



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

May 28, 2010

Mr. J. R. Morris
Site Vice President
Catawba Nuclear Station
Duke Energy Carolinas, LLC
4800 Concord Road
York, SC 29745

Mr. Regis T. Repko
Vice President
McGuire Nuclear Station
Duke Energy Carolinas, LLC
12700 Hagers Ferry Road
Huntersville, NC 28078

Mr. Dave Baxter
Vice President, Oconee Site
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2, MCGUIRE NUCLEAR STATION, UNITS 1 AND 2, AND OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, ISSUANCE OF AMENDMENTS REGARDING ADOPTING TECHNICAL SPECIFICATIONS TASK FORCE (TSTF)-248 (TAC NOS. ME1563, ME1564, ME1565, ME1566, ME1567, ME1568, AND ME1569)

Dear Messrs. Morris, Repko, and Baxter:

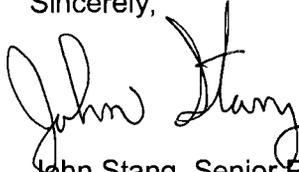
The Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 254 to Renewed Facility Operating License NPF-35 and Amendment No. 249 to Renewed Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2, Amendment No. 255 to Renewed Facility Operating License NPF-9 and Amendment No. 235 to Renewed Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2, and Amendment Nos. 367, 369, and 368 to Renewed Facility Operating Licenses DPR-38, DPR-47, and DPR-55, for the Oconee Nuclear Station, Units 1, 2, and 3, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated May 18, 2009.

These amendments revise the TSs to adopt Technical Specification Task Form (TSTF)-248, "Revise Shutdown Margin Definition For Stuck Rod Exception." The TSTF revises the definition of shutdown margin (SDM) in the TSs with all control rods verified fully inserted by two independent means. It is not necessary to account for a stuck control rod in the SDM calculation. By letter dated October 31, 2000, the NRC issued the approval of TSTF-248

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.

If you have any questions, please call me at 301-415-1345.

Sincerely,

A handwritten signature in black ink, appearing to read "John Stang". The signature is fluid and cursive, with the first name "John" being larger and more prominent than the last name "Stang".

John Stang, Senior 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. 254 to NPF-35
2. Amendment No. 249 to NPF-52
3. Amendment No. 255 to NPF-9
4. Amendment No. 235 to NPF-17
5. Amendment No. 367 to DPR-38
6. Amendment No. 369 to DPR-47
7. Amendment No. 368 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. 254
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 May 18, 2009, 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.

Enclosure 1

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. 254, which are attached hereto, are hereby incorporated into this license. Duke Energy Carolinas, LLC, shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'G. Kulesa', with a horizontal line extending to the right and a small flourish at the end.

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: May 28, 2010



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. 249
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 May 18, 2009, 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.

Enclosure 2

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. 249, which are attached hereto, are hereby incorporated into this license. Duke Energy Carolinas, LLC, shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'G. Kulesa', with a horizontal line extending to the right and the word 'for' written below it.

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: May 28, 2010

ATTACHMENT TO
LICENSE AMENDMENT NO. 254
RENEWED FACILITY OPERATING LICENSE NO. NPF-35
DOCKET NO. 50-413
AND LICENSE AMENDMENT NO. 249
RENEWED FACILITY OPERATING LICENSE NO. NPF-52
DOCKET NO. 50-414

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

Remove

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

TSs

1.1-5

Insert

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

TSs

1.1-5

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No 254, 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.

*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.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 249, 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.

*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.

1.1 Definitions (continued)

RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3411 MWt.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming: <ul style="list-style-type: none">a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; andb. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing each slave relay and verifying the OPERABILITY of each slave relay. The SLAVE RELAY TEST shall include, as a minimum, a continuity check of associated testable actuation devices.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during <i>n</i> Surveillance Frequency intervals, where <i>n</i> is the total number of systems, subsystems, channels, or other designated components in the associated function.

(continued)



UNITED STATES
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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. 255
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 May 18, 2009, 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.

Enclosure 3

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. 255, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'G. Kulesa', with a stylized flourish at the end.

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: May 28, 2010



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. 235
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 May 18, 2009, 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.

