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May 28, 2008

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

ATTENTION: Document Control Desk

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

License Amendment Request for Full Scope Implementation  
of the Alternative Source Term  
Revisions to Control Room Atmospheric Dispersion Factors

Reference 1: Duke letter to NRC dated March 20, 2008

Attachment 1 to this letter supplements McGuire Nuclear Station's Alternative Source Term License Amendment Request (LAR) dated March 20, 2008 (Reference 1). Corrected meteorological data files and revised control room atmospheric dispersion factors are provided in the attachment.

The meteorological data files are a component of the input to the ARCON96 computer code used to calculate control room atmospheric dispersion factors. During an April 24, 2008 conference call between NRC Staff and Duke personnel, questions about the meteorological data files were discussed, and the need to reformat the 2004 meteorological data file for proper utilization by the ARCON96 code was identified. The meteorological data files have been corrected and updated in response to this discussion. The updated files were then used to re-compute the control room atmospheric dispersion factors. The revised meteorological data files and the replacement dispersion factor tables for the LAR are provided in Attachment 1.

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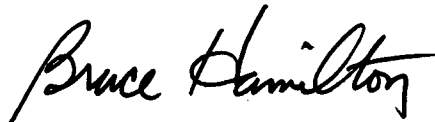
In comparison to the values originally submitted, the re-computed control room atmospheric dispersion factors were minimally impacted. Thus, incorporation of the revised dispersion factors into the radiological consequence models did not result in a material change to the control room doses reported in Sections 4.9 and 4.10 of Reference 1.

Attachment 1 contains the corrected control room atmospheric dispersion factors in revised Tables 15, 16, 17, and B-3. Appendix D is also included to transmit the revised meteorological data files (CD format).

The conclusions reached in the original determination that this License Amendment 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 these revisions.

Please contact Lee A. Hentz at 704-875-4187 if additional questions arise regarding this License Amendment Request.

Sincerely,

A handwritten signature in black ink that reads "Bruce Hamilton". The signature is written in a cursive style with a large initial "B".

Bruce H. Hamilton

Attachment

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cc: w/attachment

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U.S. Nuclear Regulatory Commission  
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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: 5/28/08

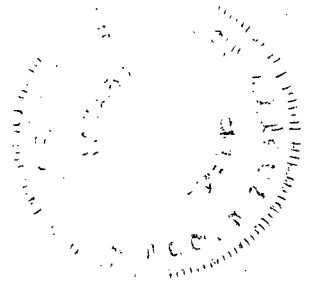
Date

Lori C. Gibby / Lori C. Gibby

Notary Public

My commission expires: July 1, 2012

Date



## Attachment 1

**Table 15**  
**Maximum Control Room Atmospheric Dispersion Factors (sec/m<sup>3</sup>)**

Time	Unit Vent M1UV1	Equipment Hatch M1EQ1PTM (arc)	Refueling Water Storage Tank M2FWST2
0 – 2 hours	1.67E-03	4.06E-03	1.84E-03
0 – 4 hours	1.51E-03	3.76E-03	1.75E-03
0 – 8 hours	1.42E-03	3.51E-03	1.63E-03
2 – 8 hours	1.33E-03	3.33E-03	1.57E-03
4 – 8 hours	1.33E-03	3.26E-03	1.51E-03
8 – 24 hours	6.77E-04	1.60E-03	7.68E-04
1 – 4 days	5.25E-04	1.23E-03	5.68E-04
4 – 30 days	4.18E-04	9.73E-04	4.48E-04

Not adjusted for dual intakes or VC System flow split.  
 See footnote in Table B-3 of Appendix B for explanation of source receptor nomenclature.

**Table 16**  
**McGuire LOCA Control Room Atmospheric Dispersion Factors**  
**(Unadjusted for Control Room Area Ventilation System Intake Flow Split,**  
**sec/m<sup>3</sup>)**

Time	Unit Vent	Equipment Hatch	Refueling Water Storage Tank
0 – 2 hours	1.67E-03	4.06E-03	1.84E-03
2 – 8 hours	1.33E-03	3.33E-03	1.57E-03
8 – 24 hours	6.77E-04	1.60E-03	7.68E-04
1 – 4 days	5.25E-04	1.23E-03	5.68E-04
4 – 30 days	4.18E-04	9.73E-04	4.48E-04

# Attachment 1

**Table 17**  
**Control Room Atmospheric Dispersion Model for VC Alignments**  
(sec/m<sup>3</sup>, 65/35 flow split)

Time	Unit Vent <sup>1</sup>	Equipment Hatch <sup>2</sup>	Refueling Water Storage Tank
0 – 2 hours <sup>3</sup>	1.09E-03	2.64E-03	1.20E-03
2 – 8 hours	8.65E-04	2.16E-03	1.02E-03
8 – 24 hours	4.40E-04	1.04E-03	4.99E-04
1 – 4 days	3.41E-04	8.00E-04	3.69E-04
4 – 30 days	2.72E-04	6.32E-04	2.91E-04

<sup>1</sup> Upper and lower containment bypass leakage flow path. Release point for other discharges.

