



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

January 8, 2014

Mr. Scott Batson
Site Vice President
Oconee Nuclear Station
Duke Energy Carolinas, LLC
7800 Rochester Highway
Seneca, SC 29672-0752

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3, ISSUANCE OF
AMENDMENTS REGARDING TEMPORARY TECHNICAL SPECIFICATION
CHANGE REQUEST TO EXTEND THE COMPLETION TIME FOR AN
INOPERABLE KEOWEE HYDRO UNIT (TAC NOS. ME9021, ME9022, AND
ME9023)

Dear Mr. Batson:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment Nos. 383, 385, and 384 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 June 27, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12181A312), as supplemented by letters dated December 14, 2012 (ADAMS Accession No. ML12359A039), May 28 (ADAMS Accession No. ML13151A023), July 26 (ADAMS Accession No. ML13214A384), November 26 (ADAMS Accession No. ML13337A170), December 6 (ADAMS Accession No. ML13346A020), and December 12, 2013 (ADAMS Accession No. ML13349A002).

These amendments revise the TSs on a one-time basis by adding a temporary Completion Time to TS 3.8.1 Required Action C.2.2.5 to allow time to perform major maintenance on each Keowee Hydro Unit.

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

S. Batson

- 2 -

If you have any questions, please call me at 301-415-1030.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Guzman", with a stylized flourish at the end.

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosures:

1. Amendment No. 383 to DPR-38
2. Amendment No. 385 to DPR-47
3. Amendment No. 384 to DPR-55
4. Safety Evaluation

cc w/encls: Distribution via Listserv



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. 383
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 Duke Energy Carolinas, LLC (the licensee), dated June 27, 2012, as supplemented by letters dated December 14, 2012, May 28, July 26, November 26, December 6, and December 12, 2013, 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. 383, 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: January 8, 2014



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. 385
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 Duke Energy Carolinas, LLC (the licensee), dated June 27, 2012, as supplemented by letters dated December 14, 2012, May 28, July 26, November 26, December 6, and December 12, 2013, 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

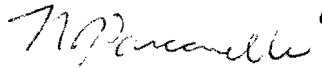
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B of Renewed Facility Operating License No. DPR-47 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 385, 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: January 8, 2014



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. 384
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 Duke Energy Carolinas, LLC (the licensee), dated June 27, 2012, as supplemented by letters dated December 14, 2012, May 28, July 26, November 26, December 6, and December 12, 2013, 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. 384, 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, 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: January 8, 2014

ATTACHMENT TO LICENSE AMENDMENT NO. 383
RENEWED FACILITY OPERATING LICENSE NO. DPR-38
DOCKET NO. 50-269

AND

TO LICENSE AMENDMENT NO. 385
RENEWED FACILITY OPERATING LICENSE NO. DPR-47
DOCKET NO. 50-270

AND

TO LICENSE AMENDMENT NO. 384
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

Page 3.8.1-3
Page 3.8.1-4
Page 3.8.1-5
Page 3.8.1-6
Page 3.8.1-7

Insert Pages

Licenses

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

TSs

Page 3.8.1-3
Page 3.8.1-4
Page 3.8.1-5
Page 3.8.1-6
Page 3.8.1-7

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. 383 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

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. 385 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

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. 384 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

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. KHU or its required overhead emergency power path inoperable due to reasons other than Condition A.	C.1 Perform SR 3.8.1.3 for OPERABLE KHU.	1 hour if not performed in previous 12 hours <u>AND</u> Once per 7 days thereafter
	<u>AND</u>	
	C.2.1 Restore the KHU and its required overhead emergency power path to OPERABLE status.	72 hours <u>AND</u> 72 hours from discovery of inoperable KHU
	<u>OR</u>	
	C.2.2.1 Energize both standby buses from LCT via isolated power path.	72 hours <u>AND</u> 1 hour from subsequent discovery of deenergized standby bus
	<u>AND</u> C.2.2.2 Suspend KHU generation to grid except for testing. <u>AND</u>	72 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	<p>C.2.2.3 -----NOTE----- Not applicable to remaining KHU and its required underground emergency power path or LCO 3.3.21 when in Condition H to perform generator field pole rewind work.</p> <p>-----</p> <p>Verify by administrative means that the remaining KHU and its required underground emergency power path and both required offsite sources are OPERABLE and the requirements of LCO 3.8.3, "DC Sources-Operating," LCO 3.8.6, "Vital Inverters-Operating," LCO 3.8.8, "Distribution Systems-Operating," LCO 3.3.17, "EPSL Automatic Transfer Function," LCO 3.3.18, "EPSL Voltage Sensing Circuits," LCO 3.3.19, "EPSL 230 kV Switchyard DGVP," and LCO 3.3.21, "EPSL Keowee Emergency Start Function" are met.</p> <p><u>AND</u></p>	<p>72 hours</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2.4 Verify alternate power source capability by performing SR 3.8.1.16. <u>AND</u>	72 hours <u>AND</u> Every 31 days thereafter
	C.2.2.5 Restore KHU and its required overhead emergency power path to OPERABLE status.	28 days when Condition due to an inoperable Keowee main step-up transformer <u>AND</u> -----NOTE----- 1. Not to exceed 45 days cumulative per rolling 3-year time period for each KHU. 2. Not applicable during generator field pole rewind work. 3. Not applicable until 1 year after KHU is declared OPERABLE following generator field pole rewind work. ----- 45 days from discovery of initial inoperability when Condition due to an inoperable KHU

