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March 7, 2013

10 CFR 50.90

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

Restatement of License Condition Proposed in August 15, 2012 Response to Request for Additional Information Related to License Amendment Request for Measurement Uncertainty Recapture Power Uprate (TAC Nos. ME8213 and ME8214)

This letter provides a restatement of a proposed License Condition described in an August 15, 2012 response to an August 1, 2012 Nuclear Regulatory Commission (NRC) request for additional information (RAI) related to a March 5, 2012 McGuire Nuclear Station (MNS) Units 1 and 2 License Amendment Request (LAR) submitted pursuant to 10 CFR 50.90 in support of a measurement uncertainty recapture (MUR) power uprate.

In the August 15, 2012 MNS MUR LAR RAI response, MNS agreed to a License Condition that would address the issue described in RAI question 41. On February 22, 2013, the NRC requested that MNS provide an explicit restatement of the License Condition proposed in the response to RAI question 41. This restatement is provided in Enclosure 1.

The restatement of the proposed License Condition in Enclosure 1, which is consistent with the License Condition proposed in the August 15, 2012 response to RAI question 41, does not revise or replace the August 15, 2012 response to RAI question 41. In addition, the conclusions reached in the original determination that the MNS MUR 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 proposed License Condition restatement provided in this submittal.



A001
NRR

Please contact Jeffrey N Robertson at 980-875-4499 if additional questions arise regarding this LAR.

Sincerely,

S. D. Capps

Enclosures

cc: w/enclosure

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OATH AND AFFIRMATION

Steven D. Capps 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.

S D Capps

Steven D. Capps, Vice President, McGuire Nuclear Station

Subscribed and sworn to me: March 7, 2013

Date

Toni C. Gibbs

Notary Public

My commission expires: July 1, 2017

Date

## Enclosure 1

## Restatement of License Condition Proposed in August 15, 2012 Response to a Request for Additional Information Related to License Amendment Request for Measurement Uncertainty Recapture Power Uprate

By letter dated August 15, 2012 (Agencywide Documents Access and Management System, Accession No. ML12250A622), Duke Energy Carolinas, LLC (Duke Energy), submitted a response to an August 1, 2012 Nuclear Regulatory Commission (NRC) request for additional information (RAI) (Agencywide Documents Access and Management System, Accession No. ML12215A330) related to a March 5, 2012 McGuire Nuclear Station (MNS) Units 1 and 2 License Amendment Request (LAR) (Agencywide Documents Access and Management System, Accession No. ML12215A330) submitted pursuant to 10 CFR 50.90 in support of a measurement uncertainty recapture (MUR) power uprate. As part of the August 15, 2012 MUR LAR RAI response, MNS provided a response to RAI question 41 from the August 1, 2012 NRC RAI. Both RAI question 41 and the MNS response from the August 15, 2012 submittal are copied below:

### NRC Question 41

Pressure-Temperature (P-T) limit curves

The regulation at 10 CFR Part 50, Appendix G, Paragraph IV.A states that, "the pressure-retaining components of the reactor coolant pressure boundary [RCPB] that are made of ferritic materials must meet the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code [ASME Code, Section III], supplemented by the additional requirements set forth in [paragraph IV.A.2, "Pressure-Temperature (P-T) Limits and Minimum Temperature Requirements"]..." Therefore, 10 CFR Part 50, Appendix G requires that P-T limits be developed for the ferritic materials in the reactor vessel (RV) beltline (neutron fluence $\geq 1 \times 10^{17}$ n/cm$^2$, E > 1 MeV), as well as ferritic materials not in the RV beltline (neutron fluence $< 1 \times 10^{17}$ n/cm$^2$, E > 1 MeV). Further, 10 CFR Part 50, Appendix G, requires that all RCPB components must meet the ASME Code, Section III, requirements. The relevant ASME Code, Section III, requirement that will affect the P-T limits is the lowest service temperature requirement for all RCPB components specified in Section III, NB-2332(b).

The P-T limit calculations for ferritic RCPB components that are not RV beltline shell materials may define P-T curves that are more limiting than those calculated for the RV beltline shell materials due to the following factors:

1. RV nozzles, penetrations, and other discontinuities have complex geometries that may exhibit significantly higher stresses than those for the RV beltline shell region. These higher stresses can potentially result in more restrictive P-T limits, even if the reference temperature (RTNDT) for these components is not as high as that of RV beltline shell materials that have simpler geometries.

2. Ferritic RCPB components that are not part of the RV may have initial RTNDT values, which may define a more restrictive lowest operating temperature in the P -T limits than those for the RV beltline shell materials.

Consequently, please describe how the current P-T limit curves at 34 EFPY for McGuire Units 1 and 2 and the methodology used to develop these curves considered all RV materials (beltline and non-beltline) and the lowest service temperature of all ferritic RCPB materials, consistent with the requirements of 10 CFR Part 50, Appendix G, in the MUR power uprate LAR.

**McGuire Response to NRC Question 41**

Consideration of RV materials (beltline and non-beltline) and the lowest service temperature of all ferritic RCPB materials consistent with the requirements of 10 CFR Part 50, Appendix G, is the subject of ongoing discussions between the industry and the NRC. During discussion of this RAI question with the NRC, the NRC Staff indicated they would require this issue be addressed as part of their MUR LAR review rather than waiting for resolution of the ongoing industry discussions. To this end, the NRC proposed issuance of a new MNS License Condition requiring submittal of a site-specific analysis or a topical report addressing RAI Question 41 within approximately one year after NRC approval of the MNS MUR LAR. MNS agrees that a License Condition would address the issue raised in the RAI.

On February 22, 2013, the NRC requested MNS provide an explicit restatement of the License Condition proposed in the McGuire response to RAI question 41. This restatement, which is provided in Table 1 of this Enclosure, is consistent with the License Condition proposed in the August 15, 2012 response to RAI question 41.

## Table 1

## Restatement of MNS Unit 1 and Unit 2 License Condition Proposed in the August 15, 2012 Response to MNS MUR LAR RAI Question 41

| **Proposed Unit 1 License Condition** |
| --- |
| The Licensee shall perform an analysis, in the form of either a topical report or site-specific analysis, describing how the current P-T limit curves at 34 Effective Full Power Years (EFPY) for McGuire Unit 1 and the methodology used to develop these curves considered all Reactor Vessel (RV) materials (beltline and non-beltline) and the lowest service temperature of all ferritic Reactor Coolant Pressure Boundary (RCPB) materials, as applicable, consistent with the requirements of 10 CFR Part 50, Appendix G. This analysis shall be provided to the NRC within one year after NRC approval of the March 5, 2012 McGuire Measurement Uncertainty Recapture (MUR) License Amendment Request. |

| **Proposed Unit 2 License Condition** |
| --- |
| The Licensee shall perform an analysis, in the form of either a topical report or site-specific analysis, describing how the current P-T limit curves at 34 Effective Full Power Years (EFPY) for McGuire Unit 2 and the methodology used to develop these curves considered all Reactor Vessel (RV) materials (beltline and non-beltline) and the lowest service temperature of all ferritic Reactor Coolant Pressure Boundary (RCPB) materials, as applicable, consistent with the requirements of 10 CFR Part 50, Appendix G. This analysis shall be provided to the NRC within one year after NRC approval of the March 5, 2012 McGuire Measurement Uncertainty Recapture (MUR) License Amendment Request. |