

US EPA ARCHIVE DOCUMENT

EPA Comments on Lansing Smith Draft report

No EPA comments.



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October 28, 2010

By Overnight Delivery

Mr. Stephen Hoffman
Office of Resource Conservation and
Recovery
U.S. Environmental Protection Agency
Two Potomac Yard
2733 South Crystal Drive, 5th Floor, N-5237
Arlington, Virginia 22202-2733

Re: Draft Coal Combustion Waste Impoundment
Round 5-Dam Assessment Report (July 2010)
Gulf Power Company
Lansing Smith Plant
Southport, Florida

Dear Mr. Hoffman:

By email dated September 30, 2010, the U.S. Environmental Protection Agency ("EPA") provided to Gulf Power Company ("GPC") the above-referenced report ("Draft Report") regarding the surface impoundment utilized for management of coal combustion residuals ("CCRs") generated at GPC's Lansing Smith Plant ("Plant"). The Draft Report was prepared by Dewberry & Davis, LLC ("Dewberry") following Dewberry's July 6, 2010 Plant surface impoundment inspection and review of information provided to Dewberry by GPC both on and after July 6, 2010. Provided below are GPC's comments regarding the Draft Report. As well, GPC is providing specific responses to each of the recommendations set forth in the Draft Report which are found in Section 1.2 beginning on page 1-2 of the Draft Report. For ease of reference, the Draft Report recommendations are repeated in italics, followed by GPC's response.

General Comments/Corrections

Initially, GPC notes significant pagination and formatting errors throughout the Draft Report. As an example, "Conclusions and Recommendations" are contained in Section 1.0. However, the following section of the Draft Report entitled "Description of the Coal Combustion Waste Management Unit(s)" is also identified as Section 1.0. This has resulted in subsequent

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numbering and pagination errors in the sections and subsections of the Draft Report. These errors should be corrected.

In Section 1.3.1 List of Participants, Mark King of American Electric Power is identified as having participated in the Plant visit. Mr. King was not present at the surface impoundment inspection and he is not an employee of Gulf Power Company or Southern Company. Thus, his name should be deleted from the list of meeting participants.

In Section 1.3.2 Acknowledgement and Signature, the date should be corrected from July 6, 2009 to July 6, 2010.

In Section 2.1 Location, the Lansing Smith Plant is identified as being in proximity to the town of New Haven. The town of New Haven does not exist in Bay County, Florida. The name of the town should be corrected to Lynn Haven.

In Section 2.2 Size and Hazard Classification, reference is made to remedial work in 1980 "resulting in steeper slopes." This is incorrect. In fact, work conducted in 1980 resulted in flatter slopes as reflected in Table 2.2b and Figure 4.1.2a of the Draft Report. The downstream slope of at least 2.5H to 1V can be verified using the 2010 topography on Drawing No. ES1840S1 or the slope cross-sections, both of which were furnished to Dewberry as part of the 2010 stability analyses. This comment also applies to Section 4.1.2.

In this same section (2.2), Dewberry provides a Federal Hazard Classification of "Significant" as being appropriate for the facility. This classification is inconsistent with the "Low" hazard designation found in the checklist completed by Dewberry at the July 6, 2010 Plant visit which is provided in Appendix B of the Draft Report, as well as verbal representations made by Dewberry during the July 6, 2010 inspection. GPC requests that EPA provide it with Dewberry's and/or EPA's rationale for this change in the Federal Hazard Classification for the facility.

In Section 2.3 Amount and Type of Residuals Currently Contained in the Unit(s) and Maximum Capacity, there are factual errors in the narrative of that section as well as Table 2.3. Initially, the approximate maximum design storage capacity of the impoundment at the Plant is 4,212,716 cubic yards not 307,384 cubic yards as set forth in the Draft Report. Thus, Table 2.3 should be revised to incorporate the correct maximum design storage capacity in acre-feet based on the significantly larger cubic yard design storage capacity of the impoundment. GPC is uncertain what is meant by "current storage volume" in Table 2.3. To the extent that term means the current amount of CCRs in the impoundment, the approximate volume of CCRs currently stored in the impoundment is

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3,278,089 cubic yards. As a result, Table 2.3 should also be revised to incorporate the correct current storage volume in acre-feet using the correct cubic yard figure of CCRs in the Plant impoundment. GPC's cubic yard figures are based on GPC's May 2009 response to EPA's information collection request regarding the Plant's impoundment.

