

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. Charles Huling, Vice President, Environmental Affairs
Georgia Power
241 Ralph McGill Blvd., N.E. 22nd Floor, bin 10221
Atlanta, Georgia 30308-3374

Dear Mr. Huling,

On May 10-11, 2010 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Plant Yates 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 Plant Yates 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 Plant Yates 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 Plant Yates 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

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

4.2 Ash Pond 1

4.2.1 Hydrologic and Hydraulic Recommendations

Ash Pond 1 is currently used as a sediment control for the coal stockpile. Some of the embankment's downstream face has been backfilled due to construction of cooling towers. However, the dam is a maximum of 15 feet high and the surface of the ash is sufficiently low to allow accumulation of water. Based upon additional information provided by Georgia Power on 21 September 2010 (YAT-API 083), in AMEC's opinion, the analyses that were provided address the ability of the impoundment to safely control or pass appropriate storm events.

4.2.2 Geotechnical and Stability Recommendations

In the draft report, AMEC commented that the stability analyses were performed for the existing loading condition plus a seismic acceleration. It was unclear if the steady state condition includes the peak pool due to the design storm event. The analyses presented depicted a grid and radius type search; however, the grid appears to be small and seems to limit the radii of the potential failure circles. The analyses should include an entry and exit type of search that would allow long radius failure surfaces. Furthermore, the failure surfaces appear to be limited to circular surface; the failure surfaces should be optimized. Subsequently, SCECS provided updated stability analyses in the information submitted on September 21, 2010 which satisfactorily address the comments AMEC provided in the draft report.

4.2.3 Monitoring and Instrumentation Recommendations

This ash pond is not actively receiving CCW, but is used for storm water control. At the time of the draft report there was no instrumentation for this structure. Subsequently, a piezometer was installed and is being monitored.

4.2.4 Inspection Recommendations

This pond has, prior to 2007, not had routinely documented inspections. Routine documented formal inspections are now performed on a regular basis.

4.3 Ash Pond 2

4.3.1 Hydrologic and Hydraulic Recommendations

Ash pond 2 is currently used for disposal and processing of CCW. This pond also receives almost all the drainage from six of the other ponds at the site prior to recycling the water. Based upon additional information provided by Georgia Power on 21 September 2010 (YAT-API 084), in AMEC's opinion, the analyses that were provided address the ability of the impoundment to safely control or pass appropriate storm events.

4.3.2 Geotechnical and Stability Recommendations

In the draft report, AMEC commented that the stability analyses were performed for the existing loading condition plus a seismic acceleration. It was unclear if the steady state condition included the peak pool due that would result from the design storm event. The analyses presented depict several methods of search; however, the extent of the searches appears to be limited and seems to prevent several modes of failure. The failure surfaces should also be optimized to allow for non-circular or non-planer failures. Subsequently, SCECS provided updated stability analyses in the information submitted on September 21, 2010 which satisfactory address the comments AMEC provided in the draft report.

In the draft report, AMEC commented that the analyses discuss the loss of the riverbank, which supports the toe of the dam, and indicates that "...we feel that even if the toe of the dam were undermined, the overall stability of the dam is high enough that corrective measures could be

taken before Ash Pond 2 dike would be affected.” After consideration and review of flood events over the recent past, a prudent engineer could perceive that erosion of the toe of the dam and the riverbank during a flood event may be sufficient to cause total failure of the dam, without allowing protection or repairs to the dam during the event. FEMA’s 1% recurrence flood is a flood that has a 1% chance of occurring in any one year; for a dam with a 50 or 100 year design life, the probability of the dam experiencing such a flood is high. It would be prudent to provide scour and erosion protection of the riverbank and toe of the dam to a level sufficient to protect them from a flood event well in excess of the minimum criteria. Such a flood event might include the flood of record or the 0.2% recurrence event for that portion of the Chattahoochee River. Upon review of the updated information and analyses submitted on September 21, 2010 by SCECS, AMEC generally agrees that inspection and maintenance of the riverbank is a critical aspect to assure stability and safety of ASH Pond 2. As stated in their report, Georgia Power and Plant Yates personnel are keenly aware of the need to monitor the riverbank and the riverbank is included in their weekly inspection. The riverbank is also included in the routine inspections by the Dam Safety Engineer. Any change in condition of the riverbank would be immediately noted and corrective action taken before the stability of Ash Pond 2 dike would be compromised. This attention to the riverbank satisfactorily addresses the comments AMEC provided in the draft report.