Enclosure 4

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. 235, are hereby incorporated into this license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'Gloria Kulesa', with a horizontal line extending to the right. To the right of the signature, the words 'as for' are written in a smaller, cursive script.

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: May 28, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 255
RENEWED FACILITY OPERATING LICENSE NO. NPF-9
DOCKET NO. 50-369

AND

LICENSE AMENDMENT NO. 235
RENEWED FACILITY OPERATING LICENSE NO. NPF-17
DOCKET NO. 50-370

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

<u>Remove</u>	<u>Insert</u>
License Pages	License Pages
NPF-9, page 3 NPF-17, page 3	NPF-9, page 3 NPF-17, page 3
TS Pages	TS Pages
1.1-5	1.1-5

- (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. 255, are hereby incorporated into this renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

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

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

- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (5) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproducts and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2; and,
 - (6) Pursuant to the Act and 10 CFR Parts 30 and 40, to receive, possess and process for release or transfer such 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. 235, 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.

1.1 Definitions (continued)

QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3411 MWt.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	<p>SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:</p> <ol style="list-style-type: none">All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; andIn MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing each slave relay and verifying the OPERABILITY of each slave relay. The SLAVE RELAY TEST shall include, as a minimum, a continuity check of associated testable actuation devices.



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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. 367
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 May 18, 2009, 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.

Enclosure 5

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. 367, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'G. Kulesa', with a horizontal line extending to the right and the word 'for' written below it.

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: May 28, 2010



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. 369
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 May 18, 2009, 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.

Enclosure 6

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. 369, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'G. Kulesa', with a horizontal line extending to the right and a small flourish at the end.

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: May 28, 2010



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. 368
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 May 18, 2009, 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.

Enclosure 7

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. 368, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'Gloira Kulesa', with a horizontal line extending to the right and a small flourish below it.

Gloira 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: May 28, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 367
RENEWED FACILITY OPERATING LICENSE NO. DPR-38
DOCKET NO. 50-269
AND
TO LICENSE AMENDMENT NO. 369
RENEWED FACILITY OPERATING LICENSE NO. DPR-47
DOCKET NO. 50-270
AND
TO LICENSE AMENDMENT NO. 368
RENEWED FACILITY OPERATING LICENSE NO. DPR-55
DOCKET NO. 50-287

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

Remove Pages

Licenses

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

TSs

1.1-4

Insert Pages

Licenses

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

TSs

1.1-4

Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

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. 367, 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

Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

A. Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2588 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 369 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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- (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.
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Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

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. 368, 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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- (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

1.1 Definitions (continued)

OPERABLE – OPERABILITY

A system, subsystem, train, component, or device shall be **OPERABLE** or have **OPERABILITY** when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation.

These tests are:

- a. Described in the UFSAR;
- b. Authorized under the provisions of 10 CFR 50.59; or
- c. Otherwise approved by the Nuclear Regulatory Commission.

QUADRANT POWER TILT (QPT)

QPT shall be defined by the following equation and is expressed as a percentage.

$$QPT = 100 \left(\frac{\text{Power in any Core Quadrant}}{\text{Average Power of all Quadrants}} - 1 \right)$$

RATED THERMAL POWER (RTP)

RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2568 MWt.

SHUTDOWN MARGIN (SDM)

SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:

- a. All full length **CONTROL RODS** (safety and regulating) are fully inserted except for the single **CONTROL ROD** of highest reactivity worth, which is assumed to be fully withdrawn. However, with all **CONTROL RODS** verified fully inserted by two independent means, it is not necessary to account for a stuck **CONTROL ROD** in the **SDM** calculation. With any **CONTROL ROD** not capable of being fully inserted, the reactivity worth of these **CONTROL RODS** must be accounted for in the determination of **SDM**;



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 254 TO RENEWED FACILITY OPERATING LICENSE NPF-35

AMENDMENT NO. 249 TO RENEWED FACILITY OPERATING LICENSE NPF-52

AMENDMENT NO. 255 TO RENEWED FACILITY OPERATING LICENSE NPF-9

AMENDMENT NO. 235 TO RENEWED FACILITY OPERATING LICENSE NPF-17

AMENDMENT NO. 367 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 369 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-47

AND

AMENDMENT NO. 368 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 application dated May 18, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091410283), Duke Energy Carolinas, LLC (Duke, the licensee), requested changes to the Technical Specifications (TSs) for the Catawba Nuclear Station, Units 1 and 2 (CNS), McGuire Nuclear Station, Units 1 and 2 (MNS), and Oconee Nuclear Station, Units 1, 2, and 3 (ONS).

