



## North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

December 15, 2004

Mr. Allen Stowe  
Duke Power  
EC11E / 526 South Church Street  
Charlotte, NC 28202-1802

SCANNED

g 2/20/14

Subject: Review of Application for Permit to Construct  
Duke Energy Marshall Steam Station FGD Residue Landfill  
Catawba County, North Carolina

Dear Mr. Stowe,

Thank you for the response to my September 20, 2004 comment letter, regarding the proposed Flue Gas Desulfurization (FGD) landfill in Catawba County.

I reviewed the following documents from you.

- 1) FGD Residue Landfill Permit Application Site Suitability Information August 29, 2003  
Volume 1 15A NCAC 13B .0503 (1) and .0504 (1) Requirements and Responses received September 3, 2003.
- 2) FGD Residue Landfill Permit Application Site Suitability Information August 29, 2003  
Volume 2 Hydrogeologic Study Study S&ME Project 1264-02-578 received November 18, 2004 received September 3, 2003.
- 3) Compliance Demonstration Report dated March 31, 2004, received April 6, 2004,
- 4) Construction Plan Application for Phase 1 dated March 2004, received April 2, 2004.
- 5) FGD Residue Landfill Permit Application site Suitability Information October 29, 2004  
Volume 1 Appendum 1 Hydrogeologic Study S&ME Project 1264-02-578 received November 18, 2004.
- 6) FGD Residue Landfill Permit Application site Suitability Information October 29, 2004  
Volume 2 Appendum 1 Hydrogeologic Study S&ME Project 1264-02-578 received November 18, 2004
- 7) FGD Residue Landfill Permit Application .0503(2)(d)(ii)(A) Compliance  
Demonstration Report. Addendum November 12, 2004, received November 18, 2004.

This review is according to and is referenced to the *15A NCAC 13B Solid Waste Management Rules* Section .0503 and .0504. Following are comments regarding the application.

Construction Plan Application

- It is my understanding, regarding comment 5.4 of that letter that the Cell 2 will be handled under a separate Permit to Construct (PTC). It would be impossible to include that area in this PTC, as the paperwork from other agencies is not complete. Additionally it will be necessary to evaluate hydrogeologic conditions before construction is started in the area of wetland mitigation.

Landfill Operations and Maintenance

- Comment 1.6: Mention is made to "FGD residue that is removed from settling and clarifier stages". Is this a separate waste to the typical FGD waste. It seems to be because it is considered to be a finer material. When the material is tested, when the Marshall scrubber is operational, both types of material will need to be tested. At this time, the testing will not be required for the PTC.

Compliance Demonstration

- Comment 5.1.1: Whatever the actual waste to be landfilled is, it will need to be tested after the scrubber is in operation and the tests submitted to this Section.

Appendix B

- Please replace the USGS Seismic Map with the most updated information, which is from 2002. It is unacceptable to keep information, which is not current in the document. The data from 1996 (in your document) and 2002 has been altered significantly by the USGS for the area, which includes North Carolina.

Other MYGRT questions

- It is unclear to me how the dimensions of *Width of Source* and *Source Length* were derived. Please show on a map the dimensions shown.

- Let me restate my question about *Transverse Dispersion Coefficient*

$$\begin{aligned}
 D_y &= D_x / 10. \text{ } D_x \text{ is Horizontal Dispersion Coefficient.} \\
 D_x &= \text{Horizontal Dispersion} * \text{Horizontal Seepage Velocity} \\
 &= 7.84 \text{ feet/year} * 24.93 \text{ ft/year} \\
 &= 195.45 \text{ ft}^2/\text{year} \\
 \text{Therefore } D_y &= 195.45 \text{ ft}^2/\text{year} / 10 \\
 &= 19.5 \text{ ft}^2/\text{year}
 \end{aligned}$$

This is according to the MYGRT manual page 7-18. Please let me know if I am calculating something wrong. I still believe the  $D_y$  is wrong.

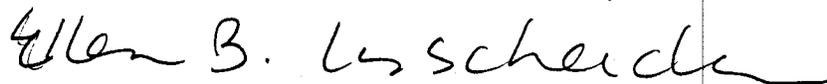
- Please let me know which specific cross-sections show the soil types, which reflect the cross-sections in the MYGRT demonstration.

Mr. Allen Stowe

December 15, 2004

Please contact me regarding these questions. I can be reached at 919-733-0692 extension 345 or by email at [ellen.lorscheider@ncmail.net](mailto:ellen.lorscheider@ncmail.net). Additional comments may be forthcoming from me, I needed to clarify the above before completing my review for a permit to construct.

Sincerely,

A handwritten signature in cursive script that reads "Ellen B. Lorscheider". The signature is written in black ink and is positioned above the typed name and title.

Ellen B. Lorscheider  
Permitting Hydrogeologist

Cc: Bill Miller, Duke  
John Murray, SWS  
Jim Barber, SWS