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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-001

ATTENTION: Document Control Desk

Subject: Duke Energy Carolinas (DEC), LLC

McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370

Catawba Nuclear Station, Units 1 and 2
Docket Nos. 50-413 and 50-414

License Amendment Request (LAR) for Technical Specification (TS) 3.6.13, Ice Condenser Doors, Response to Request for Additional Information (RAI)

This letter provides the response to a second RAI for a LAR submitted on October 2, 2008 to revise TS 3.6.13 - Ice Condenser Doors for the McGuire and Catawba Nuclear Stations. This RAI was sent via electronic mail from Jon Thompson dated October 5, 2009. The draft response to this RAI was discussed during a conference call with the NRC staff on October 13, 2009. The NRC staff's questions and DEC's responses are provided in Enclosure 1.

The additional information provided in this RAI does not impact the conclusions of the No Significant Hazards Considerations and the basis for the categorical exclusion from performing an Environmental/Impact Statement presented in the October 2, 2008 LAR submittal. Specifically, the proposed revisions to TS 3.6.13 do not affect the current post-accident Containment Response analysis of record. In addition, DEC's August 25, 2009 response to the first RAI is not impacted by this RAI response.

This RAI response contains no regulatory commitments for McGuire or Catawba.

A001
NRR

Please direct any questions with regard to this matter to Julius W. Bryant at (980) 875-4162.

Very truly yours,

Bruce Hamilton

B. H. Hamilton

Enclosure

xc w/ Enclosures

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OATH AND AFFIRMATION

Bruce H. Hamilton 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.

Bruce Hamilton
Bruce H. Hamilton, Site Vice President

Subscribed and sworn to me: 10-23-09
Date

Kay L Crane
Notary Public

My commission expires: 4-1-2012
Date

KAY L. CRANE NOTARY PUBLIC LINCOLN COUNTY, N.C.

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Enclosure 1

Response to NRC Staff Second RAI Related to October 2, 2008 LAR for TS 3.6.13, Ice Condenser Doors

NRC Staff Question 1 (Two Parts; 1a and 1b)

NRC Staff Question No.1a

In relation to the last paragraph of your response dated August 25, 2009 to SCVB#1, please explain the sequencing of when the surveillance would be done to detect lower inlet door blocking devices unintentionally left during outages?

DEC Response to NRC Staff Question No.1a:

The paragraph in the August 25, 2009 letter[1] referred to in the above RAI question is repeated below:

"Under the proposed revision to McGuire/Catawba TS 3.6.13, the one-hour Required Action Completion Time for Condition A would be entered only if one or more Lower Inlet Door(s) is physically restrained from opening. Such a condition could arise if a Lower Inlet Door blocking device, which is temporarily installed during outages to prevent inadvertent opening of the doors, is unintentionally left in place and the Unit is brought into a Mode of Applicability while in that configuration."

Proposed and current Technical Specification Surveillance Requirement (TSSR) 3.6.13.4 and TSSR 3.6.13.5 are actually performed twice every eighteen months, instead of once as required by the TSSRs. The LIDs are tested per TSSR 3.6.13.4 and TSSR 3.6.13.5 in the as-found condition at the beginning of an outage, and in the as-left condition at the end of an outage[2,3]. Since accessing the lower plenum area of the ice condenser while in MODES 1-4 is prohibited by plant Technical Specifications, both of these LID TSSR performance windows are in Mode 5 (one at shutdown and one at restart).

The as-left LID testing sequence is scheduled just prior to entering MODE 4 restart to ensure containment conditions are as close as practically achievable to those expected at full power operation. The installation and removal of the LID blocking devices is controlled via procedure at both McGuire and Catawba[4,5]. At the conclusion of the as-left LID TSSRs, MODE related checklists[6,7] ensure the procedure for removal of the LID blocking devices is completed, which ensures all blocking devices are accounted for prior to entering a MODE of Applicability.

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[1] Duke Letter dated August 25, 2009, Enclosure 1, page 1 of 6
[2] MNS Procedure PT/0/A/4200/032 (I/C Door Surveillance)
[3] CNS Procedure MP/0/A/7150/006 (I/C Door Surveillance)
[4] MNS Procedure SM/0/A/8510/005 (LID Door Block Installation/Removal)
[5] CNS Procedure SM/0/A/8510/005 (LID Door Block Installation/Removal)
[6] MNS Procedures OP/1&2/A/6100/SU-9 (Units 1&2 Mode 4 Checklist Procedures)
[7] CNS Procedures OP/1&2/A/6100/001 (Units 1&2 Controlling Procedures For Unit Startup)

During ice condenser MODES of Applicability (i.e., MODE 1-4), if an event occurs that could challenge the LID's ability to open (e.g., a seismic event), the lower plenum area and LIDs are observable from the Intermediate Deck (Upper Plenum). For this inspection, a camera is lowered through the ice bed flow channels and directed appropriately[8,9,10,11]. Discovery of a physically restrained LID would then require entry into Condition A of TS 3.6.13 with a required action completion time of 1 hour.

NRC Staff Question No.1b

Since the surveillance would be done during outages, how do you apply a one hour action statement that was meant for MODE 1, 2, 3 and 4? Include in the response, all other surveillances done during outages, at a frequency of 18 months (i.e., TSSR 3.6.13.4, TSSR 3.6.13.5, and TSSR 3.6.13.7).

