NRC staff requirements memorandum (SRM) dated October 21, 2010 (Reference 1); 2) records retention; and 3) the implementation schedule for the CSP. In addition, Enclosure 4 of the letter dated April 15, 2011, provided a Revision 2 of the CSP which incorporated all of the changes and/or additional information added to the CSP up to that date. Portions of the letters dated August 16, 2010, March 7, 2011, and April 15, 2011, contain sensitive unclassified non-safeguards information (security-related) and, accordingly, are being withheld from public disclosure.

The supplements dated September 27, 2010, March 7, 2011, April 15, 2011, and August 9, 2011, 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 the *Federal Register* on July 7, 2011 (76 FR 39913).

## 2.0 REGULATORY EVALUATION

### 2.1 General Requirements

Consistent with 10 CFR 73.54(a), the licensee must provide high assurance that digital computer and communication systems, and networks are adequately protected against cyber attacks, up to and including the design basis threat (DBT), as described in 10 CFR 73.1. The licensee shall protect digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment which, if compromised, would adversely impact safety, security, or emergency preparedness (SSEP) functions. The rule specifies that digital computer and communication systems and networks associated with these functions must be protected from cyber attacks

that would adversely impact the integrity or confidentiality of data and software; deny access to systems, services, or data; or provide an adverse impact to the operations of systems, networks, and associated equipment.

In the SRM-COMWCO-10-0001, "Regulation of Cyber Security of Nuclear Power Plants," dated October 21, 2010 (Reference 1), the Commission stated that the NRC's cyber security rule at 10 CFR 73.54 should be interpreted to include structures, systems, and components (SSCs) in the balance of plant (BOP) that have a nexus to radiological health and safety. The NRC staff determined that SSCs in the BOP that have a nexus to radiological health and safety are those that could directly or indirectly affect reactivity of a nuclear power plant (NPP), and are therefore within the scope of important-to-safety functions described in 10 CFR 73.54(a)(1).

## 2.2 Elements of a CSP

As stated in 10 CFR 73.54(e), the licensee must establish, implement, and maintain a CSP that satisfies the Cyber Security Program requirements of this regulation. In addition, the CSP must describe how the licensee will implement the requirements of the regulation and must account for the site-specific conditions that affect implementation. One method of complying with this regulation is to describe within the CSP how the licensee will achieve high assurance that all SSEP functions are protected from cyber attacks.

## 2.3 Regulatory Guide 5.71 and NEI 08-09, Revision 6

NRC Regulatory Guide (RG) 5.71, "Cyber Security Programs for Nuclear Facilities" (Reference 2), describes a regulatory position that promotes a defensive strategy consisting of a defensive architecture and a set of security controls based on standards provided in the National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53, "Recommended Security Controls for Federal Information Systems and Organizations," and NIST SP 800-82, "Guide to Industrial Control Systems Security," dated September 29, 2008. NIST SP 800-53 and NIST SP 800-82 are based on well-understood cyber threats, risks, and vulnerabilities, coupled with equally well-understood countermeasures and protective techniques. RG 5.71 divides the above-noted security controls into three broad categories: technical, operational, and management.

RG 5.71 provides a framework to aid in the identification of those digital assets that licensees must protect from cyber attacks. These identified digital assets are referred to as "critical digital assets" (CDAs). Licensees should address the potential cyber security risks to CDAs by applying the defensive architecture and addressing the collection of security controls identified in RG 5.71. RG 5.71 includes a CSP template that provides one method for preparing an acceptable CSP.

The organization of RG 5.71 reflects the steps necessary to meet the requirements of 10 CFR 73.54. Section C.3 of RG 5.71 describes an acceptable method for implementing the security controls, as detailed in Appendix B, "Technical Controls," and Appendix C, "Operational and Management Controls." Section C.4 of RG 5.71 discusses the need to maintain the established cyber security program, including comprehensive monitoring of the CDAs and the effectiveness of their security protection measures, ensuring that changes to the CDAs or the environment are controlled, coordinated, and periodically reviewed for continued protection from cyber attacks.

Section C.5 of RG 5.71 provides licensees and applicants with guidance for retaining records associated with their cyber security programs. Appendix A to RG 5.71 provides a template for a generic cyber security plan which licensees may use to comply with the licensing requirements of 10 CFR 73.54. Appendices B and C provide an acceptable set of security controls, which are based on well-understood threats, vulnerabilities, and attacks, coupled with equally well-understood and vetted countermeasures and protective techniques.