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)		<p><u>AND</u></p> <p>-----NOTE-----</p> <ol style="list-style-type: none"> 1. No discretionary maintenance or testing allowed on SSF, EFW and essential AC Power Systems. 2. Only applicable one time for each KHU due to generator field pole rewind work and expires on January 1, 2015. 3. Only applicable if the SSF and EFW are administratively verified OPERABLE prior to entering the extended Completion Time. <p>-----</p> <p>62 days from initial inoperability when Condition due to an inoperable KHU to perform generator field pole rewind work</p>
D. KHU or its required underground power path inoperable.	<p>D.1 Perform SR 3.8.1.4 for OPERABLE KHU.</p> <p><u>AND</u></p> <p>D.2 Energize either standby bus from LCT via isolated power path.</p>	<p>1 hour if not performed in previous 12 hours</p> <p>24 hours</p> <p><u>AND</u></p> <p>1 hour from subsequent discovery of deenergized required standby bus</p>

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued)	<p><u>AND</u></p> <p>D.3 Restore KHU and its required underground emergency power path to OPERABLE status.</p>	<p>72 hours</p> <p><u>AND</u></p> <p>72 hours from discovery of inoperable KHU</p>
E. Required Action and associated Completion Time not met for Required Action D.2.	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 5.</p>	<p>12 hours for one unit</p> <p><u>AND</u></p> <p>24 hours for other unit(s)</p> <p>84 hours</p>
F. Zone overlap protection circuitry inoperable when overhead electrical disconnects for KHU associated with the underground power path are closed.	<p>F.1 Restore zone overlap protection circuitry to OPERABLE status.</p> <p><u>OR</u></p> <p>F.2 Open overhead electrical disconnects for KHU associated with the underground power path.</p>	<p>72 hours</p> <p>72 hours</p>
G. Both emergency power paths inoperable due to one inoperable E breaker and one inoperable S breaker on the same main feeder bus.	G.1 Restore one breaker to OPERABLE status.	24 hours

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 383 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 385 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-47

AND

AMENDMENT NO. 384 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-55

DUKE ENERGY CAROLINAS, LLC

OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3

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

1.0 INTRODUCTION

By application dated June 27, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12181A312), as supplemented by letters dated December 14, 2012 (ADAMS Accession No. ML12359A039), May 28 (ADAMS Accession No. ML13151A023), July 26 (ADAMS Accession No. ML13214A384), November 26 (ADAMS Accession No. ML13337A170), December 6 (ADAMS Accession No. ML13346A020), and December 12, 2013 (ADAMS Accession No. ML13349A002), Duke Energy Carolinas, LLC (Duke, the licensee), submitted a license amendment request (LAR) requesting a temporary change to the Technical Specifications (TSs) for the Oconee Nuclear Station, Units 1, 2, and 3 (ONS 1/2/3). The supplements dated December 14, 2012, May 28, July 26, November 26, December 6, and December 12, 2013, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 2, 2012 (77 FR 60149).

The proposed changes would revise TS 3.8.1, "AC Sources – Operating," Required Action (RA) C.2.2.5 to allow a temporary one-time Completion Time (CT) extension of 62 days to restore an inoperable Keowee Hydro Unit (KHU) for the purpose of performing generator field pole rewind work on each KHU.

The licensee provided a traditional deterministic evaluation (not risk-based) in the LAR, and the NRC staff's regulatory evaluation is based on a deterministic approach.

2.0 REGULATORY EVALUATION

The regulatory requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) which the NRC staff applied in its review of the application include:

- 10 CFR 50.36, "Technical Specifications," which requires, in part, that a licensee establish TSs with limiting conditions for operation (LCOs) and surveillance requirements (SRs) for equipment that is required for safe operation of the facility. Specifically, Section 50.36(c) stipulates the items to be included in the TSs, including Section 50.36(c)(2), which stipulates the LCOs, and Section 50.36(c)(3), which stipulates the SRs.
- 10 CFR 50.63, "Loss of all alternating current power," which requires, in part, that all nuclear power plants have the capability to withstand a loss of all alternating current (AC) power (station blackout) for an established period of time, and to recover therefrom. The licensee describes the compliance of ONS 1/2/3 with 10 CFR 50.63 in the Updated Final Safety Analysis Report (UFSAR) Section 8.3.2.2.4, "Station Blackout Analysis."
- 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," which includes the requirement to monitor the performance or condition of specified structures, systems, and components (SSCs) to provide reasonable assurance that the SSCs are capable of fulfilling their intended functions, and to balance preventive maintenance activities against the objective of minimizing the unavailability of the SSCs due to monitoring or preventive maintenance.

