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April 28, 2009

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC.
William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the
William States Lee III Nuclear Station Units 1 and 2
Response to Request for Additional Information
Ltr# WLG2009.04-05

Reference: Letter from L.M. Tello (NRC) to B.J. Dolan (Duke Energy), *Request for Additional Information Regarding the Environmental Review of the Combined License Application for William States Lee III Nuclear Station, Units 1 and 2*, dated January 21, 2009.

Letter from B. J. Dolan (Duke) to Document Control Desk, Revision 1 to the Environmental Report (Part 3) and Revision 2 to Withheld Information (Part 9) for William States Lee III Nuclear Station, Units 1 and 2 Combined License Application, dated March 30, 2009.

This letter provides the Duke Energy response to the Nuclear Regulatory Commission's (NRC) request for the following additional information (RAI) item included in the first referenced letter:

RAI 109, Radiological Health

The response to this NRC request is addressed in a separate enclosure, which also identifies associated changes, when appropriate, that were previously incorporated in Revision 1 to the Environmental Report (Part 3) of the Williams States Lee III Nuclear Station application, transmitted as an enclosure to the second letter referenced above.

If you have any questions or need any additional information, please contact Peter S. Hastings, Nuclear Plant Development Licensing Manager, at 980-373-7820.

Bryan J. Dolan
Vice President
Nuclear Plant Development

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NRO

Enclosure:

1) Response to RAI 109, Radiological Health

AFFIDAVIT OF BRYAN J. DOLAN

Bryan J. Dolan, being duly sworn, states that he is Vice President, Nuclear Plant Development, Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this supplement to the combined license application for the William States Lee III Nuclear Station and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

Bryan J. Dolan

Bryan J. Dolan

Subscribed and sworn to me on April 28, 2009

Notary Public

My commission expires: April 19, 2010

SEAL

KIM M. SLAYS
NOTARY
PUBLIC
GASTON COUNTY, N.C.

xc (w/o enclosure):

Loren Plisco, Deputy Regional Administrator, Region II
Stephanie Coffin, Branch Chief, DNRL
Robert Schaaf, Branch Chief, DSER

xc (w/ enclosure):

Linda Tello, Project Manager, DSER
Brian Hughes, Senior Project Manager, DNRL

Lee Nuclear Station Response to Request for Additional Information (RAI)

RAI Letter Dated: January 21, 2009

Reference NRC RAI Number: ER RAI 109

NRC RAI:

Regarding the biota doses presented in Table 5.4-17 (Dose to Biota for Liquid and Gaseous Effluents):

a. What assumptions were used with the LADTAP computer code to estimate dose to biota from liquid effluents? The assumptions necessary to produce Table 5.4-17 are not described in Section 5.4.4.1 or Footnote (b) to Table 5.4-17 of the ER.

b. What assumptions were used to estimate inhalation dose to terrestrial biota? The terrestrial inhalation dose reported in Table 5.4-17 for Muskrat is only about 1% of the dose for the other organisms.

Duke Energy Response:

a. The biota doses from normal liquid releases were calculated using the LADTAP computer code with a dilution factor of 1 and a transit time of 0 hours. All other inputs are provided in Table 5.4-2. A revision of Table 5.4-2 was provided previously in the response to RAI 39 (Accession # ML083520212). Also, the estimated biota doses from liquid effluents were reported erroneously in Table 5.4-17 of the Environmental Report (ER), Revision (Rev.) 0. Those values have been corrected in Table 5.4-17 of ER Rev. 1. The supporting LADTAP calculation is available for inspection at the Duke Energy office in Charlotte, NC or at our consultants' offices in Richland, WA or Bethesda, MD.

b. The inhalation doses to terrestrial biota were estimated using the inhalation dose to immature receptors at the maximum point of exposure calculated by the GASPAR II computer code. Table 5.4-17 Note (c) describes assumptions applicable to the terrestrial biota inhalation dose estimates. The gaseous effluent terrestrial inhalation and external dose pathway results for muskrat were reported erroneously in Table 5.4-17 of the Environmental Report (ER), Rev. 0. Those values have been corrected in Table 5.4-17 of ER Rev. 1. The supporting GASPAR II calculation is available for inspection at the Duke Energy office in Charlotte, NC or at our consultants' offices in Richland, WA or Bethesda, MD.

