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

July 28, 2011

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

VIA E-MAIL

Mr. Alan Wood
American Electric Power
1 Riverside Plaza,
Columbus, Ohio 43215-2373

Dear Mr. Wood,

On October 19, 2010 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Southwestern Electric Power Co - Pirkey 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 Southwestern Electric Power Co - Pirkey 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 Southwestern Electric Power Co - Pirkey 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 Southwestern Electric Power Co - Pirkey 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 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 provide a rationale. Please provide a response to this request by August 29, 2011. Please send your response to:

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

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
5th Floor, N-5838
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 efforts to ensure protection of human health and the environment.

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

Enclosures

In the Draft Report the West Ash Pond, Auxiliary Surge Pond, and Landfill Runoff Pond were rated poor due to the lack of critical analyses which would verify the unit's stability under required loading conditions. Namely, for these ponds, sufficient storage or runoff routing ability for the hydrologic event equivalent to the hazard condition specified for the facility. Materials provided by AEP in comments to the Draft Report addressed these areas of concern. As a result, the ratings for the West Ash Pond and Auxiliary Surge Pond were changed to Fair. However, the provided materials show the existing Landfill Runoff Pond is not designed to sufficiently pass even the 10-year 24-hour storm. As a result, that rating will remain Poor. The EPA is currently working to complete final rules for the CCW assessment program. Additionally, condition ratings noted in this *Report of Dam Safety Assessment of Coal Combustion Surface Impoundments* represent a snapshot in time. If the following recommendations are implemented and acceptable levels of protection are shown, it may be possible to improve the condition ratings if the CCW impoundments were to be re-evaluated in the future.

In addition, although the factors of safety determined in the 2010 Embankment Investigation were acceptable for the Landfill Runoff Pond, Triaxial and Direct Shear values for the Landfill Runoff Pond were not provided in the Investigation. However, comments to the Draft Report provided by AEP outlined the reasoning behind the selection of geotechnical parameters. AMEC considers the issue resolved.

4.2 Hydrologic and Hydraulic Recommendations

In comments to the Draft report, AEP took exception to the application of MSHA criteria to the hydrologic and hydraulic operations of the ash ponds. Per EPA's directive, the impoundments were assessed using the resources and guidelines as set forth in Sections 1.1 of the final report. In comments to the Draft report, AEP concurred that "a revised hydraulic analysis may be beneficial to perform according to the current criteria established by the Texas Commission on Environmental Quality for small, low hazard dams, for completeness and updating the records." The May 2011 *Hydrologic & Hydraulic Report* authored by Johnson & Pace Incorporated and included in AEP's comments to the Draft Report, provided that revised hydraulic analysis and summary of pond freeboard resulting from design storm events for the West Bottom, North (Auxiliary) Surge, and Landfill Runoff Ponds.

4.2.1 West Bottom Ash Pond

Draft Report

AMEC recommends that an appropriate design storm rainfall and freeboard depth in accordance with MSHA guidelines be applied to the impoundment's watershed to assess whether the dam and decant system can safely store, control, and discharge the design flow. Based on the size and hazard rating for the West Bottom Ash Pond, the design storm per MSHA guidelines would be the ½ PMF. Hydraulic calculations should also be completed to determine the rate at which the discharge structure and associated piping could pass the design storm, if necessary, or draw down elevated water surfaces following such an event. The analysis should consider all critical stages over the life of the pond including full pond conditions. Additionally, the analysis should take into account the connectivity between the West, East, and Secondary Bottom Ash Ponds.

Final Report

A "Significant Hazard" potential was originally assigned to the West Ash Pond. However, following receipt of Draft Report comments from AEP, the hazard potential of the West Ash Pond was changed from "Significant" to "Low" as described in Section 1.2 of the final report.

That hazard potential change resulted in reduction of the required MSHA design storm criteria from ½ PMF to 100-Year 24-hour.

The West Bottom Ash Pond, shown to operate at elevation 354.0 feet, would be capable of containing the 100-year 24-hour design storm of between 10 and 11 inches while maintaining a freeboard of approximately two feet based on the reported crest elevation of 357.0 feet. Ideally, per MSHA and other frequently referenced sources, a freeboard of three feet should exist above the maximum water surface elevations that result from a design storm.

4.2.2 East Bottom Ash Pond
The East Bottom Ash Pond is incised, therefore, no hydrologic or hydraulic recommendations are provided.

4.2.3 Secondary Bottom Ash Pond
The Secondary Bottom Ash Pond is incised, therefore, no hydrologic or hydraulic recommendations are provided.

4.2.4 Surge Pond
The Surge Pond is incised, therefore, no hydrologic or hydraulic recommendations are provided.

4.2.5 Auxiliary Surge Pond
Draft Report
AMEC recommends that an appropriate design storm rainfall and freeboard depth in accordance with MSHA guidelines be applied to the impoundment's watershed to assess whether the dam can safely store the design flow, as there is no decant or discharge capability in this pond. Based on the size and rating for the Auxiliary Surge Pond, the design storm, per MSHA recommendations, would be the 100-year 24-hour event.

If it is determined that addition of a discharge structure is warranted, hydraulic calculations should also be completed to determine the rate at which the discharge structure and associated piping could pass the design storm, if necessary, or draw down elevated water surfaces following such an event. The analysis should consider all critical stages over the life of the pond including full pond conditions.