The following explains the applicability of the 10 CFR Part 50, Appendix A, General Design Criteria (GDC) to ONS 1/2/3. The construction permits for ONS 1/2/3 were issued by the Atomic Energy Commission (AEC) on November 6, 1967. The operating licenses were issued on February 6, 1973, for ONS 1, October 6, 1973, for ONS 2, and July 19, 1974, for ONS 3. The plant GDC are discussed in the UFSAR Chapter 3.1, "Conformance with NRC General Design Criteria," with more details given in the applicable UFSAR sections. The AEC published the final rule that added 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," in the *Federal Register* (36 FR 3255) on February 20, 1971, with the rule effective on May 21, 1971. In accordance with an NRC staff requirements memorandum from S. J. Chilk to J. M. Taylor, "SECY-92-223 - Resolution of Deviations Identified During the Systematic Evaluation Program," dated September 18, 1992 (ADAMS Accession No. ML003763736), the Commission approved the NRC staff's proposal to not apply the 10 CFR Part 50, Appendix A, GDC requirements to plants with construction permits issued prior to May 21, 1971. Therefore, the GDC requirements which constitute the licensing bases for ONS 1/2/3 are those specified in the UFSAR.

As discussed in the UFSAR, the licensee for ONS 1/2/3 has made some changes to the facilities over the life of the units that have committed the licensee to some of the GDCs from 10 CFR Part 50, Appendix A. The extent to which the Appendix A GDC have been invoked can be found in specific sections of the UFSARs and in other ONS 1/2/3 licensing basis documentation, such as license amendments.

Based on a review of UFSAR Section 3.1, "Conformance with NRC General Design Criteria," UFSAR Section 8.3, "Onsite Power Systems," and the licensee's submittals, the NRC staff has identified the following criteria as being applicable to the proposed amendment:

- ONS UFSAR, Chapter 3, Criterion 24, "Emergency Power for Protection Systems," which states that in the event of loss of all offsite power, sufficient alternate sources of power shall be provided to permit the required functioning of the Protective Systems. In the event of loss of all off-site power to all units at Oconee or to any unit alone, sufficient power for operation of the Protective Systems of any unit will be available from either of two on-site independent hydroelectric generators.
- ONS UFSAR, Chapter 3, Criterion 39, "Emergency Power for Engineered Safety Features (ESF)," which states that alternate power systems shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning required of the ESF. As a minimum, the on-site power system and the off-site power system shall each, independently, provide this capacity assuming a failure of a single active component in each power system.

The licensing basis for the KHUs is provided in the ONS, Unit 1, AEC safety evaluation (SE) dated December 29, 1970 (ADAMS Accession No. ML12276A270). Section 8.0 of the ONS, Units 2 and 3, licensing SE dated July 6, 1973 (ADAMS Accession No. ML12276A272), extends the ONS, Unit 1, SE to ONS, Units 2 and 3. Section 8.4 of the December 29, 1970, SE states:

Onsite power is provided by two 87.5-MVA [mega-volt-amperes] hydroelectric generators. This power is available either through the 230-kV [kilo-volt] switchyard and the 45/60 MVA Unit 1 startup transformers or through the 13.8-kV underground feeder which utilizes its own 12/16/20 MVA transformer. The maximum emergency power demand upon initiation of accident conditions would be 4.8 MVA. Each hydro unit has capacity well in excess of this 4.8 MVA requirement, via either circuit, for operation of the engineered safety feature loads.

Section 8.4 describes additional sources of power for Oconee, including gas turbines located 30 miles away at Lee Steam Station via an independent overhead 100 kV transmission system. With regard to the gas turbine, the SE states:

In evaluating these power sources, we have considered the gas turbine as a temporary substitute power source for use primarily during the periods when the hydro units are not available. The applicant has estimated these periods to be approximately 24 hours each year plus 4 days once every 10 years when the common penstock will be drained for inspection and maintenance. During these periods the gas turbine will be run at rated speed, with no load, and will be directly connected through the Oconee 100-kV switchyard over the isolated line, to the standby buses for automatic selection in the event that the 230-kV power is lost.

3.0 TECHNICAL EVALUATION

3.1 Background

As stated by the licensee in its LAR and supplemental letter dated November 26, 2013, the Keowee Hydroelectric Station was commissioned in 1971, with the last major overhaul performed in 2004 for KHU-1 and 2005 for KHU-2. The overhaul included refurbishment of each unit's turbines and replacement of the governor, voltage regulator, and batteries. During an inspection in March 2009, the licensee identified a need for major refurbishment work within the generator, including generator field pole rewinds. The licensee stated in their LAR that they planned to perform this work in April 2013 and July 2013, for each KHU. However, in a letter dated December 14, 2012, the licensee stated that their planned schedule for work on the KHUs had been delayed. The licensee proposed a new schedule for the generator field pole rewind work on KHU-2 and KHU-1 in January and July of 2014, respectively, with an expiration date of January 1, 2015 in the proposed TS.