NEI 08-09, Revision 6, closely maps with RG 5.71; Appendix A of NEI 08-09, Revision 6, contains a cyber security plan template that is comparable to Appendix A of RG 5.71. Appendix D of NEI 08-09, Revision 6, contains technical cyber security controls that are comparable to Appendix B of RG 5.71. Appendix E of NEI 08-09, Revision 6, contains operational and management cyber security controls that are comparable to Appendix C of RG 5.71.

In its letter to NEI dated May 5, 2010 (Reference 3), the NRC stated that the licensees may use the template in NEI 08-09, Revision 6 (Reference 4), to prepare an acceptable CSP, with the exception of the definition of "cyber attack." The NRC staff subsequently reviewed and approved by letter dated June 7, 2010 (Reference 5), a definition for "cyber attack" to be used in submissions based on NEI 08-09, Revision 6. The licensee submitted a CSP for Catawba 1 and 2, McGuire 1 and 2, and Oconee 1, 2, and 3 that was based on the template provided in NEI 08-09, Revision 6, and included a definition of cyber attack in the LAR cover letter dated August 16, 2010, that was acceptable to the NRC staff. Additionally, the licensee submitted a supplement to its CSP on April 15, 2011, to include information on SSCs in the BOP that, if compromised, could affect NPP reactivity.

RG 5.71 and NEI 08-09, Revision 6, are comparable documents; both are based on essentially the same general approach and same set of technical, operational, and management security controls. The CSP submitted by the licensee was reviewed against the corresponding sections in RG 5.71.

### 3.0 TECHNICAL EVALUATION

The NRC staff performed a technical evaluation of the licensee's submittal. The licensee's submittal, with the exception of deviations described in Section 4.0 of this safety evaluation, generally conformed to the guidance in NEI 08-09, Revision 6, which was found to be acceptable by the NRC staff and comparable to RG 5.71 to satisfy the requirements contained in 10 CFR 73.54. The NRC staff reviewed the licensee's submittal against the requirements of 10 CFR 73.54 following the guidance contained in RG 5.71. The NRC staff's evaluation of each section of the licensee's submittal is discussed below.

#### 3.1 Scope and Purpose

The CSP submitted by the licensee establishes a means to achieve high assurance that digital computer and communication systems and networks associated with the following functions are adequately protected against cyber attacks up to and including the DBT:

1. Safety-related and important-to-safety functions;

2. Security functions;
3. Emergency preparedness functions, including offsite communications; and
4. Support systems and equipment which, if compromised, would adversely impact SSEP functions.

The CSP submitted by the licensee describes achievement of high assurance of adequate protection of systems associated with the above functions from cyber attacks by:

- Implementing and documenting the “baseline” security controls as described in Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3 described in RG 5.71; and
- Implementing and documenting a Cyber Security Program to maintain the established cyber security controls through a comprehensive life cycle approach as described in Section 4 of NEI 08-09, Revision 6, which is comparable to Appendix A, Section A.2.1 of RG 5.71.

Thus, the licensee’s CSP, as originally submitted, is comparable to the CSP in NEI 08-09, Revision 6. However, in its submittal dated April 15, 2011, the licensee clarified its original submission and indicated that the scope of systems includes those BOP SSCs that have an impact on NPP reactivity if compromised. This is in response to, and consistent with, SRM-COMWCO-10-0001, in which the Commission stated that the NRC’s cyber security rule at 10 CFR 73.54 should be interpreted to include SSCs in the BOP that have a nexus to radiological health and safety. The NRC staff determined that those systems that have a nexus to radiological health and safety are those that could directly or indirectly affect reactivity of a NPP, and are therefore within the scope of important-to-safety functions described in 10 CFR 73.54(a)(1).

The NRC staff reviewed the CSP and the supplemental information submitted by the licensee and found no deviation from Regulatory Position C.3.3 in RG 5.71 and Appendix A, Section A.2.1 of RG 5.71. The NRC staff finds that the licensee established adequate measures to implement and document the Cyber Security Program, including baseline security controls.

Based on the above, the NRC staff finds that the CSP adequately establishes the Cyber Security Program, including baseline security controls.

### 3.2 Analyzing Digital Computer Systems and Networks and Applying Cyber Security Controls

The licensee’s CSP describes that the Cyber Security Program is established, implemented, and maintained as described in Section 3.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1 described in RG 5.71 to:

- Analyze digital computer and communications systems and networks; and

- Identify those assets that must be protected against cyber attacks to satisfy 10 CFR 73.54(a).

