ASSESSMENT OF DAM SAFETY OF COAL COMBUSTION SURFACE IMPOUNDMENTS

Gulf Power
Plant Scholz
Sneads, Florida

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Section 1
Introduction, Summary Conclusions and Recommendations

1.1 Introduction

Following the December 22, 2008 dike failure at the Tennessee Valley Authority's Kingston, Tennessee coal combustion waste (CCW) ash pond dredging cell that resulted in a spill of over 1 billion gallons of coal ash slurry, covered more than 300 acres and impacted residences and infrastructure, the United States Environmental Protection Agency (USEPA) is embarking on a initiative to prevent the catastrophic failure from occurring at other facilities located at electrical utilities in an effort to protect lives and property from the consequences of a dam failure or the improper release of impounded slurry.

This assessment of the stability and functionality of the Gulf Power Company Plant Scholz's ash management units is based on a review of available documents, site assessments conducted by CDM Smith on August 22, 2012, and technical information provided subsequent to the site visit. In summary, the Gulf Power Company Plant Scholz ash impoundment embankments are classified as **POOR** for continued safe and reliable operation, static and seismic engineering studies following the best professional engineering practice to support acceptable safety factors have not been presented for all the embankments. However, a **FAIR** classification and acceptable performance is expected with minor remedial actions and provision of analyses documenting structural stability under all required loading conditions.

It is critical to note that the condition of the embankment(s) depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the embankment(s) will continue to represent the condition of the embankment(s) at some point in the future. Only through continued care and inspection can there be any chance that unsafe conditions be detected.

1.2 Purpose and Scope

CDM Smith was contracted by the USEPA to perform site assessments of selected surface impoundments. As part of this contract, CDM Smith conducted site assessments of the Upper Pond, comprised of the Upper East Pond, Upper Middle Pond, and Upper West Pond; the Middle Pond and the Lower Pond at the Plant Scholz site owned by Gulf Power Company, a division of Southern Company. These ponds, referred to as the "Ash Pond", are located on the west and southwest sides of the site. The purpose of this report is to provide the results of the assessments and evaluations of the conditions and potential for waste release from the management units.

Site visits were conducted by CDM Smith representatives on August 22, to collect relevant information, inventory the impoundments, and perform visual assessments of the impoundments.

1.3 Conclusions and Recommendations

1.3.1 Conclusions

Conclusions are based on visual observations during site assessment on August 22, 2012 and review of technical documentation provided by Gulf Power and Southern Company.

1.3.1.1 Conclusions Regarding Structural Soundness of the Management Units

Management units appear to be structurally sound based on visual observations of the structural element components (i.e. inlet structures, earth embankments and outlet structures). Recent slope stability calculations for the north and east embankments of the Upper Pond which were provided to us show an inadequate factor of safety for the rapid drawdown condition.

1.3.1.2 Conclusions Regarding the Hydrologic/Hydraulic Safety of Management Units

Hydrologic and hydraulic data provided by Gulf Power and reviewed by CDM Smith indicate management units have adequate capacity to withstand 24-hour storm events during various conditions, without overtopping.

However, supporting technical documentation provided is incomplete. No probable maximum precipitation (PMP) analysis required under Federal Emergency Management Agency (FEMA) standards was provided.

1.3.1.3 Conclusions Regarding Adequacy of Supporting Technical Documentation

Supporting data and documentation for the Middle Pond and the Lower Pond have not been provided. Liquefaction potential analyses for embankment foundations have not been performed, and original design drawings for the Ash Pond are not available.

1.3.1.4 Conclusions Regarding Description of the Management Units

The description of the management units provided by Gulf Power and Plant Scholz representatives appears to be consistent with the visual observations by CDM Smith during site assessment. However, record drawings were not provided to assess discrepancies against the intended design of the management units.

1.3.1.5 Conclusions Regarding Field Observations

During visual observations and site assessments, signs of areas of erosion, erosion rills and scarps, were observed on the exterior slopes of the south and southeast embankments of the Lower Pond. Maintenance of these areas is encouraged. Signs of erosion rills and shallow scarps were observed on the interior slopes of all management units.

1.3.1.6 Conclusions Regarding Adequacy of Maintenance and Methods of Operation

Current maintenance and operation procedures appear to be adequate. There was no existing evidence of previous spills and release of impounded coal ash slurry outside the plant property.

Repairs on the north embankment to mitigate seepage discovered during regular inspection were performed in October, 2010. Seepage in any other areas has not been reported to us by Gulf Power.

1.3.1.7 Conclusions Regarding Adequacy of Surveillance and Monitoring Program

Groundwater monitoring, surveillance program, recording and report preparation for Florida Department of Environmental Protection (FDEP) under the National Pollutant Discharge Elimination System (NPDES) Permit appear to be adequate and complying with FDEP requirements.

1.3.1.8 Conclusions Regarding Suitability for Continued Safe and Reliable Operation

Main embankments do not show evidence of unsafe conditions requiring immediate remedial efforts, although maintenance to correct deficiencies noted above is required.

Currently the State of Florida does not require Emergency Action Plans (EAPs) for CCW impoundments. Gulf Power has an EAP for the Ash Pond management units.

1.3.2 Recommendations

Based on CDM Smith visual assessment of Ash Pond management units and review of documentation provided by Gulf Power and Southern Company, CDM Smith offers the following recommendations for consideration.

1.3.2.1 Recommendations Regarding the Hydrologic/Hydraulic Safety

Determine the PMP to complete technical documentation to confirm the condition and performance of these management units and substantiate an improved condition assessment.

1.3.2.2 Recommendations Regarding the Technical Documentation for Structural Stability

Stability analyses on different cross sections representing the typical embankments of the Ash Pond and liquefaction analyses are required to enable a satisfactory rating for structural stability.

1.3.2.3 Recommendations Regarding Field Observations

Erosion rills and scarps – Erosion rills and scarps were observed on the exterior slopes of the south and southeast embankments of the Lower Pond. Place and compact structural fill in the rills and scarps and grade to adjacent existing contours. Trees and dense vegetation should be removed and embankments slopes be restored to the original contours by placing select structural fill in 12-inch lifts and compacting as recommended by a professional engineer.

After slope restoration, it is recommended to stabilize the exposed surface of the embankment with sod, hydro seeding, or riprap consisting of a heterogeneous mixture of irregular-shaped rocks placed over the compacted fill and a geotextile fabric.

Animal burrows were observed in several locations. Although not seen in other areas, vegetation cover may have hidden additional animal burrows. CDM Smith recommends documenting areas disturbed by animal activity, removing the animals and backfilling the burrows with compacted structural fill to protect the integrity of the embankments.

1.3.2.4 Recommendations Regarding Surveillance and Monitoring Program

Monitoring for potential seepage at the toe of slope of the east embankment, where saturated areas were observed, is recommended.

1.3.2.5 Recommendations Regarding Continued Safe and Reliable Operation

Inspections should be made following periods of heavy and/or prolonged rainfall and/or high water events on the Apalachicola River, and the occurrence of these events should be documented. Inspection records should be retained at the facility for a minimum of three years.

Major repairs and slope restoration should be designed by a registered professional engineer experienced with earthen dam design.

None of the conditions observed require immediate attention or remediation. However, the above recommendations should be implemented during a reasonable time frame to maintain continued safe and reliable operation of the management units.

1.4 Participants and Acknowledgment

1.4.1 List of Participants

CDM Smith representatives William Fox, P.E. and Eduardo Gutiérrez-Pacheco, P.E. were accompanied at all time during visual assessment by representatives from Gulf Power and Southern Company, which included the following individuals:

Company	Name and Title
Gulf Power	James O. Vick, Environmental Affairs Director
Gulf Power	Michael Markey, Land and Water Programs Manager
Southern Company	Jim Pegues, P.E., Geotechnical Engineer, Principal
Hopping Green & Sims	Mike Petrovich, Legal Consultant
Beggs & Lane	Russell A. Badders, Legal Consultant

1.4.2 Acknowledgement and Signature

CDM Smith acknowledges that the Ash Pond, management units referenced herein were assessed by William L. Fox, P.E. and Eduardo Gutiérrez-Pacheco, P.E. Based on the limited documentation provided and the inadequate factor of safety under rapid drawdown conditions, the Ash Pond is rated **POOR**. The facility lacks static and seismic engineering studies following best professional engineering practice to support safety factors under normal loading conditions (static, hydrologic, seismic) in accordance with the applicable safety regulatory criteria. Minor deficiencies may exist that require remedial measures.

We certify that the management units referenced herein has been assessed on August 22, 2012.

_____
Eduardo Gutiérrez-Pacheco, P.E.
Geotechnical Engineer
Florida Registration No. 74455

_____
Michael W. Montgomery, P.E.
Principal Civil Engineer
Florida Registration No. 67279

Section 2
Description of the Coal Combustion Waste Management Unit(s)

2.1 Location and General Description

Plant Scholz is located in Jackson County, Florida, approximately 3.5 miles southeast of the City of Sneads, Florida, along the west bank of the Apalachicola River as shown on **Figure 1.** Critical infrastructure within approximately five miles down gradient of Plant Scholz is shown on **Figure 2.**

Plant Scholz's Ash Pond consists of three separate units, the Upper Pond, the Middle Pond and the Lower Pond. Upper Pond is divided in three separate chambers functioning as settling ponds, which are designated as Upper East Pond, Upper Middle Pond and Upper West Pond. An aerial view of Plant Scholz including the Ash Pond is shown on **Figure 3.**

The total perimeter of the Ash Pond is approximately 5,900 feet, covering an approximate surface area of 40 acres. **Table 1** shows a summary of the approximate size and dimensions of the Ash Pond units.

Table 1 – Summary of Ash Pond Approximate Dimensions and Size

	Ash Pond				
	Upper Pond			Middle Pond	Lower Pond
	Upper East	Upper Middle	Upper West		
Dam Height (ft)	35	8	8	13	30
Average Crest Width (ft)	25	22	25	25	30
Length (ft)*	2,160			1,440	2,300
Interior Slopes H:V	2:1	2:1	2:1	2:1	2:1
Exterior Slopes H:V	2.5:1	N/A**	4:1	4:1	2:1

*Length was measured along the perimeter crest of each impoundment/unit.
**N/A= Not Applicable, Upper and Middle Pond are within divider embankments.

2.1.1 Horizontal and Vertical Datum

Site surveys provided by Gulf Power to CDM Smith used the horizontal and vertical control network established by the National Geodetic Survey (NGS) District. Horizontal survey data in this study reference the North Zone of the Florida State Plane Coordinate System based on North American Datum (NAD) of 1983, 2007 adjustment. Elevations noted herein are in feet and are referenced to 1988 North American Vertical Datum (NAVD 88), unless otherwise noted.

2.1.2 Site Geology

Plant Scholz is located along the western bank of the Apalachicola River. Based on review of the USGS Topographic Map, natural ground surface elevations in the area of the Ash Pond units, range from approximately El. 60 to El. 120. According to the Geologic Map of Florida, Plant Scholz is located on terraces or marine deposits west of the Apalachicola River floodplain that consist of undifferentiated surficial deposits of Oligocene sediments. These deposits consist of clayey sand, sand and gravel that

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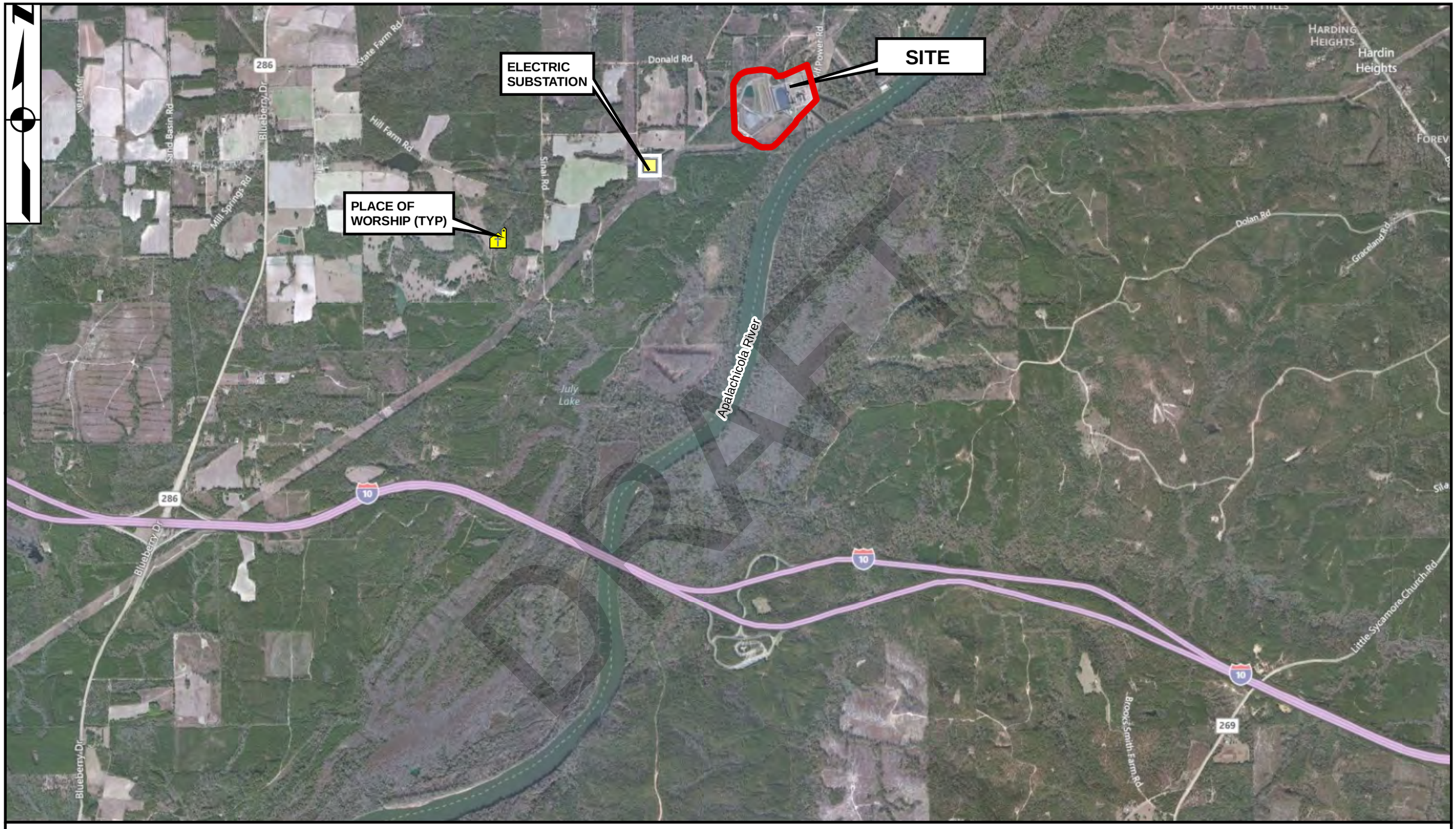
0 1,500 3,000 6,000 9,000 12,000 Feet