Final Report
The Auxiliary Surge Pond, shown to operate at elevation 373.0 feet, would be capable of containing the 100-year 24-hour design storm of between 10 and 11 inches while maintaining a freeboard of approximately two feet based on the reported crest elevation of 376.0 feet. Ideally, per MSHA and other frequently referenced sources, a freeboard of three feet should exist above the maximum water surface elevations that result from a design storm.

4.2.6 Landfill Runoff Pond
Draft Report
URS recommended, following their March 2009 inspection, that AEP "verify the hydraulic adequacy of this pond as soon as possible to ensure that the dam can safely pass the design flood flows without overtopping."

AMEC is in agreement and recommends that an appropriate design storm rainfall and freeboard depth in accordance with MSHA guidelines be applied to the impoundment's watershed to assess whether the dam and outlet system can safely store, control, and discharge the design flow. Based on the size and rating for the Landfill Runoff Pond, the design storm would be the 100-year, 24-hour event. Hydraulic calculations should also be completed to determine the rate at

which the discharge structure and associated piping could pass the design storm, if necessary, or draw down elevated water surfaces following such an event.

Final Report
The May 2011 hydrologic and hydraulic analyses completed by Johnson & Pace Incorporated indicated that the proposed spillway design would pass 12.8 inches (25% PMF) of runoff with less than 5 inches of freeboard with respect to the pond's top of embankment elevation. The nearly 11 inches resulting from the 100-year 24-hour design storm (MSHA requirement for Low hazard impoundment) would produce a similar, if slightly greater, freeboard. AMEC recommends that AEP revisit the proposed pond design to produce a spillway/crest elevation combination that will work to provide a freeboard for the 100-year 24-hour design storm routing that would more closely mirror that recommended by MSHA.

4.3 Geotechnical and Stability Recommendations
Draft Report
Regarding the West Bottom Ash, Auxiliary Surge, and Landfill Runoff Ponds, analyses and factors of safety reported in the October 2010 Embankment Investigation met acceptable minimum criteria. However, final verification will be provided once clarification is provided regarding the steps taken, as well as the calculations and assumptions that were utilized to determine the Triaxial and Direct Shear Tests values. These values are provided in Table 6 of the assessment report. Additionally, Triaxial and Direct Shear Test results were not reported for Landfill Runoff Pond borings L-1 and L-2. These values need to be reported.

The East and Secondary Bottom Ash Ponds and the Surge Pond feature incised configurations and geotechnical or stability recommendations are not provided.

Final Report
In their comments to the Draft Report, AEP noted that *USACE Engineering Manual 110-2-1902 Section 3.3 stated that "computed factors of safety less than the preferred values for new dams (FS = 1.5 static conditions) may be acceptable based on past performance and current condition of the dam. It should be pointed out that the Factors of Safety for the facilities presented in the report of the independent consultant, ETTL, (Table 6.1.2) meet or exceed the minimum requirement for new dams."*

Also, AEP noted that "it is common practice and accepted professional standards that soil properties are selected based on a combination of the results of site specific drilling and testing programs as well as published data and local knowledge of the subsurface conditions. AEP believes that the selection of design parameters for the facilities is well documented in the ETTL report. Additional testing seems to be unwarranted given the Factor of Safety calculated for the facilities."

Based on the response to comments, AMEC considers all issues noted in the Draft Report with regard to the geotechnical stability analyses to have been satisfactorily resolved.

4.4 Monitoring and Instrumentation Recommendations
Associated existing monitoring wells should continue to be sampled semi-annually. In addition, any associated piezometers installed in support of the 2010 Embankment Investigation, should be read semi-annually, as well, with levels recorded.

In order to monitor change of water surface in the West and East Bottom Ash Ponds, a level gauge, similar to those in the Secondary Bottom Ash Pond and Surge Pond, should be added to those ponds. Routine monitoring should be established.

4.5 Inspection Recommendations

Draft Report

Although AEP/SWEPCO believes Pirkey to be a low hazard facility, that does not minimize the need for a more detailed and documented record of inspection activities. AMEC recommends that an inspection program be completed monthly by the plant, as well as being expanded to identify observation date, describe the conditions of crests, embankments, and other areas that are observed, identify potential problems, remark on maintenance response to previous concerns, and note conditions of monitoring instrumentation and pond levels. Inspections of the ponds should be performed after significant rainfall events.

AMEC understands a Professional Engineer performed an inspection in March 2009, and the next inspection is planned for 2012. We recommend this type of inspection program and report by a Professional Engineer be continued at least annually, in addition to the recommended monthly inspections by facility personnel.

The presence of trees, excessive vegetation and animal burrows are also related to the maintenance of the facility. More frequent (monthly) inspections would allow for these maintenance concerns to be recognized and addressed in a timely manner.

Final Report

AMEC noted comments provided by AEP with respect to inspection type and frequency. AMEC continues to recommend standard annual inspections by a professional engineer and well documented monthly inspections by plant personnel as described in the first paragraph of the final report section. The inspection form that AEP provided in their comments to the Draft report should have added columns based on the additional types of information outlined in that first paragraph.