

Permit No.	Date	DIN
18-12	February 4, 2010	9545



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February 4, 2010

Solid Waste Section

Asheville Regional Office

February 3, 2010

North Carolina Department of Environment and Natural Resources
Asheville Regional Office – Division of Solid Waste
2090 US Highway 70
Swannanoa, North Carolina 28778

Attention: Mr. Larry Frost

**Reference: Response to Permit to Construct (PTC) Application –
Technical Review**

Marshall Steam Station Industrial Landfill No. 1, Permit No. 18-12
Duke Energy – Marshall Steam Station
8320 NC Highway 150 East, Terrell, Catawba County, North Carolina
S&ME Project No. 1356-08-122
North Carolina P.E. License No. F-0176

Dear Mr. Frost:

S&ME Inc., (S&ME) received the Division of Waste Management, Solid Waste Section (Section) letter dated January 21, 2010 regarding the technical review of the subject Permit to Construction (PTC) Application (DIN 9348). On behalf of Duke Energy, S&ME is pleased to provide responses to the items as requested in the Section's letter. The technical review items are provided below, in italics font, followed by our response.

Comment 1: *The site of the proposed landfill is within 200 feet of Island Point Road (NCSR 1838), 15A NCAC 13B .503 (2)(b) states "A site shall not allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site;" , provide a plan that addresses control of access to the landfill, security.*

Response 1: Duke Energy will provide means and methods to control public access to the landfill facility. At this time, Duke Energy plans to install a perimeter fence along the south side of Island Point Road for this purpose. In the near term, the proposed perimeter fence will extend a distance (undetermined at this time) from the landfill where it will end in areas of steep terrain and/or dense vegetation. This portion of the perimeter fence will be completed with landfill construction and we anticipate, prior to receiving the Permit to Operate. Long-term plans for providing overall security and continuing

perimeter fencing for the Marshall Steam Station property are being coordinated with station personnel.

Comment 2: *The Operations Plan – Section 3.2 indicates that all leachate will be treated and discharged in accordance with the plant’s existing NPDES permit. Please include a copy of the current NPDES permit for this facility.*

Response 2: A copy of the current NPDES permit is attached. We note however that a NPDES permit renewal is currently under review by the North Carolina Department of Natural Resources (NCDENR), Division of Water Quality. Provisions for adding the contribution of landfill leachate to the NPDES permit have been made in Section 2.2.13 of the subject permit renewal (attached).

Comment 3: *Due to issues experienced across the State with the blockage of leachate collection systems (LCS) from fouling caused by fine materials, primarily soils, infiltration, the Division is requesting the Operation Plan include, at a minimum, a requirement with procedures to clean the LCS lines and sumps at least once a year and remote camera inspection once every five (5) years. The Division will consider a reduction in frequency or removal of these cleaning and inspection requirements upon written request from the Facility, after the first five years pending the results of the remote camera inspection and the Facility’s ability to maintain the LCS.*

Response 3: S&ME revised Section 3.2 of the Operations Plan to provide for the requested pipe cleaning and camera observation. Additionally, format changes were made to more clearly outline the new LCS and LDS maintenance requirements. This included the reorganization and addition of subsections of sections 3.2 and 3.3. Specifically, the following text has been added to Section 3.2.1, LCS Maintenance:

“Clean-out pipes are located at the ends of the LCS leachate header pipes. LCS lines and sumps shall be cleaned out by the use of a clean-out snake or high pressure water flushing at least once a year and remote camera monitored at least once every five (5) years. Leachate line cleanout and camera monitoring will be documented in the operating record.”

We do not propose to cleanout the LDS because it is not anticipated to have regular flow. However, camera observations will be conducted on LDS lines once every five years. The following text has been added to Section 3.3.1, LDS Maintenance:

“Clean-out pipes are located at the ends of the LDS leachate header pipes. LDS lines and sumps shall be remote camera monitored at least once every five (5) years. LDS line camera monitoring will be documented in the operating record.”

Comment 4: *Include in the plans and specifications for LCS and Leak Detection System (LDS) sump/pump systems that the controls be equipped with high level alarms, both visual and audible, with test functions.*

Response 4: S&ME revised Section 3.2. of the Operations Plan to provide for visual and audible alarms with test function capability. The Operations Plan, Section 3.2, has been amended to read:

“The LCS sump shall be equipped with a dedicated pump system. The LCS pump system contains one low-flow pump and one high-flow pump. The pump system shall operate automatically based on level switches with a low level cutoff and high level run-start activations. Additionally, a high level alarm shall be in place which will also have a high level activation. See the table below for LCS specific sump operations levels. The LCS system control panels will be equipped with visual and audible alarms programmed to activate at the programmed sump liquid level. The alarms will be equipped with a test function.”

