

US EPA ARCHIVE DOCUMENT

NOTE

Subject: EPA Comments on Georgia Power Co - Kraft Power Station,  
Port Wentworth, GA  
Round 9 Draft Assessment Report

To: File

Date: September 9, 2011

1. On pp. i - vii and Section 5: need to add site name, management company, city and state...this footer section is left blank.
2. On p. 1-1, Section 1.1 Conclusions, first line, replace "in" with "on."
3. **On p. 7-4, Section 7.1.5 Liquefaction Potential. "The documentation provided to Dewberry did not include an evaluation of the liquefaction potential. The soil boring data provided with the stability analyses (See Appendix Doc 09) appears to have a thin layer of loose sand at a depth of about 6 to 9 feet that may be susceptible to liquefaction.** However, as the sand layer is only about three feet thick and overlain by a clay layer not expected to be susceptible to liquefaction, is likely that the clay layer can provide temporary support for the impoundment in event of liquefaction of the sand layer." The statements in this section may support a condition rating of less than satisfactory.
4. Indicate the impoundment's name on the EPA Checklist in the Appendix. On the first page it is left blank, on the second page under Impoundment Name, "Plant Kraft" is incorrectly listed.

MEMORANDUM

TO: Jana Englander

FROM: Jerry Strauss

cc:

Date: November 29, 2011

SUBJECT: Georgia Power, Plant Kraft, Response to Comments

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EPA Comments:

- footer issues corrected
- editorial comment was addressed.
- Liquefaction discussion: additional analysis shows confining layers make liquefaction unlikely.
- CCW Checklist: Added "CCR Impoundment" to Unit Name

Georgia Power Comments:

- Changed name to Georgia Power (~~Company~~ deleted).
- Georgia Power has addressed embankment elevation issue
  - With clarification of elevation Dewberry concurs the slope stability analysis and results are Satisfactory.
- Georgia Power has changed operation of CCR impoundment to address flooding
  - Report discussion now reflects change in normal operating pool to meet 100-year, 24-hr storm w/ 1' freeboard

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June 3, 2011

Mr. Stephen Hoffmann  
U.S. Environmental Protection Agency  
2 Potomac Yard  
2733 S. Crystal Drive, 5<sup>th</sup> Floor N-237  
Arlington, Virginia 22202-2733

Re: Draft Coal Combustion Residue Impoundment Round 9  
Dam Assessment Report Plant Kraft Ash Dike Georgia Power Company Port  
Wentworth, Georgia, April 2011

Via email and U.S. Postal Service

Dear Mr. Hoffmann:

On May 5, 2011, the U.S. Environmental Protection Agency ("EPA") provided Georgia Power with a draft report regarding certain facilities for the management of coal combustion by-products at Georgia Power's Plant McIntosh ("Draft Report"). The Draft Report was prepared by Dewberry & Davis, LLC ("Dewberry") and dated April 2011. Georgia Power appreciates the opportunity to provide comments on the draft report before it is finalized. This letter provides Georgia Power's comments on that draft report. EPA's recommendations are shown in italics below, and Georgia Power's responses follow the recommendation. The Georgia Power comments on the Draft Report are shown in the attached spreadsheet and the attached document entitled "Plant Kraft Discussion on Dike Crest Elevation".

### **Acknowledgment 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 onsite inspection and document review have given Plant Kraft a "Satisfactory" rating (the highest rating) and have confirmed that Georgia Power's facilities are well constructed and managed effectively.

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

*Dewberry recommends that the apparent discrepancy in crest elevation data used in the hydraulic and slope stability analyses be resolved for purposes of clarity and consistency.*

The elevation used for the slope stability analysis was taken from a recent survey (August 2010) and is therefore to be considered the most accurate. The crest elevation used in the "Kraft Ash Pond Flood Evaluation" calculation was selected conservatively, based on the Drawing "Georgia Power Company Plant Kraft Ash Pond" P-146-4, November 2008. The current crest widths correspond to the design drawing, indicating that they have not been cut down.

All of EPA's recommendations have been completed. Please direct any future correspondence to me.

