



Duke Energy Marshall Steam Station FGD
Residue Landfill
Facility Permit No: 18-09
Permit to Construct
June 5, 2006
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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

**STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT**

**SOLID WASTE FACILITY
PERMIT NO. 18-09**

Duke Energy Marshall Steam Station Flue Gas Desulfurization (FGD) Residue Landfill
is hereby issued a

Permit to Construct

An **INDUSTRIAL SOLID WASTE MANAGEMENT FACILITY**
Industrial Solid Waste Landfill
Phase 1, Cell 1

Duke Energy Marshall Steam Station Flue Gas Desulfurization (FGD) Residue Landfill, located in Catawba County and located off of NC 150 via Steam Plant Road (SR 1847) just west of Lake Norman in Terrell, North Carolina, in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit. The facility is located and described by the legal description found in the approved application.

Edward F. Mussler, III, P.E.,
Permitting Branch Supervisor
Permitting Branch
Solid Waste Section

ATTACHMENT 1

Part A Permitting History

Permit Type	Date Issued
Date PTC Issued, No. 1	April 12, 2006
Modification No. 2 (HDPE Liner and Cap System added)	May 22,2006

Part B List of Documents

- 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 Construction Plan Application September 3, 2003.
- 2) *FGD Residue Landfill Permit Application Site Suitability Information* August 29, 2003 Volume 2 Hydrogeologic Study S&ME Project 1264-02-578 received September 3, 2003.
- 3) *Compliance Demonstration Report* dated March 31, 2004 received April 6, 2004.for Phase 1 dated March 2004 received April 2, 2004.
- 4) *FGD Residue Landfill Permit Application Site Suitability Information* October 29, 2004 Volume 1 Addendum 1 Hydrogeologic Study S&ME Project 1264-02-578 received November 18, 2004.
- 5) *FGD Residue Landfill Permit Application Site Suitability Information* October 29, 2004 Volume 2 Addendum 1 Hydrogeologic Study S&ME Project 1264-02-578 received November 18, 2004.
- 6) *FGD Residue Landfill Permit Application .0503(2)(d)(ii)(A) Compliance Demonstration Report.* Addendum November 12, 2004 received November 18, 2004.
- 7) *Response to Comments: Marshall Steam Station FGD Industrial Landfill Permit to Construct* dated January 6, 2005 received January 7, 2005. Including a Drawing set, Sheets M-6024-01.00 through MM6451.01-0004.001.
- 8) *Construction Plan Application (Volume One and Two).* Prepared by: Chas. H. Sells, Inc., Mooresville, NC. Prepared for: Duke Energy Marshall Steam Station, Catawba County, NC. December 15, 2005 revised through March 30, 2006. Including Revised Drawing set, MM6451.00-000.001 through MM6451.00-0014.001
- 9) *Flue Gas Desulfurization (FGD) Residue Landfill Permit Application - .0503(2)(d)(ii)(A) Compliance Demonstration Report.* Prepared by Chas. H. Sells, Inc., Mooresville, NC. Prepared for Duke Energy Marshall Steam Station, Catawba County, NC. December 15, 2005 revised through March 23, 2006.
- 10) *Technical Specifications for Construction.* Prepared by Chas. H. Sells, Inc., Mooresville, NC. Prepared for Duke Energy Marshall Steam Station, Catawba County, NC. December 15, 2005.
- 11) *Construction Quality Assurance Program.* Prepared by Chas. H. Sells, Inc., Mooresville, NC. Prepared for Duke Energy Marshall Steam Station, Catawba County, NC. Including revised copy of Drawing MM6451.00-0007.001, Revision B. January 16, 2006.
- 12) *Operation and Maintenance Plan.* Document No. MM6451.00-0000-001. Prepared by: Chas. H. Sells, Inc. Prepared for: Duke Energy Steam Station. Revision 1, March 2006.

ATTACHMENT 2 CONDITIONS OF PERMIT

Site Specific Conditions

1. This Permit to Construct will be in effect for 18 (eighteen) months from date of issuance.
 - a. If construction does not commence within the 18- (eighteen-) month timeframe, the owner shall submit a request for reissuance of the Permit to Construct. The facility Design and Operation Plan shall be subject to and shall comply with the rules in effect at that time.
 - b. Modifications to the facility may be required in accordance with rules in effect at the time of review of the request for reissuance of the Permit to Construct.
2. Under 15A NCAC 13B .0201(b), solid waste permits are issued in two parts, (i) a Permit to Construct, and (ii) a Permit to Operate. This Permit to Construct authorizes the construction of the facility in accordance with the approved documents shown in Attachment 2 and the NC Solid Waste Rules.
 - a. The Permit to Construct does not grant permission to operate the facility prior to issuance of the Permit to Operate.
 - b. The Permit to Operate shall not be issued until the Division determines that the facility has been constructed in accordance with the approved documents shown in Attachment 2.
3. The landfill is permitted to receive solid waste generated solely by Duke Energy as described in the approved plan and as defined in G.S. 130A-290 (a)(35) except where prohibited by North Carolina General Statutes Article 9 of Chapter 1 30A, and rules adopted by the Commission for Health Services. The Duke Energy Company, LLC Marshall FGD landfill is permitted to receive FGD by-product from the Duke Energy Company, LLC Allen Plant located in Gaston County and the Duke Energy Company, LLC Cliffside Plant located in Rutherford County, in accordance with the revised zoning letter dated 9 November 2004 from Catawba County.