The CSP submitted by the licensee describes how the cyber security controls in Appendices D and E of NEI 08-09, Revision 6, which are comparable to Appendices B and C in RG 5.71, are addressed to protect CDAs from cyber attacks.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately addresses security controls.

### 3.3 Cyber Security Assessment and Authorization

The licensee provided information addressing the creation of a formal, documented, cyber security assessment and authorization policy. This included a description concerning the creation of a formal, documented procedure comparable to Section 3.1.1 of NEI 08-09, Revision 6.

The NRC staff finds that the licensee established adequate measures to define and address the purpose, scope, roles, responsibilities, management commitment, and coordination, and facilitates the implementation of the cyber security assessment and authorization policy.

The NRC staff reviewed the above information and found no deviation from Section 3.1.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.1 and Appendix A, Section A.3.1.1 of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately established controls to develop, disseminate, and periodically update the cyber security assessment and authorization policy and implementing procedure.

### 3.4 Cyber Security Assessment Team

The Cyber Security Assessment Team (CSAT) responsibilities include conducting the cyber security assessment, documenting key findings during the assessment, and evaluating assumptions and conclusions about cyber security threats. The CSP submitted by the licensee outlines the requirements, roles and responsibilities of the CSAT comparable to Section 3.1.2 of NEI 08-09, Revision 6. It also describes that the CSAT has the authority to conduct an independent assessment.

The CSP submitted by the licensee describes that the CSAT will consist of individuals with knowledge about information and digital systems technology; NPP operations, engineering, and plant technical specifications; and physical security and emergency preparedness systems and programs. The CSAT description in the CSP is comparable to Regulatory Position C.3.1.2 in RG 5.71.

The CSP submitted by the licensee lists the roles and responsibilities for the CSAT which included performing and overseeing the cyber security assessment process; documenting key observations; evaluating information about cyber security threats and vulnerabilities; confirming information obtained during tabletop reviews, walk-downs, or electronic validation of CDAs; and identifying potential new cyber security controls.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1.2 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately establishes the requirements, roles and responsibilities of the CSAT.

### 3.5 Identification of CDAs

The CSP submitted by the licensee describes that the licensee will identify and document CDAs and critical systems (CSs), including a general description, the overall function, the overall consequences if a compromise were to occur, and the security functional requirements or specifications as described in Section 3.1.3 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.3 of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes the process to identify CDAs.

### 3.6 Examination of Cyber Security Practices

The CSP submitted by the licensee describes how the CSAT will examine and document the existing cyber security policies, procedures, and practices; existing cyber security controls; detailed descriptions of network and communication architectures (or network/communication architecture drawings); information on security devices; and any other information that may be helpful during the cyber security assessment process as described in Section 3.1.4 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.2 of RG 5.71. The examinations will include an analysis of the effectiveness of the existing Cyber Security Program and cyber security controls. The CSAT will document the collected cyber security information and the results of their examination of the collected information.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.1.2 in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes the examination of cyber security practices.

### 3.7 Tabletop Reviews and Validation Testing

The CSP submitted by the licensee describes tabletop reviews and validation testing, which confirm the direct and indirect connectivity of each CDA and identify direct and indirect pathways to CDAs. The CSP states that validation testing will be performed electronically or by



physical walkdowns. The licensee's plan for tabletop reviews and validation testing is comparable to Section 3.1.5 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.4 of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes tabletop reviews and validation testing.

### 3.8 Mitigation of Vulnerabilities and Application of Cyber Security Controls

The CSP submitted by the licensee describes the use of information collected during the cyber security assessment process (e.g., disposition of cyber security controls, defensive models, defensive strategy measures, site and corporate network architectures) to implement security controls in accordance with Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3 and Appendix A.3.1.6 to RG 5.71. The CSP describes the process that will be applied in cases where security controls cannot be implemented.

The CSP submitted by the licensee notes that before the licensee can implement security controls on a CDA, it will assess the potential for adverse impact in accordance with Section 3.1.6 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3 of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes mitigation of vulnerabilities and application of security controls.

### 3.9 Incorporating the Cyber Security Program into the Physical Protection Program

The CSP submitted by the licensee states that the Cyber Security Program will be reviewed as a component of the Physical Security Program in accordance with the requirements of 10 CFR 73.55(m). This is comparable to Section 4.1 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.4 of RG 5.71.