Sincerely,

A handwritten signature in cursive script that reads "Rochelle Rontman for". The signature is written in black ink and is positioned above the typed name "Ron Shipman".

Ron Shipman

## Plant Kraft

### Discussion on dike crest elevation

Description	Elevation	Source
Dike Crest	20.0	Stone and Webster Design Drawing 9477-FY-3A <i>"Datum Reference for Power Station Elevations is District Corps or U. S. Engrs. "</i>
Dike Crest	15	Calculation SH-KR-10911-01 "Kraft ash pond Flood Evaluation" <i>Drawing "Georgia Power Company Plant Kraft Ash Pond" P-146-4, November 2008</i>
Dike Crest	15.7, 16.9	Calculation TV-KR-3319HB-001 "Slope Stability Analyses of Ash Pond Dikes" <i>August 2010 Cross Sections by GPC Land Dept.</i>

The elevation used for the slope stability analysis is taken from a recent survey (August 2010) and is therefore to be considered the most accurate.

The crest elevation used in the Calculation SH-KR-10911-01 "Kraft ash pond Flood Evaluation" was selected conservatively, but based on the Drawing "Georgia Power Company Plant Kraft Ash Pond" P-146-4, November 2008. This drawing was intended to provide pond volumes and therefore did not have a lot of information on the crest elevations.

The elevation of the dike crest in the Stone and Webster drawing, 20.0, is due to the use of a different datum. The drawing, Stone and Webster Design Drawing 9477-FY-3A has a note that says

*"Datum Reference for Power Station Elevations is District Corps or U. S. Engrs., "*

followed by a note that states

*"Datum Reference for Transmission Tower and Circuit Elevations is U.S. C. & G. S."*

This would indicate that the plant datum shown on the drawing differed from the then current USCGS (later USGS) datum.

The Stone and Webster Design Drawing 9477-FY-3A gives an invert of 10.96 for the outfall pipe in the outlet structure in the southwest corner of the ash pond. A recent survey puts the top of the outlet structure at elevation 16.41. A measurement of 67.5 inches (5.63 feet) from the top of the outlet structure to the inside of the crown of the 42" outlet pipe gives an invert elevation of 7.3 feet. This is 3.7 feet off from the 10.96 shown on the drawing. This would seem to confirm that the "District Corps or U. S. Engrs." datum used for the power plant was different from the USGS datum.

We do not believe that the dike crests have been lowered. The current crest widths seem to correspond to the design drawing, indicating that they have not been cut down.

PLANT	KRAFT	Comments			
PAGE	SECTION	CURRENT STATEMENT READS	RECOMMENDED CHANGE	ADDITIONAL NOTES	
Title		Georgia Power Company	Georgia Power	The correct name is Georgia Power	
ii	Introduction	(last sentence)...no recognized existing or potential management unity safety deficiencies."	(last sentence)... no recognized existing or potential management unit safety deficiencies.		
ii	Introduction	As detailed in Section 1.2.3	As detailed in Section 1.2.1		
vii		Doc 02: Plant Kraft CCR Impoundment Aerial Photograph	Doc 02: Plant Kraft CCR Impoundment USGS Topographic Map	The document is mislabelled as Plant McIntosh in the appendix	
vii		Doc 04: Drawing 9477-FY-3A Lot Plant	Doc 04: Drawing 9477-FY-3A Lot Plan		
vii		APPENDIX A	APPENDIX A: Reference Documents		
vii		APPENDIX B	APPENDIX B: Site Assessment Documents		
1-1 thru 1-4	Section 1	Georgia Power Company	Georgia Power		
1-1	1.1	site visit in Thursday March 3, 2011,...	site visit on Thursday March 3, 2011,...		
1-1	1.1.3	Engineering documentation reviewed is referenced in Appendix A. The supporting technical documentation is Fair. The technical documentation provided for review has discrepancies in the embankment crest elevations used for the different analyses. The hydraulic analysis indicates an embankment crest elevation of 15 ft. The slope stability analyses indicate an embankment elevation of about 16 ft. As whichever elevation is correct has an effect on the hydrologic and structural stability results. If the 15 ft. elevation is correct, the slope height decreases and the safety factors should increase above currently acceptable levels. If the 16 ft. elevation is correct the impoundment may be able to contain the 100 year, 24-hour storm with a freeboard of 1-foot.	Engineering documentation reviewed is referenced in Appendix A. The supporting technical documentation is Fair. The technical documentation provided for review has discrepancies in the embankment crest elevations used for the different analyses, but these are not material as each was selected to make that particular analysis conservative. The hydraulic analysis indicates an embankment crest elevation of 15 ft. This elevation was taken from Drawing "Georgia Power Company Plant Kraft Ash Pond" P -146-4, November 2008. The slope stability analyses indicate an embankment elevation of 15.7 ft, which was taken from an August 2010 survey done for the slope stability analysis.	Please review the document entitled "Plant Kraft Discussion on Dike Crest Elevation". This attached information is essential to correcting sections 6.2, 7.2, and 1.13.	
1-3	1.3	Joel L Galt, P. E., Southern Company	Joel L Galt, P. E., Southern Company Services		
1-3	1.3	Gary H. McWhorter, P. E., southern company	Gary H. McWhorter, P. E., Southern Company Services		
2-1	2.2.1	From the silo fly ash is either 1) sold for beneficial re-use, 2) transported by covered truck to a Georgia Power owned and operated permitted solid waste landfill, or 3) sluiced to the ash pond (See Appendix A Doc 3).	From the silo fly ash is either 1) sold for beneficial re-use, 2) transported by covered truck to a Georgia Power owned and operated permitted solid waste landfill (See Appendix A Doc 3).		