Figure 2.4.1 appears to be a drawing furnished by GPC to Dewberry, Drawing No. 3727LAN at the site visit on July 6, 2010. If so its source should be attributed.

In sections 4.2.1 and 6.1.3, the report refers to the pond outlet structure as "unregulated type." In section 8.1, the report refers to the structure as "unregulated". We assume that refers to the physical structure. However, that particular description may be misleading in that discharges from the facility are subject to governmental regulation, i.e., a discharge permit under the National Pollutant Discharge Elimination System. We prefer that outlet structure be described as a weir, as presented in the Hydrologic and Hydraulic Analysis Report provided to Dewberry.

In Section 5.2 Earth Embankment Dam, four photographs are included. It would be helpful if each photograph were given a photo or plate number, as is done in the appendix.

In Section 7.1.4 Factors of Safety and Base Stresses, the following sentence is included: "It is important to note, that a section of the embankment system was not evaluated under earthquake loading condition." Since the North and South dike sections were both evaluated using the pseudostatic method, GPC believes this statement is in error. If Dewberry has identified a specific area that was not appropriately evaluated, it would be helpful for that area to be identified more precisely.

In Section 7.1.5 Liquefaction Potential, the excerpt describing the liquefaction analysis should be referenced to Southern Company Calculation TS-SM-ECS3389-100.

In Section 9.3.1 Adequacy of Inspection Program, the Draft Report provides that the "[i]nspection program is inadequate" and that "[a]ny inspections need to be documented and all concerns need to be addressed in a timely manner." GPC disagrees with this assertion in the Draft Report. As set forth in detail in GPC's response to Draft Report recommendations regarding surveillance and monitoring programs, Dewberry was provided with a blank copy example of the weekly inspection form that has historically been and continues to be used by Plant personnel. This form is completed at the time of each weekly inspection and maintained on file at the Plant. Please refer to GPC's full response on page 6 of this letter to Section 1.2.7 of the Draft Report.

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Some of the documents furnished by GPC to Dewberry and included in Appendix A to the report were not reproduced in their entirety. For example, the Ash Pond Evaluation ES 1840 did not include the boring logs, lab test results, or stability cross-sections provided as part of the original document. GPC requests that each document included in the appendix be reproduced in its entirety. This is to provide greater clarity as it might be difficult to interpret Ash Pond Evaluation ES 1840, for example, in its abridged state. In addition, some of the documents were difficult to read as reproduced (such as Southern Company Calculation TS-SM-ECS3389-100), or were not unfolded (such as the 11x17 Drawing ES1840S1, part of Ash Pond Evaluation ES 1840).

GPC Responses to Draft Report Recommendations

1.2.1 Recommendations Regarding the Structural Stability

An action plan needs to be developed to address surficial sloughing, rill erosion and sediment deposition along downstream slopes.

GPC Response: A site specific "Ash Pond Maintenance Plan" ("Plan") has been developed for the Plant. A copy is provided in Attachment A to this response for EPA's review and reference. Section I of the Plan addresses Embankment Slopes. It is GPC's view that a majority of the issues noted during the site visit relating to rill erosion and sediment deposition are the result of a lack of established vegetation on the slopes. Section I.a. of the Plan specifically addresses Grass Vegetation, and Section I.c. addresses Erosion Control. Both sections provide recommendations for regular and/or needed maintenance activities. Furthermore, the preamble to the Plan indicates that appropriate Southern Company Generation Dam Safety personnel are to be notified in the event evidence of surface sliding or sloughing is noted during the weekly inspection conducted by Plant personnel. Event-specific recommendations for any needed repairs relating to sliding or sloughing will be provided at that time. In the event the situation is deemed an emergency, however, the Plant will utilize stockpiled materials to address the condition as soon as possible.

1.2.2 Recommendations Regarding the Hydrologic/Hydraulic Safety

The amount of freeboard needs to be verified. Per information provided by GPC [Gulf Power Company], the freeboard is currently 2.5'.

