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Enclosure 3 contains proprietary information.
Withhold from public disclosure per 10 CFR 2.390.
Upon removal of Enclosure 3, this letter is uncontrolled.

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May 29, 2012

U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: Document Control Desk

Subject: Duke Energy Carolinas, LLC (Duke Energy)
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370

Response to Request for Additional Information Regarding License Amendment Related to Measurement Uncertainty Recapture Power Uprate (TAC NOS. ME8213 and ME8214)

This letter provides the responses to a request for additional information (RAI) regarding the March 5, 2012 McGuire Nuclear Station (MNS) Units 1 and 2 License Amendment Request (LAR) to support a measurement uncertainty recapture (MUR) power uprate. The NRC staff's questions and Duke Energy's responses are provided in Enclosure 1. A Duke Energy regulatory commitment related to NRC RAI question 4 is provided in Enclosure 2. Drawings provided as part of this RAI response are included in Enclosure 3.

The NRC RAI was conveyed via a letter dated April 27, 2012. The NRC indicated that MNS should provide a response to the four questions in the RAI within 30 days of issuance of that letter. Enclosure 1 provides a response to questions 1 through 3. Question 4 of the RAI indicated MNS should complete an evaluation of the MUR power uprate against the Environmental Qualification (EQ) Program requirements and provide the results to the NRC. MNS has identified components which require further evaluation with respect to the EQ program requirements. In order to ensure a complete and accurate response, MNS requests additional time to respond to question 4. MNS will complete the evaluation of the MUR power uprate against the EQ Program requirements and provide the results of this evaluation by July 6, 2012.

The conclusions reached in the original determination that the LAR contains No Significant Hazards Considerations and the basis for the categorical exclusion from performing an Environmental/Impact Statement have not changed as a result of the RAI responses provided in this submittal.

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NRR

Enclosure 3 contains proprietary information. Duke Energy requests that Enclosure 3 be withheld from public disclosure per 10 CFR 2.390. Upon removal of Enclosure 3, this letter is uncontrolled.

Please contact Kenneth L Ashe at 980-875-4535 if additional questions arise regarding this LAR.

Sincerely,

H. Duncan Brewer (for Regis T. Repko)

Enclosures
cc: w/enclosures

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OATH AND AFFIRMATION

H. Duncan Brewer affirms that he is the person who subscribed his name to the foregoing statement, and that all the matters and facts set forth herein are true and correct to the best of his knowledge.

H. Duncan Brewer, Site Nuclear Safety Assurance Manager

Subscribed and sworn to me: May 29, 2012
Date

Notary Public

My commission expires: June 18, 2013
Date

bxc w/attachments:

McGuire Master File (MG02DM)
NRIA/ELL (EC05O)
R. T. Repko (MG01VP)
S. D. Capps (MG01VP)
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J. W. Boyle (MG05SE)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION BY THE OFFICE OF NUCLEAR REGULATION REGARDING A MCGUIRE LICENSE AMENDMENT TO SUPPORT A MEASUREMENT UNCERTAINTY RECAPTURE (MUR) POWER UPRATE

Enclosure 1

McGuire Nuclear Station's Response to Request for Additional Information

NRC Question 1

1. In Enclosure 2 of the LAR, Section V.1.D, "Grid Stability," on page E2-73, the licensee stated that:

> A Generation System Impact Study evaluation was completed and found to be acceptable for the installation of an additional 80 [mega-watt electric] MW of generating capacity at McGuire Unit 1 and Unit 2 located in Mecklenburg County, [North Carolina] NC. This capacity increase is due to the Measurement Uncertainty Recapture (MUR) uprate, the High Pressure [HP] Turbine replacement and new electrical Generators/Exciters ....

Regarding above, please provide the following additional information:

a. Provide a split of the 80 MW of additional generating capacity between the MUR power uprate and the HP Turbine replacement.

b. Provide the maximum MW generation expected at each unit at the McGuire Nuclear Station corresponding to an 80 MW capacity increase.

c. Provide the MVARs (mega-voltampere-reactive) required, corresponding to the maximum MW generation expected, based on the agreement with the transmission system operator and meeting the voltage requirement at the switchyard.

d. Provide the maximum capacity of new generators in terms of MVA (mega-voltampere) and power factor (preferably provide generator capability curves).

McGuire Response to Question 1

a. Provide a split of the 80 MW of additional generating capacity between the MUR power uprate and the HP Turbine replacement.