FIGURE-1
LOCUS PLAN
GULF POWER - PLANT SCHOLZ
SNEADS, FLORIDA



CDM Smith

0 1,500 3,000 6,000 9,000 12,000 Feet

FIGURE-2
CRITICAL INFRASTRUCTURE PLAN
GULF POWER - PLANT SCHOLZ
SNEADS, FLORIDA

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0 150 300 600 900 1,200 Feet

FIGURE-3
AERIAL PLAN
GULF POWER - PLANT SCHOLZ
SNEADS, FLORIDA

vary laterally and vertically within short distances. Most deposits are cross-bedded, and the sands and gravels are locally cemented into hard, dense, ferruginous sandstone.

Borings provided by Gulf Power indicate that existing soils present within and below the south and southeast embankments of the Lower Pond consist of loose to medium dense clayey and silty sand underlain by soft to stiff sandy clay, with varying amounts of gravel and rock fragments. Boring logs provided and boring location are included in **Appendix A**. Location of additional borings performed on the north and east embankments of the Upper Pond are also presented in Appendix A. However, boring logs for these borings are not available.

2.2 Coal Combustion Residue Handling

Plant Scholz uses an ash pond divided into three separate settling ponds (Upper Pond, Middle Pond, and Lower Pond) to handle the coal combustion waste (CCW) that includes bottom ash and fly ash. Sluiced Ash enters the Upper Pond and then moves in sequence through a series of three settling chambers before moving through the Middle Pond to the Lower Pond unit. Ash dredged from the Upper Pond is deposited in the ash storage area located between the Upper and Middle Ponds. The Ash Pond also receives low volume wastes that include, but are not limited to, ash sluice waste, water softener regeneration wastewater, boiler blowdown, air preheater wash, coal pile runoff, and treated domestic wastewater. Overflow from the ash pond discharges thru a 24-inch steel pipe (morning glory-type riser) located near the south end of the Lower Pond to the on-site discharge canal, and thence into the Apalachicola River.

2.3 Size and Hazard Classification

According to the United States Army Corps of Engineers (USACE) Guidelines for Safety Inspection of Dams (1979), impoundments are categorized per **Table 2.**

Table 2 – USACE ER 1110-2-106 Size Classification

Category	Impoundment	
	Storage (Ac-ft)	Height (Ft)
Small	50 to < 1000	25 to < 40
Intermediate	1000 to < 50,000	40 to < 100
Large	> 50,000	> 100

Based on the Ash Pond total storage capacity of approximately 200 Ac-ft and maximum embankment height of 30 feet, Plant Scholz's Ash Pond is considered a SMALL impoundment. The Ash Pond storage capacity was estimated using the "2008 Ash Pond Certification for Plant Scholz (NPDES Permit FL0002283)" to FDEP by Gulf Power dated December 17, 2007.

It is not known if Plant Scholz impoundments currently have a Hazard Potential Classification. Based on the USEPA classification system as presented on Page 2 of the USEPA checklist (**Appendix B**) and our review of the site and downstream areas, recommended hazard ratings have been assigned to the impoundments as summarized in **Table 3**:

Table 3 – Recommended Impoundment Hazard Classification Ratings

Ash Pond Unit	Recommended Hazard Rating	Basis
Upper East Pond	Significant Hazard	▪ Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to adjacent waterways and downstream areas. ▪ Loss of human life is not anticipated.
Upper Middle Pond	Significant Hazard	▪ Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities ▪ Loss of human life as a result of failure or mis-operation is not anticipated.
Upper West Pond	Significant Hazard	▪ Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to downstream areas. ▪ Loss of human life as a result of failure or mis-operation is not anticipated.
Middle Pond	Significant Hazard	▪ Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to downstream areas. ▪ Loss of human life as a result of failure or mis-operation is not anticipated.
Lower Pond	Significant Hazard	▪ Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to adjacent waterways and downstream areas. ▪ Loss of human life as a result of failure or mis-operation is not anticipated.

2.4 Amount and Type of Residuals Currently Contained in the Unit(s) and Maximum Capacity

CDM Smith was not provided information on the amounts of residuals currently stored in the units. The pool area of the Upper East Pond is approximately 2.5 acres. The pool areas of the Upper Middle Pond, Upper West Pond, Middle Pond, and Lower Pond are approximately 3.5, 4.5, 6.3, and 11.4, acres, respectively. Decant water from the lower Pond exits thru a monitored National Pollutant Discharge Elimination System (NPDES) discharge point into a concrete lined on-site canal, which flows into the Apalachicola River.

2.5 Principal Project Structures

Principal structures of the Ash Pond include the following:

- Three 18-inch diameter HDPE culverts, one at each chamber of the Upper Pond,
- Two 18-inch diameter steel riser pipes, one at the southwest corner of the Upper West Pond and one at the east corner of the Middle Pond,
- One 24-inch diameter steel riser pipe, at the south corner of the Lower Pond,

- Earthen perimeter embankments composed of compacted soil and ash mix,
- A 27-inch diameter concrete pipe that runs under the south embankment to a concrete discharge v-notch weir structure.

2.6 Critical Infrastructure within Five Miles Down Gradient

Based on available topographic maps, surface drainage in the vicinity of Plant Scholz appears to be to the south and southeast toward Apalachicola River. Critical infrastructure, including schools, hospitals, waterways, roadways and bridges, and other major facilities, identified within five miles down gradient of Plant Scholz includes the following:

- Greater Mt Sinai
- Electric substation
- Interstate 10 Bridge over Apalachicola River

Discharge will initially flow into the Apalachicola River. There is no critical infrastructure between the impoundments and this waterway.

A breach of the impoundment embankments would most likely impact low-lying lands surrounding the plant and is not expected to result in loss of human life.

Section 3
Summary of Relevant Reports, Permits and Incidents

3.1 Summary of Reports on the Safety of the Management Unit

On October 2, 2010 during routine observations near the toe of slope of the north embankment of the Ash Pond (Upper East Pond), seepage was observed. A disturbance in the surface water of the pond indicated the location of the seepage area. The plant personnel immediately utilized on-site equipment to place ash on the interior slope, which reportedly stopped the seepage. After visual inspection by Southern Company Services (SCS), the recommended final repair was to install a reverse filter consisting of sand overlain by #89 and #57 Stone in the area where the seepage emerged on the toe of the exterior slope . SCS performed subsequent seepage modeling to evaluate the benefits of adding a toe berm at the toe of slope of the north embankment. However, based on the results obtained with the analysis, SCS concluded that a toe berm would provide little or no benefit, and the cost of such remedial work was unnecessary.

SCS reminded Plant Scholz personnel responsible for the Ash Pond inspections of the potential for flow concentrations due to animal burrows, roots and other surface imperfections. SCS also recommended that routine maintenance be directed to address surface imperfections as recommended by Federal Emergency Management Agency (FEMA) Publication No. 534.

Plant Scholz personnel reported that no seepage was released outside of the plant property during this incident.

3.2 Summary of Local, State, and Federal Environment Permits

Currently, the coal combustion waste (CCW) impoundments are regulated by FDEP.

Plant Scholz was issued a permit under the National Pollutant Discharge Elimination System (NPDES) authorizing discharge to the Apalachicola River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in the permit. The Plant's permit was issued on September 24, 2010. The permit number is FL0002283.

3.3 Summary of Spill/Release Incidents

According to plant representatives, there have been no known spills or releases related to the impoundment. No documentation was available to confirm or disprove this claim.

Section 4
Summary of History of Construction and Operation

4.1 Summary of Construction History

4.1.1 Impoundment Construction and Historical Information

Scholz Generating Station began operation in 1953. The coal combustion waste (CCW) is currently generated by two coal fired steam electric generating units (Unit 1 and 2), each of which generates 49 megawatts of power.

Historical information on the Ash Pond was not readily available in the documentation provided by Gulf Power. Based on our understanding and available data, the Ash Pond seems to be constructed as a side-hill configuration using the natural slope of the terrain towards the Apalachicola River. Perimeter crest elevation decreases towards the south, with the crest of the north embankment the highest at approximate El. 134, and the crest of the south embankment at approximate El. 104. Reportedly, interior slopes were originally constructed at 2.5H:1V. Exterior slopes were constructed at 2.5H:1V. Original design drawings for the Ash Pond were not available. Based on information provided by Gulf Power, and visual observations the Ash Pond embankment crest width varies from 20 to 30 feet approximately.

The four soil boring logs provided to us and attached in Appendix A depict the embankment soils as primarily comprised of loose to medium dense clayey and silty sands, underlain by soft to stiff sandy clays. We do not, of course, know whether these four logs are representative of all embankment conditions.

4.1.2 Significant Changes/Modifications in Design since Original Construction

Reportedly, there have not been significant changes or modifications in the design.

4.1.3 Significant Repairs/Rehabilitation since Original Construction

Information regarding major repairs or rehabilitation to the embankments of the Ash Pond was not provided. Reportedly, the only repair that has been done is on the north embankment of the Upper East Pond as described in Section 3.1 of this report. No evidence of prior releases, failures or remedial works was observed on the embankments during CDM Smith visual assessment. There was no documentation provided that indicates different.

4.2 Summary of Operational Procedures

4.2.1 Original Operating Procedures

The Ash Pond impoundments at Plant Scholz have historically been used as settling ponds for CCW and other plant wastes. Waste water streams that are discharged into the Ash Pond and whose decant water is ultimately released into the Apalachicola River include:

- Ash sluice water
- Water softener regeneration wastewater
- Boiler blowdown
- Air preheater wash

- Auxiliary equipment cooling water
- Coal pile runoff
- Yard sump runoff
- Treated domestic water
- Stormwater

4.2.2 Significant Changes in Operational Procedures and Original Startup

No significant changes in operational procedures have been made to the Ash Pond. There was no documentation provided that indicates different.

4.2.3 Current CCW Impoundment Configuration

Current operational procedures of the Ash Pond are consistent with the original operating procedures.

The Ash Pond is currently divided in five Impoundments at Plant Scholz as previously described and as shown on Figure 3.

The approximate crest elevations of the embankments and pond areas are shown on **Table 4.**

Table 4 – Approximate Crest Elevations and Surface Areas

Ash Pond	Approximate Crest Elevation (Feet)	Approximate Pond Surface Area (Acres)
Upper East Pond	131	2.5
Upper Middle Pond	128	3.5
Upper West Pond	123	4.5
Middle Pond	112	6.3
Lower Pond	104	11.4

During normal plant operations, most of the ash sedimentation occurs in the upper ponds. Ash sluice water is discharged into the Upper East Pond, which is hydraulically connected by two 18-inch diameter High Density Polyethylene (HDPE) corrugated equalizer pipes to the Upper Middle Pond. Water from the Upper Middle Pond flows into the Upper West Pond through two 18-inch diameter HDPE corrugated equalizer pipes, and then decant water flows into the Middle Pond through an 18-inch-diameter morning glory-type drop inlet. The Lower Pond receives decant water from the Middle Pond through an 18-inch morning glory-type drop inlet located at the east corner of the pond and then is discharge by a 24-inch steel pipe morning glory-type drop inlet into a monitored NPDES discharge outlet structure at the toe of slope of the south embankment. Water is released through a v-notch weir structure into a concrete lined trapezoidal canal discharging into Apalachicola River.

4.2.4 Other Notable Events since Original Startup

No additional information was provided to CDM Smith regarding other notable events which impacted operations and /or regular maintenance and inspection of the Ash Pond.