DEC Response to NRC Staff Question No.1b:

With regard to any of the TS 3.6.13 surveillances with a frequency of 18 months, any condition resulting in a failed TSSR which is identified while not in a MODE of Applicability would not require entry into the one hour action statement meant for MODE 1, 2, 3, and 4. The conditions resulting in a failed TSSR would be dispositioned such that the applicable TS requirements are satisfied prior to entering a MODE of Applicability.

There are certain abnormal situations where the operability of an ice condenser door could be challenged during an outage while in a MODE of Applicability (e.g. reference the above response to NRC Staff Question #1a). In these instances, the applicable TS 3.6.13 Condition would be entered (e.g. Condition A for those situations resulting in a LID being physically restrained from opening).

NRC Staff Question No. 2

Are any new analyses (GOTHIC or otherwise) performed in support of the LAR or is the LAR entirely dependent on previous analyses (including sensitivity runs) only? Are all the analyses fully formalized and documented?

[8] MNS procedure RP/0/A/5700/007 (Earthquake)
[9] CNS procedure RP/0/A/5000/007 (Natural Disaster and Earthquake)
[10] MNS procedure MP/0/A/7150/190 (Ice Fallout Due To Seismic Disturbance)
[11] CNS procedure MP/0/A/7150/142 (Ice Fallout Due To Seismic Disturbance)

Response to NRC Staff Second RAI Related to October 2, 2008 LAR for TS 3.6.13, Ice Condenser Doors

DEC Response to NRC Staff Question No.2:

No new analyses were performed in support of the subject Ice Condenser Doors LAR. A sensitivity run (GOTHIC), which was performed for a previously approved LAR (TSTF-429, Revision 3), was invoked to reaffirm the insensitivity of containment response to an extreme maldistribution of ice in the ice baskets (reference below response to NRC Staff Question #4). All analyses in support of this LAR are fully formalized and documented, and have been reviewed by NRC staff in previous DEC licensing submittals[12].

NRC Staff Question No. 3

With respect to Section 3.3.4 "Additional Considerations", the staff needs further explanation as to the relation between the items discussed in this section and the LAR. Why would deletion of TSSR 3.6.13.6 have any effect on the items discussed? Did the analyses related to these items use the LID flow-proportioning behavior as an input? If not, why would they even be affected?

DEC Response to NRC Staff Question No.3:

Section 3.3.4 of the LAR ("Additional Considerations") was provided to show that the proposed elimination of current TSSR 3.6.13.6 and the addition of a new requirement in TSSR 3.6.13.5 would have no effect on existing license basis elements or recently revised licensing basis elements at McGuire or Catawba Nuclear Stations. A review of this nature is standard DEC regulatory compliance practice.

Most of the items listed in Section 3.3.4 were specifically requested by the NRC to be included in the LAR. As noted in the LAR, none of the items requested to be evaluated are affected by, or have an impact on, the proposed revision to Ice Condenser Doors TS 3.6.13. No analyses done in support of any of these items used LID flow-proportioning behavior as an input.

NRC Staff Question No. 4

In letter dated October 2, 2008, page 6 of 27, last sentence of last full paragraph: Please explain why requiring containment spray to mitigate the bypassing steam is a concern?

[12] IC Door LAR submitted via Duke correspondence dated October 2, 2008, Attachment 1, Pg 17 of 27

Response to NRC Staff Second RAI Related to October 2, 2008 LAR for TS 3.6.13, Ice Condenser Doors

DEC Response to NRC Staff Question No.4:

The subject paragraph in the October 2, 2008 LAR package referred to in NRC Staff Question No. 4 is repeated below[13]:

"Maldistribution of the ice bed inventory was considered a threat since a section of ice baskets loaded with less total ice than the others ("light" baskets) would melt first during a DBA release, even if the release was evenly distributed. The concern was that a channel in the ice bed could be created, requiring Containment Spray to mitigate the bypassing steam."

This paragraph was provided in the LAR to clarify an original design basis element of the Ice Condenser System. During a Design Basis Accident, if any blowdown energy (in the form of steam) were to bypass the ice bed into the upper compartment (e.g., via a channel melted through the bed from bottom to top), the Containment Spray System would then become the needed heat sink for the mitigation of this bypassing energy. Since a phase change (i.e., melting ice) is not involved when the Containment Spray System is used to condense steam, it is less effective in mitigating containment pressure. As such the Ice Condenser design protects against this scenario for as long a time period as possible, ultimately limiting the peak containment shell pressure.

Additional NRC Staff Question (from October 13, 2009 conference call)

Are the ANSI N18.2-1973 requirements for designing against the propagation of a small break event to a large break event (i.e., concurrent, or "double" breaks) referenced in the McGuire and Catawba UFSARs?

DEC Response to Additional NRC Staff Question:

The McGuire and Catawba UFSARs both contain descriptions of the basic design requirements against pipe rupture effects stipulated by GDC 4 and ANSI N18.2-1973[14,15]. These descriptions identify that McGuire and Catawba are designed in accordance with these requirements, which prevents the propagation of small break sizes to larger break sizes for piping systems within the LOCA boundary.

[13] IC Door LAR submitted via Duke correspondence dated October 2, 2008, Attachment 1, page 6 of 27 (I/C Door TS Revision LAR)
[14] MNS UFSAR Section 3.6.2.1 (see also Section 3.6.6, ref.1: WCAP-8172-A, pp 1-3 and 1-4)
[15] CNS UFSAR Section 3.6.1.1 (see also Section 3.6.3, ref.1: WCAP-8172-A, pp 1-3 and 1-4)