This section of the CSP submitted by the licensee is comparable to Appendix A, Section A.3.2, in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes review of the CSP as a component of the physical security program.

### 3.10 Cyber Security Controls

The CSP submitted by the licensee describes how the technical, operational and management cyber security controls contained in Appendices D and E of NEI 08-09, Revision 6, that are comparable to Appendices B and C in RG 5.71, are evaluated and dispositioned based on site-specific conditions during all phases of the Cyber Security Program. The CSP describes that many security controls have actions that are required to be performed on specific frequencies and that the frequency of a security control is satisfied if the action is performed within 1.25 times the frequency specified in the control, as applied, and as measured from the previous performance of the action as described in Section 4.2 of NEI 08-09, Revision 6.

This section of the CSP submitted by the licensee is comparable to Appendix A, Section A.3.1.6, in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes implementation of cyber security controls.

### 3.11 Defense-in-Depth Protective Strategies

The CSP submitted by the licensee describes the implementation of defensive strategies that ensure the capability to detect, respond to, and recover from a cyber attack. The CSP specifies that the defensive strategies consist of security controls, defense-in-depth measures, and the defensive architecture. The CSP submitted by the licensee notes that the defensive architecture establishes the logical and physical boundaries to control the data transfer between these boundaries.

The licensee established defense-in-depth strategies by: implementing and documenting a defensive architecture as described in Section 4.3 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.2 in RG 5.71; a physical security program, including physical barriers; the operational and management controls described in Appendix E of NEI 08-09, Revision 6, which is comparable to Appendix C to RG 5.71; and the technical controls described in Appendix D, of NEI 08-09, Revision 6, which is comparable to Appendix B to RG 5.71.

The CSP submitted by the licensee described that when referring to protections which isolate or secure safety-related CDAs and security CDAs within cyber security defensive Level 4, that these devices may be secured by "air gap" or are located in Layer 4. The licensee provided supplemental information by letter dated March 7, 2011 (ADAMS Package No. ML110680296), clarifying that safety-related and security-related CDAs secured via "air gap" is equivalent to locating these CDAs in Layer 4. The NRC staff finds that the defensive model described in the licensee's CSP will provide effective protection to CDAs from cyber attacks as air gaps will entail disconnection of CDAs from external networks, if the licensee chooses not to contain the safety and security CDAs in Level 4. As per RG 5.71, Regulatory Position C.3.2.1, digital isolation of CDAs (i.e., no communication pathways between a CDA and any other digital asset) is the most secure way to meet many of the requirements specified in 10 CFR 73.54. Therefore, the NRC staff concludes that this clarification is acceptable.

The licensee clarified its defensive architecture by stating that the boundary device between Layer 3 and 4 is a deterministic, uni-directional boundary device (e.g., data-diode). The NRC staff requested the licensee to clarify the direction of information flow between layers 3 and 4; the licensee clarified by letter dated March 7, 2011, that traffic flows from Layer 4 to Layer 3. The NRC staff concludes that this clarification is acceptable per RG 5.71, Regulatory Position C.3.2.1, which states, "Only one-way data flow is allowed from Level 4 to 3." The licensee submitted an updated CSP to reflect these clarifications on April 15, 2011 (ADAMS Package No. ML111090627).

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.2 and Appendix A, Section A.3.1.5. in RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes implementation of defense-in-depth protective strategies.

### 3.12 Ongoing Monitoring and Assessment

The CSP submitted by the licensee describes how ongoing monitoring of cyber security controls to support CDAs is implemented comparable to Appendix E of NEI 08-09, Revision 6, which is comparable to Regulatory Positions C.4.1 and C.4.2 of RG 5.71. The ongoing monitoring program includes configuration management and change control; cyber security impact analysis of changes and changed environments; ongoing assessments of cyber security controls; effectiveness analysis (to monitor and confirm that the cyber security controls are implemented correctly, operating as intended, and achieving the desired outcome) and vulnerability scans to identify new vulnerabilities that could affect the security posture of CDAs.

This section of the CSP submitted by the licensee is comparable to Regulatory Positions C.4.1 and C.4.2 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes ongoing monitoring and assessment.

