

US EPA ARCHIVE DOCUMENT

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**CERTIFIED MAIL AND ELECTRONIC MAIL**

Mr. Stephen Hoffman  
Office of Resource Conservation and Recovery  
U. S. Environmental Protection Agency (5304P)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

[hoffman.stephen@epa.gov](mailto:hoffman.stephen@epa.gov)

**Re: "Report of Safety Assessment Coal Combustion Surface Impoundments, Georgia Power, Plant Mitchell, Albany, Georgia", December 2010**

Dear Mr. Hoffman:

On January 7, 2011, the U. S. Environmental Protection Agency ("EPA") provided Georgia Power with a final report regarding certain facilities for the management of coal combustion byproducts at Georgia Power's Plant Mitchell ("Final Report"). The Final Report was prepared by AMEC Earth & Environmental, Inc. ("AMEC") and dated December 2010. EPA stated that Georgia Power's comments were considered in preparation of the Final Report. Georgia Power appreciated the opportunity to provide comments. EPA also requested Georgia Power's response to the Final Report's recommendations, including specific plans and schedules for implementing the recommendations. This letter provides Georgia Power's response to the recommendations in the Final Report and additional comments on the Final Report. With this submittal, Georgia Power has addressed all recommendations identified in the Final Report and EPA's transmittal letter dated January 7, 2011. EPA's recommendations are shown in italics below, and Georgia Power's responses follow each recommendation. The Georgia Power comments on the Final Report are shown at the end of the letter.

**Acknowledgement of Management Unit Condition and Potential Hazard Rating**

Georgia Power is committed to the management of coal combustion byproducts in a safe manner that is protective of human health and the environment. Georgia Power has had a robust ash pond dike inspection and maintenance program in place for many years. We are pleased that EPA's on-site inspection and document review have confirmed that Georgia Power's facilities are well constructed and managed effectively.

## **4.2 Ash Pond 1**

### **4.2.1 Hydrologic and Hydraulic Recommendations**

*June 2010 Draft Report. Ash Pond 1 is currently inactive and does not receive CCW. The impoundment is essentially full of ash and scrub trees and brush are growing atop the ash. The dam can still impound storm water that falls within its watershed. The dam is, for all practical purposes, a ring dike, the watershed is the area of the impoundment, and the service spillway is still in place and working. The dam is a maximum of 23 feet high and the surface of the ash is sufficiently low to allow accumulation of water. The impoundment does not have an open channel emergency spillway. AMEC recommends that the appropriate design storm rainfall should be applied to the impoundments watershed to assure that the dam and decant system can safely store or control the design flow. The analysis should be documented.*

*Final Report. Based upon additional information provided by Georgia Power on September 21, 2010, in AMEC's opinion, the analyses that were provided address the ability of the impoundment to safely control or pass appropriate storm events.*

No recommendations were provided so no response required.

### **4.2.2 Geotechnical and Stability Recommendations**

*June 21 Draft Report. It appears that the stability analyses were performed for the existing loading condition plus a seismic acceleration. It is unclear if the steady state condition includes the peak pool due the design storm event. The analyses notes results for "Downstream Steady State – Surface Slough" and "Downstream Seismic – Surface Slough" for Ash Pond 1 but fails to describe what that case entails; it is unclear from the table heading. AMEC recommends that the Failure Conditions analyzed be clarified, describing what is meant by "surface slough." 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. AMEC recommends that the analyses should include entry-exit type analyses and optimization of failure surfaces.*

*Final Report. AMEC has reviewed the additional information and geotechnical analyses, provided by Georgia Power, for Ash Pond 1 and determined that Georgia Power has adequate inspection practices. The stability analyses were performed for the existing loading condition*

*plus a seismic acceleration. The analyses notes results for "Downstream Steady State – Surface Slough" for Ash Pond 1, which results in a factor of safety less than the regulatory agencies minimum factor of safety. The SCECS, in AMEC's opinion, adequately addressed the deficiency and have indicated that that particular failure mode is checked in their regular inspection. AMEC recommends that the slopes continue to be routinely and regularly inspected as part of the current inspection program and practices for this ash pond.*

Georgia Power is committed to continuing its inspection program and practices which includes inspection of the slopes of Ash pond 1.

#### **4.2.3 Monitoring and Instrumentation Recommendations**

*This ash pond is not actively receiving CCW, but may be impacted by storm water accumulation. There are currently six recently installed piezometers for this structure. These instruments were installed early 2010, so it would be prudent for Plant Mitchell 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.*

Georgia Power is committed to continuing its inspection program and practices, which includes inspection of the slopes of Ash pond 1. The piezometers were installed and have been a part of Georgia Power's monitoring program since April of 2010.

#### **4.2.4 Inspection Recommendations**

*AMEC has reviewed provided information and inspection records for Ash Pond 1 and determined that Georgia Power has adequate inspection practices. AMEC recommends that the current inspection program and practices be continued for this ash pond except that future reports should include the new piezometer readings.*

Georgia Power is committed to continuing its inspection program and practices which includes the new piezometer readings.