The current TS 3.8.1 RA C.2.2.5 requires the KHU and its required overhead emergency power path to be restored to operable status within 45 days of discovery of an initial inoperability, when Condition C is entered due to an inoperable KHU if not used for that KHU in the previous 3 years. The licensee stated that this 45-day time period is not sufficient to allow the KHU generator field pole rewinding to be performed without the three ONS units being in a shutdown condition. In the LAR, as supplemented by letter dated December 14, 2012, the licensee proposed a third CT for TS 3.8.1 RA C.2.2.5 of 75 days. In a letter dated November 26, 2013, the licensee proposed to reduce the original CT extension request to 62 days. The proposed TS changes provided in the licensee's letters dated November 26, 2013, and December 12, 2013, are provided below.

3.2 Requested Change to TSs

The licensee is proposing the following revisions to its current TS RA C.2.2.3 and RA C.2.2.5 Completion Times:

A new note will be added to TS 3.8.1, RA C.2.2.3, to allow entry into the 60-hour dual unit outage to reassemble the refurbished KHU and return it to functional condition prior to declaring the refurbished KHU operable.

-----NOTE-----

Not applicable to
remaining KHU and its
required underground
emergency power path
or LCO 3.3.21 when in
Condition H to perform
generator field pole
rewind work.

The above note is added to avoid using up the 45 days CT concurrent with the new 62-day CT and will provide some time to allow the licensee to perform emergent maintenance work should the need arise after a one-year waiting period.

New notes will be added to TS 3.8.1, RA C.2.2.5 under the CT for "28 days when Condition due to an inoperable Keowee main step-up transformer" as follows:

-----NOTE-----

1. Not to exceed 45 days cumulative per rolling 3-year time period for each KHU.
2. Not applicable during generator field pole rewind work.
3. Not applicable until 1 year after the KHU is declared OPERABLE following generator field pole rewind work.

New notes will be added to TS 3.8.1, RA C.2.2.5 under the CT for "45 days from discovery of initial inoperability when Condition due to an inoperable KHU" as follows:

AND

-----NOTE-----

1. No discretionary maintenance or testing allowed on SSF, EFW, and essential AC Power Systems.
2. Only applicable one time for each KHU due to generator field pole rewind work and expires on January 1, 2015.
3. Only applicable if the SSF and EFW are administratively verified OPERABLE prior to entering the extended Completion Time.

62 days from initial
inoperability when
Condition due to an
inoperable KHU to
perform generator field
pole rewind work

In addition, an administrative change is proposed to TS 3.8.1, RA C.2.1, CT to delete a note that is no longer applicable:

-----NOTE-----
An additional 96 hours
can be added to the
following completion
times. This expires on
August 27, 2005 @1058
hours

3.3 Description of the Oconee Offsite Power System

As stated in the UFSAR Chapter 8, an off-site power system (preferred power) and an onsite power system are provided for each ONS unit to supply the unit auxiliaries during normal operation and the Reactor Protection System and Engineered Safeguards (ES) Protection Systems during abnormal and accident conditions. Each ONS unit has six available sources of power to the ES Protection Systems. These include:

- 230 kV transmission system and/or the 525 kV transmission system
- Two Keowee Hydroelectric Units
- 100 kV transmission system supplied electrical power from Lee Steam Station via two combustion turbines
- two other nuclear units

The ONS design is unique because it has two redundant emergency KHUs to supply emergency AC power for all three units instead of dedicated diesel generators for each unit. As described in the UFSAR, the KHUs are the onsite standby power sources, rated at 13.8 kV, 87.5 kVA each, and are designed to supply the required ES loads of one unit and safe shutdown loads of the other two units. The repair process of the KHUs is also unique. The KHU turbine generators are powered through a common intake (penstock) by water taken from Lake Keowee. To isolate one KHU from the common intake for major maintenance activities, both KHUs must be removed from service. The common penstock must be de-watered to allow the unit designated for maintenance to be sealed. After sealing the unit designated for maintenance, the common penstock is then re-watered allowing the designated operating unit to be returned to service. Each KHU is individually sealed at its wicket gates (which are internal to the machine) prior to the maintenance. If two KHUs are under maintenance, the de-watering, re-watering, and sealing processes will be repeated, one at a time.

Upon a loss of power from the Oconee generating unit and the 230 kV switchyard, power is supplied to the standby buses from both KHUs through two separate and independent routes. One route is via an underground feeder line through the transformer CT-4. The other route is via the overhead emergency power line through the start-up transformer. The standby buses can also receive power from the two combustion turbine generators at Lee Steam Station via a 100 kV transmission line and transformer CT-5.

UFSAR Section 8.2.2, "Analysis," under Section 8.2, "Off-site Power System," states that the probability of loss of more than one source of 230 kV or 525 kV power from a credible fault is low. However, in the event of an occurrence causing loss of all 230 kV and 525 kV connections, the station is supplied from one or more of three sources of power (i.e., the two hydro units or the 100 kV line supplied by either the Lee combustion turbines or the Central Tie Substation). Therefore, with the two KHUs out of service for planned maintenance activities, additional electrical power sources are available to provide power to the Standby Shutdown Facility (SSF) and thus maintain hot shutdown conditions for each ONS unit. The SSF is capable of maintaining all three units in a safe shutdown condition, for a period of 72 hours following a fire, turbine building flood, sabotage, or tornado missile events and station blackout.