GPC Response: It is unclear to GPC what is meant by "amount of freeboard needs to be verified." The available freeboard noted in the hydrologic/hydraulic report was determined by Southern Company Generation's Civil Design Department. The calculation used to determine available freeboard for the design storm (100-year storm) addressed rainfall amount for the design storm, inflow

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from other Plant water sources, and elevations of the perimeter and interior dikes. The aforementioned Plan specifically references the minimum crest elevations needed to maintain sufficient freeboard (*see* Section II (Roadways)). Furthermore, Section IV (Ash Pond Storage) of the Plan references the minimum storage capacity needed in the ponds. Specific reference is made in Section I.v.a. to required capacity. Adherence to these maintenance practices will result in sufficient storage capacity and embankment height to maintain the needed freeboard.

1.2.5 Recommendations Regarding the Field Observations

The following issues need to be addressed with routine maintenance:

- *Surface sloughing has occurred in four areas along the northeast downstream slope of the embankment. One of those areas has been repaired with slush grouted rip-rap;*
- *There is evidence of some small animal burrows along the downstream embankment;*
- *Widespread rill erosion, surface sloughing and sediment deposition has occurred along downstream slope; and*
- *Irregular road along west dike downstream buttress with rutting and small surface depressions holding water.*

GPC Response: Maintenance of embankment slopes is an integral part of the on-going maintenance activities at the Plant. When erosion-related features such as those referenced in this recommendation are noted during the weekly inspections by Plant personnel, every effort possible is made to address these features in a timely manner. As documented in the photographs supplied as a part of this response in Attachment B, steps have been taken to address these items since the time of Dewberry's Plant visit and field observations. Also, as referenced above, an "Ash Pond Maintenance Plan" has been prepared specifically to address the Plant's needs, and thus the maintenance program and appropriate remedial measures have become more formalized. As stated previously, erosion features and sloughing will be addressed in a timely manner in accordance with the aforementioned Plan and/or after any needed consultation with engineering personnel. Section I.d. of the Plan specifically addresses treatment of animal burrows, and Section II addresses maintenance of the roadways.

1.2.6 Recommendations Regarding the Maintenance and Methods of Operation
Vegetation shall be cut or mowed on as needed basis to prevent large woody-stemmed vegetation from establishing. A plan of action needs to be established to handle the maintenance of surficial sloughing, crest depression and rill erosion when observed.

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GPC Response: Sections I.a. and I.b. of the Plan address the schedule and procedures for mowing and cutting grass and woody-stemmed vegetation. Section I.c. addresses erosion control and rill erosion. Section II addresses maintenance of the roadways around the perimeter dikes. As stated above and as referenced in the preamble to the Plan, appropriate repairs to any noted sloughing features on the embankment slopes will be undertaken after consultation with Southern Company Generation Dam Safety personnel.

- 1.2.7 *Recommendations Regarding the Surveillance and Monitoring Program***
The weekly inspections performed need to [be] documented and if items of concern appear they need to be addressed in a timely manner.

GPC Response: At the time of Plant visit, Dewberry was provided with a blank copy example of the weekly inspection form used by Plant personnel. This form is completed at the time of each weekly inspection and maintained on file at the Plant. The Southern Company Generation "Safety Procedure for Dams and Dikes" (a copy of which was provided to Dewberry at the Plant visit) states in Section 10003.240.1 that "Inspection reports with no areas of concern identified shall be retained for the current year plus one year. Inspection reports with areas of concern indentified shall be retained for the life of the plant plus ten years."

Items noted during the weekly inspections are to be addressed in a timely manner in accordance with the aforementioned Plan and/or after any needed consultation with engineering personnel.

- 1.2.8 *Recommendations Regarding Continued Safe and Reliable Operation***
- *Develop an action plan to address surficial sloughing along the downstream slopes*
 - *Perform remediation along downstream slopes to address surficial sloughing*
 - *Perform remediation along the slopes where erosion is occurring*
 - *Perform remediation along crest where depressions are present*

GPC Response: All of these recommendations have been addressed as outlined in the previous responses and in the "Ash Pond Maintenance Plan" for the Plant. Maintenance at the Plant is an ongoing process and an integral component of day to day Plant operations and all issues are addressed in a systematic and timely manner based on relevant safety and operation priorities.