### **4.3 Ash Pond 2**

#### **4.3.1 Hydrologic and Hydraulic Recommendations**

*June 2010 Draft Report. Ash Pond 2 is currently used for disposal and process of CCW. The dam is, for all practical purposes, a ring dike and the watershed is the area of the impoundment. The dam is a maximum of 33 feet high and the ash is primarily deposited in the north and east portions of the pond; the southwest portion of the pond is primarily occupied by water. The impoundment does not have an open channel emergency spillway. AMEC recommends that the appropriate design storm rainfall should be applied to the impoundment's watershed to assure that the dam and decant system can safely store or control the design flow.*

*Final Report. Based upon additional information provided by Georgia Power on September 21, 2010, in AMEC's opinion, the analyses that were provided adequately address the ability of the impoundment to safely control or pass appropriate storm events.*

No recommendations were provided so no response required.

#### **4.3.2 Geotechnical and Stability Recommendations**

*June 2010 Draft Report. It appears that the stability analyses were performed for the existing loading condition plus a seismic acceleration. It is unclear if the steady state condition includes the peak pool due to the design storm event. Likewise, the analyses appear to lack other stages of development for the impoundment, such as the load condition when the impoundment is nearly full of low strength ash that has a unit weight much higher than water. 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.*

*AMEC reviewed the soil strength properties used for the stability analyses and see that the values selected for the dike soil appear to have soil strength properties for the total stress and effective stress envelopes that appear unusual (MIT-API 51, page 158 of 175). The effective stress envelope appears to have gained significant cohesion and reduced phi angle from the total stress envelope. AMEC recommends that the soil strength tests be revisited to clarify the results; and, that the analyses should include entry-exit type analyses and optimization of failure surfaces.*

*Final Report. Based upon additional information provided by Georgia Power on September 21, 2010, AMEC has reviewed provided information and geotechnical analyses for Ash Pond 2 and determined that Georgia Power has adequate inspection practices. Additional analyses were made for maximum pool surcharge and the maximum ash loading. The analyses notes results for "Upstream Steady State" for Ash Pond 2, which results in a factor of safety less than the regulatory agencies minimum factor of safety. The SCECS, in AMEC's opinion, adequately addresses the deficiency. AMEC recommends that the current inspection program and practices be continued for this ash pond.*

Georgia Power is committed to continuing its inspection program and practices.

#### **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. AMEC recommends that the current inspection program and practices be continued for this ash pond.*

Georgia Power is committed to continuing its inspection program and practices.

#### **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.*

Georgia Power is committed to continuing its inspection program and practices.

#### **4.4 Ash Pond A**

##### **4.4.1 Hydrologic and Hydraulic Recommendations**

*Ash Pond A is full, covered, no longer receives liquid borne material, and is completely incised. Stormwater runoff from this unit flows overland. Erosion and vegetation appear to be under control. AMEC recommends that Georgia Power continue to maintain this unit to provide erosion and vegetation control*

Georgia Power will continue to maintain this ash pond to provide erosion and vegetation control.

##### **4.4.2 Geotechnical and Stability Recommendations**

*No stability analyses were provided for Ash Pond A. The dam has been removed since 1962. 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.*

Georgia Power will continue to maintain this ash pond to provide erosion and vegetation control.

##### **4.4.3 Monitoring and Instrumentation Recommendations**

*No instrumentation was available for review for this unit since the dam for Ash Pond A was removed in 1962. 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.*

Georgia Power will continue to maintain this ash pond to provide erosion and vegetation control.

#### 4.4.4 Inspection Recommendations

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

Georgia Power will continue to maintain this ash pond to provide erosion and vegetation control.

#### Additional Georgia Power comments on the Final Report

Page 6: Section 1.4.4, last sentence – Information on the location and repair of sinkholes was provided to AMEC during the inspection in documents MIT API 0003 and MIT API 0004.

Page 9: Section 2.3.1, 2<sup>nd</sup> Paragraph, 2<sup>nd</sup> sentence – clarification was provided in the Comments to the Draft Report that this was not a depression, but an erosion feature.

Page 20: Section 3.5, last sentence - Plant personnel inspect the ponds and embankments weekly. They are normally documented and provided to SCG Hydro Services. This documentation was not requested during the inspection.

Page 21: Section 3.5.1, 1<sup>st</sup> sentence – Thirty two piezometers were initially installed. Currently, a total of 27 piezometers are monitored at Ash Pond 2.

Page 22: Section 4.1, Ash Pond 1: From the discussion in Section 4.2.2, further analyses of less critical modes of failure and clarification of the latest analyses appear not to be needed.

With this response, Georgia Power has addressed all recommendations in the Final Report and EPA's letter dated January 7, 2011. Please direct any future correspondence to my attention.

Sincerely,



Ron Shipman