The proposed changes would revise the TSs to adopt Technical Specification Task Force (TSTF)-248, "Revise Shutdown Margin Definition For Stuck Rod Exception." The TSTF revises the definition of shutdown margin (SDM) in the TSs with all control rods verified fully inserted by two independent means. It is not necessary to account for a stuck control rod in the SDM calculation. By letter dated October 31, 2000 (ADAMS Accession No. ML003775261), the Nuclear Regulatory Commission (NRC) issued the endorsement of TSTF-248.

2.0 REGULATORY EVALUATION

CNS and MNS design and construction was in compliance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Appendix A, General Design Criteria (GDC) for nuclear plants. The Principle Design Criteria (PDC) for the ONS were developed in consideration of the Atomic Energy Commission's 70 General Design Criteria for nuclear power plant construction permits contained in the proposed rulemaking published in the *Federal Register* notice of July 11, 1967.

Applicable GDCs and Applicable PDCs

- GDC 10 – Reactor Design
- GDC 26 – Reactivity control system redundancy and capability
- GDC 27 – Combined reactivity control systems capability
- PDC 6 – Reactor Core Design
- PDC 27 – Redundancy of Reactivity Control
- PDC 31 – Reactivity Shutdown

GDC 10 and PDC 6 states, in part, the requirements for design of the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. The requested revision of the TSs to change the TS definition of SDM does not change the way the licensee designs the core, it only revises the way in which SDM is defined. Revising the TS definition would not require any changes to the core design methodology used for calculating shutdown boron. Rather, it would afford the analytical flexibility for determining SDM for a particular circumstance. Therefore, the ability to meet the GDC and PDC is not compromised. Because the licensee would still have to ensure that adequate SBM is always provide for the entire fuel cycle.

GDC 26 states, in part, two independent reactivity control systems of different design principles shall be provided. One of the systems shall use control rods, preferably including a positive means for inserting the rods, and shall be capable of reliably controlling reactivity changes to assure that under conditions of normal operation, including anticipated operational occurrences, and with appropriate margin for malfunctions such as stuck rods, specified acceptable fuel design limits are not exceeded. The second reactivity control system shall be capable of reliably controlling the rate of reactivity changes resulting from planned, normal power changes (including xenon burnout) to assure acceptable fuel design limits are not exceeded. One of the systems shall be capable of holding the reactor core subcritical under cold conditions. PDC 27 states, in part, at least two independent reactivity control systems, preferably of different principles, shall be provided. The requested revision of the TSs to change the TS definition of SDM does not impact on the reactivity control system and thus does not compromise reactivity control system redundancy or capability. Therefore the proposed changes will not result in the inability to reliably

control reactivity changes. Changing the SBM definition in the TSs has no direct impact on the functional capability on the reactivity control systems.

GDC 27 states, in part, the reactivity control systems shall be designed to have a combined capability, in conjunction with poison addition by the emergency core cooling system, of reliably controlling reactivity changes to assure that under postulated accident conditions and with appropriate margin for stuck rods the capability to cool the core is maintained. The proposed amendments revise the way in which SDM is defined. There is no impact on the reactivity control systems capability to assure appropriate margin for stuck rods is being met. Concurrently, this change does obviate the need to assume one stuck control rod, as with adequate indication from two independent trains allow for flexibility in being able to avoid this over conservative assumption. Therefore, the ability to meet this criterion is not compromised.

PDC 31 states, in part, at least one of the reactivity control systems provided shall be capable of making the core subcritical under any conditions (including anticipated operation transients), sufficiently fast to prevent exceeding acceptable fuel damage limits. SDMs greater than the maximum worth of the most effective control rod when fully withdrawn shall be provided. The proposed amendments revise the way in which SDM is defined. This revised definition has no adverse impact on the ability to meet the criteria of making the core subcritical under any conditions. Concurrently, the proposed change does obviate the need to assume one stuck control rod, as with adequate indication from two independent trains allow for flexibility in being able to avoid this over conservative assumption. Therefore, the ability to meet this criterion is not compromised.