4-2	4.2.3	slurry water is pumped back to the plant for reuse	Remove. This is not done at Plant Kraft.	
5-1	5.2.1	Figure number 5.2-1	Figure number 5.2.1a	
5-2	5.2.2	Figure number 5.3-1	Figure number 5.2.2a	
5-3	5.2.3	Figure number 5.4-1	Figure number 5.2.3a	
5-4	5.2.3	Figure number 5.4-2	Figure number 5.2.3b	
5-4	5.2.4	Figure number 5.5-1	Figure number 5.2.4a	
5-5	5.2.4	Figure number 5.5-2	Figure number 5.2.4b	
5-6	5.3.1	Figure number 5.3.2-1	Figure number 5.3.1a	
5-7	5.3.2	Figure number 5.6.2-1	Figure number 5.3.2a	
5-7	5.4	There is no emergency spillway for the impoundment.	The emergency spillway is incorporated into the discharge structure and the emergency outflows discharge through the outlet conduit pictured in Figure 5.3.2-2. (Please renumber figure.)	
6-1	6.1.2	Southern Company Generation conducted a flood evaluation for the Plant Kraft CCR impoundment (See Appendix A Doc 08). The design storm was the 100 year (1 percent probability of occurrence in any given year), 24-hour event with an intensity of 6.72 inches. The report estimated the 1 percent probability storm can be retained by the impoundment between elevation 13.5 (assumed normal operating pool elevation) and elevation 15 with no freeboard.	Southern Company Generation conducted a flood evaluation for the Plant Kraft CCR impoundment (See Appendix A Doc 08). The design storm was the 100 year (1 percent probability of occurrence in any given year), 24-hour event with an intensity of 6.72 inches. The report estimated the 1 percent probability storm can be retained by the impoundment between elevation 13.5 (assumed normal operating pool elevation) and elevation 15 with no freeboard. The normal operating level of the pond has been reduced to elevation 12.5, which provides for storage of the 100 year, 24 hour event with one foot of freeboard.	Please note that Plant Kraft is operating the pond at a reduced elevation of 12.5.