### 3.13 Modification of Digital Assets

The CSP submitted by the licensee describes how cyber security controls are established, implemented, and maintained to protect CDAs. These security controls ensure that modifications to CDAs are evaluated before implementation that the cyber security performance objectives are maintained, and that acquired CDAs have cyber security requirements in place to achieve the site's Cyber Security Program objectives. This is comparable to Section 4.5 of NEI 08-09, Revision 6, which is comparable to Appendix A, Sections A.4.2.5 and A.4.2.6 of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes modification of digital assets.

### 3.14 Attack Mitigation and Incident Response

The CSP submitted by the licensee describes the process to ensure that SSEP functions are not adversely impacted due to cyber attacks in accordance with Section 4.6 of NEI 08-09, Revision 6, which is comparable to Appendix C, Section C.8, of RG 5.71. The CSP includes a discussion about creating incident response policy and procedures, and addresses training, testing and drills, incident handling, incident monitoring, and incident response assistance. It also describes identification, detection, response, containment, eradication, and recovery activities comparable to Section 4.6 of NEI 08-09, Revision 6.

This section of the CSP submitted by the licensee is comparable to Appendix C, Section C.8, of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes attack mitigation and incident response.

### 3.15 Cyber Security Contingency Plan

The CSP submitted by the licensee describes creation of a Cyber Security Contingency Plan and policy that protects CDAs from the adverse impacts of a cyber attack described in Section 4.7 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.7 and Appendix C.9 of RG 5.71. The licensee describes the Cyber Security Contingency Plan that would include the response to events. The plan includes procedures for operating CDAs in a contingency, roles and responsibilities of responders, processes and procedures for backup and storage of information, logical diagrams of network connectivity, current configuration information, and personnel lists for authorized access to CDAs.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.3.2.7 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes the cyber security contingency plan.

### 3.16 Cyber Security Training and Awareness

The CSP submitted by the licensee describes a program that establishes the training requirements necessary for the licensee's personnel and contractors to perform their assigned duties and responsibilities in implementing the Cyber Security Program in accordance with Section 4.8 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.8 of RG 5.71.

The CSP states that individuals will be trained with a level of cyber security knowledge commensurate with their assigned responsibilities in order to provide high assurance that individuals are able to perform their job functions in accordance with Appendix E of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.3.2.8 of RG 5.71 and describes three levels of training: awareness training, technical training, and specialized cyber security training.

Based on the above, the NRC staff concludes that the CSP adequately describes the cyber security training and awareness program.

### 3.17 Evaluate and Manage Cyber Risk

The CSP submitted by the licensee describes how cyber risk is evaluated and managed utilizing site programs and procedures comparable to Section 4.9 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.4 and Appendix C, Section C.13, of RG 5.71. The CSP describes the Threat and Vulnerability Management Program, Risk Mitigation, Operational Experience Program; and the Corrective Action Program and how each will be used to evaluate and manage risk.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.4 and Appendix C, Section C.13 of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes evaluation and management of cyber risk.

### 3.18 Policies and Implementing Procedures

The CSP describes development and implementation of policies and procedures to meet security control objectives in accordance with Section 4.10 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.5 and Appendix A, Section A.3.3, of RG 5.71. This includes the process to document, review, approve, issue, use, and revise policies and procedures.

The CSP also describes the licensee's procedures to establish specific responsibilities for positions described in Section 4.11 of NEI 08-09, Revision 6, which is comparable to Appendix C, Section C.10.10, of RG 5.71.

This section of the CSP submitted by the licensee is comparable to Regulatory Position C.3.5, Appendix A, Section A.3.3, and Appendix C, Section C.10.10, of RG 5.71 without deviation.

Based on the above, the NRC staff concludes that the CSP adequately describes cyber security policies and implementing procedures.

### 3.19 Roles and Responsibilities

The CSP submitted by the licensee describes the roles and responsibilities for the qualified and experienced personnel, including the Cyber Security Program Sponsor, the Cyber Security Program Manager, Cyber Security Specialists, the Cyber Security Incident Response Team (CSIRT), and other positions as needed. The CSIRT initiates in accordance with the Incident Response Plan and initiates emergency action when required to safeguard CDAs from cyber security compromise and to assist with the eventual recovery of compromised systems. Implementing procedures establish roles and responsibilities for each of the cyber security roles in accordance with Section 4.11 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.3.1.2, Appendix A, Section A.3.1.2, and Appendix C, Section C.10.10, of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes cyber security roles and responsibilities.

### 3.20 Cyber Security Program Review

The CSP submitted by the licensee describes how the Cyber Security Program establishes the necessary procedures to implement reviews of applicable program elements in accordance with Section 4.12 of NEI 08-09, Revision 6, which is comparable to Regulatory Position C.4.3 and Appendix A, Section A.4.3, of RG 5.71.