4.3.3 Monitoring and Instrumentation Recommendations

AMEC has reviewed provided information and instrumentation records for Ash Pond 2 and determined that Georgia Power has adequate inspection practices. These instruments were installed only in that last few months, so it would be prudent for Plant Yates to document monitoring more frequently than normal until base line phreatic readings are apparent. AMEC recommends that the current inspection program and practices be continued for this ash pond.

4.3.4 Inspection Recommendations

AMEC has reviewed provided information and inspection records for Ash Pond 2 and determined that Georgia Power has adequate inspection practices. AMEC recommends that the current inspection program and practices be continued for this ash pond.

4.4 Ash Pond 3

4.4.1 Hydrologic and Hydraulic Recommendations

Ash Pond 3 is not currently used for processing of CCW. This pond receives almost all the drainage from Ash Pond B` before discharging into Ash Pond 2. YAT-API 057, from 2001, provided information regarding analyses of design storm events for AP 3. That document appeared to indicate that the dike overtopped during the 2% (50-year) storm event. Since the service life of this facility is generally 50 to 100 years (it is now 33 years old), there is a high probability that the dam will experience a storm event in excess of the “design” storm. Based upon additional information provided by Georgia Power on September 21, 2010 (YAT-API 084), in AMEC’s opinion, the analyses that were provided address the ability of the impoundment to safely control or pass appropriate storm events.

4.4.2 Geotechnical and Stability Recommendations

In the draft report, AMEC commented that the stability analyses were performed for the existing condition plus a seismic acceleration. It was unclear if the steady state condition included the peak pool due to the design storm event. The analyses presented depict only the sliding block methods of search; however, the extent of the searches appears to be limited. AMEC recommended that the slope stability analyses be performed so they include design storm peak/surcharge stage water levels that reflect appropriate phreatic surfaces due to presaturation by appropriate antecedent precipitation and the limited outflow capacity of the pond. Likewise, the stability analyses should consider all critical stages during the life of the facility, such as maximum pool area and any potential surcharges, as well as likely loading combinations. Furthermore, the previous analyses limited the failure surfaces to linear surfaces; AMEC recommended that the slope stability analyses include entry and exit type searches that

would allow long radii failure circles as well as slip surface optimization to allow for non-linear and non-circular failure surfaces. Subsequently, SCECS provided updated stability analyses in the information submitted on September 21, 2010 which satisfactorily address the comments AMEC provided in the draft report.

4.4.3 Monitoring and Instrumentation Recommendations

AMEC has reviewed provided information and instrumentation records for Ash Pond 3. The piezometers installed in 1997 appear to have been temporary and don't appear to have been monitored since 1999. AMEC understands that six piezometers were recently installed.

4.4.4 Inspection Recommendations

AMEC has reviewed provided information and inspection records for Ash Pond 3 and determined that Georgia Power has adequate inspection practices. AMEC recommend that the current inspection program and practices be continued for this ash pond.

4.5 Ash Pond B`

4.5.1 Hydrologic and Hydraulic Recommendations

Ash Pond B` is currently used for processing of CCW and discharges into Ash Pond 3. Based upon YAT API-050, it appears that AshPond B` was designed to safely store or pass the 1% recurrence (100-year) storm, however, the document did not indicate the storm duration. Since the service life of this facility is generally 50 to 100 years (it is now about 33 years old), there is a high probability that the dam will experience a storm event equal to or greater than the "design" storm. Based upon additional information provided by Georgia Power on September 21, 2010 (YAT-API 083), in AMEC's opinion, the analyses that were provided address the ability of the impoundment to safely control or pass appropriate storm events.

4.5.2 Geotechnical and Stability Recommendations

In the draft report, AMEC commented that the stability analyses were performed for the existing loading condition plus a seismic acceleration. It was unclear if the steady state condition included the peak pool due to the design storm event. The analyses presented depicted only the grid & radius methods of search; however, the extents of the searches appeared to be extended. AMEC recommended that the slope stability analyses be performed so they include design storm peak/surcharge stage water levels that reflect appropriate phreatic surfaces due to pre-saturation by appropriate antecedent precipitation and the limited outflow capacity of the pond. Likewise, the stability analyses should consider all critical stages during the life of the facility, such as maximum pool area and any potential surcharges, as well as likely loading combinations. Furthermore, the previous analyses limited the failure surfaces to circular surfaces; AMEC recommended that the slope stability analyses include entry and exit type searches that would allow long radii failure circles as well as slip surface optimization to allow for non-linear and non-circular failure surfaces. Subsequently, SCECS provided updated stability analyses in the information submitted on September 21, 2010 which satisfactorily address the comments AMEC provided in the draft report.