TSTF-428 was approved by the NRC on October 31, 2000, and has been incorporated into the Standard Technical Specifications (STSS) NUREG-1431, Revision 3, "Standard Technical Specifications, Westinghouse Plants," and NUREG-1430, Revision 3, "Standard Technical Specifications, Babcock and Wilcox Plants."

3.0 TECHNICAL EVALUATION

The proposed license amendments adopt TSTF 248, which modifies the TSs by changing the definition of SDM to reflect the definition in the latest revision to Westinghouse STSS NUREG-1431, and Babcock and Wilcox STSS, NUREG-1430. This change will revise the definition as a part of each station's TS Section 1.1, "Definitions," for SFM to include a provision allowing an exception to the highest reactivity worth stuck control rod (for ONS) or rod cluster control assemblies (for CNS and MNS) penalty if there are two independent means of confirming that all rod cluster control assemblies (RCCA) or control rods are fully inserted in the core.

SDM is the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition. The core operating limits report (COLR) is the unit specific document that provides cycle specific parameter limits for the current Fuel cycle. These cycle specific parameter limits are determined for each fuel cycle. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the documents listed in TSs Sections 5.6.5. for CNS, MNS and ONS. The COLR in conjunction with the TSs ensures for each specific fuel cycle that all parameters including SDM meet the licensing basis requirements. While the control rods are withdrawn from the reactor core the required amount of SDM includes the penalty for the single

control rod of highest reactivity worth, which is assumed to be fully withdrawn. Once all control rods are fully inserted into the reactor and verified by two independent means the SDM limit in the COLR assures that adequate SDM as assumed in the updated final safety analysis report for accidents and transients that initiate from a shutdown condition are met. Once all control rods have been verified to be fully inserted into the core, requiring the SDM calculation to include the penalty for the single control rod of highest reactivity worth fully withdrawn would be overly conservative.

The digital rod position indication (DRPI) system (for CNS and MNS) has two redundant trains of indication. This system provides two independent means of verification that all control rods have successfully be inserted into the core. The DPRI system measures the actual position of each full length rod using a detector which consists of discrete coils mounted concentrically with the rod drive pressure housing. The coils are located axially along the pressure housing and electro-magnetically sense the entry and presence of the rod drive shaft through its centerline. For each detector, the coils are interlaced into two data channels and are connected to the containment electronics (Data A and B) by separate multiconductor cables. By employing two separate channels of information, the DRPI system can continue to function if one channel fails. The control room area DRPI process cabinet contains two separate, redundant computer nodes, each receiving the data from one of the containment data cabinets. The nodes calculate rod position and communicate with each other to produce a +/- 4 step composite rod position when operating at full accuracy. The composite rod position is provided to two independent monitors in a display unit on the main control board. Each monitor is capable of displaying the position of all control rods; however, the default arrangement will be to typically display all control banks on one monitor and all shutdown banks on the other. Additional optional display screens are available on each display for diagnostic and testing purposes.

The composite rod position data is also supplied to the operator aid computer (OAC), which has the same display capabilities as the control board displays. The DRPI system provides a rod at bottom indication for each rod, as well as an alarm when any rod is at bottom.

The DRPI system is split into independent A and B trains that are powered from separate 120vac regulated power sources. The B train is powered through a power transfer switch such that the normal source of power is from the unit it is monitoring, and alternate power is provided from the other nuclear unit.; if both trains are fully operable on all control rods and with both trains confirming rods being fully inserted after a reactor trip, there is adequate verification of the configuration of the rods to confirm that there is not a stuck control rod.