   In addition to the ER Table 5.4-17 changes made in response to this RAI described above, an assumption used in developing the terrestrial biota gaseous effluent external dose contribution from ground exposure was revised. Table 5.4-17 Note (d) has been revised (presented as Note (e) in ER Rev. 1) to describe the revised assumption. The assumed biota lengths used in conjunction with Note (e) of revised Table 5.4-17 provided in Rev. 1 of the ER are summarized as follows:

Biota	Min. Average Length cm
Muskrat	40.96
Raccoon	60.96
Heron (Little Blue Heron)	63.5
Duck (Mallard)	45.72

Revised terrestrial biota gaseous effluent external dose results are also included in Table 5.4-17 of ER Rev. 1.

The revised version of Table 5.4-27 included as an attachment to this enclosure has been included in Rev. 1 of the Environmental Report. The mark-up provided with this response shows changes between Rev. 0 and Rev. 1 of the Environmental Report.

Associated Revisions to the Lee Nuclear Station Combined License Application:

ER Table 5.4-17, Dose to Biota from Liquid and Gaseous Effluents

Associated Attachment:

Attachment 109-1 Revised ER Table 5.4-17

Attachment 109-1 to RAI 109

Revised ER Table 5.4-17

TABLE 5.4-17
DOSE TO BIOTA FROM LIQUID AND GASEOUS EFFLUENTS [a]

Biota	Liquid Effluents [b]		Gaseous Effluents		All Pathways [c]
Organism	Internal Dose (mrad/yr)	External Dose (mrad/yr)	Internal Dose [~~c~~d] (mrad/yr)	External Dose [~~d~~e] (mrad/yr)	Total Dose (mrad/yr)
Fish	2.78E-01~~10.8~~	2.96E-01~~11.2~~	N/A	N/A	5.74E-01
Invertebrate	1.02E+00~~39.8~~	5.90E-01~~22.4~~	N/A	N/A	1.61E+00
Algae	4.64E+00~~179.8~~	1.43E-03~~0.1~~	N/A	N/A	4.64E+00
Muskrat	1.51E+00~~57.2~~	1.97E-01~~7.5~~	4.92E-02~~4.30E-05~~	1.77E+00~~2.12E-03~~	3.52E+00
Raccoon	5.24E-01~~19.9~~	1.47E-01~~5.6~~	4.92E-02	1.43~~16~~E+00	2.15E+00
Heron	7.62E+00~~288.0~~	1.97E-01~~7.5~~	4.92E-02	1.40~~16~~E+00	9.27E+00
Duck	1.34E+00~~50.8~~	2.96E-01~~11.2~~	4.92E-02	1.66~~16~~E+00	3.34E+00

a) Total for two units.

b) Based on conservative dilution factor of 1.

c) ~~Whole body inhalation dose for infant at EAB as a surrogate for biota dose~~The All Pathways values are calculated by summing the Liquid and Gaseous Effluents.

d) ~~Whole body dose due to ground and plume exposure at EAB. Ground exposures increased by a factor of two to account for ground proximity.~~Whole body inhalation dose for infant at EAB is used as a surrogate for biota internal dose from gaseous effluents.

e) External biota doses due to gaseous effluents consist of the whole body dose due to ground and plume exposure at the EAB. Ground exposures were increased by a ratio of the height at which ground exposure is calculated by GASPAR II (1 m) to the height of the surrogate biota. The height of each biota was assumed to be equal to half the length of the animal.