Section 5
Field Observations

5.1 Project Overview and Significant Findings (Visual Observations)

CDM Smith performed visual assessments of the CCW impoundments at the Gulf Power Company's Plant Scholz site. Impoundments assessed included the Upper Pond, comprised of the Upper East Pond, Upper Middle Pond, and Upper West Pond; the Middle Pond and the Lower Pond. These ponds, referred to as the "Ash Pond" are located on the west and southwest sides of the site. The perimeter and divider embankments of the Ash Pond are approximately 9,500 feet in length and vary from approximately 8 feet to approximately 35 feet in height. The assessments were completed following the general procedures and considerations contained in Federal Emergency Management Agency's (FEMA's) Federal Guidelines for Dam Safety (April 2004) to make observations concerning settlement, movement, erosion, seepage, leakage, cracking, and deterioration. A Coal Combustion Dam Inspection Checklist and Coal Combustion Waste (CCW) Impoundment Inspection Form, developed by USEPA, were completed for each of the aforementioned Ash Pond impoundments. Copies of these forms are included in **Appendix B**. Photograph locations are shown on **Figure 4**, and photographs are included in **Appendix C**. Photograph locations were logged using a handheld GPS device. The photograph coordinates are also listed in **Appendix C.**

CDM Smith visited the plant on August 22, 2012, to conduct visual assessments of the impoundments. The weather was generally cloudy with daytime high temperatures up to 80 degrees Fahrenheit. The daily total precipitation prior to the site visit is shown in **Table 5**. The data was recorded at USGS Station 02358000 Apalachicola River at Chattahoochee, Florida, approximately 2.8 miles northwest of the Plant.

Table 5 – Approximate Precipitation Prior to Site Visit

Dates of Site Visit – August 22, 2012		
Day	**Date**	**Precipitation (inches)**
Sunday	August 21	0.40
Saturday	August 20	0.61
Friday	August 19	0.02
Thursday	August 18	0.0
Wednesday	August 17	0.56
Tuesday	August 16	0.00
Monday	August 15	0.21
Sunday	August 14	0.55
Total	**(August 1 - 21, 2012)**	**4.34**
Total	**Month Prior to Site Visit (July, 2012)**	**4.37**

Note: Precipitation data from www.waterdata.usgs.gov. Station Location: Apalachicola River (02358000), Chattahoochee, FL Lat. 30.701; Lon. -84.859; EL. 40.58 (ft-NGVD29).

CDM Smith

FIGURE-4
PHOTOGRAPH LOCATION PLAN
GULF POWER - PLANT SCHOLZ
SNEADS, FLORIDA

5.2 Upper East Pond

At the time of the assessment, the Upper East Pond contained residual ash and water with approximately 5 feet of freeboard. It was indicated by plant personnel that this pond is dredged as necessary to remove accumulated ash.

5.2.1 Crest

The crest of the Upper East Pond appeared to be in satisfactory condition (Photographs 54, 59 and 60). The crest ranged from 20- to 30-feet wide. The crest of the embankment consists of compacted granular soils and gravel and is exposed to minimal vehicle traffic. No depressions or evidence of settlement were observed on the crest. Minor rutting was observed (Photograph 60).

5.2.2 Interior Slopes

The interior slopes appear to be in fair condition. Reportedly, the interior slopes are 2H:1V, but a portion of the slopes on the east embankment seem to be steeper, around 1.5H:1V. Sparse vegetation covers the interior slopes. Discontinuities and eroded areas (Photographs 57, 86, and 91) were observed along the interior slopes.

Inlet pipes are located at the south corner of the Upper East Pond (Photograph 43).

5.2.3 Exterior Slopes

The exterior slopes appear to be in satisfactory condition. The exterior slopes of the embankment are approximately 2.5H:1V. They are covered with short grass, approximately 4 to 6 inches tall at the time of the visual assessment (Photographs 45 to 47). Some areas on the east embankment appear to be recently backfilled and repaired. Based on plant personnel comments, shallow erosion rills have occurred in these areas (Photographs45 and 48). Some saturation was observed at the toe of slope (Photograph 49 to 51) of the east embankment. It was difficult to determine if these wet areas were caused by seepage or the previous day's rain. Based on the embankment height, these areas have the potential to have seepage.

The repaired area, previously described in Section 3 of this report, located on the exterior slope of the north embankment was identified (Photographs 61 and 62). No signs of further seepage were observed in the area. An animal burrow was observed on the north embankment (Photograph 66).

5.2.4 Outlet Structures

The outlet pipe consists of an 18-inch HDPE corrugated pipe (Photograph 90). The pipe was submerged at the time of visual assessment and is located near the northwest corner of the Upper East Pond. The pipe appears to be in satisfactory condition.

5.3 Upper Middle Pond

The Upper Middle Pond is situated between the Upper East Pond , the Upper West Pond, and the Middle Pond, sharing common divider embankments with these adjacent ponds. The Upper Middle Pond contained standing water and ash at the time of this assessment, with approximately 5 feet of freeboard. It was indicated by plant personnel that this pond is also dredged as necessary to remove accumulated ash.

5.3.1 Crest

The crests of the Upper Middle Pond appear to be in satisfactory condition. The average crest width is approximately 22 feet. Slight depressions and ruts with standing water (Photographs 79 80, 83 and 85) were observed on the crest of the divider embankment between the Upper Middle Pond and the Upper West Pond. No evidence of settlement or cracks was observed on the crests. Signs of heavy equipment traffic were present on the crest of the east divider embankment (Photographs 93 to 95 and 104).

5.3.2 Interior Slopes

The interior slopes appear to be in fair condition. The interior slopes appear to be approximately 2H:1V. Short grass covers the interior slopes. Shallow erosion rills (Photographs 101 and 102) were observed along the interior slope of the west embankment with an approximate frequency of one every 50 feet. Areas of surface erosion were observed on the west embankment (Photograph 86 and 87) and also were observed at the northwest corner of the pond (Photograph 89) around the 18-inch diameter corrugated HDPE inlet pipe. Water was flowing thru the pipe from the Upper East Pond.

5.3.3 Exterior Slopes

The Upper Middle Pond is situated between the Upper East Pond , the Upper West Pond, and the Middle Pond, sharing common divider embankments with these adjacent ponds as shown on Figure 4. The exterior slopes of the Upper Middle pond are the interior slopes for the Upper East and Upper West ponds at the north, east and west respectively. Exterior slopes at the south, are the interior slopes of the Middle Pond beyond the Ash Dry Stack. The Ash Dry Stack Area ground surface is approximately at crest elevation. The slopes of the Ash Dry Stack area towards the Middle Pond were not accessible to visual assessment due to the dense vegetation at the Middle Pond surface. These slopes appear to be very steep, nearly vertical, (Photographs 111 and 112) when observed from a distance.

5.3.4 Outlet Structures

The outlet from the Upper Middle Pond consists of an 18-inch diameter corrugated HDPE pipe located near the southwest corner of the pond (Photograph 82). The pipe appears to be in good condition.

5.4 Upper West Pond

The Upper West Pond contained standing water and ash at the time of this assessment with approximately 2 ½ feet of freeboard at the outlet area. The south portion of the pond is covered by vegetation (i.e. cattail). It was indicated by plant personnel that this pond is dredged as necessary to remove accumulated ash. The Upper West Pond is located adjacent to and west of the Upper Middle Pond; and adjacent to and north of the Middle Pond, sharing common divider embankments with these ponds.

5.4.1 Crest

The crest of the Upper West Pond appears to be in fair condition, with some areas of rutting and signs of heavy equipment traffic on the south divider embankment between the Upper Middle Pond and the Upper West Pond (Photographs 79 and 80). The average crest width is approximately 25 feet. The crest of the west embankment is gravel-covered without vegetation. The east embankment crest is surfaced with compacted gravel and is used as an access road. Sparse vegetation was growing in the middle and on both sides of the roadway (photo 88).

5.4.2 Interior Slopes

The interior slopes appear to be in fair condition. The interior slopes of the embankments were approximately 2H:1V. The interior slopes were generally covered with grassy vegetation approximately 3 to 6 inches tall. Shallow erosion and scarps were observed on the west interior slope (Photographs 71 and 72). An approximately 30-foot long erosion/depressed area (Photograph 73) was also observed at the west embankment. An 18-inch diameter corrugated HDPE inlet pipe is located near the southeast corner of the pond. Water was flowing thru the pipe from the Upper Middle Pond.

5.4.3 Exterior Slopes

In general, the exterior slopes the Upper West Pond appear to be in good condition (Photographs 69 and 70). The embankment slopes are approximately 3H:1V with a flattening tendency towards the southwest corner of the embankment. Exterior slopes are covered with grassy vegetation about 4 to 6 inches tall. The alignment and slopes appear to be relatively uniform and consistent.

5.4.4 Outlet structures

The Upper West Pond outlet structure consists of an 18-inch morning glory-type steel pipe located at the southwest corner of the pond (Photograph 74). The riser appeared to be free of debris and in good operating condition.

5.5 Middle Pond

The Middle Pond is located adjacent to and south of the Upper West Pond and the Upper Middle Pond; and adjacent to and northwest of the Lower Pond, sharing common divider embankments with these ponds. The Middle Pond contained standing water and CCW during the assessment, with approximately 2 feet of freeboard. The pond's interior surface is heavily vegetated (Photograph 39). Middle Pond has a dog-leg shape and borders the west, south and southeast limits of the Ash Dry Stack as shown on Figure 4. Surface runoff from the Ash Dry Stack apparently flows into the Middle Pond.

5.5.1 Crest

The crest of the Middle Pond appeared to be in good condition (Photographs 115 and 116). The average crest width is approximately 25 feet. The southwest and west crests are gravel-covered with sparse short grass. The crest of the divider embankment between the Middle Pond and the Lower Pond appeared to be in good condition. The crest of the west embankment of the pond is nearly level with the natural ground elevation west of the pond area. The north and southeast divider embankments seem to be constructed of soil and ash mix; no gravel was observed in this crest. No depressions or evidence of settlement were observed on the crests. Ruts and tire tracks were observed on the southeast divider embankment (Photographs 28, 109 and 110).

5.5.2 Interior Slopes

The interior slopes of the pond appear to be in poor condition. Significant surface erosion and scarps (Photographs 37, 38 and 40 to 42) were observed on the east corner and on the north and northwest embankments adjacent to the Ash Dry Stack. Due to the high vegetation and proximity to the Dry Ash Stack area, the slope was not accessible but appears from a distance to be very steep (Photographs 111 and 112). The Ash Dry Stack appears to cover the Middle Pond north divider embankment.

5.5.3 Exterior Slopes

Exterior slopes of the Middle Pond appear to be in good condition. Slopes are approximately 4H:1V. Exterior slopes are covered with grassy vegetation about 4 to 6 inches tall (Photograph 116).

Alignment and slopes appears to be relatively uniform and consistent. No signs of bulging, sloughing or slope failure were observed. No animal burrows were readily apparent.

As previously described the southeast embankment is a divider embankment between the Middle Pond and the Lower Pond.

5.5.4 Outlet Structures

The Upper West Pond outlet structure consists of an 18-inch morning glory-type steel pipe located near the east corner of the pond (Photograph 33). The riser appeared to be free of debris and in good operating condition.

5.6 Lower Pond

The Lower Pond is located adjacent to and south of the Middle Pond, sharing a common divider embankment with the Middle Pond. The Lower Pond contained standing water during the assessment, with approximately 6 ½ feet of freeboard and an embankment height of about 30 feet on the south and southeast sides. The north and northwest embankment height is about 6 feet. The pond receives water from the Middle Pond near the north corner of the pond. Pond surface is densely vegetated with cattail (Photograph 20).

5.6.1 Crest

The crest appeared to be in good condition (Photographs 2 and 6). The average crest width is approximately 30 feet. The crest widens to approximately 40 feet near the south corner near the NPDES discharge area and a chemical storage building (Photograph 8). Crests are gravel-covered without vegetation (Photos 2, 5, 6 and 26). No depressions or evidence of settlement were observed on the crest. Ruts and tire tracks were observed on the northwest divider embankment (Photograph 28).

5.6.2 Interior Slopes

The interior slopes appear to be in good condition and are approximately 2.5H:1V (Photographs 6, 22 and 26). Some erosion and scarps along the interior slopes (Photograph 7) on the southeast embankment were observed. Erosion rills were also observed on the divider embankment between the Middle Pond and the Lower Pond (Photograph 29).

Water was being discharged into the pond from the Middle Pond through the north corner inlet pipe.

5.6.3 Exterior Slopes

Exterior slopes of the south and southeast embankments appear to be in poor condition. Irregular slope faces are approximately 2H:1V with some areas at 1.5H:1V (Photographs 4, 16 and 17). The exterior slopes of the south and southwest embankments are covered with trees and dense vegetation (Photographs 1, and 3). Scarp areas along the exterior slope of the south embankment were observed. Alignment and slopes appear inconsistent. Signs of erosion were readily observed in this area.

An area of standing water or possible seepage was observed at the toe of the southwest embankment (Photograph 25). Trees and dense vegetation extend beyond the toe of the embankment in this area. Animal burrows were not observed during visual assessment of this area.

A concrete lined canal conveying the discharge water from the Lower Pond runs parallel to the toe of slope on the southeast embankment (Photograph 18).