At ONS, the Analog Position Indication (API) system has two separate strings (API-A and API-B) of reed switches located in the position indication tube for each control rod. The two strings are combined to feed a single meter for each control rod on the position indication (PI) panel. The two strings can also be viewed independently on the operator aid computer. These two strings have separate sensors and separate power sources and can be used to verify that control rods are fully inserted. While the API indication in itself has redundancy, another means of indicating that the control rods are inserted is via the Zero percent switches in the control rod position indication tubes. The Zero percent reed switches are independent from the API reed switches. The Zero percent indication is via indicating lights for each control rod that are also located on the PI panel. The Zero percent indication uses separate sensors, separate cable conductors, and a separate power source from the API indication. Another means of verifying that the control rods are

inserted is via the In Limit reed switches. The In Limit switches are separate from the Zero percent and from the API indication. In Limit indication is provided on the OCA. The In Limit indication uses separate sensors, separate cable conductors, and separate indication from either the zero % or the API switches. The two power sources for the In Limit Indication are the same two power sources provided for the API-A and API-B indications. For verification of rod insertion at Oconee, the following indications can be used: API-A, API-B, Zero % indication, and In Limit Indication.

The NRC staff has reviewed the independence of the control rod indication and finds that at CNS, MNS and ONS two independent systems do exist that verify all rods are fully inserted.

The change in the SDM definition does not change continued compliance with all applicable regulatory requirements and design criteria, e.g., train separation, redundancy, and single failure. All plant systems will continue to function as designed, all plant parameters will remain within their design limits.

Revising the TS definition of SDM would not require core designers to revise any SDM boron calculations. Rather, it would afford the analytical flexibility for determining SDM for a particular circumstance. The proposed changes do not involve any change in the design, configuration, or operation of the nuclear plant. The current plant safety analyses remain complete and accurate in addressing the design-basis events and in analyzing plant response and consequences.

The limiting conditions for operations, limiting safety system settings and safety limits specified in the TSs are not affected by the proposed changes. As such, the plant conditions for which the design-basis accident analyses were performed are not changed.

Margin of safety is related to confidence in the ability of the fission product barriers to perform their accident mitigation functions. These barriers include the fuel and fuel cladding, the reactor coolant system, and the containment and containment related systems. The proposed changes will not impact the reliability of these barriers to function. Radiological doses to plant operators or to the public will not be impacted as a result of the proposed change. The change in the TS definition of SDM will have no impact to these barriers. Adequate SDM will continue to be ensured for all operational conditions. Currently, SDM is defined as the amount by which the reactor is or would be shutdown from its present state, assuming all control rods are fully inserted except for the single highest worth RCCA stuck in its fully-withdrawn position, and fuel and moderator temperatures normalized to their hot zero power nominal values. The proposed change in SDM definition would allow for elimination of the single stuck RCCA penalty if two independent means can confirm that all control rods are fully inserted. One of the design criteria for operating reactor cores is that adequate SDM is maintained post-trip at all points in core life, assuming the highest-worth control rod is fully stuck out of the core, and applying a 10 percent penalty to total control worth for uncertainty. If adequate SDM is maintained with the highest-worth control rod fully stuck out of the core, then after shutdown of the reactor adequate SDM will be maintained if it is confirmed that all control rods are fully inserted into the core, and the single stuck rod penalty is eliminated. The current TS requirement for the SDM calculation to be performed taking into account the highest reactivity worth control rod to be stuck out of the core will be overly conservative. The revision to SDM definition will result in analytical flexibility for determining SDM.

4.0 SUMMARY

Based on the above evaluation the NRC staff finds the licensee's proposed change to the CNS, MNS, and the ONS TSs definition of SDM acceptable. The NRC staff finds the proposed changes are in accordance with the TSTF-248 and the STSs. The proposed change will not affect the required amount of SDM for all plant operational modes in accordance with the TSs and the COLR.

5.0 STATE CONSULTATION

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

6.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. 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 March 9, 2010 (75 FR 10827). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

7.0 CONCLUSION

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

Principal Contributor: John Stang

Date: May 28, 2010

J. Morris, R. Repko and D. Baxter

- 2 -

If you have any questions, please call me at 301-415-1345.

Sincerely,

/RA/

John Stang, Senior 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. 254 to NPF-35
2. Amendment No. 249 to NPF-52
3. Amendment No. 255 to NPF-9
4. Amendment No. 235 to NPF-17
5. Amendment No. 367 to DPR-38
6. Amendment No. 369 to DPR-47
7. Amendment No. 368 to DPR-55
8. Safety Evaluation

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