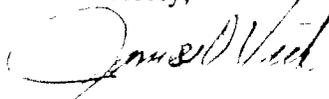
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GPC appreciates the opportunity to provide these comments regarding the Draft Report. GPC respectfully requests that all of the corrections and additional information provided herein be incorporated into the next iteration of the Draft Report. As well, GPC requests that it be provided the additional opportunity to review and comment on the next version of the Draft Report before it is finalized by Dewberry and EPA. Finally, GPC again asks that Dewberry and/or EPA provide their rationale for changing the Federal Hazard Classification for the Plant's surface impoundment from "Low" to "Significant."

Should you have any questions regarding the comments or information contained in this response, please do not hesitate to contact me or Jim Pegues of Southern Company Generation Technical Services. I can be contacted at (850) 444-6311. Jim Pegues can be contacted at (205) 992-6002.

Sincerely,



James O. Vick
Director
Environmental Affairs

cc: Chris Miller, Gulf Power Company
Jim Pegues, Southern Company Generation Technical Services
Russell Badders, Esq., Beggs & Lane
Michael Petrovich, Esq., Hopping, Green & Sams

ATTACHMENT A

ASH POND MAINTENANCE PLAN
PLANT LANSING SMITH
SOUTHPORT, FLORIDA

Rev 0, August 2010

**ASH POND MAINTENANCE PLAN
PLANT LANSING SMITH
SOUTHPORT, FLORIDA**

This document is to serve as a maintenance plan and guideline for the Plant Lansing Smith ash pond. The ash pond is formed by a system of perimeter dikes, or embankments. Furthermore, the pond is subdivided into a series of three cells for management of the ash and process flows. It is the outer perimeter embankments that are the focus of this maintenance plan.

Maintenance should be considered an ongoing process that not only involves routine tasks such as mowing the grass, controlling woody growth and keeping discharge structures clean, but also includes regular inspection of the structure and properly maintaining its components. For this facility, it also includes maintaining minimum storage capacity for design storms for various events. This plan addresses maintenance of the slopes of the embankments, the embankment crests/roadways, discharge structures, storage capacity of the facility to safely handle and/or pass design or regulatory storm events, and inspections.

Before any significant maintenance operations are undertaken (i.e. more than just reseeding of bare areas or backfilling relatively minor erosion rill backfilling), consultation should be made with both Gulf Power Environmental Affairs personnel and Southern Company Hydro Services Dam Safety personnel. Hydro Services Dam Safety personnel should be notified and consulted when any embankment slides or sloughs are noted during the weekly inspections by Plant personnel and prior to repairs to any such features. Contact information and procedures for Southern Company Hydro Services personnel can be found in the Southern Company Generation "Safety Procedure for Dams and Dikes".

I. EMBANKMENT SLOPES

a. Grass Vegetation

The establishment and control of vegetation is an important part of embankment maintenance. A properly maintained stand of vegetation can help prevent erosion of the embankment surface, and can aid in the control of vermin that may burrow in the embankment. Uncontrolled growth of vegetation can lead to damage of embankment slopes, as well as hinder the inspection process. If properly maintained, grass vegetation provides an embankment surface that can be easily inspected, and is an effective and relatively inexpensive way to reduce the potential for erosion of embankment slopes. Vegetation should be established on both interior and exterior slopes.

Given current slope surface conditions, establishing a suitable stand of perennial grass may be difficult. Placement of a surficial topsoil layer may be required, particularly in the more problematic areas. Hydroseeding may be more effective

Ash Pond Maintenance Plant
 Plant Lansing Smith

than hand or mechanical seeding alone. Furthermore, it may be necessary to repeat planting activities, including scarifying the surface, fertilizing, watering, mulching, and seeding.

Below is a suggested perennial planting schedule, as taken from Table 1.66A of the The Florida Development Manual: A Guide to Sound Land and Water Management:

Variety	Seeding Rates Per Acre	Seeding Dates
Bahiagrass (Pensacola, Argentine, Paraguay)	40-60 lbs	Feb. 15 – Aug. 15
Bahiagrass with Bermudagrass, hulled	40-60 lbs 8-12 lbs	Feb. 15 – Aug. 15
Sericea Lespedeza, scarified	40 – 50 lbs	Jan. 1 – July 15
Sericea Lespedeza, unhulled	75 lbs	July 15 – Jan. 1
Sericea Lespedeza, scarified or Sericea Lespedeza, unhulled with Bahiagrass	40 – 50 lbs 75 lbs 15 lbs	Feb 15 – Aug. 15
Tall Fescue	20 lbs	Oct. 1 – Nov. 15
Weeping Lovegrass	3 lbs	Feb 15 – Aug. 15