3.4 Back-up Power Sources for Emergency Power System to maintain Defense-in-depth of Electrical System

As described above, the ONS plant can receive offsite AC power from multiple sources. In addition, either of the two Lee Combustion Turbines (LCTs) can provide sufficient power to the safety-related electrical buses. The LAR credits an LCT as a back-up power source to the inoperable KHU to support the requested field pole rewind CT.

In letter dated December 14, 2012, in response to the NRC staff's question to determine the current status of LCT availability, reliability, and capability, the licensee stated that new LCTs were placed in service in January 2007. The NRC staff noted that since that time, a number of failures have occurred that resulted in a Maintenance Rule Functional Failure (MRFF) of an individual LCT. The NRC staff noted that of the two LCTs, LCT 7C had two failures and LCT 8C had six failures. The licensee stated that the LCTs are maintained with high reliability and availability through its preventive maintenance program and that it has addressed all of the performance issues through its corrective action program.

Since the 100 kV transmission line to ONS is a single line connecting the Lee Steam Station and Central Tie Substation to the plant standby buses through a single transformer (CT-5) for all three ONS units, the NRC staff asked the licensee to explain the operational readiness of this power source to perform its intended design function during the dual KHU unit outage. In its May 28, 2013, response, the licensee stated that since January 2007 when the new LCTs were placed in service, two failures have occurred that resulted in maintenance rule functional failures of the Lee/Central Power (LCP) System path.

In addition, the licensee stated that another failure occurred in April 28, 2012, due to fiber optic cable damage and a circuit switcher failure associated with the LCP System path. The Transmission Control Center (TCC) is used to control the circuit switcher remotely to align an LCT to ONS. Because of the circuit switch failure, it could not be operated remotely. When remote control is lost, manual control is provided locally at the Circuit Switcher. However, an LCT is

required to be aligned on a dedicated path within 1 hour, which could not be facilitated. The licensee stated that it changed the operating procedure to notify the TCC to immediately dispatch a technician if local operation is required. The licensee stated that both LCTs and the power path were available, only the requirement to be aligned within 1 hour was challenged, and therefore that it had corrected this issue by revising the LCT operating procedure.

The licensee clarified in its letter dated December 14, 2012, that the LCTs have a preventive maintenance program and that these were not common mode failures. In addition, routine preventive maintenance was performed on the gas turbine-generators, the 100 kV transmission line, and transformer CT-5. The licensee stated that the corrective actions addressed all of the LCT performance issues and their operational readiness was verified via inspections and testing.

However, the NRC staff had concerns regarding the LCT availability, operation, and ability to be aligned within 1 hour to provide power to the safety-related buses during the dual KHU outage. To further address the NRC concerns with the LCT availability during a dual KHU outage, the licensee established additional outage time-line restrictions and risk-reduction measures. In its letter dated November 26, 2013, the licensee stated that it would provide additional back-up power sources to maintain the defense-in-depth philosophy of the ONS electrical power system. The additional measures include the following:

- The licensee owns Jocassee Hydroelectric Station, and can be black started, aligned, and dedicated to ONS via a power path isolated from the grid. In accordance with an approved procedure, the alignment can be completed within approximately one hour. The licensee stated that in the unlikely event that all other power sources (e.g., offsite Grid, KHU overhead line, KHU underground line, transformer CT-5) are unavailable, and ONS is experiencing a Station Blackout, the Emergency Operating Procedure will be entered to take steps to provide the dedicated power path from Jocassee Hydroelectric Station to ONS.
- The licensee will provide a temporary diesel generator at the Keowee Station to enable the recovery of the remaining operable, but de-watered, KHU within 4 hours. The temporary diesel generator will provide a back-up power source to operate Keowee Station electrical auxiliaries, the intake gate hoist to provide water to the remaining operable KHU, and the powerhouse crane.
- Turbine-Driven Emergency Feedwater Pump capable of feeding each ONS unit's steam generators.
- Onsite temporary diesel-driven feedwater pump capable of feeding each ONS unit's steam generators.
- The Protected Service Water (PSW) system is installed and capable of aligning the 100 kV line or a KHU to the SSF, should the SSF diesel generator fail to start and run.

Based on the above information, the NRC staff has determined that there are multiple, diverse means of supplying electrical power to the safety buses to safely shutdown ONS units 1, 2, and 3, and maintain them in a cold shutdown condition until the offsite power is available or one of the KHUs is restored to operable condition. This satisfies the applicable criteria that, in the event of a

loss of all offsite power, alternate sources of power with adequate independency, redundancy, capacity, and testability shall be provided to permit the required functioning of the Protective Systems.

3.5 Planned Major Maintenance Activities and Critical Activity Plan

The licensee stated in the LAR that the schedule for each KHU maintenance outage will include dewatering and watering the penstock, removal of all 56 generator field poles, asbestos abatement, complete generator rewinding, and reassembly. It would also include balance runs and balance shots for data acquisition, collection of data from the thermal curve to validate generator parameters, and post modification testing.

