

US EPA ARCHIVE DOCUMENT



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

June 13, 2013

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

VIA E-MAIL

Ms. Cynthia Anderson, Senior Manager, Water and Waste Compliance  
Fossil Generation Development & Construction  
Tennessee Valley Authority  
1101 Market Street, BR 4A  
Chattanooga, TN 37402-2801

Re: Request for Action Plan regarding Tennessee Valley Authority – Bull Run Fossil Plant

Dear Ms. Anderson,

On September 19, 2011 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Tennessee Valley Authority - Bull Run Fossil Plant 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 Tennessee Valley Authority - Bull Run Fossil Plant 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 Tennessee Valley Authority - Bull Run Fossil Plant facility can be accessed at the secured link below. The secured link will expire on July 31, 2013.

Here is the link: <http://www.yousendit.com/download/UVJnTONkR0ZEa1cwYjhUQw>

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 Tennessee Valley Authority - Bull Run Fossil Plant facility. These recommendations are listed in Enclosure 1.

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 **July 15, 2013**. Please send your response to:

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

If you are using overnight or 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),  
[dufficy.craig@epa.gov](mailto:dufficy.craig@epa.gov), [kelly.patrickm@epa.gov](mailto:kelly.patrickm@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

**Tennessee Valley Authority - Bull Run Fossil Plant Recommendations (from the final assessment report)**

**CONCLUSIONS**

Conclusions are based on visual observations from a one-day site visit, September 14, 2011, and review of technical documentation provided by Tennessee Valley Authority.

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

The dike embankments for Area 1, Area 2 and Area 2A and spillway for Area 2A and Area 2 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. Remediation was complete for several dikes in each area that had shown potential failures (major sloughing) under static conditions in a 2010 study, and were subsequently improved to meet minimum Factors of Safety.

No liquefaction evaluation was performed for the current dikes of Area 1, Area 2 or Area 2A. TVA plans on performing such analyses upon closure of the units. A qualitative analysis by Dewberry indicates possible liquefaction from ash underlying the Area 1 and Area 2A management units (see Appendix B, Doc 17). Without information concerning releases of CCR as a result of liquefaction under seismic conditions, the dike ratings cannot be rated Satisfactory.

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

A hydrologic and hydraulic analysis provided to Dewberry indicates adequate impoundment capacity to contain the 1 percent probability/Probable Maximum Precipitation design storm without overtopping the dikes.

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

The supporting technical documentation is inadequate; due to the lack of quantitative analysis of liquefaction potential. Engineering documentation reviewed is referenced in Appendix A.

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

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

**Conclusions Regarding the Field Observations**

Dewberry staff was provided access to all areas in the vicinity of the management units required to conduct a thorough field observation. The visible parts of the embankment dikes and outlet structures were observed to have no signs of overstress, significant settlement, shear failure, or other signs of instability although visual observations were hampered by the presence of thick vegetation in some areas. Embankments appear structurally sound. There are no apparent indications of unsafe conditions or conditions needing remedial action.

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

The current maintenance and methods of operation appear to be adequate for the management units. As previously mentioned, there was active construction and/or repairs to each disposal area at the time of the site assessment.

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

The surveillance program appears to be adequate. The management unit dikes are instrumented with piezometers, inclinometers, staff gauges and monitoring wells.

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

**One CCR management unit (Area 2) is rated SATISFACTORY and two (Area 1 and Area 2A) are rated FAIR for continued safe and reliable operation based on visual assessment and the pertinent technical documentation provided.** Implementation of the recommendations described in below would help improve the ratings.

**RECOMMENDATIONS**

**Recommendations Regarding the Structural Stability**

Maintain frequent inspections of the management unit embankments for the Bottom Ash Disposal Area (Area 1), Fly Ash pond Area (Area 2) and the Gypsum Disposal Area (Area 2A) to ensure the recently completed construction and repairs to ensure structural stability, as recommended by Stantec, are adequate.

An analysis of the impact of potential liquefaction of materials within and under all three management units is recommended to be performed now rather than upon closure of the units.

### **Recommendations Regarding Continued Safe and Reliable Operation**

It is anticipated that all three management units would be considered Satisfactory for continued safe and reliable operation upon:

- A determination of liquefaction potential for soils and materials for the three management units, particularly Bottom Ash Disposal Area 1 and the Gypsum Disposal Area 2A under the design seismic event.