Two monitoring wells were observed beyond the toe of the south embankment (Photograph 24).

5.6.4 Outlet Structures

The Lower Pond outlet structure consists of a 24-inch morning glory-type steel pipe riser with a 48-inch trash rack pipe located near the south corner of the pond (Photograph 9 and 10). The riser appeared to be free of debris and in good operating condition. A concrete outlet structure located at the toe of the southeast embankment's exterior slope appeared to be in good condition (Photographs 11 to 15). Discharge flow from a 27-inch reinforced concrete pipe (RCP), flows through a v-notch weir, to a concrete lined canal (Photograph 18) that discharges to the Apalachicola River. Details on the connection between the 24-inch steel pipe riser and the 27-inch RCP are not available.

According to Scholz Plant personnel, discharge water from the Lower Pond is monitored on a daily basis as required by the FDEP - NPDES Permit No. 0002283. Daily records were not provided to CDM Smith.

Section 6
Hydrologic/Hydraulic Safety

6.1 Impoundment Hydraulic Analysis

The State of Florida does not currently have requirements related to the hydrologic or hydraulic design of coal ash impoundments. FEMA standards require impoundments to have the capacity to store some percentage of the Probable Maximum Precipitation (PMP) for a 6-hour storm event over a 10 square-mile area in the vicinity of the site. Significant and high hazard structures are required to store 50% PMP and 100% PMP, respectively. Based on information provided by Gulf Power, hydrologic and hydraulic analyses have been conducted for the Ash Pond at 25- and 100-year, 24-hour storm events.

6.2 Adequacy of Supporting Technical Documentation

Hydrologic and hydraulic documentation provided for the 25- and 100-year, 24-hour storm events was provided. However, the PMP was not considered in the analyses. All the existing ponds previously described herein were analyzed for the 25- and 100-year, 24-hour storm events. Based on the results of the analyses, each pond will handle the 25- and 100-year, 24 hour storm events without overtopping the perimeter dikes. However, freeboard for the Upper West Pond and the Middle Pond is very low.

No documentation or analyses for the PMP were provided.

6.3 Assessment of Hydrologic/Hydraulic Safety

Hydrologic and hydraulic safety of the management units appears to be satisfactory based on the following:

- Recent hydrologic/hydraulic analysis of the Ash Pond was provided and, in general, determined that overtopping will not occur and storage capacity is available for the certain design storm events.
- During visual observations and site assessments, no signs of plugged, collapsed or blocked pipes, or other detrimental conditions were observed.
- Adequate freeboard was observed at the time of the assessments.

However, since the PMP was not provided, the Ash Pond units are rated as poor.

Section 7
Structural Stability

7.1 Supporting Technical Documentation

Gulf Power Company and Southern Company provided CDM Smith with the most recent slope stability analyses performed for the north and east embankment of the Ash Pond (Upper East Pond) dated February 9, 2011. The analyses were performed by the Southern Company. The slope stability analyses are based on recent and historical geotechnical information. The soil properties used for the analyses were determined on the basis of recent laboratory tests, recent field SPT data, and a compilation of historical field and laboratory data and previous experience with engineering properties of those soils as stated by Southern Company in their analyses.

Slopes analyzed were based on current survey (April and May 2010) data available with actual slopes ranging from 1.5H:1V to 2.9H:1V.

7.1.1 Stability Analyses and Load Cases Analyzed

Currently the State of Florida does not have regulations regarding coal ash impoundments. Procedures established by the United States Army Corps of Engineers (USACE), the United States Bureau of Reclamation, the Federal Energy Regulatory Commission, and the Natural Resources Conservation Service are generally accepted engineering practice. Minimum required factors of safety outlined by the USACE in EM 1110-2-1902, Table 3-1 and seismic factors of safety by FEMA Federal Guidelines for Dam Safety, Earthquake Analyses and Design of Dams (pgs. 31, 32 and 38, May 2005) are provided in **Table 6**.

Table 6 - Minimum Safety Factors

Load Case	Minimum Required Factor of Safety
Steady-State Condition at Normal Pool or Maximum Storage Pool Elevation	1.5
Rapid Drawdown Condition from Normal Pool Elevation	1.3
Maximum Surcharge Pool (Flood) Condition	1.4
Seismic Condition from at Normal Pool Elevation	1.1
Liquefaction	1.3

Note: Based on required factors of safety published by USACE. Currently not required in the State of Florida for coal ash impoundments.

7.1.2 Design Parameters and Dam Materials

General soil properties and soil parameters used for the slope stability analyses performed on the north and east embankment for the Ash Pond (Upper East Pond) are presented in **Table 7.**

Table 7 – Soil Parameters for the Ash Pond Subsurface Soil Profile

Soil Description	Moist Unit Weight (psf)	Effective Stress Parameters		Total Stress Parameters	
		Φ' (degrees)	C' (psf)	Φ (degrees)	C (psf)
Sluiced Ash	80	27	0	24	100
Compacted Ash	90	34	0	28	100
Sand (Foundation)	125	35	0	22	500
Clay (Foundation)	120	28	50	N/A	N/A
Marl (Foundation)	125	38	0	N/A	N/A

7.1.3 Uplift and/or Phreatic Surface Assumptions

The stability analyses provided by Gulf power considered a steady-state seepage through the embankments. The normal operating water at El. 129 was used for free water in the pond. Water levels within the embankment were estimated

7.1.4 Factors of Safety and Base Stresses

A summary of safety factors computed for the different cases on the north and east embankment of the Ash pond (Upper East Pond) is included in **Table 8.**

Table 8 – Safety Factors Computed for Various Stability Conditions on the Upper East Pond

Condition	Referenced Factor of Safety	Present Factor of Safety	Modified Factor of Safety
Ash Pond Cell 1 – East Dike			
Downstream, Steady State	1.5	1.5	N/A
Downstream, Seismic	1.1	1.3	N/A
Downstream, Surcharge	1.4	1.4	N/A
Upstream, Steady State	1.5	1.7	N/A
Upstream, Seismic	1.1	1.3	N/A
Upstream, Rapid Drawdown	1.3	1.3	N/A
Ash Pond Cell 1 – North Dike			
Downstream, Steady State	1.5	1.6	1.6
Downstream, Seismic	1.1	1.3	1.4
Downstream, Surcharge	1.4	1.6	1.5
Upstream, Steady State	1.5	1.5	1.8
Upstream, Seismic	1.1	1.1	1.2
Upstream, Rapid Drawdown	1.3	1.2	1.3

Source: Engineering and Construction Services Calculation – Slope Stability Analyses of Ash Pond Dikes, prepared by Southern Company, February 9, 2011.

The Factors of Safety referenced in the first column of the above table, are the minimum required factors of safety by USACE in EM 1110-2-1902, Table 3-1. Present factors of safety were calculated by Southern Company Services, as shown in the middle column. In general, these meet the criteria listed by USACE. However, under the rapid drawdown case the Upper East Pond north embankment interior slope factor of safety of 1.2 did not meet the required factor of safety of 1.3. As stated by Southern Company in its slope stability analysis, this was related to over-steepening of the upstream face during regular dredging and maintenance of the pond. Southern Company recommended flattening the interior slope to no steeper than 2.5H:1V and providing a crest not less than 10 feet wide, which will

result in acceptable safety factors against rapid drawdown of 1.3 (Modified Factor of Safety column) and reduce the potential for shallow sloughing to occur. We note that downstream factors of safety also, in some instances, differ in the modified analysis. Based on the visual assessment by CDM Smith on August 22, 2012 the interior slope seems to have been flattened using ash material, a bulged area indicating a buttressed slope on the north embankment interior slope was observed (Photograph 53).

The seismic analyses were performed based on Southern Company's review of the USGS "Map for Peak Acceleration with 2% Probability of Exceedance in 50 Years"; the maximum horizontal acceleration in the vicinity of Plant Scholz is approximately 0.161g.

7.1.5 Liquefaction Potential

Documentation provided by Gulf Power and Southern Company did not include evaluation of liquefaction potential.

7.1.6 Critical Geological Conditions

Based on the Geological Survey Map by the Florida Department of Natural Resources, Bureau of Geology, the state is characterized by four areas of sinkhole occurrence. Plant Scholz is located in Area III where Limestone cover is between 30 to 200 feet thick and consists mainly of cohesive clayey sediments of low permeability. Sinkholes of varying size, which may develop abruptly, can occur in this geologic setting. Cover collapse sinkholes predominate in this area. Examination of topographic maps shows no closed depressions in the immediate vicinity of the plant site.

Based on geographic location and the 2008 USGS National Seismic Hazard Map, Peak Ground Acceleration (PGA) for 2% probability of exceedance in 50 years, Florida is located in the lowest hazard potential area for seismic activity.

7.2 Adequacy of Supporting Technical Documentation

Structural stability documentation that has been provided is incomplete. Documentation provided for the north and east embankments for the Upper East Pond appears to be adequate, for the cases and loading conditions analyzed. However, documentation for the other embankments, specially the south embankment, which appear to be critical due to its height and close proximity to the Apalachicola River was not provided.

Liquefaction potential analyses were not provided for the foundation soils of the ash pond embankments.

Southern Company stated during the closing meeting of the site visit, that they will provide slope stability analyses including sections, profiles and liquefaction potential to USEPA during the following month after this site assessment.

7.3 Assessment of Structural Stability

Existing conditions and visual observations would yield a fair rating for structural stability of the Ash Pond based on the following:

- Recent slope stability analyses of the Ash Pond embankments are well documented only for the north and east embankments, and in general, satisfactory safety factors are reported for the different loading conditions analyzed. However, there is also a lack of documentation relative to the design and construction of the west, south and intermediate embankments. It is not known

if critical studies or investigations have been performed to confirm that potential safety deficiencies do not exist. Additional documentation and future studies performed to confirm the condition and performance of these impoundments may be sufficient to substantiate an improved condition assessment.

- Stability analyses on different cross sections representing the typical embankments of the Ash Pond and liquefaction analyses are required to assess a satisfactory rating for structural stability. These types of analyses were not provided.
- During visual observations and site assessments, high vegetation, trees, and scarp erosion areas on the south embankment exterior slope were observed.
- No indications of major seepage along the outside slopes of the management units were observed.

Therefore, because the lack of documentation and analyses for certain required loading conditions (i.e. Liquefaction Potential) and cross sections on the identified embankments, the assessed rating is Poor. As such, a dam safety rating of "POOR" is assigned when a dam safety deficiency is recognized for loading conditions that may realistically occur. Remedial action is necessary. POOR may also be used when uncertainties exist as to critical analysis parameters that identify a potential dam safety deficiency. Further investigations and studies are necessary.

Section 8
Adequacy of Maintenance and Methods of Operation

8.1 Operating Procedures

As described in Section 2, the Ash Pond is currently divided into three primary units: Upper Pond, Middle Pond and Lower Pond. The Upper Pond consists of three individual sections, Upper East Pond, Upper Middle Pond, and Upper West Pond. The individual sections of the Upper Pond are hydraulically connected with a series of 18-inch diameter HDPE corrugated pipes. The upper ponds' main purpose is to act as settling chambers and to convey decant water into the Middle Pond for final filtration performed by vegetation (i.e. cattail) before discharge into the monitored NDPES discharge point located at the south corner of the Lower Pond.

8.2 Maintenance of the Dam and Project Facilities

Gulf Power and Southern Company provided CDM Smith with a copy of their guidelines and procedures for routine maintenance and inspection of the ash pond management units described in this report. Also, they provided a copy of "Safety Procedures for Dams and Dikes" by Southern Company reviewed and approved by Southern Company's Executive Vice President on April 30, 2012, and a copy of "Plant Scholz Ash Pond Dike Emergency Response Plan".

It was indicated by Plant Scholz personnel during the site visual assessment by CDM Smith on August 22, 2012, that visual dam inspections are performed at all management units every week, and Southern Company performs one general detailed inspection once every year. Copies of the annual inspection reports for the last 3 years previous to this assessment were provided to CDM Smith for information.

8.3 Assessment of Maintenance and Methods of Operations

8.3.1 Adequacy of Operating Procedures

Based on CDM Smith's visual observations and review of documents provided by Gulf Power and Southern Company, operating procedures appear to be generally adequate for Plant Scholz. There is no readily available indication that suggests that the Ash Pond's primary purpose is not being accomplished.

8.3.2 Adequacy of Maintenance

Generally, no major maintenance issues that compromise the structural stability and operation of the Ash Pond in the short term were identified. Management units appear to be in a fair condition. However, high vegetation, trees, scarps and erosion areas were observed on the exterior slope of the south and southeast embankments. Scarps and erosion rills were observed in the interior slopes of every pond. Maintenance procedures and schedule should be developed to address these issues.

Section 9
Adequacy of Surveillance and Monitoring Program

9.1 Surveillance Procedures

Gulf Power is required by Florida Department of Environmental Protection (FDEP) under National Pollutant Discharge Elimination System (NPDES) Permit No. FL0002283 to monitor discharge of wastewater into Apalachicola River, and groundwater in the vicinity of the Ash Pond management units described in previous sections of this report. Surveillance procedures should be in accordance with FDEP – NPEDS Permit.

Reportedly, Gulf Power inspects the embankments for structural stability on a weekly basis and Southern Company does as well once a year. CDM Smith was provided with copy of the last three inspection reports by Southern Company, and one blank copy of "Plant Scholz Weekly Dike Inspection Log".