<sup>2</sup> Upper containment bypass leakage flow path.

<sup>3</sup> Values to be used during 2 hour period of maximum activity release

## Attachment 1

**Table B-3 McGuire Maximum ( $\chi/Q$ )s per Source (McGuire 2001-2005 Meteorology)**

	0-2 Hr	0-4 Hr	0-8 Hr	2-8 Hr	4-8 Hr	8-24 Hr	1-4 day	4-30 day
EQ M1EQ1PTM (arc)	4.06E-03	3.76E-03	3.51E-03	3.33E-03	3.26E-03	1.60E-03	1.23E-03	9.73E-04
FUEL M1FUEL1	7.97E-04	7.20E-04	6.62E-04	6.18E-04	6.04E-04	2.83E-04	2.32E-04	1.90E-04
NDOG M2NDOG2 (arc)	1.16E-03	9.45E-04	8.25E-04	7.38E-04	7.13E-04	3.00E-04	2.40E-04	1.96E-04
VNDOG M2VNDOG2 (arc)	1.54E-03	1.31E-03	1.16E-03	1.05E-03	1.01E-03	4.17E-04	3.25E-04	2.65E-04
ODOG M2ODOG2	4.99E-03	4.37E-03	4.03E-03	3.71E-03	3.69E-03	1.79E-03	1.49E-03	1.20E-03
VODOG M2VODOG2	1.73E-02	1.52E-02	1.40E-02	1.30E-02	1.28E-02	6.23E-03	5.12E-03	4.05E-03
RX- Murphy-Campe M1RX1; M2RX2	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03
FWST M2FWST2	1.84E-03	1.75E-03	1.63E-03	1.57E-03	1.51E-03	7.68E-04	5.68E-04	4.48E-04
UV M1UV1	1.67E-03	1.51E-03	1.42E-03	1.33E-03	1.33E-03	6.77E-04	5.25E-04	4.18E-04
VP M2VP2 (arc)	1.57E-03	1.43E-03	1.30E-03	1.21E-03	1.17E-03	5.26E-04	4.14E-04	3.45E-04
AGIN M1AGIN1 (arc)	2.92E-03	2.80E-03	2.60E-03	2.49E-03	2.40E-03	1.17E-03	8.72E-04	6.72E-04
AGOUT M2AGOUT2	1.75E-02	1.63E-02	1.50E-02	1.41E-02	1.37E-02	6.45E-03	4.85E-03	3.64E-03
PORVin M1PORVn1	2.60E-03	2.38E-03	2.20E-03	2.07E-03	2.02E-03	9.77E-04	7.45E-04	5.70E-04
PORVout M2PORVo2	1.07E-02	9.89E-03	8.99E-03	8.42E-03	8.09E-03	3.75E-03	2.98E-03	2.43E-03
MSSVin M1MSSVn1	2.90E-03	2.64E-03	2.42E-03	2.26E-03	2.20E-03	1.02E-03	7.69E-04	5.77E-04
MSSVout Murphy-Campe M1MSSVo1; M2MSSVo2	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03	1.26E-03
AFW M1AFWn1s	3.30E-03	2.74E-03	2.47E-03	2.19E-03	2.20E-03	1.07E-03	7.90E-04	6.23E-04
		M1AFWn1s	M1AFWn1s	M1AFWn1s	M1AFWn1s	M1AFW1a (arc)	M1AFW1a (arc)	M1AFW1a (arc)

Receptor/source nomenclature lists the receptor first, followed by source. For example, "M1UV1" represents a release from the Unit 1 unit vent ("UV1") to the McGuire unit one control room area ventilation system inlet location ("M1").

## **Attachment 1**

### **Appendix D**

The attached compact disc (CD) contains McGuire meteorological data for each year from 2001 through 2005. Five data files are included. Each file corresponds to the year indicated in the file name. These files (\*.met) are text files. They can be opened into any standard text, spreadsheet, or word processing software.