It is desirable to base fertilization rates on actual soil test data. If seeding is performed in an area where the predominate surficial material is ash, this may not be practical, but would be appropriate for areas where topsoil has been placed. In the absence of soil test data, the following fertilization rates could be used:

Vegetation	N-P-K	Fertilizer Rates Per Acre
Grass Alone	8-24-24	400 lbs
Grass-Legume Mixture	8-24-24	400 lbs
Legume Alone	0-20-20	500 lbs

After seeding, the planted area should be protected with erosion control/protection materials. This issue is discussed in more detail in the later section on Erosion Control.

Once established, areas that are vegetated with grass should be mowed a minimum of twice a year, unless drought or other circumstances make mowing unnecessary, or as needed to allow visual inspection of the embankment slopes. Grass should be mowed to a reasonable height to facilitate inspection of the embankments, taking care to not damage the grass by cutting it too low. Also, mowing should be accomplished with appropriate equipment in such a way to minimize damage to the grass and embankment soils from mower tires and blades. Mowing immediately after significant rain events should be avoided to reduce the potential for rutting or otherwise impacting surficial soils.

FEMA Publication 534 (referenced in the Southern Company "Safety Procedure for Dams and Dikes") can be used as an additional reference on regarding vegetation control on dams and embankments.

b. Trees and Brush

Trees, brush and other woody vegetation should not be allowed to become established on the embankment slopes or crest. Brush can obscure the surface of the slope, thereby limiting visual inspection, and can provide a haven for burrowing animals and retard growth of grass vegetation. Roots of larger woody vegetation can also be detrimental to the slope if left unaddressed. The regular mowing program discussed in the previous section should control much of the woody growth as well. However, control of woody vegetation may need to be performed more frequently than grass vegetation to prevent or control its establishing deeper root systems. In areas where mowing is not practical, it may be necessary to utilize approved herbicides to control woody growth.

If stumps of previously cut trees remain or become visible over time, they should be removed so that appropriate grass vegetation can be established and mowing is not impeded. The entire stump and root system should be removed to the extent possible. Stump holes should be filled with compacted soil and the embankment graded to provide a smooth surface. Grass vegetation should then be established on all bare surfaces. Chapter 5 of FEMA Publication 534 can be referenced for additional information on control of trees and brush.

c. Erosion Control

Erosion is one of the most common maintenance problems associated with embankment structures. Periodic and timely maintenance is essential in reducing the potential for a routine maintenance issue to progress into continuous deterioration and potential embankment instability. Prompt repair of vegetated areas that develop erosion features is required to prevent more serious damage to the embankment.

As soon as possible, any rills and gullies should be filled with suitable soil, compacted and seeded. It may be necessary to use an erosion control mat or blanket to assist in protection against further erosion until new vegetation is well established. An erosion control material such as BioNet S150BN Double Net Straw Blanket by North American Green, or approved equal, should be placed in accordance with manufacturers recommendations once repairs have been made and seeding or hydroseeding of the repair area is complete.

More severe erosion features may require the construction of check dams using riprap, hay bales or other measures until vegetation can be fully established.

Not only should erosion features be repaired, but the source of the erosion problem should be identified and addressed to prevent a continuing maintenance problem. Erosion may be aggravated by improper drainage, traffic, animal burrows or other forces.

Special measures may be needed where concentrated flows across the slope faces are occurring, such as a low points along the embankment crest or in locations where the embankment makes a significant turn (i.e. at a corner of the perimeter embankment). At such locations, a "gutter" should be constructed using 9 to 12 inch diameter rock placed on a graded gravel or sand bed. The size of the gutter should be sufficient to carry the concentrated flow, and should not be overtopped; otherwise, additional erosion adjacent to the gutter will occur.

d. Animal Burrows

Burrowing of small animals into the slopes of the embankment can be an on-going maintenance issue at ash pond facilities, and if not addressed in a timely manner, control becomes more difficult and the potential risks to the embankment more severe. A well established cover of properly maintained vegetation on the slopes can discourage some forms of wildlife from burrowing, but not all. Other measures are needed to address the population. If the animal population is deemed significant, trapping the animals and removing them from the property in accordance with applicable State and Federal regulations may be needed.