In its letter dated November 26, 2013, the licensee reduced the scheduled duration of a KHU outage from 75 days to 62 days after a re-evaluation of requisite tasks for the planned maintenance. The 13-day reduction in the KHU outage time was achieved by eliminating the need to de-water the KHU to add balance shots and decreasing the contingency time for the physical maintenance outage work. As a result, the planned dual KHU outage time was also reduced from 160 hours to 80 hours during the planned maintenance time.

The licensee stated that it will assess and manage the increase in risk that may result from the proposed maintenance outage activities in accordance with 10 CFR 50.65(a)(4). The licensee's Risk Management Process requires a Critical Activity Plan (CAP) for the generator field pole rewind outages. The CAP will include multiple risk mitigation strategies as listed below and as provided in the licensee's letter dated November 26, 2013.

- ONS will not start the extended single KHU outage or a dual KHU outage if severe weather conditions are forecast
- ONS will contact the system load dispatcher once per day to ensure no significant grid perturbations (high grid loading not able to withstand a single contingency of line or generation outage) are expected during the extended TS CT
- ONS will control the steam-driven emergency feedwater pump on each ONS unit as "protected" equipment during the extended TS CT; (the licensee stated in the LAR that "protected" means to ensure that no persons inadvertently enter the area of the equipment).
- ONS will continuously staff the SSF during the dual KHU outages
- LCT and Central Tie Switchyard will be protected
- Second LCT will be protected and available within one hour
- Prior to the start of each KHU outage, ONS will verify that the Jocassee Hydroelectric Station is available to be aligned to the ONS 230kV Yellow Bus within approximately one hour
- Temporary diesel generator will be located at Keowee Hydro Station with capability to restore the available KHU unit to operable status within 4 hours from the dual KHU outage
- Reduced reactor coolant system inventory will not be permitted during a dual KHU outage
- Temporary diesel-driven pump will be available to feed each unit's steam generators
- PSW equipment installed and capable of aligning the 100 kV line or a KHU to the SSF

In its letter dated December 14, 2012, the licensee stated that the generator field pole rewind work will be performed in January and July of 2014, to avoid performing the work during the peak tornado months of March, April, May, and June.

In addition to the above, the licensee stated in the LAR that the generator field pole rewind work will be controlled by a CAP, which requires Plant Operations Review Committee approval. In response to the NRC staff's questions regarding the plans for entering the dual KHU outage and for any immediate need to exit the dual KHU outage, in its letter dated December 14, 2012, the licensee stated the following broad activities for such work:

- a. Written plan for accomplishing the activity
- b. Completed activity coversheet
- c. Contingency plans for problems that have a reasonable chance to occur
- d. Clear criteria for aborting the activity (when appropriate)
- e. When appropriate, identification of pre-determined critical step stopping points for the purpose of reviewing the work completed and questioning the work getting ready to be performed. The stopping points should be strategically selected to allow recovery prior to plant impact and expected actions to be performed prior to continuing should be specified (e.g., verification of pre-requisites, verification of contingency/compensatory actions, work group re-brief, review of procedure, etc.)
- f. Activity Manager's assignments include ownership of the plan and responsibility for aborting or initiating the contingency plan. An individual with these responsibilities will be on site during the entire activity
- g. Need for just in time training evaluated and documented
- h. Specified pre-job briefing components and requirements for participation
- i. Reviewed by a manager in the Operations organization
- j. Plan reviewed and approved by a Group Superintendent (or designee)
- k. Plan reviewed and approved by the Plant Operations Review Committee (PORC)

The licensee also stated that CAPs are created and approved by management in the weeks leading up to the outage, on average one to two months before the outage starts.

The licensee also stated that an addition to the 2014 CAP will ensure that the Outage Command Center (OCC) at ONS is fully staffed for 24-hour continuous coverage and that the CAP Manager, Outage Manager, and Technical Support positions will also provide 24-hour continuous coverage.

In addition, the licensee stated that Conditional Measures will instruct the Operations department to follow the ONS document AP/A/1700/006, "Natural Disaster," which initiates return of the KHUs to service in the event of severe weather. For other issues that may arise during the outage, the OCC, in conjunction with the Operations Shift Manager, will be used to determine the best course of action at that time.

The NRC staff reviewed the above details and determined that the licensee will have a CAP to ensure 24-hour fully staffed continuous coverage for the pole-rewind task. The NRC staff also determined that the licensee has identified and planned the necessary actions to ensure that there will not be any discretionary maintenance performed on the protected equipment, including the 230 kV switchyard, main transformer yards, essential switchgear rooms, and the Emergency

Feed Water (EFW), SSF, and AC Power Systems. These actions are identified by the licensee as regulatory commitments and are described in Section 3.6 of this SE.

Although this is not a risk-informed submittal, the licensee stated in the LAR that to supplement its deterministic evaluation and to gain insights concerning the proposed plant configuration, the licensee performed a risk assessment. The licensee further stated that the findings of the risk assessment confirmed that the risk impact of adding an additional CT to restore an inoperable KHU due to generator field pole rewind work is insignificant. The insights from this risk assessment support the deterministic analysis showing that there is reasonable assurance of adequate protection of public health and safety by operation in the manner proposed by the LAR.