Gulf Power is required to maintain records and make them available for FDEP inspection for at least three years after report preparation.

9.2 Instrumentation Monitoring

Based on the documents reviewed by CDM Smith, fifteen (15) piezometers/ monitoring wells are installed in the vicinity of the ash pond management units. Gulf Power submits to FDEP groundwater readings, daily rainfall and analytical data for groundwater sampling in a semi-annual Groundwater Report. CDM Smith was provided with the Groundwater Reports submitted to FDEP on 2008, 2009, 2011 and 2012.

The Ash Pond embankments do not have an instrumentation monitoring system to monitor structural stability, seepage or ground displacement.

9.3 Assessment of Surveillance and Monitoring Program

9.3.1 Adequacy of Inspection Programs

Based on the documents reviewed by CDM Smith and visual observations during the site assessment, the inspection program appears to be adequate. No conditions that needed immediate remedial actions were observed.

The annual reports for the last three years provided by Gulf Power did not identify any detrimental conditions needing remedial actions. However, regular maintenance issues were reported and most of those issues were already addressed.

9.3.2 Adequacy of Instrumentation Monitoring Program

As mentioned before, instrumentation is not present within the embankments. Detrimental conditions or indications for potential failure of embankments were not observed during CDM Smith's visual assessment. Therefore, the need for additional instrumentation to monitor structural stability, seepage, or ground movement is not indicated.

Based on visual observations and the documentation reviewed by CDM Smith, groundwater instrumentation monitoring program appears to be adequate. A series of monitoring wells has been installed for compliance with FDEP in the vicinity of the CCW impoundments. A summary of the water level readings, analytical data and potentiometric maps were included in the Groundwater Report by Gulf Power to FDEP dated July 30, 2012.

Based on information provided by Gulf Power, Groundwater Reports are delivered semi annually to FDEP.

A summary of groundwater levels collected on March 26, 2012 by Gulf Power as presented in the Groundwater Report to FDEP, dated July 30, 2012 is presented in **Table 9.**

Table 9: Monitoring Wells Water Levels.

WELL I.D.	WATER LEVEL	PH	TEMP. Celsius	COND. Us/cm	D.O. Mg/l	TURB. Ntu's	O.R.P. +/-	TOTAL GALLONS PURGED	DATE
MW-205MD	81.71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-205S	10.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
WSW-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-203MD	17.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWI-203S	13.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-204MD	59.74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWI-204S	9.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-210MD	49.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWI-210S	9.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-212MD	28.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWP-103	13.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWP-105	80.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MWP--110A	48.77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW110	7.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12
MW-112	27.42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3-26-12

Section 10
Reports and References

The following is a list of reports and drawings that were provided by Gulf Power and Southern Company and were used during the preparation of this report and the development of the conclusions and recommendations presented herein. Gulf Power and Southern Company requested this information were considered as Confidential Business information (CBI).

1. Plant Scholz Hydrologic and Hydraulic Study of the Ash Pond to perform a stormwater routing analysis, prepared by Gulf Power to EPA, August 2011

2. Ash Pond Certification Letter for Plant Scholz, prepared by Gulf Power to Florida Department of Environmental Protection, December 17, 2007

3. Ash Pond Certification Letter for Plant Scholz, prepared by Gulf Power to Florida Department of Environmental Protection, December 23, 2009

4. Ash Pond Certification Letter for Plant Scholz, prepared by Gulf Power to Florida Department of Environmental Protection, January 28, 2011

5. Ash Pond Certification Letter for Plant Scholz, prepared by Gulf Power to Florida Department of Environmental Protection, January 25, 2012

6. Drawing of Plant Scholz North and East Dike Boring Locations, prepared by Southern Company Generation Engineering and Construction Services for Gulf Power Company, Figure 1, 2010

7. Intra-company Correspondence to Chris Miller of Southern Company from Ben Gallagher, Plant Scholz Ash Pond Cell 1 Seepage Modeling, November 18, 2010

8. Intra-company Correspondence to Chris Miller of Southern Company from Ben Gallagher, Field Observations –Plant Scholz Ash Pond Cell 1 Seepage Event, October 11, 2010

9. Aerial of Plant Scholz

10. Solid Waste Inspection Report, prepared by Florida Department of Environmental Protection for Gulf Power-Scholz Electric Generating Plant, February 5, 2009

11. Engineering and Construction Services Calculation – No. TV-SZ-4161AK-001 prepared by Southern Company, Plant Scholz Ash Pond Dikes, February 9, 2011

12. Drilling Log Geological Services, prepared by Southern Company for Plant Scholz Ash Pond, October 29, 2009

13. Groundwater Monitoring Reports for Sampling at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, August 22, 2008

14. Groundwater Monitoring Reports for Sampling, Daily Rainfall Log, Potentiometric Maps and Sample Logs at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, July 30, 2012

15. Groundwater Monitoring Reports for Sampling, Daily Rainfall Log, Potentiometric Maps and Sample Logs at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, August 4, 2011

16. Groundwater Monitoring Reports for Sampling at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, January 20, 2011

17. Groundwater Monitoring Reports for Sampling at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, July 28, 2009

18. Groundwater Monitoring Reports for Sampling at Plant Scholz – Permit FL 0002283, prepared by Gulf Power to Florida Department of Environmental Protection, prior report submittals several errors were noticed, and this update serves to correct the errors, December 8, 2009

19. Notice of Permit FL0002283-004-IWIS, prepared by Florida Department of Environmental Protection to Gulf Power Company to operate the Scholz Electric Generating Plant, September 24, 2010

20. Bearing Reference – North Based on state Plane Coordinate System (Grid North) Topographic Survey of a portion of ash ponds, Scholz Plant, Sneads, FL, Section 12, T-3N, R-07 W, prepared by Pittman, Glaze and Associates, Inc., March 18, 2010

21. Dam Safety Inspection Ash Pond Dike Report for Plant Scholz, performed by R.D. Wood and H. H Armitage of the SCG Hydro Services Group on February 11, 2010, report includes a checklist and photographs of observations of site conditions, report dated March 22, 2010

22. Dam Safety Inspection Ash Pond Dike Report for Plant Scholz, performed by R.D. Wood of the SCG Hydro Services Group on April 13, 2011, report includes a checklist and photographs of observations of site conditions, report dated April 27, 2011

23. Dam Safety Inspection Ash Pond Dike Report for Plant Scholz, performed by R.D. Wood of the SCG Hydro Services Group on March 15, 2012, report includes a checklist and photographs of observations of site conditions, report dated April 24, 2012

24. Plant Scholz Ash Pond Dike Emergency Response Plan prepared by Southern Company Generation Safety Procedure for Dams and Dikes (GEN-1003)

25. Bearing Reference – Magnetic North Topographic Survey of a portion of ash ponds, Scholz Plant, Sneads, FL, Section 12, T-3N, R-07 W, prepared by Pittman, Glaze and Associates, Inc., December 30, 2009

26. Bearing Reference – North Based on State Plane Coordinate System (Grid North) Topographic Survey of a portion of ash ponds, Scholz Plant, Sneads, FL, Section 12, T-3M, R-07 W, prepared by Pittman, Glaze and Associates, Inc., March 18, 2010

27. Plant Scholz Weekly Dike Inspection Log – Blank Form

Appendix A

Boring Logs

Google Earth Pro

feet 2000
meters 700

CDM Smith

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. B-1
Sheet 1 of 2

SITE: Plant Scholz Ash Pond | HOLE DEPTH: 50' | SURF.ELEV.: NA

LOCATION: Sneads, Florida | GPS coordinates N: 30 40.008 | W: 084 53.296

DRILLING METHOD: H.S.A. | NO. SAMPLES: NA | NO. U.D. SAMPLES: NA

CASING SIZE: NA | LENGTH: NA | CORE SIZE: NA | TOTAL % REC.: NA

WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA

TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 10/29/2009

DRILLER: Universal | RECORDER: M. Boatright | APPROVED: B. Coates | DRILLING COMP. DATE: 10/29/2009

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0									
1									
2									
3									
4									
5		tan to olive brown clayey silty fine to medium SAND (SM-SC)		3.5-5.0	25-12-16	28			
6									
7									
8									
9									
10		white gravelly CLAY (CL)		8.5-10	2-4-6	10	med plastic		
11									
12									
13									
14									
15		white to tan gravelly CLAY w/ coarse sand (CL)		13.5-15	4-4-8	12			
16									
17									
18									
19									
20		white to tan gravelly CLAY w/ coarse sand (CL)		18.5-20	4-5-6	11			
21									
22									
23									
24									
25		white lean CLAY few gravel		23.5-25	2-4-3	7			

EXHIBIT
GP-SH # 12

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. B-2
Sheet 1 of 2

SITE: Plant Scholz Ash Pond | HOLE DEPTH: 50' | SURF.ELEV.: NA
LOCATION: Sneads, Florida | GPS coordinates N: 30 39.992 | W: 084 53.316
DRILLING METHOD: H.S.A. | NO. SAMPLES: NA | NO. U.D. SAMPLES: NA
CASING SIZE: NA | LENGTH: NA | CORE SIZE: NA | TOTAL % REC.: NA
WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA
TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 10/29/2009
DRILLER: Universal | RECORDER: M. Boatright | APPROVED: B. Coates | DRILLING COMP. DATE: 10/29/2009

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0									
1									
2									
3									
4									
5		orange clayey fine to medium SAND (SP-SC)		3.5-5.0	5-8-10	18			
6									
7									
8									
9									
10		light brown clayey fine SAND (SP-SC)		8.5-10	1-1-2	3	wet		
11									
12									
13									
14									
15		light brown clayey fine SAND (SP-SC)		13.5-15	2-1-3	4			
16									
17									
18									
19									
20		tan sandy CLAY-clay SAND mix (SC)		18.5-20	0-0-1	1			
21									
22									
23									
24									
25		olive grey fine sandy CLAY w/ gravel (CH)		23.5-25	3-4-4	8	limestone frags		

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. B-3
Sheet 1 of 2

SITE: Plant Scholz Ash Pond | HOLE DEPTH: 50' | SURF.ELEV.: NA

LOCATION: Sneads, Florida | GPS coordinates N: 30 39.964 | W: 084 53.350

DRILLING METHOD: H.S.A. | NO. SAMPLES: NA | NO. U.D. SAMPLES: NA

CASING SIZE: NA | LENGTH: NA | CORE SIZE: NA | TOTAL % REC.: NA

WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA

TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 10/29/2009

DRILLER: Universal | RECORDER: M. Boatright | APPROVED: B. Coates | DRILLING COMP. DATE: 10/29/2009

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0									
1									
2									
3									
4									
5		orange clayey SAND (SC)		3.5-5.0	5-7-14	21			
6									
7									
8									
9									
10		light to dark brown silty clayey SAND (SM-SC)		8.5-10	6-4-3	7			
11									
12									
13									
14									
15		olive grey fine sandy CLAY (CH)		13.5-15	1-1-1	2			
16									
17									
18									
19									
20		olive grey fine sandy CLAY (CH)		18.5-20	WOH	0			
21									
22									
23									
24									
25		olive grey clayey SAND- SAND CLAY mix (SC)		23.5-25	WOH	0			

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. B-4
Sheet 2 of 2

SITE Plant Scholz Ash Pond TOTAL DEPTH 47' SURF.ELEV. NA

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
26									
27									
28									
29									
30		No Recovery		28.5-30	1-1-1	2			
31									
32									
33									
34									
35		light grey clayey SILT (ML) w/ rock fragments		33.5-35	7-18-21	39			
36									
37									
38									
39									
40		white to bluish CLAY to silty CLAY (CL)		38.5-40	13-14-50/3	ref			
41									
42									
43									
44									
45		rock fragments		43.5-45	50/1	ref			
46									
47									
48		Refusal @ 47'							
49									
50									
51									
52									
53									
54									
55									
56									
57									

Form GS9901 7-26-2004

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DRILLING LOG
GEOLOGICAL SERVICES

Hole No. B-5
Sheet 1 of 2

SITE: Plant Scholz Ash Pond | HOLE DEPTH: 50' | SURF.ELEV.: NA

LOCATION: Sneads, Florida | GPS coordinates N: 30 39.943 | W: 084 53.420

DRILLING METHOD: Mud rotary | NO. SAMPLES: NA | NO. U.D. SAMPLES: NA

CASING SIZE: NA | LENGTH: NA | CORE SIZE: NA | TOTAL % REC.: NA

WATER TABLE DEPTH: NA | ELEV.: NA | TIME AFTER COMP.: NA | DATE TAKEN: NA

TYPE GROUT: NA | QUANTITY: NA | MIX: NA | DRILLING START DATE: 10/30/2009

DRILLER: Universal | RECORDER: M. Boatright | APPROVED: B. Coates | DRILLING COMP. DATE: 10/30/2009

Depth	Elev.	Material Description, Classification and Remarks	Sample No.	Standard Penetration Test From To	Blows	N	Comments	% Rec	RQD
0									
1									
2									
3									
4									
5		grey brown siilty fine SAND (SP) trace clay		3.5-5.0	8-11-11	22			
6									
7									
8									
9									
10		olive grey clayey silty fine SAND (SP)		8.5-10	1-1-1	2			
11									
12									
13									
14									
15		grey to dark brown clayey fine to med SAND (SP-SC)		13.5-15	3-1-2	3			
16									
17									
18									
19									
20		orange brown clayey fine to med SAND (SP-SC)		18.5-20	9-9-10	19			
21									
22									
23									
24									
25		white to yellowish brown silty CLAY (CH)		23.5-25	0-0-1	1			

EXHIBIT
tabbies' GPSH # 6

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GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)
1 inch = 250 ft.

