

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 - Gallatin 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 - Gallatin 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 - Gallatin 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 - Gallatin 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/UVJnT0NkOW44NVhOTzhUQw>

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 - Gallatin 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:

Mr. Stephen Hoffman

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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 - Gallatin Fossil Plant Recommendations (from the final assessment report)**

**CONCLUSIONS**

Conclusions are based on visual observations from a one-day site visit on September 8, 2011, and review of technical documentation provided by TVA.

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

The structural stability of the dike embankments for the Coal Combustion Residue (CCR) Complex and its outlet works appears to be satisfactory in practically all respects, based on review of the original and supplemental engineering data provided by the owner's technical staff and on Dewberry engineers' observations during the site visit. With exception of the Bottom Ash Pond A divider dike, the structural stability of the containment dikes of the CCR Complex is satisfactory for both global and non-global potential failures under all credible loading conditions. The stability of the Bottom Ash Pond A divider dike will be satisfactory when the recommended remedial measures are successfully implemented to increase the non-global factors of safety to the acceptable minimum. Until then, the overall structural stability of the Bottom Ash Pond A divider dike is considered fair.

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

The initial hydrologic and hydraulic (H & H) analysis provided to Dewberry shows that the CCR Complex at the Gallatin Fossil Plant does not currently have acceptable hydrologic/hydraulic safety. However, given that TVA has taken the necessary action to replace an existing deficient spillway at Bottom Ash Pond A and to make improvements in the stilling ponds (Pond B, C, and D), for improving the design flood routing through the CCR Complex to prevent overtopping of the dikes, the inadequacy is considered temporary. Upon completion of the new spillway and stilling pond improvements, the CCR Complex will be considered adequate with respect to hydrologic/hydraulic safety.

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

The documentation of the H & H analyses for the CCR Complex appears overall to be adequate for assessment purposes. The additional H & H analyses by URS for the new spillway at the Bottom Ash Pond A and for determining improvements to be made to the stilling ponds should be provided for record purposes when they become available. The structural stability documentation that was provided and supplemented with additional analyses as recommended is adequate.

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

The description of the CCR management units provided by the owner (two ash ponds and three interconnected stilling ponds) 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 immediate 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 CCR management units. There was no evidence of significant unexplained embankment repairs or prior releases observed during the field 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.

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

The Gallatin Fly Ash Pond E is rated SATISFACTORY for continued safe and reliable operation, as no deficiencies were noted. The Bottom Ash Pond A is rated FAIR. This rating is considered temporary and will be reassessed as satisfactory after successful implementation of recommended remedial measures to improve the factor of safety against potential non-global (maintenance-type) slope failures of the divider dike and with successful installation of the new spillway at the Bottom Ash Pond. The Stilling Ponds B, C, and D system is rated FAIR. The satisfactory structural stability of the dikes that contain the stilling ponds, as indicated by the supplemental engineering documentation, and the fact that TVA is actively addressing the hydrologic/hydraulic deficiency by engaging URS to study ways to upgrade the system to handle the design flood flow, weighed positively to a fair rating for the stilling pond complex. This rating will be reassessed as satisfactory after successful implementation of measures to improve the stilling pond complex to safely pass the design flood flow.

No other existing or potential management unit safety deficiencies are recognized in the field assessment and review of furnished operations, maintenance, surveillance, and monitoring information. Except as noted above with respect to potential for maintenance-type slope failures along the Bottom Ash Pond A divider dike, acceptable slope stability performance is expected under applicable static and seismic (pseudostatic) loading conditions in accordance with the applicable criteria. Implementation of recommendations as presented below would help improve the ratings.

### **RECOMMENDATIONS**

#### **1.2.1 Recommendations Regarding the Structural Stability**

Implement URS's recommended preferred remedial measures for increasing the factor of safety against non-global (maintenance-type) slope failures to the minimum factor of safety criterion for the Bottom Ash Pond A divider dike. This will involve placing a rockfill toe on the downstream (stilling pond) side of the divider dike, flattening the downstream slope by filling or cutting and filling down to the top of the rockfill, leaving a 10- foot wide bench at the top of the rockfill, and vegetating the new slope (see Appendix C – Doc 21).

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

Complete the project to replace the Bottom Ash Pond A spillway (scheduled completion in December 2013) and implement stilling pond complex improvements determined by URS for upgrading the ponds to safely pass the design flood flow.

#### **Recommendations Regarding the Supporting Technical Documentation**

When available, provide final H & H analyses documenting that the CCR Complex will safely pass the design flood once the Bottom Ash Pond A spillway project and the stilling pond complex improvement project are completed.

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

- 1) Repair minor erosion observed at various locations during the site visit; use cohesive soil cover on the eroded slopes and improve the vegetation growth.
- 2) Continue to inspect/monitor the dikes for new and existing seeps for changes that might affect the dikes' integrity. Closely inspect for new sinkholes that could impact the integrity and function of the dikes, particularly after heavy rainfalls or flooding.

It is understood from responses to the Dewberry Draft report that "improvements made in 2012 included overseeding of sparsely vegetated areas; wave wash protection for Ponds A, C, and D; and crushed stone road/dike crest covering for Ponds E, C, and D." It was indicated that TVA will continue the ongoing maintenance program through its Routine Handling, Operations, and Maintenance (RHO&M) group, which addresses items like those noted in 1) above, and will also continue its ongoing inspection program, which checks for conditions like those noted in 2) above.

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

No additional recommendations appear warranted at this time.