To understand the operating procedures established and the training provided to the ONS operators for the proposed KHU outage, the NRC staff requested an explanation of actions (manual and automatic) that must be taken to mitigate the consequence of an accident in one ONS unit and to bring the other two ONS units to safe shut down conditions when both KHUs are inoperable during the 62-day KHU outage and the only power sources available are those not credited in the ONS accident analysis. In its letter dated December 5, 2013, the licensee stated that the LCT is not credited in UFSAR Chapter 15 accident analysis as an emergency power source. However, the ONS TS 3.8.1 Condition H allows both KHUs to be inoperable for a limited time period (60 hours) for planned reasons, provided that an LCT is energizing both standby buses via an isolated power path prior to entering the TS Condition. In this configuration, the LCT is serving as the ONS emergency power source. The capability of an LCT to power loss-of-coolant accident (LOCA) loads on one ONS unit and loss of offsite power (LOOP) loads on the other two ONS units is specifically addressed in UFSAR Chapter 8 (Section 8.2.1.4 and Table 8-1). With the standby buses continuously energized by an LCT, as required by TSs, the automatic actions of the emergency power switching logic (EPSL), as described in TS 3.3.17 Bases, "EPSL Automatic Transfer Function," will seek out and align power from the charged standby buses to each unit's main feeder buses and associated required loads. Therefore, there are no manual actions required to power these loads on any of the ONS units. Also, the licensee stated that operators are trained and the emergency operating procedures are in place to recognize that power may be supplied through transformer CT-4 or CT-5. For a LOCA/LOOP on one ONS unit and a LOOP on the other two ONS units from full power operating conditions, there is no change in how the operator would respond with a KHU supplying power via transformer CT-4 or a LCT energizing the standby buses via transformer CT-5 prior to the event. Since the standby buses were energized prior to the event, there are no operator actions required to restore power to the main feeder buses on any of the ONS units.

The NRC staff reviewed the above details and determined that the licensee has established procedures and training to align the LCT by automatic actions of the EPSL as described in TS 3.3.17.

The NRC staff issued numerous requests for additional information (RAIs) to the licensee regarding this LAR with concerns primarily associated with the simultaneous outage of both KHUs. The NRC staff was concerned that severe weather events (tornadoes, earthquake, ice storms, hurricanes, and snow) could cause the failure of all overhead power sources, leaving only the SSF and EFW systems available to the three ONS units to mitigate the design basis events and accidents. The licensee added a number of additional compensatory measures in response to these concerns. The NRC staff determined that these compensatory measures, that will be

contained in the TSs and in Regulatory Commitments, provide reasonable assurance that the safety of the ONS will not be unduly affected by the planned KHU maintenance outages for the generator field pole rewinds consistent with 10 CFR 50.65 requirements.

On the basis of its review, the NRC staff finds that the licensee has adequately addressed the staff's concerns and that the LAR is acceptable based on the deterministic evaluation and because it satisfies all of the applicable regulatory requirements identified in Section 2.0 of this SE.

3.6 Regulatory Commitments

The licensee made the following regulatory commitments in supplemental letters dated December 14, 2012, May 28, 2013, and November 26, 2013:

Commitment		Completion Date
From licensee letter dated December 14, 2012:		
1	No discretionary maintenance or testing on the offsite power system (230 kV Switchyard) will be performed	During [62-day] ¹ CT for TS 3.8.1 RA C.2.2.5
2	Operability of required offsite circuits should be maintained at all times	During [62-day] ¹ CT for TS 3.8.1 RA C.2.2.5
From licensee letter dated May 28, 2013:		
1	Duke Energy will take the necessary steps to ensure the PSW tie-in work and the generator pole rewind work will not impact or conflict with each other. Note: This does not preclude performing the work concurrently. (As of November 15, 2013, PSW tie-in to Keowee is complete).	During each KHU generator field pole rewind outage; expires on 1/1/2015
2	Duke Energy will use a Critical Activity Plan for the Keowee generator pole replacement outages for risk mitigation purposes. This plan will include similar risk mitigation strategies to those that are currently used in the Critical Activity Plans for scheduled Dual Unit Outages as described in the response to EEEB [Electrical Engineering Branch] RAI 7 in the enclosure to this letter [May 28, 2013]. The Critical Activity Plan will include requirements to notify the TCC and System Operating Center to take action to ensure grid reliability and minimize risks.	During each KHU generator field pole rewind outage; expires on 1/1/2015

¹ In the LAR dated June 27, 2012, as supplemented by letter dated December 14, 2012, the licensee's proposed TS change was for a 75-day CT extension. In the licensee's supplemental letter dated November 26, 2013, the proposed TS change was revised for a 62-day CT extension; therefore, applicable regulatory commitments were updated to reflect a 62-day CT.