6-1	6.2	The flood evaluation report (See Appendix A Doc 08) results indicated an embankment crest elevation of 15 ft. Other data provided to Dewberry indicated crest elevations of 20 ft. (See Appendix A Doc 04) and about 16 ft. (See Section 7 of this report). Although the apparent discrepancy may make the flood evaluation conclusions conservative, it nonetheless creates uncertainty about the actual crest elevation.	The flood evaluation report (See Appendix A Doc 08) results indicated an embankment crest elevation of 15 ft. Other data provided to Dewberry indicated crest elevations of 20 ft. (See Appendix A Doc 04) and about 16 ft. (See Section 7 of this report). However, these apparent discrepancies are in fact readily explainable and do not impact any of the analyses. PP The crest elevation used in the Calculation SH-KR-10911-01 "Kraft ash pond Flood Evaluation" was selected conservatively, based on the Drawing "Georgia Power Company Plant Kraft Ash Pond" P-146-4, November 2008. Likewise, the crest elevation of about 16 ft. was taken from an August 2010 survey made specifically for the slope stability analysis. This elevation was selected to make the slope stability analysis conservative. PP The elevation	Please review the document entitled "Plant Kraft Discussion on Dike Crest Elevation"
7-2	Table	A necessary label has been omitted from what should be Table 7.1.2.	Table 7.1.2	This table is referred to as Table 7.1.2 in the previous paragraph and should be labeled as such.
7-4	7.1.5	2nd para., 2nd sentence; and overhain be "...not expected to be susceptible to liquefaction, is likely.."	and overhain by...not expected to be susceptible to liquefaction, it is likely..	
7-4	7.1.6	Provided to Dewberry from review...	Provided to Dewberry for review...	
7-4	7.1.6	The upper unit consists of...loose, set and sandy silt	This sentence is not clear.	
7-4	7.2	The stability analyses report (See Appendix A Doc 09) results indicated an embankment crest elevation of about 16 ft. Other data provided to Dewberry indicated crest elevations of 20 ft. (See Appendix A Doc 04) and about 15 ft. (See Section 6 of this report). Although the apparent discrepancy may make the stability analyses conclusions conservative, it nonetheless creates uncertainty about the actual crest elevation.	The flood evaluation report (See Appendix A Doc 08) results indicated an embankment crest elevation of 15 ft. Other data provided to Dewberry indicated crest elevations of 20 ft. (See Appendix A Doc 04) and about 16 ft. (See Section 7 of this report). However, these apparent discrepancies are in fact readily explainable and do not impact any of the analyses. PP The crest elevation used in the Calculation SH-KR-10911-01 "Kraft ash pond Flood Evaluation" was selected conservatively, based on the Drawing "Georgia Power Company Plant Kraft Ash Pond" P-146-4, November 2008. Likewise, the crest elevation of about 16 ft. was taken from an August 2010 survey made specifically for the slope stability analysis. This elevation was selected to make the slope stability analysis conservative. PP The elevation	Please review the document entitled "Plant Kraft Discussion on Dike Crest Elevation"

8-1	8.1	Clear water is recycled to the plant or discharged via an overflow system to a canal that empties into the Savannah River.	Clear water is discharged via an overflow system to a canal that empties into the Savannah River.	There is no recycling of the ash sluice water.
9-2	9.1	Last sentence references reports submitted to Plant Manager for review	Reports are submitted to SCS Hydro Services Engineer for review and copies maintained in plant files	
Appendix A	All			Please use consistent labeling for the different documents in the Appendix.
Appendix A	Document 2	Plant McIntosh Topographic map	Plant Kraft Topographic Map	
CCW Form Page 1		5. Lowest dam crest elevation (operator records)? 20.0	5. Lowest dam crest elevation (operator records)? 15.7 MSL	The lowest dam crest elevation should be stated as 15.7 MSL. The dike crest elevation of 20 feet is explained in the reference drawing, Stone and Webster Design Drawing 9477-FY-3A, which states in its Notes section that "Datum Reference for Power Station Elevations is District Corps or U. S. Engrs., " and "Datum Reference for Transmission Tower and Circuit Elevations is U. S. C. & G. S." PP This would indicate that the plant datum shown on the drawing differed from the then current USCGS (later USGS) datum at the time of construction. The correct datum to use is the USGS datum, resulting in a maximum dike crest
CCW Form Page 1		Analysis do not indicate...Construction photographs...	Analysis do not indicate...	Construction photographs for Plant Kraft do not exist and were not reviewed during the inspection.
CCW Form Page 1		...for damms and dikes...	for Dams and Dikes...	
CCW Form Page 2		Name of impoundment Plant McIntosh	Name of impoundment Plant Kraft	