PLANT SCHOLZ
North and East Dike
Boring Locations

Southern Company Generation
Engineering and Construction Services
FOR
Gulf Power Company

SCALE	PROJ I.D.	DRAWING NUMBER	SHEET	CONT'D	REV
AS SHOWN		**FIGURE 1**	1	FINAL	0

Appendix B

USEPA Checklists

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Gulf Power- Plant Scholz	Date:	August 22, 2012
Unit Name:	Upper East Pond	Operator's Name:	Gulf Power
Unit I.D.:		Hazard Potential Classification:	High (Significant) Low
Inspector's Name:	William Fox/ Eduardo Gutierrez		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Weekly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	126.0		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	123.7		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	DNA		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	131.0		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	DNA		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	DNA		From underdrain?		X
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	DNA		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	DNA		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?	DNA		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?	X		24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
1.	Weekly by plant personnel, annually by Southern Company Services.
2,3,5.	Referenced to Mean Sea Level (MSL).
6.	Instrumentation is not present.
12.	Trashracks are not present.
17.	Shallow scarps appear to have been repaired recently.

N/A = Not Available
DNA = Does Not Apply

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # 0002283 INSPECTOR William Fox and Eduardo Gutierrez

Date August 22, 2012

Impoundment Name Upper East Pond

Impoundment Company Gulf Power

EPA Region 4

State Agency (Field Office) Addresss 61 Forsyth Street, SW
Atlanta, Ga 30303-8960

Name of Impoundment Upper East Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	X	_____

IMPOUNDMENT FUNCTION: Receives process and plant water; storage and primary settling of coal combustion waste (ash)

Nearest Downstream Town : Name Bristol, Florida

Distance from the impoundment 17 miles

Impoundment Location:
Longitude 84 Degrees 53 Minutes 25.09W Seconds
Latitude 30 Degrees 40 Minutes 10.73N Seconds
State Florida County Jackson

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Florida Department of Environmental Protection

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

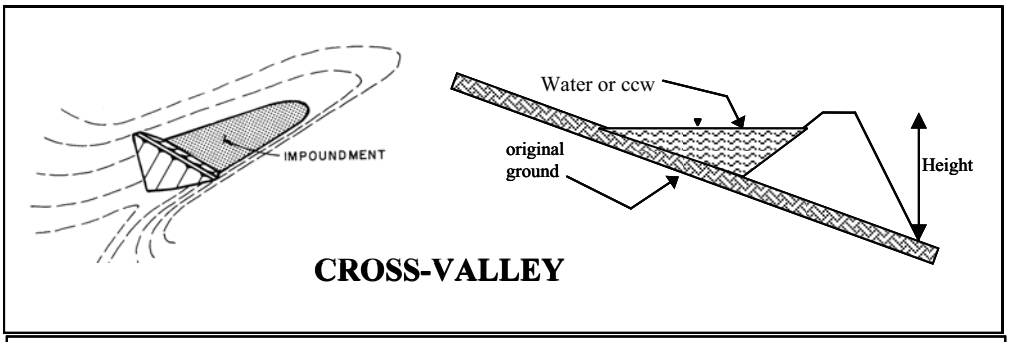
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

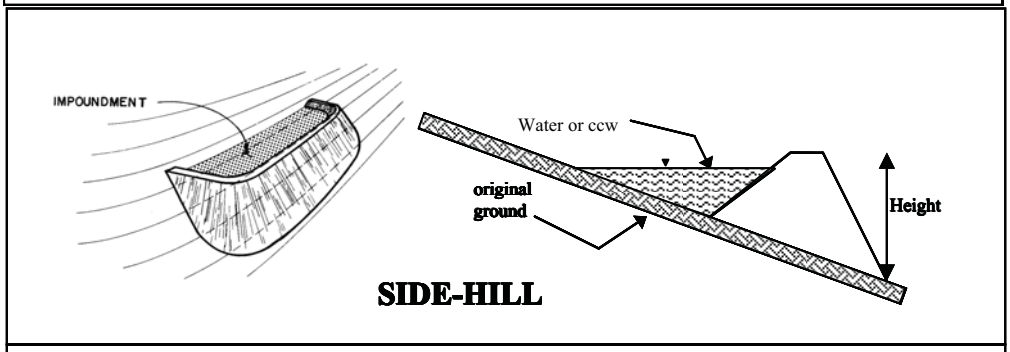
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

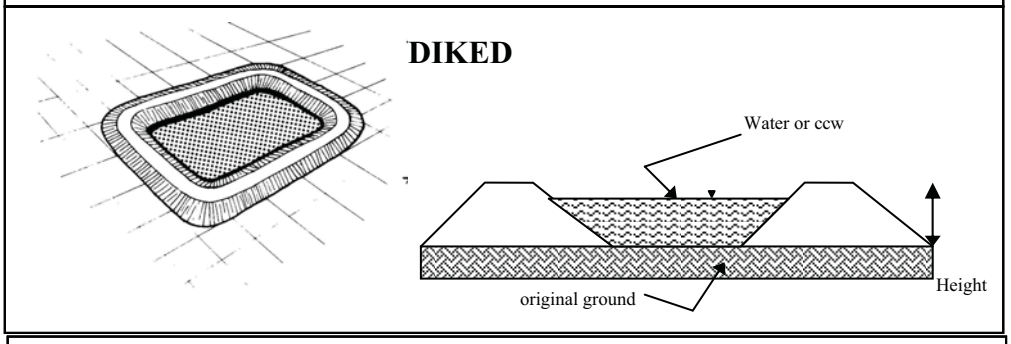
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

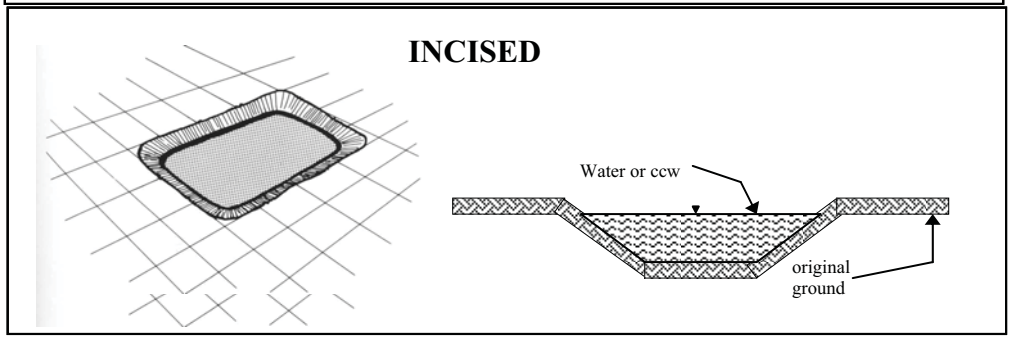
Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to adjacent waterways and downstream areas. Loss of human life as a result of failure or mis-operation is not anticipated.

CONFIGURATION:









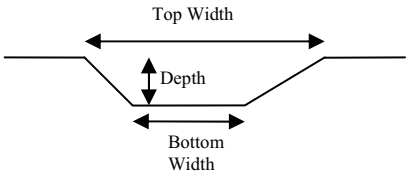
_____ Cross-Valley
_____ Side-Hill
__X__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

Embankment Height 35 feet
Pool Area 2.5 acres
Current Freeboard 5 feet
Embankment Material Ash/soil mix
Liner Not Applicable
Liner Permeability Not Applicable

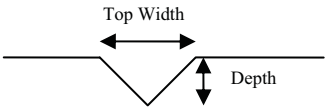
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

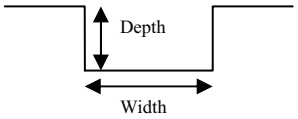


TRIANGULAR

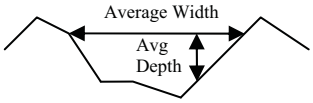


_____ depth
_____ bottom (or average) width
_____ top width
_____

RECTANGULAR

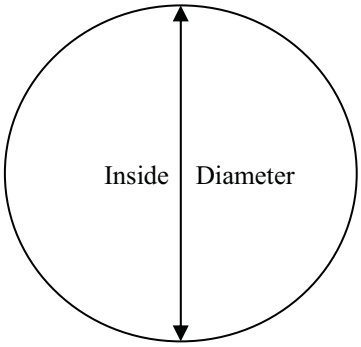


IRREGULAR



__X__ **Outlet**

18" inside diameter



Material
_____ corrugated metal
_____ welded steel
_____ concrete
__X__ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

_____

Is water flowing through the outlet? YES __X__ NO _____

_____ **No Outlet**

_____

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By Southern Company Services
_____

Has there ever been a failure at this site? YES _____ NO ____X____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES X NO _____

If So When? October 2, 2010

IF So Please Describe:

Piping was discovered by plant personnel during routine observations near the outboard toe of slope of the north dike. Effluent did not leave the plant property. Maintenance and repairs were made on the same day. Initial repairs consisted of placing and compacting available backfill soils. Final repairs consisted placing an inverted filter system consisting of sand overlain by #89 and #57 gradation stone.

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X__

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Gulf Power- Plant Scholz	Date:	August 22, 2012
Unit Name:	Upper Middle Pond	Operator's Name:	Gulf Power
Unit I.D.:		Hazard Potential Classification:	High (Significant) Low
Inspector's Name:	William Fox/ Eduardo Gutierrez		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Weekly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	123.0		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	122.7		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	DNA		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	128.0		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	DNA		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	DNA		From underdrain?		DNA
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	DNA		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	DNA		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?	DNA		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?	X	
17. Cracks or scarps on slopes?	X		24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
1.	Weekly by plant personnel, annually by Southern Company Services.
2,3,5.	Referenced to Mean Sea Level (MSL).
6.	Instrumentation is not present.
12.	Trashracks are not present.
17.	Several shallow scarps on interior slopes; Frequency of one every @50 feet.
23.	Upper East Pond at east embankment downstream side and Upper West Pond at west embankment downstream side.

N/A = Not Available
DNA = Does Not Apply

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # 0002283 INSPECTOR William Fox and Eduardo Gutierrez

Date August 22, 2012

Impoundment Name Upper Middle Pond

Impoundment Company Gulf Power

EPA Region 4

State Agency (Field Office) Addresss 61 Forsyth Street, SW
Atlanta, Ga 30303-8960

Name of Impoundment Upper Middle Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	X	_____

IMPOUNDMENT FUNCTION: Receives process water from Upper East Pond; storage and secondary settling of coal combustion waste (ash)

Nearest Downstream Town : Name Bristol, Florida

Distance from the impoundment 17 miles

Impoundment Location:
Longitude 84 Degrees 53 Minutes 26.94W Seconds
Latitude 30 Degrees 40 Minutes 8.99N Seconds
State Florida County Jackson

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Florida Department of Environmental Protection

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

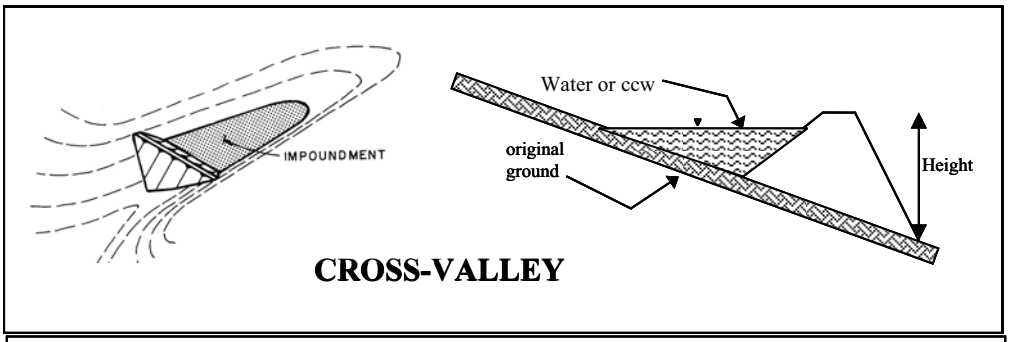
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

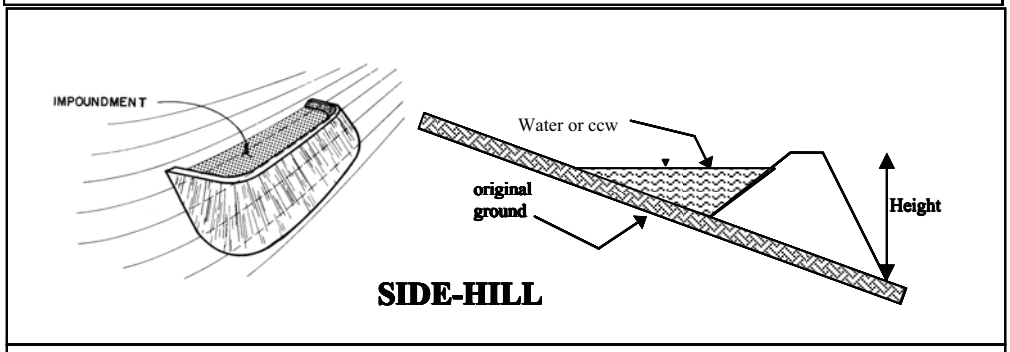
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

