

US EPA ARCHIVE DOCUMENT



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

January 12, 2012

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

VIA E-MAIL

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

Re: Request for Action Plan regarding Duke Energy Corp - Cliffside Power Station

Dear Mr. Sullivan,

On February 23, 2011 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Duke Energy Corp - Cliffside Power Station facility. 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 Duke Energy Corp - Cliffside Power Station facility 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 Duke Energy Corp - Cliffside Power Station facility is enclosed. This report includes a specific condition 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 Duke Energy Corp - Cliffside Power Station facility. These recommendations are listed in Enclosure 2.

Since these recommendations relate to actions which could affect the structural stability of the CCR management unit(s) 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 provide a rationale. Please provide a response to this request by February 13, 2012. Please send your response to:

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

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

Mr. Stephen Hoffman  
U.S. Environmental Protection Agency  
Two Potomac Yard  
2733 S. Crystal Drive  
5<sup>th</sup> Floor, N-5838  
Arlington, VA 22202-2733

You may also provide a response by e-mail to [hoffman.stephen@epa.gov](mailto:hoffman.stephen@epa.gov), [kohler.james@epa.gov](mailto:kohler.james@epa.gov), and [englander.jana@epa.gov](mailto:englander.jana@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 efforts to ensure protection of human health and the environment.

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

Enclosure

Enclosure 2  
**Duke Energy Corp - Cliffside Power Station Recommendations (from the final  
assessment report)**

## **1.0 CONCLUSIONS AND RECOMMENDATIONS**

### **1.1 CONCLUSIONS**

Conclusions are based on visual observations from a one-day site visit, February 23, 2011, and review of technical documentation provided by Duke Energy Corporation.

#### **1.1.1 Conclusions Regarding the Structural Soundness of the Management Unit(s)**

The dike embankments and spillway appear to be structurally sound based on a review of the engineering data provided by the owner's technical staff and Dewberry engineers' observations during the site visit.

#### **1.1.2 Conclusions Regarding the Hydrologic/Hydraulic Safety of the Management Unit(s)**

Adequate capacity and freeboard to safely pass the design storm (full Probable Maximum Precipitation (PMP)) has not been demonstrated. Hydrologic and hydraulic analyses provided to Dewberry indicate there is adequate impoundment capacity to contain the ½ PMP design storm without overtopping the dikes. (Appendix A: Doc 01 – 2007 Five-Year Inspection Report).

#### **1.1.3 Conclusions Regarding the Adequacy of Supporting Technical Documentation**

Supporting documentation reviewed by Dewberry is inadequate. Although documentation was provided for the hydrologic/hydraulic safety analysis, the PMP design storm was not assessed. Remaining supporting technical documentation is adequate. Engineering documentation reviewed is referenced in Appendix A of the final report.

#### **1.1.4 Conclusions Regarding the Description of the Management Unit(s)**

The description of the management unit provided by the owner was an accurate representation of what Dewberry observed in the field.

#### **1.1.5 Conclusions Regarding the Field Observations**

The visible parts of the embankment dikes and outlet structure were observed to have no signs of overstress, significant settlement, shear failure, or other signs of significant instability although widespread seepage was observed along the toe of the upstream dike which needs to continue to be monitored. There are no apparent indications of unsafe conditions or conditions needing remedial action.

#### **1.1.6 Conclusions Regarding the Adequacy of Maintenance and Methods of Operation**

The current maintenance and methods of operation appear to be adequate for the ash management unit. There was no evidence of significant embankment repairs or prior releases observed during the field inspection. However there were minor ruts from erosion along the upstream dike, left abutment crest.

#### **1.1.7 Conclusions Regarding the Adequacy of the Surveillance and Monitoring Program**

The surveillance program appears to be adequate. The management unit dikes are instrumented. Multiple piezometers and observation wells have been installed as instrumentation. However, widespread seepage at the toe of the upstream dike and seepage at the toe of the downstream dike need to be monitored and recorded. If discoloration or changes in the flow are observed, then an action plan should be developed.

### **1.1.8 Classification Regarding Suitability for Continued Safe and Reliable Operation**

The facility is **SATISFACTORY** for continued safe and reliable operation. No existing or potential management unit safety deficiencies are recognized. Acceptable performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable criteria.

## **1.2 RECOMMENDATIONS**

### **1.2.1 Recommendations Regarding the Hydrologic/Hydraulic Safety**

Perform hydrologic/hydraulic analysis to document adequate freeboard exists to pass the PMP event.

### **1.2.2 Recommendations Regarding the Field Observations**

Continue to monitor seepage along the toe of both embankments.

### **1.2.3 Recommendations Regarding the Maintenance and Methods of Operation**

Remediate minor rutting along upstream dike, left abutment crest.