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

September 14, 2010

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

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (ONS) - REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING LICENSE AMENDMENT REQUEST, TRANSITION TO TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* (10 CFR), PART 50, SECTION 50.48(c), *NATIONAL FIRE PROTECTION ASSOCIATION STANDARD* (NFPA) 805 (TAC NOS. ME3844, ME3845, AND ME3846)

Dear Mr. Baxter:

By letter dated May 30, 2008, as supplemented by letters dated October 31, 2008, January 30, February 9, February 23, May 31, August 3, September 29, and November 30, 2009, and April 14, 2010, Duke Energy Carolinas, LLC (the licensee), submitted a license amendment request (LAR) to transition the fire protection licensing basis at ONS from 10 CFR 50.48(b) to 10 CFR 50.48(c), NFPA 805. By letter dated April 14, 2010, the licensee resubmitted the LAR and superseded the content of the LAR submitted by letters dated May 30, 2008, and October 31, 2008. This resubmitted LAR, however, does not supersede previous responses to RAI questions submitted by letters dated October 31, 2008, January 30, February 9, February 23, May 31, August 3, September 29, and November 30, 2009.

To complete our review of the LAR, the U.S. Nuclear Regulatory Commission (NRC) staff needs additional information. The NRC staff's RAI is enclosed. Unless otherwise agreed to, please submit all responses to these RAI questions within 30 days.

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

Sincerely,

Karen Cotton for

John Stang, 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

Enclosure:
RAI

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION (RAI)

OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (ONS)

TRANSITION TO

TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* (10 CFR), PART 50, SECTION 50.48(c)

NATIONAL FIRE PROTECTION ASOCIATION STANDARD (NFPA) 805

By letter dated May 30, 2008 (Agencywide Documents Access and Management System (ADAMS), Accession No. ML081650475), as supplemented by letters dated October 31, 2008 (ADAMS Accession No. ML083120362), January 30, 2009 (ADAMS Accession No. ML091040205), February 9, 2009 (ADAMS Accession No. ML090480143), February 23, 2009 (ADAMS Accession No. ML090700134), May 31, 2009 (ADAMS Accession No. ML091590045), August 3, 2009 (ADAMS Accession No. ML092190212), September 29, 2009 (ADAMS Accession No. ML092740624), November 30, 2009 (ADAMS Accession No. ML093410007), and April 14, 2010 (ADAMS Accession No. ML101121032), Duke Energy Carolinas, LLC (the licensee), submitted a license amendment request (LAR) for the U.S. Nuclear Regulatory Commission (NRC) staff's review and approval. The proposed LAR would approve the transition of the fire protection licensing basis at ONS from 10 CFR 50.48(b) to 10 CFR 50.48(c), NFPA 805.

The NRC staff has determined that the following information is needed in order to complete its review of the LAR:

RAI 3-3.1

Section 2.4.2.2.2 of NFPA 805 states that circuits that share common power supply and/or common enclosure with circuits required to achieve nuclear safety performance criteria shall be evaluated for their impact on the ability to achieve the nuclear safety performance criteria.

LAR Table S-2 in Attachment S provides a list of implementation items for ONS. As described in Implementation Item 33, the breaker coordination analysis for ONS will be updated to include all new NFPA 805 safe shutdown equipment list (SSEL) related power supplies for power and non-power operations. The ONS response to RAI 3-3 states that the revised breaker coordination study will meet the requirements of NFPA 805, Section 2.4.2.2.2.

The planned modification for Protected Service Water (PSW) includes the installation of a diverse safety-related power supply for powering various safe shutdown equipment. This modification will also install the ability to power the Safe Shutdown Facility (SSF) safe shutdown components from alternate power sources. However, it is not clear if the currently ongoing coordination study will bound the electrical aspects of the PSW modification.

Confirm that the coordination study identified in Attachment S of the LAR includes the PSW modification. If a separate coordination study is to be performed under the PSW modification, provide the date by which this study will be complete. For the coordination study referred to in your response to RAI 3-3, and for the breaker coordination study for the PSW modification, if

separate, confirm that ONS will take corrective action to provide breaker coordination for any circuits where inadequate coordination is identified and that the requirements of Section 2.4.2.2.2 of NFPA 805 will be met.

RAI 3-16.2

Provide information which confirms that the fire area analysis methodology assumed multiple fire induced failures and multiple spurious actuations based on the cables and components present in the fire area of concern, and was not limited to safe shutdown cables and components.

LAR Table B2 provides conflicting statements with regard to the analysis of multiple spurious operations (MSOs). Specifically, LAR Table B-2 (Page 93) states:

> *The fire area analysis methodology assumes multiple fire induced failures and multiple spurious actuations based on the cables and components present in the fire area of concern. All postulated cable and component failures were identified.*

This statement clearly indicates that the methodology considered all cables and components located in the area of concern. However, LAR Table B-2 (Page 102) states:

> *All postulated safe shutdown cable and component failures were identified and a resolution provided at the cable or component level for the credited train.*

This statement infers that the MSO methodology was limited to a review of cables and components identified as being required to achieve and maintain safe shutdown. Interactions that could impact nuclear safety may not be limited to only those cables and components identified as being required to achieve safe shutdown. Confirm that the MSO methodology considered all cables and components present in the fire area of concern, and were not limited to safe shutdown cables and components.