The Operations Plan Section 3.3 has been amended to read:

“The LDS sump shall be equipped with a dedicated pump system. The LDS pump system contains one low-flow pump. The LDS pump system shall operate automatically based on level switches with a low level cutoff and a high level run-start activation. Additionally, a high level alarm shall be in place which will also have a high level activation. See the table below for LDS specific sump operations levels. The LDS system control panels will be equipped with visual and audible alarms programmed to identify sump liquid levels. The alarms will be equipped with a test function.”

Comment 5: *The Operation Plan – Section 3.2.1 states “Appropriate corrective measures shall be taken when equipment is not operating properly”, the Plan should include regular inspections to determine whether the equipment is operating properly. At a minimum these inspection should include, weekly visual inspection of the LCS and LDS pump systems for leachate leaks, proper operations, and test of alarm functions.*

Response 5: S&ME has addressed the Division’s comment by providing for weekly observation and testing. This has been addressed by amending Section 3.2.1 and 3.3.1, the LCS and LDS maintenance sections (respectively) as presented below. Section 3.2.1 has been amended as follows:

“Periodic equipment maintenance shall be performed as recommended by the equipment manufacturer. Equipment maintenance will consist of checking pumps, flow meters, valves, connections, and other system equipment for leaks, corrosion, wear, scale build-up, improper functioning, and other improper operations. Appropriate corrective measures shall be taken when equipment is not operating properly.

Observations shall be made weekly to confirm the proper LCS system performance. Weekly observations shall include, but not be limited to, checking pump function, verifying flow meter function, testing visual and audible alarms, and monitoring for leaks.”

Section 3.3.1 has been amended as follows:

“Periodic equipment maintenance shall be performed as recommended by the equipment manufacturer. Equipment maintenance will consist of checking pumps, flow meters, valves, connections, and other system equipment for leaks, corrosion, wear, scale build-up, improper functioning, and other improper operations. Appropriate corrective measures shall be taken when equipment is not operating properly.

Observations shall be made weekly to confirm the proper LDS system performance. Weekly observations shall include, but not be limited to, checking pump function, verifying flow meter function, testing visual and audible alarms, and monitoring for leaks.”

In addition to the Division’s comments, S&ME has revised the Operations Plan to provide for monitoring and testing waste placement during operations. Operations monitoring and testing is summarized in the Operations Quality Assurance Plan included as Appendix II of the Operations Plan. In summary, the operations monitoring and testing includes:

- conduct in-place density testing at a frequency of one test per 10,000 cubic yards of material placed;
- develop one moisture-density relationship (standard Proctor test) at a frequency of one test per 50,000 cubic yards of material placed;
- achieve a relative compaction of 95 percent of the standard Proctor maximum dry density with compacted moisture content within 5 percent of optimum moisture content; and
- monitor and document the compaction methods used during material placement including the types of equipment used and the number of passes with compaction equipment to achieve the required relative compaction.

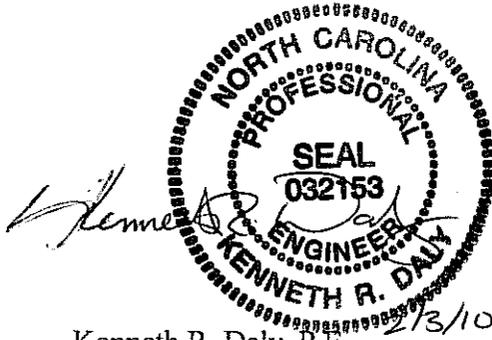
Based on the proposed testing frequency and design disposal rates we generally anticipate monitoring and testing waste placement during operations one-day per month.

The revised Operations Plan is attached for your records. Note that only the Operations Plan narrative and Appendix II have been revised. For ease of inclusion into record documents, however, we have attached the entire Operations plan, including figures and appendices.

On behalf of Duke Energy, S&ME would like to thank the Division for its time in reviewing this material. Should you have any questions or comments, please contact us.

Respectfully submitted,

S&ME, Inc.



Kenneth R. Daly, P.E.
Senior Project Engineer
Engineer of Record

KRD/WMH/cps

William M. Harrison, E.I.
Staff Professional

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Marshall Industrial Landfill\Permit to
Construct Application\NCDENR Tech
Review\Cover letter.doc

Attachments: Operations Plan (Revised 02/03/10)

cc: Ed Sullivan – Duke Energy
Dean Snyder – Duke Energy