4.5.3 Monitoring and Instrumentation Recommendations

AMEC has reviewed provided information and instrumentation records for Ash Pond B`. These instruments were installed only in that last few months, so it would be prudent for Plant Yates to document monitoring more frequently than normal until base line phreatic readings are apparent. AMEC recommend that the current inspection program and practices be continued for this ash pond.

4.5.4 Inspection Recommendations

This pond has, historically, not had routinely documented inspections. Because this pond is used to receive CCW and is capable of impounding water, AMEC recommends that this pond have documented formal inspections on a regular basis.

4.6 Ash Pond A

4.6.1 Hydrologic and Hydraulic Recommendations

Ash Pond A is currently inactive, covered, and no longer receives liquid borne waste. Drainage from this unit appears to flow overland or in ditches to Ash Pond 2. Erosion and vegetation, for the most part, appear to be under control. AMEC recommends that Georgia Power continue to periodically maintain this unit to provide erosion and vegetation control.

4.6.2 Geotechnical and Stability Recommendations

In the draft report, AMEC commented that the stability analyses were performed for the existing loading condition plus a seismic acceleration. The analyses presented depict only the sliding block methods of search. AMEC recommended that the slope stability analyses be performed so they reflect appropriate phreatic surfaces due to pre-saturation by appropriate antecedent precipitation. Furthermore, the previous analyses limit the failure surfaces to linear surfaces; AMEC recommends that the slope stability analyses include entry and exit type searches that would allow long radii failure circles as well as slip surface optimization to allow for non-linear and non-circular failure surfaces. Subsequently, SCECS provided updated stability analyses in the information submitted on September 21, 2010 which satisfactorily address the comments AMEC provided in the draft report.

4.6.3 Monitoring and Instrumentation Recommendations

AMEC has reviewed provided information and instrumentation records for Ash Pond A. These instruments were installed only in that last few months, so it would be prudent for Plant Yates to document monitoring more frequently than normal until base line phreatic readings are apparent. AMEC recommend that the current inspection program and practices be continued for this ash pond.

4.6.4 Inspection Recommendations

This pond has, historically, not had routinely documented inspections. Because this dam exists and is subject to failure or degradation due to erosion, AMEC recommends that this pond have documented formal inspection on a regular basis.

4.7 Ash Pond B

4.7.1 Hydrologic and Hydraulic Recommendations

Ash Pond B is currently inactive and the dam appears to be breached and buried. Drainage from this unit appears to flow overland or in ditches to Ash Pond 2. Erosion and vegetation, for the most part, appear to be under control. AMEC recommends that Georgia Power continue to periodically maintain this unit to provide erosion and vegetation control.

4.7.2 Geotechnical and Stability Recommendations

No stability analyses are available for Ash Pond B. Likewise, it appears that the dam for Ash Pond B has been partially to mostly buried; AMEC rated this unit as less than low hazard. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.

4.7.3 Monitoring and Instrumentation Recommendations

No instrumentation was available for review for this unit. It appears that the dam for Ash Pond B has been partially to mostly buried; AMEC rated this unit as less than low hazard. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.

4.7.4 Inspection Recommendations

This pond has, historically, not had routinely documented inspections. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.

4.8 Ash Pond C

4.8.1 Hydrologic and Hydraulic Recommendations

Ash Pond C has been incorporated into solid waste landfill R6. AMEC recommends that Georgia Power continue to periodically maintain this unit to provide erosion and vegetation.

4.8.2 Geotechnical and Stability Recommendations

Ash Pond C has been incorporated into solid waste landfill R6. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.

4.8.3 Monitoring and Instrumentation Recommendations

Ash Pond C has been incorporated into solid waste landfill R6. AMEC rated this unit as less than low hazard. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.

4.8.4 Inspection Recommendations

Ash Pond C has been incorporated into solid waste landfill R6. This pond has, historically, not had routinely documented inspections. AMEC recommends that only routine maintenance of vegetation and prevention of erosion is necessary for this unit.