RAI 3-49

The nuclear safety goal of NFPA 805 is to provide reasonable assurance that a fire during any operational mode and plant configuration will not prevent the plant from achieving and maintaining the fuel in a "safe and stable condition." NFPA 805 does not define a time period in which a "safe and stable condition" should be evaluated.

Section 4.2.1.2 of the LAR proposes that safe and stable conditions be deemed fulfilled if hot standby is achieved for 72 hours. This section of the LAR also indicates that long-term actions would be required to indefinitely maintain hot standby beyond the proposed 72-hour "mission time." However, it does not identify the specific actions that may need to be taken or describe why they are needed to maintain the fuel in a safe and stable condition.

Demonstrating the ability to maintain safe and stable conditions for only the first 72 hours following a fire does not, by itself, provide adequate assurance that the nuclear safety goal of NFPA 805 is met. The licensee should be able to demonstrate that safe and stable conditions can be maintained indefinitely, once achieved. The licensee would only need to discuss a time limit

with respect to safe and stable if there was some physical limitation on the part of one or more plant systems/components that would result in the failure to be able to maintain safe and stable conditions (e.g., cooling water inventory would be depleted, battery capacity is limited, centrifugal pump may overheat as a result of too low flow, etc.). In this case, the licensee should discuss the limitations, and the basis for why that limitation will not have an adverse impact on the long-term ability to maintain the safe and stable requirements (e.g., by the time the plant/system problem occurs, additional resources/equipment will be made available, damage repairs can be made, etc.).

RAI 5-80

During the evaluation of recent inspection findings (ADAMS Accession No. ML102240588), the NRC notified ONS that it did not agree with ONS's evaluation concluding that the frequency and severity of high-energy arcing faults on 4160/6900V bus ducts in the turbine building are substantially less than values developed using assumptions consistent with NUREG/CR 6850 and the NRC endorsed NFPA FAQ-07-0035.

a) Please provide the fire-area by fire-area change-in-risk estimates associated with the transition to NFPA 805 that appropriately reflects the frequency and severity of these faults.

b) Please explain how the change-in-risk estimates incorporating these faults were derived.

c) If these estimates are not derived by changing the fire PRA models, when will the models be changed to include these faults?

September 14, 2010

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

SUBJECT: OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (ONS) - REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING LICENSE AMENDMENT REQUEST, TRANSITION TO TITLE 10 OF THE *CODE OF FEDERAL REGULATIONS* (10 CFR), PART 50, SECTION 50.48(c), *NATIONAL FIRE PROTECTION ASSOCIATION STANDARD (*NFPA) 805 (TAC NOS. ME3844, ME3845, AND ME3846)

Dear Mr. Baxter:

By letter dated May 30, 2008, as supplemented by letters dated October 31, 2008, January 30, February 9, February 23, May 31, August 3, September 29, and November 30, 2009, and April 14, 2010, Duke Energy Carolinas, LLC (the licensee), submitted a license amendment request (LAR) to transition the fire protection licensing basis at ONS from 10 CFR 50.48(b) to 10 CFR 50.48(c), NFPA 805. The letter dated April 14, 2010, the licensee resubmitted the LAR and superseded the content of the LAR submitted by letters dated May 30, 2008, and October 31, 2008. This resubmitted LAR, however, does not supersede previous responses to RAI questions submitted by letters dated October 31, 2008, January 30, February 9, February 23, May 31, August 3, September 29, and November 30, 2009.

To complete our review of the LAR, the U.S. Nuclear Regulatory Commission (NRC) staff needs additional information. The NRC staff's RAI is enclosed. Unless otherwise agreed to, please submit all responses to these RAI questions within 30 days.

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

Sincerely,

/RA by KCotton for/

John Stang, 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

Enclosure:
RAI

cc w/encl: Distribution via Listserv

DISTRIBUTION:
PUBLIC
LPLII-1 R/F
RidsAcrsAcnw_MailCtr Resource
RidsNrrDorlDpr Resource
RidsNrrDorlLp2-1 Resource
RidsNrrLAMOBrien Resource (hard copy)
NSanfilippo, EDO Region 2
RidsNrrPMOconeeResource (hard copy)
RidsOgcRp Resource
RidsRgn2MailCenter Resource
AKlein, NRR
DHarrison, NRR
PLain, NRR

ADAMS Accession No. ML102560409 *via e-mail **via memo dated 08/20/10 ML102080132

OFFICE	NRR/LPL2-1/PM	NRR/LPL2-1/LA	AFPB/BC	NRR/LPL2-1/BC	NRR/LPL2-1/PM
NAME	JStang*	MO'Brien*	AKlein**	GKulesa	JStang*
DATE	09/14/10	09/14/10	09/10/10	09/14/10	09/14/10

OFFICIAL RECORD COPY