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North Carolina Department of Environment and Natural Resources
Division of Land Resources
Land Quality Section

James D. Simons, PG, PE
Director and State Geologist

Beverly Eaves Perdue, Governor
Dee Freeman, Secretary

October 27, 2010

Permit No.	Date	DIN
3612	**November 2, 2010**	**12040**

Mr. B. Henry Taylor, PE
Duke Energy – EC11Y
Post Office Box 1006
Charlotte, North Carolina 28201-1006

RE: Allen Retired Ash Basin Dam
Revision Request
Gaston County
State Dam I.D.: GASTO-016-H

Dear Mr. Taylor:

A review has been made of the "OPERATIONS PLAN RETIRED ASH BASIN (RAB) – ASH LANDFILL ALLEN STEAM STATION BELMONT, NORTH CAROLINA" document dated March 11, 2008, revised September 3, 2010 and the "Permit to Operate – Modifications Request" dated September 3, 2010 document for the referenced dam. Both documents were received by this office on September 9, 2010. These documents were prepared under the supervision of Mr. Kenneth R. Daly, PE, with S&ME, Inc.

As background, the subject dam became a jurisdictional structure under the Dam Safety Law of 1967 (NCGS 143-215.23) (hereafter referred to as the Law) on January 1, 2010. The dam is of high hazard category and has been assigned the state identification number shown above. Land Quality Section staff performed the first jurisdictional inspection of this dam on March 9, 2010. Previous informational submittals for this facility developed under supervision of Mr. Kenneth R. Daly, PE, with S&ME, Inc., received by the office on April 12, 13, and 14, 2009, provided significant detail concerning the proposed landfill activity. Generally, the submittals consisted of construction drawings and a report detailing slope stability analysis (static and pseudo-static), a settlement analysis, and a liquefaction analysis. The submittal addressed plans to spoil ash waste by dry method in the reservoir area of the subject dam and depicted spoiling the ash material to a maximum height of approximately 200 feet at 3 (horizontal) to 1 (vertical) fill slopes over a thirteen year period, through a phased approach.

To date, there has been no submittal providing applicable data and requesting decommissioning of the dam, a process which may result in exemption from jurisdiction of the Law. Based on the

circumstances described above, the landfill activity taking place within the reservoir area of the dam is considered an alteration of the dam and as such is subject to provisions of the Law and the North Carolina Administrative Code, Title 15A, Subchapter 2K (Code). The landfill activity proposed, particularly in cells 2 and 4, is in close proximity to the dam structure and as a result, constitutes a loading on the dam structure. This submittal will be considered a request for approval to modify the subject dam with consideration of documents submitted prior to jurisdictional status. It is recognized that the landfill activity is also subject to other statutory and administrative code requirements as well.

Prior to approval, it is requested that you respond to the following comments and requests for additional information:

1. Please provide detail as to vegetation control detailed in the Notice of Inspection dated April 19, 2010.

2. It is standard procedure in dam construction to provide continuous quality control testing during material placement to ensure proper placement, as opposed to relying on typical contractor performance to meet specifications. Such continued testing ensures proper placement performance by the contractor in all types of conditions and provides confidence in the assumed material properties used for the stability analysis previously submitted. For this reason, it is requested that the Operations Plan be revised as follows for compaction effort on dry placed waste ash material:

    a. Cells 1 and 3: At minimum, perform in-place density tests at a frequency of one test per 8,000 cubic yards (or one test per 216,000 square feet of 12-inch thick lift). At minimum, develop one moisture-density relationship (Standard Proctor test – ASTM D698) at a frequency of one test per 50,000 cubic yards of material placed.

    b. Cells 2 and 4: At minimum, perform in-place density tests at a frequency of one test per 2,000 cubic yards (or one test per 54,000 square feet of 12-inch thick lift). At minimum, develop one moisture-density relationship (Standard Proctor test – ASTM D698) at a frequency of one test per 20,000 cubic yards of material placed.

3. In accordance with NCGS 143-215.29(a), jurisdictional construction activities must be performed under supervision of an engineer legally qualified in the state on North Carolina. This individual is termed engineer of record. Please identify your engineer of record. Given the lengthy duration of this project, please provide for a report by the engineer of record to be submitted to this office on a quarterly basis for the duration of the project. The report is to be in a format which will certify that material placement to date is in accordance with approved compaction requirements and provide professional opinion as to whether material strength parameters assumed in the structural analyses by S&ME, Inc. dated February 18, 2009 and May 1, 2009 remain valid. The report is to be

provided in digital format. Note that the general duties of the engineer of record are described in the typical approval letter issued by this Division. You may change the engineer of record in the future if the need arises.

4. Please provide construction details and calculations for the armoring of the access road ditch in the final cover grading plan and any intermittent outfalls that may be required. The uninterrupted length of the ditch, relatively steep slope, and sharp turn angles appear to be a concern in this regard.

5. Please provide any revisions to the construction drawings and/or any reports, specifications, etc. that may have been made since the 2009 submittals.

It would greatly aid further application review if a response to each of the above comments were made in a cover letter submitted with two sets of the revised plans, specifications and design data. Please note that these comments may not be all inclusive depending upon response received. Please note that in order for the landfill activity to continue in compliance with the Law, approval to modify must be issued by this Division.

Please contact me at telephone number (919) 733-4574 should you have any questions concerning this matter. We look forward to receiving your next submittal.

Sincerely,

Steven M. McEvoy, PE
State Dam Safety Engineer

cc: Mr. Kenneth R. Daly, PE, S&ME
Mr. Zahid S. Khan, Regional Engineer
Mr. Larry Frost, PE, Division of Waste Management
Surface Water Protection Regional Supervisor

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