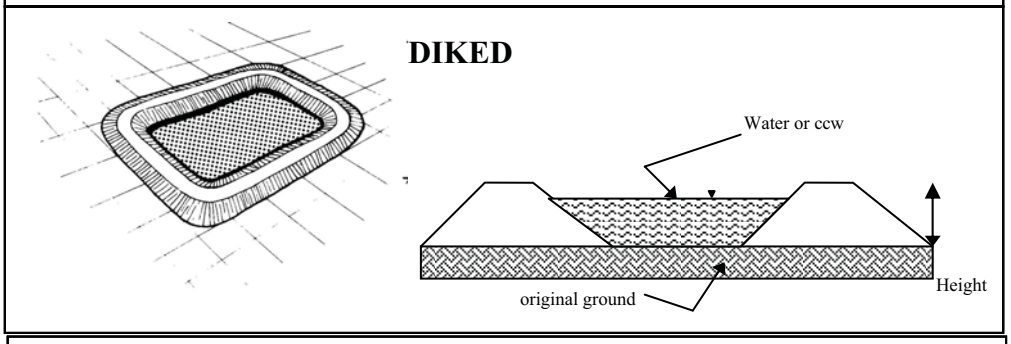
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

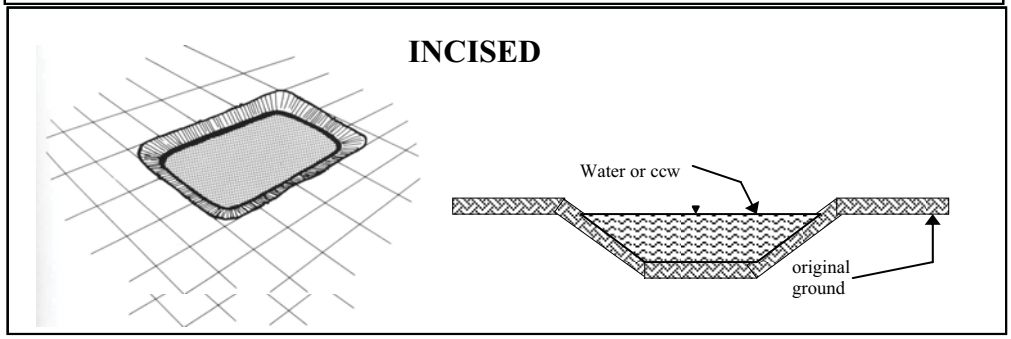
Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities. Loss of human life as a result of failure or mis-operation is not anticipated.

CONFIGURATION:









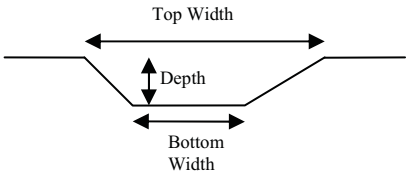
_____ Cross-Valley
_____ Side-Hill
__X__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

Embankment Height 8 feet
Pool Area 3.5 acres
Current Freeboard 5 feet
Embankment Material Ash/soil mix
Liner Not Applicable
Liner Permeability Not Applicable

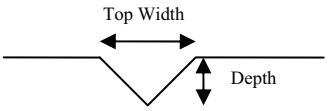
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

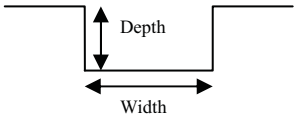


TRIANGULAR

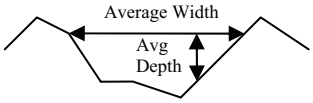


_____ depth
_____ bottom (or average) width
_____ top width
_____

RECTANGULAR

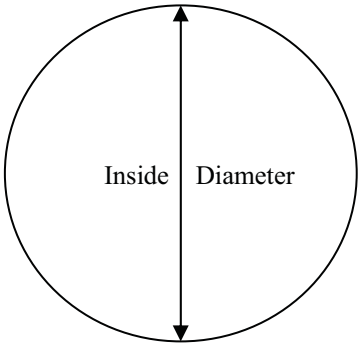


IRREGULAR



__X__ **Outlet**

__18"__ inside diameter



Material
_____ corrugated metal
_____ welded steel
_____ concrete
__X__ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

_____

Is water flowing through the outlet? YES __X__ NO _____

_____ **No Outlet**

_____

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Southern Company Services_____
_____

Has there ever been a failure at this site? YES _____ NO ____X____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __x__

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X__

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Gulf Power- Plant Scholz	Date:	August 22, 2012
Unit Name:	Upper West Pond	Operator's Name:	Gulf Power
Unit I.D.:		Hazard Potential Classification:	High (Significant) Low
Inspector's Name:	William Fox/ Eduardo Gutierrez		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Weekly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	120.5		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	120.5		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	DNA		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	123.0		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	DNA		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	DNA		From underdrain?		DNA
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	DNA		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	DNA		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?	DNA		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?	X	
17. Cracks or scarps on slopes?	X		24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
1.	Weekly by plant personnel, annually by Southern Company Services.
2,3,5.	Referenced to Mean Sea Level (MSL).
6.	Instrumentation is not present.
12.	Trashracks are not present.
17.	Several shallow scarps on interior slopes; Frequency of one every @50 feet.
21.	Ponded water on certain areas at toe of slope due to rain on previous days.
23.	Upper Middle Pond at east embankment downstream side and Middle Pond at south embankment downstream toe.

N/A = Not Available
DNA = Does Not Apply

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # 0002283 INSPECTOR William Fox and Eduardo Gutierrez

Date August 22, 2012

Impoundment Name Upper West Pond

Impoundment Company Gulf Power

EPA Region 4

State Agency (Field Office) Addresss 61 Forsyth Street, SW
Atlanta, Ga 30303-8960

Name of Impoundment Upper West Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	X	_____

IMPOUNDMENT FUNCTION: Receives process water from Upper Middle Pond; storage and tertiary settling of coal combustion waste (ash)

Nearest Downstream Town : Name Bristol, Florida

Distance from the impoundment 17 miles

Impoundment Location:
Longitude 84 Degrees 53 Minutes 30.16W Seconds
Latitude 30 Degrees 40 Minutes 10.35N Seconds
State Florida County Jackson

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Florida Department of Environmental Protection

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

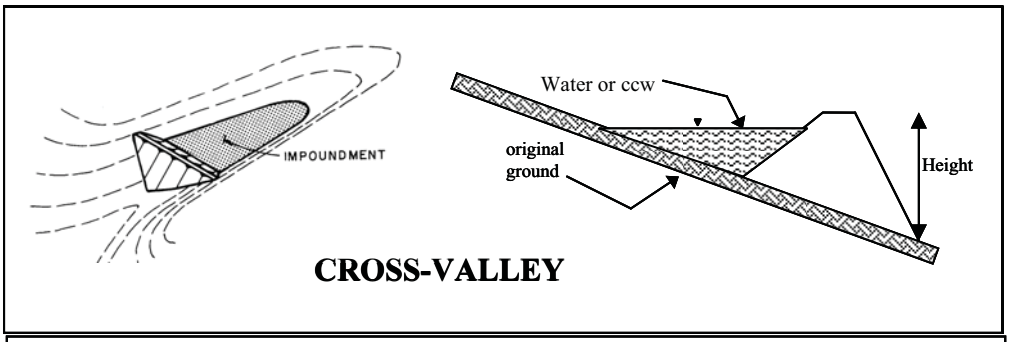
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

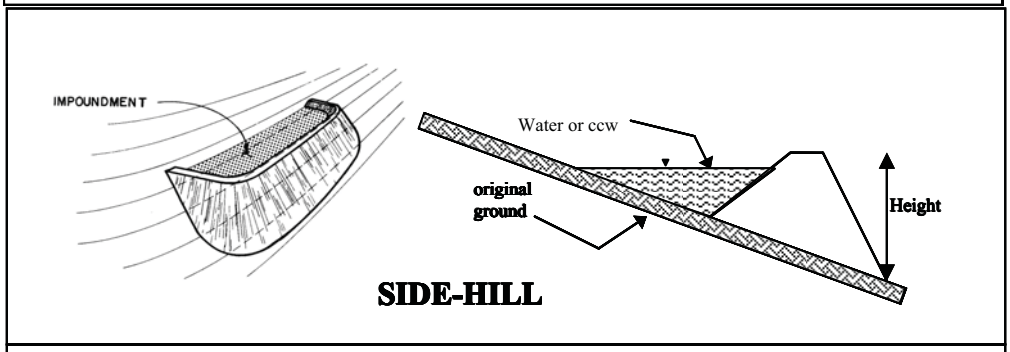
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

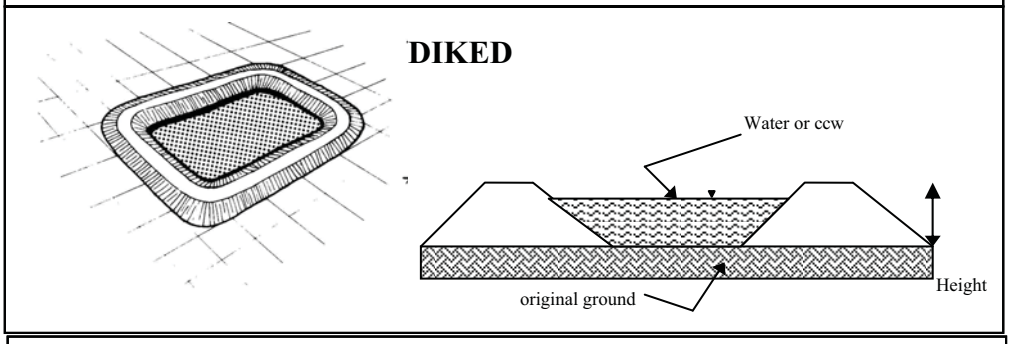
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

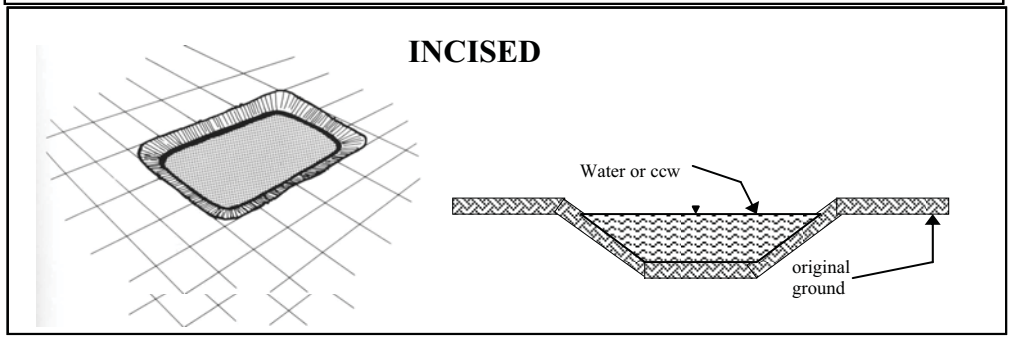
Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to downstream areas. Loss of human life as a result of failure or mis-operation is not anticipated.

CONFIGURATION:









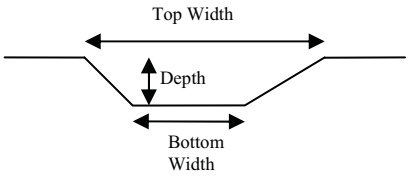
_____ Cross-Valley
_____ Side-Hill
_____ Diked
_____ Incised (form completion optional)
__X__ Combination Incised/Diked

Embankment Height 8 feet
Pool Area 4.5 acres
Current Freeboard 2-1/2 feet
Embankment Material Ash/soil mix
Liner Not Applicable
Liner Permeability Not Applicable

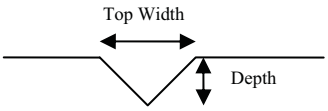
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

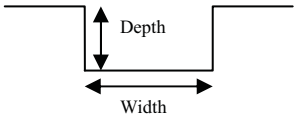


TRIANGULAR

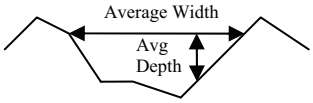


_____ depth
_____ bottom (or average) width
_____ top width
_____

RECTANGULAR

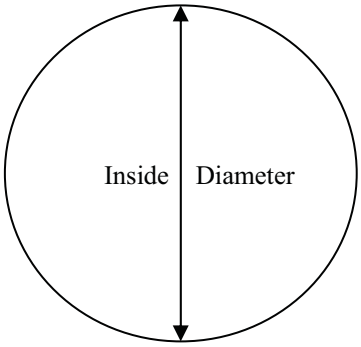


IRREGULAR



__X__ **Outlet**

__18"__ inside diameter



Material
_____ corrugated metal
_____ welded steel
_____ concrete
__X__ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

_____

Is water flowing through the outlet? YES __X__ NO _____

_____ **No Outlet**

_____

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Southern Company Services_____
_____

Has there ever been a failure at this site? YES _____ NO ____X____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __x__

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X__

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Gulf Power- Plant Scholz	Date:	August 22, 2012
Unit Name:	Middle Pond	Operator's Name:	Gulf Power
Unit I.D.:		Hazard Potential Classification:	High (Significant) Low
Inspector's Name:	William Fox/ Eduardo Gutierrez		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Weekly		18. Sloughing or bulging on slopes?		X
2. Pool elevation (operator records)?	110.0		19. Major erosion or slope deterioration?		X
3. Decant inlet elevation (operator records)?	109.7		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	DNA		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	112.0		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	DNA		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	DNA		From underdrain?		DNA
9. Trees growing on embankment? (If so, indicate largest diameter below)		X	At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	DNA		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	DNA		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?	DNA		22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?	X	
17. Cracks or scarps on slopes?		X	24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
1.	Weekly by plant personnel, annually by Southern Company Services.
2,3,5.	Referenced to Mean Sea Level (MSL).
6.	Instrumentation is not present.
12.	Trashracks are not present.
23.	Lower Pond at south embankment downstream toe.