Based on the above, the NRC staff concludes that the CSP adequately describes Cyber Security Program review.

### 3.21 Document Control and Records Retention and Handling

The CSP submitted by the licensee describes that the licensee has established the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting cyber security are developed, reviewed, approved, issued, used, and revised to reflect completed work. The CSP described that superseded portions of certain records will be retained for at least 3 years after the record is superseded, while audit records will be retained for no less than 12 months in accordance with Section 4.13 of NEI 08-09, Revision 6. However, this guidance provided by industry to licensees did not fully comply with the requirements of 10 CFR 73.54.

In a letter dated February 28, 2011 (Reference 6), NEI sent to the NRC proposed language for licensees' use to respond to the generic records retention issue, to which the NRC staff had no technical objection (Reference 7). The proposed language clarified the requirement by providing examples (without providing an all-inclusive list) of the records and supporting technical documentation that are needed to satisfy the requirements of 10 CFR 73.54. All records will be retained until the Commission terminates the license, and the licensee shall maintain superseded portions of these records for at least 3 years after the record is superseded, unless otherwise specified by the Commission. By retaining accurate and complete records and technical documentation until the license is terminated, inspectors, auditors, or assessors will have the ability to evaluate incidents, events, and other activities that are related to any of the cyber security elements described, referenced, and contained within the licensee's NRC-approved CSP. It will also allow the licensee to maintain the ability to detect and respond to cyber attacks in a timely manner, in the case of an event. In a letter dated April 15, 2011, the licensee responded to the records retention issue using the language proposed by NEI in its letter dated February 28, 2011.

Based on the above, the NRC staff concludes that the language that the licensee proposes to adopt provides for adequate records retention and will support the licensee's ability to detect and respond to cyber attacks. The NRC staff further concludes that this section is comparable to Regulatory Position C.5 and Appendix A, Section A.5, of RG 5.71 without deviation. Accordingly, the NRC staff concludes that the licensee's CSP adequately describes cyber security document control and records retention and handling.

### 3.22 Implementation Schedule

The CSP submitted by the licensee provides a proposed implementation schedule for the Cyber Security Program. In a letter dated February 28, 2011 (Reference 8), NEI sent to the NRC a template for licensees to use to submit their CSP implementation schedules. By letter dated March 1, 2011, the NRC that responded and indicated that the NRC staff had no technical objection to the proposed template (Reference 9). These key milestones include:

- Establish the CSAT;
- Identify CSs and CDAs;
- Install a deterministic one-way device between lower level devices and higher level devices;

- Implement the security control "Access Control For Portable and Mobile Devices";
- Implement observation and identification of obvious cyber-related tampering to existing insider mitigation rounds by incorporating the appropriate elements;
- Identify, document, and implement cyber security controls as per "Mitigation of Vulnerabilities and Application of Cyber Security Controls" for CDAs that could adversely impact the design function of physical security target set equipment; and
- Commence ongoing monitoring and assessment activities for those target set CDAs whose security controls have been implemented.

In a letter dated April 15, 2011, the licensee provided a revised implementation schedule using the NEI template, with the exception of milestone 6. The licensee deviated from the template for revised milestone 6 to address only the provisions of NEI 08-09, Revision 6, Appendix D technical controls, excluding the operational and management controls, on the basis that implementing the technical controls for target set CDAs provides a high degree of protection against cyber-related attacks that could lead to radiological sabotage. Furthermore, the licensee explained that existing licensee's programs that are currently in place (e.g., physical protection, maintenance and work management, configuration management, operational experience, etc.) provide a high degree of operational and management protection during the interim period until such time that the full cyber security program is implemented.

The NRC staff considers that this letter dated April 15, 2011, supplements the approved schedule as required by 10 CFR 73.54. Based on the provided schedule ensuring timely implementation of those protective measures that provide a higher degree of protection against radiological sabotage, the NRC staff concludes that the Cyber Security Program implementation schedule is satisfactory.

### 3.23 Revisions to License Condition Regarding Physical Protection

By letter dated August 9, 2011, the licensee proposed to add a paragraph to revise the license conditions regarding "Physical Protection" found in the renewed facility operating licenses for Catawba 1 and 2, McGuire 1 and 2, and Oconee 1, 2, and 3. These revisions are being made to provide a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP.