From November 13, 2013, licensee/NRC meeting and licensee letter dated November 26, 2013:		
1	ONS will not start the extended single KHU outage or a dual KHU outage if severe weather conditions are forecast	During KHU generator field pole rewind outages
2	ONS will contact the system load dispatcher once per day to ensure no significant grid perturbations (high grid loading not able to withstand a single contingency of line or generation outage) are expected during extended TS completion time.	During KHU generator field pole rewind outages
3	ONS will control the steam-driven emergency feedwater pump on each ONS unit as "protected" equipment during the extended TS completion time.	During KHU generator field pole rewind outages
4	ONS will continuously staff the SSF during the dual KHU outages.	During KHU generator field pole rewind outages
5	<p>Critical Activity Plan will include the following risk reduction measures:</p> <ul style="list-style-type: none"> a) LCT and Central Switchyard protected b) 2nd LCT protected and available within one hour c) Verify Jocassee Hydro Unit available and can be aligned to the Oconee 230kV Yellow Bus within approximately one hour prior to start of outage d) Temporary DG located at Keowee Hydro Station with capability to restore available KHU unit to operable status within 4 hours from dual KHU outage e) Reduced RCS Inventory not permitted during dual KHU outage f) Temporary diesel-driven pump available to feed each unit's steam generators g) The Protected Service Water (PSW) system is installed and capable of aligning the Fant [Commercial Feed] 100 kV line or a KHU to the SSF should the SSF diesel generator (DG) fail to start and run. 	During KHU generator field pole rewind outages
6	Duke Energy will not use the 2 nd Completion Time for Required Action C.2.2.5 for planned Keowee work prior to the Keowee generator pole rewind outage for each KHU.	Ongoing until KHU generator field pole rewind outages complete.

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are best provided by the licensee's administrative processes, including its commitment management program. The above regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

3.7 NRC Staff Conclusion

The NRC staff reviewed the licensee's proposed changes to TS 3.8.1, "AC Sources – Operating." Based on the above evaluation, the NRC staff concludes that the proposed change to TS RA C.2.2.3 and RA C.2.2.5 to allow a temporary one-time Completion Time extension of 62 days to restore an inoperable KHU for performing generator field pole rewind work for each KHU will continue to provide adequate protection to public health and safety.

The NRC staff's conclusion is based on the following compensatory actions and risk reduction measures that will be implemented for the 62-day KHU outage:

- With two KHUs in allowed outage time on maintenance, in addition to LCT, other back-up power sources (a diesel generator at KHU Station, and a black-start capable Hydro Power Unit at Jocassee Station) are available and can provide power to safety system buses necessary to maintain all three ONS units in a safe shutdown condition, should a loss of all station power occur, until power can be restored.
- No discretionary maintenance or testing will be allowed on the SSF, EFW, and essential AC power systems
- No discretionary maintenance or testing on the offsite power system (230 kV system) will be performed
- Operability of required offsite circuits should be maintained at all time.
- Preventative Maintenance and Servicing Checks are in place for regular maintenance of the equipment
- The LCTs are tested as per TS, and the LCTs have a monthly preventive maintenance (PM) (non-TS related) to align each unit to the system grid and load to full power which is well in excess of LOCA/LOOP load requirements.
- The transformer connecting the LCT and the plant Safety Buses, CT-5, undergoes minor PM every 18 months and major PM every 3 years
- The licensee will follow the Critical Activity Plan which is primarily developed for application to planned work activities for such major refurbishment work

On the basis of its review, the NRC staff finds that the licensee has adequately addressed the staff's concerns regarding the vulnerability of the ONS during a dual KHU outage for the major refurbishment work of generator field pole rewind, and that the proposed LAR is acceptable based on the deterministic evaluation and because it satisfies all of the applicable regulatory requirements identified in Section 2.0 of this SE.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The 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. 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, which was published in the *Federal Register* on October 2, 2012 (77 FR 60149). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

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

Principal Contributor(s): S. Som
R. Mathew
G. Waig

Date: January 8, 2014

S. Batson

- 2 -

If you have any questions, please call me at 301-415-1030.

Sincerely,

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-269, 50-270, and 50-287

Enclosures:

1. Amendment No. 383 to DPR-38
2. Amendment No. 385 to DPR-47
3. Amendment No. 384 to DPR-55
4. Safety Evaluation

cc w/encls: Distribution via Listserv

DISTRIBUTION:

PUBLIC

LPLII-1 R/F

RidsAcrsAcnw_MailCtr Resource

RidsNrrDssStsb Resource

RidsNrrDorIDpr Resource

RidsNrrDorILp2-1 Resource

RidsNrrDeEeeb Resource

RidsNrrLASFigueroa Resource

RidsNrrPMOcone Resource

RidsRgn2MailCenter Resource

SSom

RMathew

GWaig

ADAMS Accession No.: ML13357A674

* See memo dated 12/24/13

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	NRR/EEEE/BC*	NRR/STSB/BC	OGC	NRR/LPL2-1/BC	NRR/LPL2-1/PM
NAME	RGuzman	SFigueroa	PKang for JZimmerman	RElliott	JWachutka (NLO)	RPascarelli	RGuzman
DATE	12/26/13	1/6/13	12/24/13	1/3/14	1/7/14	1/8/14	1/8/14

OFFICIAL RECORD COPY