The Generation System Impact Study evaluation determined it was acceptable to install an additional 80 MW electrical (MWe) of generation capacity at the McGuire Nuclear Station (MNS). The split of this acceptable additional generation capacity for MNS Units 1 and 2 is 20 MWe/Unit for the MUR power uprate and 20 MWe/Unit for the HP Turbine replacement.

b. Provide the maximum MW generation expected at each unit at the McGuire Nuclear Station corresponding to an 80 MW capacity increase.

Each MNS Unit can currently generate approximately 1145 MWe at the point of grid interconnection. Therefore, based upon the Generation System Impact Study evaluation which determined 80 MWe of additional station generation capacity is acceptable, the maximum acceptable MW generation for each MNS Unit would be approximately 1185 MWe.

c. Provide the MVARs (mega-voltampere-reactive) required, corresponding to the maximum MW generation expected, based on the agreement with the transmission system operator and meeting the voltage requirement at the switchyard.

At the point of interconnection, the MVARs required meeting the voltage requirements at the switchyard and corresponding to the maximum acceptable MW generation of approximately 1185 MWe/Unit, is 389.5 MVAR lagging and (−) 389.5 MVAR leading. These MVAR values were calculated using a 0.95 power factor (pf) lagging and a 0.95 pf leading.

d. Provide the maximum capacity of new generators in terms of MVA (mega-voltampere) and power factor (preferably provide generator capability curves).

Based upon the manufacturer's nameplate rating and calculated capability curves, the maximum capacity of the new generators is 1450 MVA at a power factor of 0.90.

NRC Question 2

Provide the ampere rating of 24 kV (kilovolt) isolated-phase buses to verify its capacity corresponding to the maximum generation expected in terms of MW and MVARs (after the 80 MW increase in generation).

McGuire Response to Question 2

The MNS station 24 kilovolt (kv) isolated-phase buses are rated at 40,000 amperes forced cooled. Based upon the manufacturer's nameplate rating, generator current at 100% rated voltage (24 kv) corresponding to the maximum generation expected (after the approximately 80

MWe increase in station generation) is 34,882 amperes. The worse case generator current of 36,717 amperes would occur at 95% rated voltage (22.8 kv).

NRC Question 3

Provide a legible (preferably electronic) copy of the one line diagram for the main power distribution system showing ratings of major equipment such as power transformers, and new generators.

McGuire Response to Question 3

Printed copies of the below one-line drawings are included in Enclosure 3 to this correspondence. In addition, electronic copies have been provided to the NRC Project Manager for MNS.

MC-1700-01.00, Revision 24 – Unit 1 One Line Diagram 24 KV Relays and Meters
MC-1700-02.00, Revision 22 – Unit 1 One Line Diagram 24 KV Relays and Meters
MC-2700-01.00, Revision 20 – Unit 2 One Line Diagram 24 KV Relays and Meters
MC-2700-02.00, Revision 17 – Unit 2 One Line Diagram 24 KV Relays and Meters

NRC Question 4

In Enclosure 2 of the LAR, Section V.1.C, "Environment Qualification [EQ] of electrical equipment," on page E2-73, the licensee stated that:

> In accordance with the McGuire [1 and 2] design change process, any specific component modifications that may be required to support the MUR uprate will be evaluated against the EQ Program requirements.

The NRC staff expects that any specific component modification that may be required to support the MUR power uprate will be evaluated against the EQ Program requirements prior to approval of the LAR by the NRC staff. Therefore, please complete the evaluation of the MUR power uprate against the EQ Program requirements and provide the results of this evaluation.

McGuire Response to Question 4

MNS has identified components which require further evaluation with respect to the EQ program requirements. In order to ensure a complete and accurate response, MNS requests additional time to respond to question 4. MNS will complete the evaluation of the MUR power uprate against the EQ Program requirements and provide the results of this evaluation by July 6, 2012. This is identified as a commitment in Enclosure 2.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION BY THE OFFICE OF NUCLEAR REGULATION REGARDING A MCGUIRE LICENSE AMENDMENT TO SUPPORT A MEASUREMENT UNCERTAINTY RECAPTURE (MUR) POWER UPRATE

Enclosure 2

List of Commitments

Commitment	Commitment Date
MNS will complete the evaluation of the MUR power uprate against the EQ Program requirements and provide the results of this evaluation.	July 6, 2012