The following paragraph is added to Paragraph 2.E of Renewed Facility Operating License No. NPF-35 for Catawba 1:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 266.

The following paragraph is added to Paragraph 2.E of Renewed Facility Operating License No. NPF-52 for Catawba 2:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 262.

The following paragraph is added to Paragraph 2.D of Renewed Facility Operating License No. NPF-9 for McGuire 1:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 264.

The following paragraph is added to Paragraph 2.D of Renewed Facility Operating License No. NPF-17 for McGuire 2:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 244.

The following paragraph is added to Paragraph 3.E of Renewed Facility Operating License No. DPR-38 for Oconee 1:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 378.

The following paragraph is added to Paragraph 3.E of Renewed Facility Operating License No. DPR-47 for Oconee 2:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 380.

The following paragraph is added to Paragraph 3.E of Renewed Facility Operating License No. DPR-55 for Oconee 3:

Duke Energy Carolinas, LLC, shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Duke Energy Carolinas, LLC, CSP was approved by License Amendment No. 379.



Based on the information in Section 3.0 of this safety evaluation and the modified license condition for each of the renewed facility operating licenses described above, the NRC staff concludes this is acceptable.

#### 4.0 DIFFERENCES FROM NEI 08-09, REVISION 6

In addition to the deviations described in the LAR, the NRC staff notes the following additional differences between the licensee's submittal and NEI 08-09, Revision 6:

- In Section 3.1, "Scope and Purpose," the licensee clarified the definition of important-to-safety functions, consistent with SRM-COMWCO-10-0001.
- In Section 3.21, "Document Control and Records Retention and Handling," the licensee clarified the definition of records and supporting documentation that will be retained to conform to the requirements of 10 CFR 73.54.
- In Section 3.22, "Implementation Schedule," the licensee submitted a revised implementation schedule, specifying the interim milestones and the final implementation date, including supporting rationale. The licensee deviated from the template for Milestone 6 to address only the NEI 08-09, Revision 6, Appendix D, technical controls.

The NRC staff finds all of these deviations to be acceptable as discussed in the respective sections.

#### 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina and North Carolina State officials were notified of the proposed issuance of the amendments. The State officials from South Carolina and North Carolina had no comments.

#### 6.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92(c) state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The following analysis was provided by the licensee in its letter dated August 16, 2010.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Inclusion of the Cyber Security Plan in the Facility Operating License itself does not involve any modifications to safety-related structures, systems or components. Rather, the Cyber Security Plan describes how the requirements of 10 CFR 73.54 are to be implemented to identify, evaluate, and mitigate cyber attacks up to and including the design basis cyber attack threat, thereby achieving high assurance that the facility's digital computer and communications systems and networks are protected from cyber attacks. The Cyber Security Plan will not alter previously evaluated Updated Final Safety Analysis Report design basis accident analysis assumptions, add any accident initiators or affect the function of the plant safety-related structures, systems or components as to how they are operated, maintained, modified, tested or inspected. Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

This proposed amendment provides assurance that safety-related structures, systems or components are protected from cyber attacks. Implementation of 10 CFR 73.54 and the inclusion of a plan in the Facility Operating License do not result in the need of any new or different Updated Final Safety Analysis Report design basis accident analysis. It does not introduce new equipment that could create a new or different kind of accident, and no new equipment failure modes are created. As a result, no new accident scenarios, failure mechanisms, or limiting single failures are introduced by this proposed amendment. Therefore, the proposed amendment does not create a possibility for an accident of a new or different type than those previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The margin of safety is associated with the confidence in the ability of the fission product barriers (i.e., fuel cladding, reactor coolant pressure boundary, and containment structure) to limit the level of radiation to the public. The proposed amendment would not alter the way any safety-related structures, systems or components functions and would not alter the way the plant is operated. The amendment provides assurance that safety-related structures, systems or components are protected from cyber attacks. The proposed amendment would not introduce any new uncertainties or change any existing uncertainties associated with any safety limit. The proposed amendment would have no impact on the structural integrity of the fuel cladding, reactor coolant pressure boundary, or containment structure. Based on the above considerations, the proposed amendment

would not degrade the confidence in the ability of the fission product barriers to limit the level of radiation to the public. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff agrees with the licensee's analysis and, based on this review, has concluded that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff makes a final determination that the amendment does not involve a significant hazards consideration.

