

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

January 7, 2011

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

VIA E-MAIL AND FEDERAL EXPRESS

Mr. Ed M. Sullivan
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28202

Dear Mr. Sullivan,

On April 26-27, 2010 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Gibson Generating Station. The purpose of this visit was to assess the structural stability of the impoundments or other similar management units that contain "wet" handled CCRs. We thank you and your staff for your cooperation during the site visit. Subsequent to the site visit, EPA sent you a copy of the draft report evaluating the structural stability of the units at the Gibson Generating Station and requested that you submit comments on the factual accuracy of the draft report to EPA. Your comments were considered in the preparation of the final report.

The final report for the Gibson Generating Station is enclosed. This report includes a specific rating for each CCR management unit and recommendations and actions that our engineering contractors believe should be undertaken to ensure the stability of the CCR impoundment(s) located at the Gibson Generating Station. These recommendations are listed in Enclosure 2.

Since these recommendations relate to actions which could affect the structural stability of the CCR management units and, therefore, protection of human health and the environment, EPA believes their implementation should receive the highest priority. Therefore, we request that you inform us on how you intend to address each of the recommendations found in the final report. Your response should include specific plans and schedules for implementing each of the recommendations. If you will not implement a recommendation, please explain why. Please provide a response to this request by February 7, 2011. Please send your response to:

Mr. Stephen Hoffman
US Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

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If you are using overnight or hand delivery mail, please use the following address:

Mr. Stephen Hoffman
US Environmental Protection Agency
Two Potomac Yard
2733 S. Crystal Drive
5th Floor, N-237
Arlington, VA 22202-2733

You may also provide a response by e-mail to hoffman.stephen@epa.gov

You may assert a business confidentiality claim covering all or part of the information requested, in the manner described by 40 C. F. R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when EPA receives it, the information may be made available to the public by EPA without further notice to you. If you wish EPA to treat any of your response as “confidential” you must so advise EPA when you submit your response.

EPA will be closely monitoring your progress in implementing the recommendations from these reports and could decide to take additional action if the circumstances warrant.

You should be aware that EPA will be posting the report for this facility on the Agency website shortly.

Given that the site visit related solely to structural stability of the management units, this report and its conclusions in no way relate to compliance with RCRA, CWA, or any other environmental law and are not intended to convey any position related to statutory or regulatory compliance.

Please be advised that providing false, fictitious, or fraudulent statements of representation may subject you to criminal penalties under 18 U.S.C. § 1001.

If you have any questions concerning this matter, please contact Mr. Hoffman in the Office of Resource Conservation and Recovery at (703) 308-8413. Thank you for your continued ongoing efforts to ensure protection of human health and the environment.

Sincerely,
/Suzanne Rudzinski/, Director
Office of Resource Conservation and Recovery

Enclosures

11.1 Corrective Measures and Analyses for the Structures

1. Several large diameter trees (2-foot or greater) and vegetation were observed at the downstream toe of the North Ash Pond dam. These trees appear to be part of the preexisting wetlands that is adjacent to the North Ash Pond dam. Because the trees are well-established with considerable root systems and are part of the wetland, removal of the trees and root ball may cause further damage to the downstream slope of the dike and, is not recommended at this time. Duke Energy should continue to monitor the downstream slope for noticeable signs of seepage or transportation of embankment materials and obtain guidance from their engineers as to options and strategy for dealing with the trees. If cutting the trees is not possible due to the wetland status, one approach to address the concern of the trees would be to increase the structural stability of the dam (i.e. widening the dam in the upstream direction). Currently, DEI is in the process of widening this dike. This is one of the last original sections of the dike that remains; all others have been increased in width to accommodate other structures. This work is expected to be completed in 2010.

2. Several small diameter trees and vegetation were observed on the upstream and downstream slopes of the inner dikes at the East CCW impoundments. The trees on the inner dikes should be removed within the next year. If these trees are not removed, they could potentially initiate seepage paths or affect the stability of the slope. All vegetation on the inner dikes should be maintained to a level that does not obstruct visual dam safety inspections of the dam embankment.

3. Several small trees were observed near the downstream slope of the East CCW impoundments south and east dikes. A minimum of about 25 feet of clear spacing should be provided at the downstream toe. The trees within this area should be removed within the next year.

4. Isolated areas on the downstream slope of the East Settling Basin south dike were observed to have minor transverse ruts forming. The ruts are likely due to the wheeled tractor mowing the grass during wet or saturated soil conditions. Preventative measure should be taken not to mow the embankment when wet or modify and vary the mowing operations so as not to create ruts perpendicular to the embankment slope.

5. A small excavated drain or sump pit was observed near the downstream toe of the west dike of the East Ash Pond #2 (Photo 30). The excavated pit could potentially initiate a seepage path through the west dike if the area is not repaired. It is recommended that the excavation be backfilled with compacted clay.

6. A liquefaction susceptibility analysis should be conducted for the embankments. Based on the results of this analysis, additional corrective measures may be required.

7. Currently the six CCW impoundments have adequate freeboard and storage capacity to safely store the 6-hour 100-year inflow design flood. However, the storage capacity and water level of the ash pond units can vary depending on operations. Due to this variability, it is recommended that Duke Energy maintain the six CCW impoundments at a level that ensures sufficient storage capacity within the units to

accept the inflow design storm volume without overtopping the dam.

11.2 Corrective Measures Required for Instrumentation and Monitoring Procedures

Daily water levels are measured at the North and East Settling Basins but not at the North and East Ash Ponds. No piezometers or settlement monuments are installed at the ash pond or settling basin dams. It is recommended that a more thorough instrumentation and monitoring program be developed and implemented that would include, at a minimum, piezometers and settlement monuments installed along the perimeter dikes of any impoundments that will continue to receive wet coal combustion waste. Additionally it is recommended that an additional alarm for the water level control system for the North and East Settling Basins be co-located with central plant operations.

11.3 Corrective Measures Required for Maintenance and Surveillance Procedures

Currently, the six CCW impoundments are visually inspected monthly by Duke Energy staff, and inspected by a third-party engineer biennially in conjunction with the formal inspection of the Cooling Pond Dam. It is recommended that Duke Energy develop and document formal inspections of the ash ponds and settling basins, at a minimum annually by plant staff and quinquennially by a third party. It is also recommended that a brief daily check inspection be conducted by DEI personnel and that a written record be maintained for the monthly inspections being conducted by DEI.

11.4 Corrective Measures Required for the Methods of Operation of the Project Works

None.