Part I General Facility Conditions

4. This permit approves the Facility Plan that defines the comprehensive development of the facility including the total industrial solid waste landfill capacity, the industrial solid waste stream, all onsite solid waste management facilities and related facility infrastructure in accordance with 15 NCAC 13B .0503-.0504.
 - a. The approved plans are described in Attachment 1, "Approved Documents."
 - b. Where discrepancies may exist, the most recent approved submittal and Conditions of Permit shall govern.

5. Modifications to the facility may be required in accordance with rules in effect at the time of review of the request.
6. Should this industrial solid waste landfill facility be sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a sanitary landfill and a reference by book and page number to the recordation of the permit.
7. This permit is not transferable.
8. The facility has a total permitted gross design volume of 2,190,000 cubic yards (measured from the top of the protective cover to the top of final cover) consistent with the landfill capacity requested and approved in the Facility Report submitted with the Permit to Construct Application, Appendix I. This permit approves the construction of Phase I, Cell 1 only. Development of Phase 1 shall only be in accordance with the Division approved plans. The construction of Phase 1 is permitted for approximately
 - a. 14.8 acres,
 - b. 751,200 cubic yards of total gross volume (from the top of the protective cover to the top of final cover), and
 - c. 608,472 tons for the 5-year planning period. The cumulative waste tonnage for the period is based on design waste receipts of 950 tons per day for 304 operating days per year.
9. The facility is subject to the requirements of all applicable sections of the most recent version of the North Carolina Solid Waste Management Rules 15A NCAC 13B and the specific conditions contained herein.
10. This facility permit is issued under the criteria set forth in 15A NCAC 13B .0504(g)(i) and (ii). Any facility changes that are in conflict with the criteria established may require a new permit.
11. Duke Energy LLC- Marshall Steam Station shall submit an amendment to this permit pursuant to 15A NCAC 13B .0504 for any subsequent phase of development.
12. All sedimentation/erosion control activities shall be conducted in accordance with the Sedimentation Control Act codified at 15 NCAC 4. Native vegetation shall be established on the completed Industrial Solid Waste Landfill unit in accordance with 15A NCAC 13B .0505 (3)(b)(c).
13. Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of the Industrial Solid Waste Landfill unit development or as addressed in the approved Sedimentation and Erosion Control permit.

14. A separation distance of at least four feet shall be maintained between the Industrial Solid Waste Landfill's waste and the groundwater table.
15. Leachate shall be contained on site or properly treated prior to discharge. A NPDES permit may be required either prior to discharge of leachate to surface waters or for land disturbing activities greater than one acre.
16. A closure and post-closure plan must be submitted for approval at least 90 days prior to closure or partial closure of any landfill unit. The plan must include all steps and measures necessary to close and maintain the Industrial Solid Waste Landfill unit in accordance with all rules in effect at that time. At a minimum, the plan shall address the following:
 - a. Design of a final cover system as required by the solid waste management rules in effect at the time of closure;
 - b. Construction and maintenance/operation of the final cover system and erosion control structures;
 - c. Surface water, ground water, and explosive gas monitoring.

Facility Construction Conditions

17. Duke Energy shall conduct a preconstruction meeting, on site, prior to initiating construction of any unit/cell at the site and shall notify the Solid Waste Section 10 days prior to said meeting.
18. Construction of all solid waste management units within this facility shall be in accordance with the pertinent approved plans and only for those phases of development approved for construction as described in Attachment 1, 'Approved Documents.'
19. Additional conditions and revisions of the approved documents or changes during construction of any landfill unit/cell require approval by the North Carolina Solid Waste Section.
20. Any modifications in sedimentation and erosion control activities require approval by the Land Quality Section. The Solid Waste Section shall be notified of any sedimentation and erosion control modifications.

Facility Pre-Operative Conditions

21. Prior to receiving waste at any unit of this facility, a Permit to Operate must be obtained from the Solid Waste Section in accordance with 15A NCAC 13B .0201(b).
22. The following requirements shall be met prior to waste disposal for any unit of this facility:
 - a. Site preparation shall be in accordance with the approved plans and the conditions specified herein.

- b. The owner/operator shall arrange for a site inspection of the facility by a representative of the Solid Waste Section. The purpose of the inspection will be for the operator to demonstrate that the facility construction is consistent with approved plans and specifications.
 - c. Prior to waste disposal in any new unit or cell, the owner/operator shall contact the appropriate regional Solid Waste Management Specialist to determine whether the Solid Waste Section chooses to hold a pre-operative meeting with key landfill personnel and representatives of the Solid Waste Section.
23. Ground water monitoring wells and surface water sampling locations shall be sampled for the approved constituent list prior to issuing the Permit to Operate.

Construction Conditions

24. The owner's geologist shall examine the cell excavation and note any pertinent geologic features exposed during the construction process. Prior to the placement of any liner materials, the owner's geologist shall notify the Solid Waste Section Hydrogeologist in writing of the subgrade conditions and whether the subgrade conditions will adversely affect the design, construction or operation of the unit.
25. The owner's geologist shall be present to supervise all new monitoring well installations.
- a. Any modification to the approved water quality monitoring plan shall be submitted to the Section Hydrogeologist for review and approval.
 - b. Documentation of all changes to the approved plan shall be submitted with the well construction records.
26. For each new monitoring well constructed, a well construction record, well schematic, boring log and a description of well development activities shall be submitted to the Section within 30 days upon well completion. Each monitoring well shall be surveyed and hydraulic conductivity and effective porosity values shall be established for each screened interval in order to develop groundwater flow characteristics

- End of Permit Conditions -