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10 CFR 50.90

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

ATTENTION: Document Control Desk

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

License Amendment Request for Submittal of Atmospheric Relative Concentration Values for use in Control Room Envelope Radiological Dose Analysis dated September 25, 2012 (TAC Nos. ME9716 and ME9717)

Response to Request for Additional Information Related to the License Amendment Request (LAR)

This letter provides the response to the second request for additional information (RAI) regarding the referenced LAR dated September 25, 2012 (ADAMS No. ML1227A343). The request was conveyed by the NRC staff from Jason Paige by Electronic Mail dated August 1, 2013. The NRC staff's question and Duke Energy's response is provided in Attachment 1.

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 this request for additional information. This letter contains no regulatory commitments.

Please direct any questions you may have in this matter to Lee A. Hentz at (980) 875-4187.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 8, 2013.

Sincerely,

Steven D. Capps

Attachment

A001
NRR

cc w/ Attachment:

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ATTACHMENT 1

REQUEST FOR ADDITIONAL INFORMATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REGARDING LICENSE AMENDMENT REQUEST RELATED TO ATMOSPHERIC RELATIVE CONCENTRATION VALUES FOR USE IN CONTROL ROOM ENVELOPE RADIOLOGICAL DOSE ANALYSIS
MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

By application dated September 25, 2012, Duke Energy submitted a License Amendment Request (LAR) for the McGuire Nuclear Station, Units 1 and 2 (McGuire). The proposed LAR provides selected atmospheric relative concentration values for use in control room radiological dose analysis that were withdrawn during McGuire's request for full scope implementation of the Alternate Source Term (AST). McGuire received U. S. Nuclear Regulatory Commission (NRC) approval for full scope implementation of the AST on March 31,2009.

The NRC staff has reviewed the licensee's submittal and determined that additional information is needed in order to complete our review. On August 1, 2013, the NRC staff and Duke Energy discussed the draft RAI to gain a common understanding of the question. The below RAI reflects the question discussed during the August 1, 2013, call.

1. The first two paragraphs of the "Duke Response" on Page 10 of Attachment 1 to the Duke February 12, 2009, response to a request for additional information (ML090540682) concerning a prior licensing action state that the control room air intakes/inlets are 3.6 meters above plant grade and that the source/release heights were supplied to the ARCON96 computer code with respect to their height above plant grade. The third paragraph states that "[t]he receptor/inlets are 1.5 meters above the roof of the Auxiliary Building. The Auxiliary Building roof is represented in ARCON96 as the base elevation of the receptor/intake, because, the intakes protrude above the roof in a 'candy-cane' shape, with the inlets hooked over to face downward." Source and receptor heights are typically based on plant grade, but in this case the source heights were based on plant grade and the receptor heights were evidently based on the Auxiliary Building roof.

   With regard to the current, September 25, 2012, McGuire license amendment request (ML12272A343), are the base elevation(s) of the release heights listed in Table 1 of Attachment 1, and Table 1.b-1 of Attachment 1 to the June 12, 2013, response to a request for additional information (ML13165A321), based on plant grade, the height of the Auxiliary Building roof, or on some other elevation(s)? Please confirm that the receptor heights are based on the Auxiliary Building roof.

Duke Response:

The intake receptor height is based on the Auxiliary Building roof. A revised Table 1 from the License Amendment Request (LAR) dated September 25, 2012 (ML 12272A343) and a revised Table 1.b-1 from the Request for Additional Information (RAI) response dated June 12, 2012 (ML 13165A321) are provided below, indicating the intake receptor height.

In modeling X/Q dispersion factors for the releases contained in the September 25, 2012 LAR, the Auxiliary Building roof was used as the base elevation for all release heights, as well as the intake receptor height for Units 1 and 2.

Using the Auxiliary Building as the base elevation resulted in an intake receptor height of 1.5 meters. Since all the release heights being modeled are based at the same height, the "Elevation Difference" parameter input to ARCON96 was 0.0 meters.

Revised Table 1

Source Type:	$MSLB_y$	DOG_{in}	DOG_{out}
Intake Receptor Height	1.5 m	1.5 m	1.5 m
Release Height	1.5 m	12.2 m	12.2 m
Sigma-Y	0 m	1.48 m	1.48 m
Sigma-Z	0 m	0 m	0 m
Bldg Cross-sectional Area (Use 0.01 m^2 if assuming 0 per Regulatory Guide 1.194)	0.01 m^2	0.01 m^2	0.01 m^2
Same Unit (Unit 1): Distance Between Source and Receptor / Release Angle	7.5 m / 192°	32.5 m / 92°	11.8 m / 309°
Same Unit (Unit 2) : Distance Between Source and Receptor / Release Angle	7.5 m / 192°	32.5 m / 294°	11.8 m / 73°
Cross Unit (Unit 2 Source to Unit 1 Intake) : Distance Between Source and Receptor / Release Angle	108 m / 106°	69.2 m / 97°	101.7 m / 104 °
Cross Unit (Unit 1 Source to Unit 2 Intake) : Distance Between Source and Receptor / Release Angle	108 m / 278°	69.2 m / 287°	101.7 m / 280 °

Revised Table 1.b-1: Inputs for the Calculation of the Control Room *χ/Q* ("Same Unit Outboard χ/Q")

	Value	
Input	**Unit 1 Release to Unit1 Intake**	**Unit 2 Release to Unit 2 Intake**
Intake Receptor Height	1.5 m	1.5 m
Release Height	5.8 m	5.8 m
Sigma-Y	0 m	0 m
Sigma-Z	0 m	0 m
Horizontal Distance from Source to Receptor	9.5 m	9.5 m
Receptor to Source Angle	282°	102°
Building Cross Section Area	0.01 m^2	0.01 m^2
Source Radius	0 m	0 m
Release Flow Rate	0 m^3/sec	0 m^3/sec
Release Vertical Velocity	0 m/sec	0 m/sec