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October 23, 2015

10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC (Duke Energy)
Catawba Nuclear Station, Units 1 and 2
Docket Numbers 50-413 and 50-414
License Amendment Request (LAR) for Changes to Technical Specification (TS)
3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation"
and TS 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"
Resolution of Operable But Degraded Condition Due to Non-Conservative TS
Response to NRC Request for Additional Information

- References:
1. Letters from Duke Energy to NRC, dated November 24, 2014 (ADAMS Accession Number ML14330A327), July 31, 2015 (ADAMS Accession Number ML15217A008), and August 17, 2015 (ADAMS Accession Number ML15231A012)
 2. Letters from NRC to Duke Energy, dated May 18, 2015 (ADAMS Accession Number ML15132A773) and September 17, 2015 (ADAMS Accession Number ML15252A401)

The Reference 1 letters collectively comprise Duke Energy's request for NRC review and approval to revise the Allowable Value parameter for the TS 3.3.2 Table 3.3.2-1, "Engineered Safety Feature Actuation System Instrumentation" function for Auxiliary Feedwater Loss of Offsite Power (Function 6.d.) and for the TS 3.3.5 Loss of Voltage function in Surveillance Requirement (SR) 3.3.5.2 in order to make this parameter more restrictive. The existing parameter was determined to be non-conservative and this parameter is presently classified as Operable But Degraded in the Catawba Corrective Action Program. In addition, the Nominal Trip Setpoint parameter for this function is being slightly lowered in order to gain additional margin to what is known as a "double sequencing event". Finally, as part of this LAR, applicable footnotes are also being added to the affected TS 3.3.2 function in accordance with TS Task Force Traveler TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions".

The September 17, 2015 Reference 2 letter transmitted supplemental NRC Requests for Additional Information (RAIs) associated with the LAR.

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The purpose of this letter is to formally respond to these RAIs. The enclosure to this letter provides Duke Energy's response. The format of the enclosure is to restate each RAI question, followed by its associated response.

The conclusions of the original Regulatory Evaluation and Environmental Consideration contained in the November 24, 2014 Reference 1 letter are unaffected as a result of this RAI response.

Pursuant to 10 CFR 50.91, a copy of this LAR supplement has been forwarded to the appropriate State of South Carolina official.

There are no regulatory commitments contained in this letter or its enclosure.

If you have any questions or need additional information on this matter, please contact L.J. Rudy at (803) 701-3084.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 23, 2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'K. Henderson', written over a horizontal line.

Kelvin Henderson
Vice President, Catawba Nuclear Station

LJR/s

Enclosure

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xc (with enclosure):

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Enclosure

RESPONSE TO NRC REQUESTS FOR ADDITIONAL INFORMATION (RAIs)

Subject: License Amendment Request (LAR) for Changes to Technical Specification (TS) 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation" and TS 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"
Resolution of Operable But Degraded Condition Due to Non-Conservative TS

REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

LICENSE AMENDMENT REQUEST

TS 3.3.2, "ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION"

TS 3.3.5, "LOSS OF POWER DIESEL GENERATOR STARTUP INSTRUMENTATION"

DOCKET NOS. 50-413 AND 50-414

By letter dated November 24, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14330A327), Duke Energy Carolinas (Duke) submitted a license amendment request for the Catawba Nuclear Station, Units 1 and 2. The proposed amendment would revise the allowable value in the subject Technical Specifications to correct a nonconservative value. In order for the U.S. Nuclear Regulatory Commission (NRC) staff to complete its review of the relief request, the following additional information is requested.

1. By letter dated August 17, 2015 (ADAMS Accession No. ML15231A012), Duke provided a response to NRC RAI No. 6, which requested a curve showing the voltage transient associated with the starting of loss-of-coolant accident loads after receipt of a safety injection signal. Please provide the following clarifications:
 - a. The figure for Unit 2 shows a voltage transient at 21.9 seconds that your response characterized as the switching on and off of loads used to create bounding voltages for the 600 V system. Further, the response indicates that it would not be reflective of an actual transient. Please provide additional clarification of the cause of this transient.

Duke Energy Response:

This transient is caused by the switching on and off of the Containment Spray pump. This pump no longer automatically starts since the ECCS Water Management modifications were installed. The Unit 1 voltage graph has already been updated to reflect this change; therefore, the Unit 1 graph is representative of the Unit 2 voltage response.

- b. The response further stated that based on Unit 2 figure, the degraded grid voltage relay would not be capable of resetting due to the degraded grid timer timing out prior to the voltage recovering above the reset voltage. The response indicates that this is due the fact that the 4.16 kV motor start times have been increased to take into account timer tolerances and additional conservatism. This was done to ensure that the worst case motor operated valve voltage is determined. Please explain the tolerances and conservatism assumed in the motor start times or clarify its response.

Duke Energy Response:

The tolerance to the degraded grid voltage timers was added to the motor start time to create a bounding voltage profile to analyze the Generic Letter 89-10 motor operated valves. The Unit 1 voltage analysis uses a higher motor terminal voltage (determined at the minimum expected grid value, versus the minimum trip setting) to calculate the start times for the 4 kV motors and therefore better represents the voltage profile when at the minimum expected grid voltage. The Unit 1 graph shows that the degraded voltage relay is capable of resetting.

- c. The response stated that the lowest voltage occurs when the containment spray pump starts concurrently with auxiliary feedwater pump motor. However, automatic starting of containment spray motors have been deleted as part of Emergency Core Cooling System Water Management license amendment (Amendments 257/252 for Units 1 and 2, respectively). Please confirm that auxiliary feedwater pump motor and containment spray pump motors will not start simultaneously based on the amendments 257/252 approved by NRC on June 28, 2010 (ADAMS Accession No. ML092530088).

Duke Energy Response:

Catawba confirms that the ECCS Water Management modifications approved by the NRC in amendments 257/252 have been implemented on both units. The Containment Spray pump motors no longer start automatically in response to a design basis accident. They are manually started.

- d. Please discuss any impact on the Unit 2 voltage-time curve as a result of the above clarifications.

Duke Energy Response:

The ECCS Water Management modifications have been installed and taken into account for the Unit 1 voltage profile while at the minimum expected grid voltage. The Unit 2 voltage profile does not take the modifications into account and is at the minimum degraded grid trip setpoint and therefore indicates lower voltages. Taking these two items into account (the modifications have been installed on Unit 2), the Unit 2 voltage profile should be similar to the Unit 1 voltage profile curve.