## 7.0 ENVIRONMENTAL CONSIDERATION

The amendments, by incorporation of the NRC-approved CSP and the NRC-approved CSP implementation schedule in the licensee's bases, involve (1) changes in a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, (2) changes in record keeping, reporting, or administrative procedures or requirements, and (3) changes solely related to safeguards matters (protection against sabotage) involving (a) Organizational and Procedural matters, (b) Modifications to systems used for security, and (c) Administrative Changes. 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 July 7, 2011 (76 FR 39913). Accordingly, the amendments meet the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9), (10), and (12). 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.

## 8.0 CONCLUSION

The NRC staff's review and evaluation of the licensee's CSP was conducted using the NRC staff positions established in the relevant sections of RG 5.71. Based on the NRC staff's review, the NRC finds that the licensee addressed the relevant information necessary to satisfy the requirements of 10 CFR 73.54, 10 CFR 73.55(a)(1), 10 CFR 73.55(b)(8), and 10 CFR 73.55(m), as applicable and that the licensee's Cyber Security Program provides high assurance that digital computer and communication systems and networks associated with the following are adequately protected against cyber attacks, up to and including the design-basis threat as described in 10 CFR 73.1. This includes protecting digital computer and communication systems and networks associated with: (i) safety-related and important-to-safety functions; (ii) security functions; (iii) emergency preparedness functions, including offsite communications; and (iv) support systems and equipment which, if compromised, would adversely impact SSEP functions.

Therefore, the NRC staff finds the information contained in this CSP to be acceptable and upon successful implementation of this program, operation of the Catawba 1 and 2; the McGuire 1 and 2; and the Oconee 1, 2, and 3 will not be inimical to the common defense and security. 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) 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.

## 9.0 REFERENCES

1. Vietti-Cook, A. L., Memorandum to R. W. Borchardt, NRC, "Staff Requirements – COMWCO-10-0001 – Regulation of Cyber Security at Nuclear Power Plants," dated October 21, 2010 (ADAMS Accession No. ML102940009).
2. RG 5.71, "Cyber Security Programs for Nuclear Facilities," NRC, Washington, DC, January 2010 (ADAMS Accession No. ML090340159).
3. Letter from Richard P. Correia, NRC, to Jack Roe, NEI, "Nuclear Energy Institute 08-09, 'Cyber Security Plan Template, Revision 6,'" May 5, 2010 (ADAMS Accession No. ML101190371).
4. Letter from Jack W. Roe, NEI, to Scott A. Morris, NRC, "NEI 08-09, Revision 6, 'Cyber Security Plan for Nuclear Power Reactors, April 2010,'" April 28, 2010 (ADAMS Accession No. ML101180434).
5. Letter from Richard P. Correia, NRC, to Christopher E. Earls, NEI, "Nuclear Energy Institute 08-09, 'Cyber Security Plan Template, Rev. 6,'" June 7, 2010 (ADAMS Accession No. ML101550052).
6. Letter from Christopher E. Earls, NEI, to Richard P. Correia, NRC, "Clarification to NEI 08-09, Revision 6 Regarding Records Retention," February 28, 2011, (ADAMS Package No. ML110600203).
7. Letter from Richard P. Correia, NRC, to Christopher E. Earls, NEI, "Cyber Security Plan Generic Request for Additional Information on Records Retention," March 1, 2011 (ADAMS Accession No. ML110490337).
8. Letter from Christopher E. Earls, NEI, to Richard P. Correia, NRC, "Template for the Cyber Security Plan Implementation Schedule," February 28, 2011 (ADAMS Package No. ML110600206).
9. Letter from Richard P. Correia, NRC, to Christopher E. Earls, NEI, "Template for the Cyber Security Plan Implementation Schedule," March 1, 2011 (ADAMS Accession No. ML110070348).

Principal Contributor: M. Coflin, NSIR

Date: August 31, 2011

M. Glover

- 2 -

If you have any questions, please call me at 301-415-1119.

Sincerely,

**/RA/**

Jon Thompson, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413, 50-414, 50-369, 50-370,  
50-269, 50-270, and 50-287

**Enclosures:**

1. Amendment No. 266 to NPF-35
2. Amendment No. 262 to NPF-52
3. Amendment No. 264 to NPF-9
4. Amendment No. 244 to NPF-17
5. Amendment No. 378 to DPR-38
6. Amendment No. 380 to DPR-47
7. Amendment No. 379 to DPR-55
8. Safety Evaluation

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\*no significant change from input provided in memo dated 6/23/2011

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