Noting the location of animal burrows should be a part of the normal inspection process. If the burrows are somewhat small in size, backfilling the burrow with concrete or flowable fill can be accomplished with only nominal effort, and discourages additional burrowing at the same location. If the burrows are larger, then cleaning the burrow of loose soil and backfilling with properly compacted soil fill may be needed. It may also be necessary to place wire mesh or screen just below the slope surface to reduce the potential for an existing burrow being re-established. All repair areas should be properly grassed once remedial measures are complete.

II. ROADWAYS

The crest of the perimeter embankment also serves as a roadway to provide access to the ash pond for inspection, maintenance and other activities. This roadway needs to be properly maintained as a part of routine maintenance.

The crest of the dam should be graded to direct all surface drainage into the ash pond. However, measures should be taken so that drainage is not concentrated at one location. Even with sheet flow across the face of the interior embankment slope, erosion will be a problem if the slope is not properly vegetated.

The traffic lanes on the crest should be protected by a suitable granular layer. The use of bottom ash or similar CCB material is acceptable. However, such material should be free of pyrites or other components that could be harmful to vegetation.

Any ruts and potholes that develop along the roadway should be filled with compacted soil and then the surfacing material placed. It is important that water not be allowed to pond on the crest of the embankments.

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At Plant Smith, the roadway crest around the northwest and southwest disposal cells should be maintained at EL 23 or higher to provide for sufficient freeboard above the projected design storm water elevation. Likewise, the crest elevation for the east cell should be maintained at EL 20 or higher. Any maintenance on the embankment roadways should be followed by spot checks of elevations to determine these minimum elevations are achieved.

III. CONTROL STRUCTURES

The Plant Smith ash pond contains a primary weir control structure and several pipes and drains that control water levels and/or transfer water from one cell to another. It is important that these control structures remain clear of trash and debris. Control structures that become blocked or clogged reduce flow capacity, and thus the risk of overtopping the embankments increases. In addition to inspections during the normal weekly plant inspections, these control structures should be inspected after periods of heavy rain to check to see that the structures are performing as intended and to check for the accumulation of trash and debris. Any such trash and debris should be removed as soon as possible.

IV. ASH POND STORAGE

a. Required Capacity

The level of ash in the pond needs to be maintained at a low enough level to allow sufficient storage of liquids to comply with regulatory and prudent dam safety needs.

The facility NPDES permit requires the pond have sufficient storage capacity to contain the combined volume for all direct rainfall and all runoff to the pond resulting from the 10-year, 24-hour storm event plus the maximum dry weather plant flows which could occur in a 24-hr period. For Plant Smith, this required storage capacity is 251,485 cubic yards.

For prudent dam safety considerations, the pond should have sufficient storage and spillway capacity to contain and pass the combined volume for all direct rainfall and all runoff to the pond resulting from the 100-year, 24-hour storm event plus the maximum wet weather plant flows which could occur in a 24-hr period. For Plant Smith, the required storage capacity within the pond is 298,000 cubic yards.

b. Ash Removal Operations

In order to maintain the required storage capacity in the ash pond, ash will need to be periodically removed by excavation and/or dredging. During ash removal, care must be taken to not damage or disturb the upstream slope of the perimeter embankments.

Preferably, ash removal should be to the interior of the pond, rather than immediately adjacent to the perimeter dikes. There are multiple benefits to following such a plan. First, it provides protection to the interior slopes of the

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embankment during the excavation/dredging process. Preferably, if excavation needs to occur near the embankments, there should be no excavation within a projected zone of the embankment slope below the level of ash. To determine this zone, a line should be projected downward and into the ash pond on a 3H:1V slope, beginning at the ash/embankment interface. No ash should be removed from below this projected line.

The second benefit is the bolstering effect of the ash against the interior slope of the perimeter embankment, increasing stability and reducing the potential of sloughing of this interior slope.

Finally, providing this ash bolster reduces the potential for erosion along the interior slope due to flowing water from the "rim ditch".

V. INSPECTIONS

Inspection of the ash pond dikes should be performed in accordance with Section 10003.200 of the Southern Company Generation "Safety Procedure for Dams and Dikes", referencing the most current version. This procedure was initially approved by the Chief Production Officer for Southern Company on June 29, 2009.

ATTACHMENT B