N/A = Not Available
DNA = Does Not Apply

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # 0002283 INSPECTOR William Fox and Eduardo Gutierrez

Date August 22, 2012

Impoundment Name Middle Pond

Impoundment Company Gulf Power

EPA Region 4

State Agency (Field Office) Addresss 61 Forsyth Street, SW
Atlanta, Ga 30303-8960

Name of Impoundment Middle Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?		X
Is water or ccw currently being pumped into the impoundment?	X	

IMPOUNDMENT FUNCTION: Receives process water from Upper West Pond; storage and additional settling of coal combustion waste (ash)

Nearest Downstream Town : Name Bristol, Florida

Distance from the impoundment 17 miles

Impoundment Location:
Longitude 84 Degrees 53 Minutes 32.43W Seconds
Latitude 30 Degrees 40 Minutes 2.79N Seconds
State Florida County Jackson

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Florida Department of Environmental Protection

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

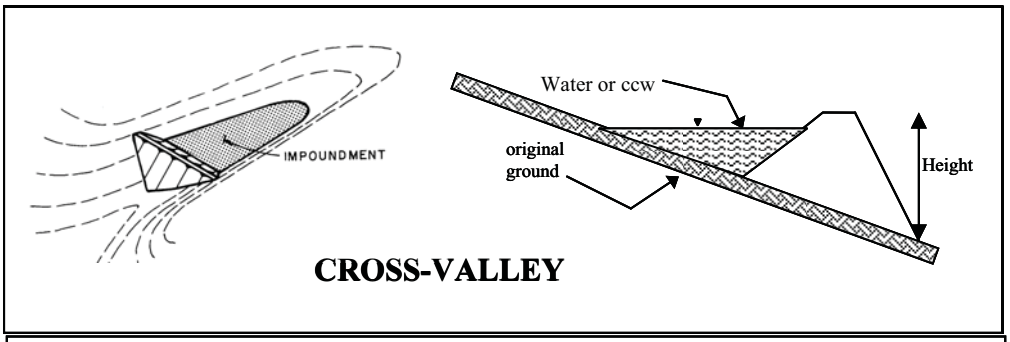
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

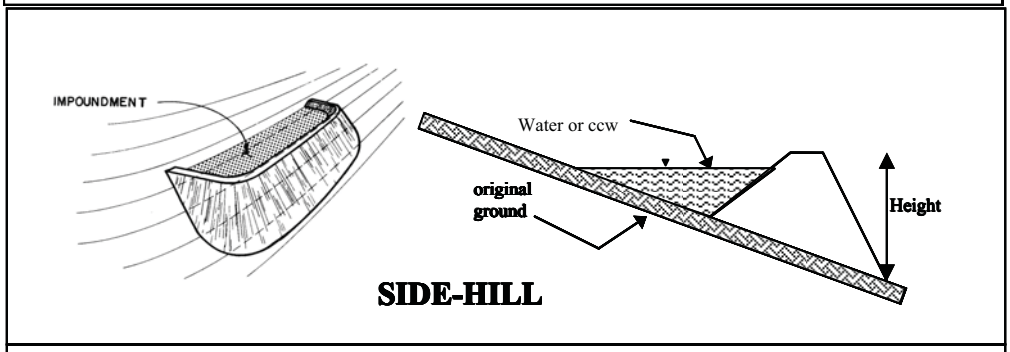
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

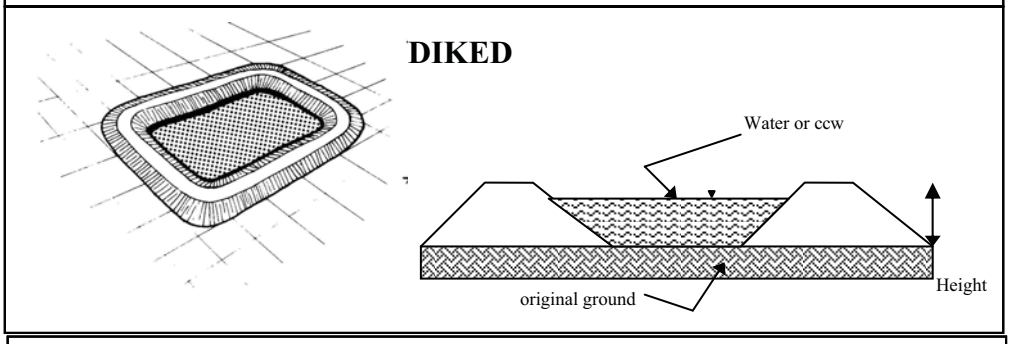
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

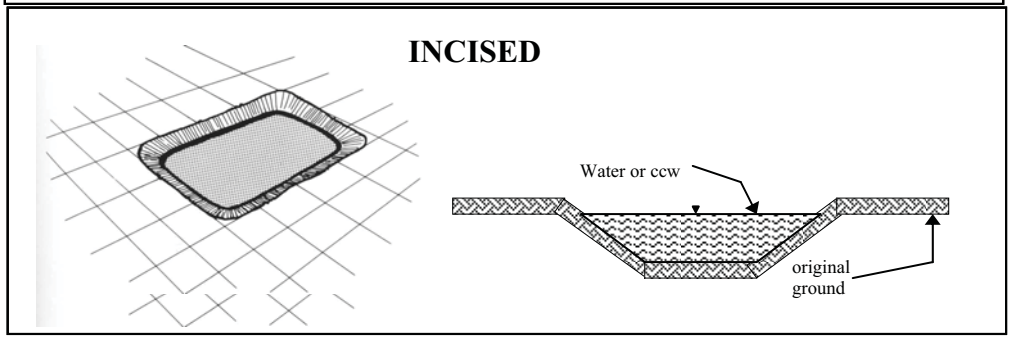
Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to downstream areas. Loss of human life as a result of failure or mis-operation is not anticipated.

CONFIGURATION:









_____ Cross-Valley
_____ Side-Hill
_____ Diked
_____ Incised (form completion optional)
__X__ Combination Incised/Diked

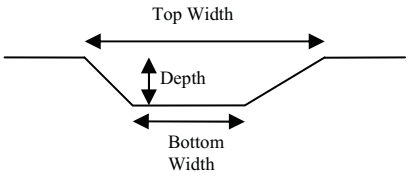
Embankment Height 13 feet
Pool Area 6.3 acres
Current Freeboard 2 feet

Embankment Material Ash/soil mix
Liner Not Applicable
Liner Permeability Not Applicable

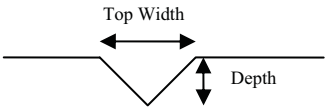
TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL

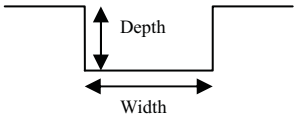


TRIANGULAR



_____ depth
_____ bottom (or average) width
_____ top width
_____

RECTANGULAR



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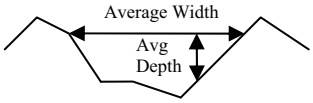
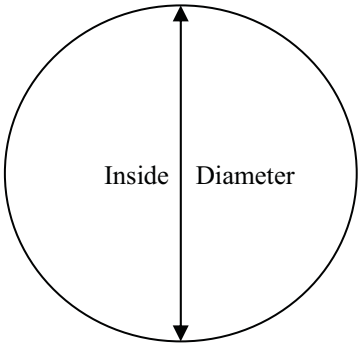


__X__ **Outlet**

__18"__ inside diameter



Material
_____ corrugated metal
_____ welded steel
_____ concrete
__X__ plastic (hdpe, pvc, etc.)
_____ other (specify) _____

_____

Is water flowing through the outlet? YES __X__ NO _____

_____ **No Outlet**

_____

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Southern Company Services_____
_____

Has there ever been a failure at this site? YES _____ NO ____X____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __x__

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X__

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Coal Combustion Dam Inspection Checklist Form

US Environmental Protection Agency

Site Name:	Gulf Power- Plant Scholz	Date:	August 22, 2012
Unit Name:	Lower Pond	Operator's Name:	Gulf Power
Unit I.D.:		Hazard Potential Classification:	High (Significant) Low
Inspector's Name:	William Fox/ Eduardo Gutierrez		

Check the appropriate box below. Provide comments when appropriate. If not applicable or not available, record "N/A". Any unusual conditions or construction practices that should be noted in the comments section. For large diked embankments, separate checklists may be used for different embankment areas. If separate forms are used, identify approximate area that the form applies to in comments.

	Yes	No		Yes	No
1. Frequency of Company's Dam Inspections?	Weekly		18. Sloughing or bulging on slopes?	X	
2. Pool elevation (operator records)?	97.6		19. Major erosion or slope deterioration?	X	
3. Decant inlet elevation (operator records)?	97.6		20. Decant Pipes:		
4. Open channel spillway elevation (operator records)?	DNA		Is water entering inlet, but not exiting outlet?		X
5. Lowest dam crest elevation (operator records)?	104.0		Is water exiting outlet, but not entering inlet?		X
6. If instrumentation is present, are readings recorded (operator records)?	DNA		Is water exiting outlet flowing clear?	X	
7. Is the embankment currently under construction?		X	21. Seepage (specify location, if seepage carries fines, and approximate seepage rate below):		
8. Foundation preparation (remove vegetation,stumps, topsoil in area where embankment fill will be placed)?	DNA		From underdrain?		DNA
9. Trees growing on embankment? (If so, indicate largest diameter below)	X		At isolated points on embankment slopes?		X
10. Cracks or scarps on crest?		X	At natural hillside in the embankment area?		X
11. Is there significant settlement along the crest?		X	Over widespread areas?		X
12. Are decant trashracks clear and in place?	DNA		From downstream foundation area?		X
13. Depressions or sinkholes in tailings surface or whirlpool in the pool area?		X	"Boils" beneath stream or ponded water?		X
14. Clogged spillways, groin or diversion ditches?	DNA		Around the outside of the decant pipe?		X
15. Are spillway or ditch linings deteriorated?		X	22. Surface movements in valley bottom or on hillside?		X
16. Are outlets of decant or underdrains blocked?		X	23. Water against downstream toe?		X
17. Cracks or scarps on slopes?	X		24. Were Photos taken during the dam inspection?	X	

Major adverse changes in these items could cause instability and should be reported for further evaluation. Adverse conditions noted in these items should normally be described (extent, location, volume, etc.) in the space below and on the back of this sheet.

Inspection Issue #	Comments
1.	Weekly by plant personnel, annually by Southern Company Services.
2,3,5.	Referenced to Mean Sea Level (MSL).
6.	Instrumentation is not present.
9.	Trees up to 24 inches in diameter.
12.	Trashracks are not present.
17,18,19.	Several scarps, areas of sloughing, and eroded areas were observed along the south outboard slopes.

N/A = Not Available
DNA = Does Not Apply

U. S. Environmental Protection Agency

Coal Combustion Waste (CCW)
Impoundment Inspection

Impoundment NPDES Permit # 0002283 INSPECTOR William Fox and Eduardo Gutierrez

Date August 22, 2012

Impoundment Name Lower Pond

Impoundment Company Gulf Power

EPA Region 4

State Agency (Field Office) Addresss 61 Forsyth Street, SW
Atlanta, Ga 30303-8960

Name of Impoundment Lower Pond

(Report each impoundment on a separate form under the same Impoundment NPDES Permit number)

New X Update _____

	Yes	No
Is impoundment currently under construction?	_____	X
Is water or ccw currently being pumped into the impoundment?	X	_____

IMPOUNDMENT FUNCTION: Receives process water from Middle Pond; storage and additional settling of coal combustion waste (ash)

Nearest Downstream Town : Name Bristol, Florida

Distance from the impoundment 17 miles

Impoundment Location:
Longitude 84 Degrees 53 Minutes 22.59W Seconds
Latitude 30 Degrees 40 Minutes 0.45N Seconds
State Florida County Jackson

Does a state agency regulate this impoundment? YES X NO _____

If So Which State Agency? Florida Department of Environmental Protection

HAZARD POTENTIAL (In the event the impoundment should fail, the following would occur):

_____ **LESS THAN LOW HAZARD POTENTIAL:** Failure or misoperation of the dam results in no probable loss of human life or economic or environmental losses.

_____ **LOW HAZARD POTENTIAL:** Dams assigned the low hazard potential classification are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

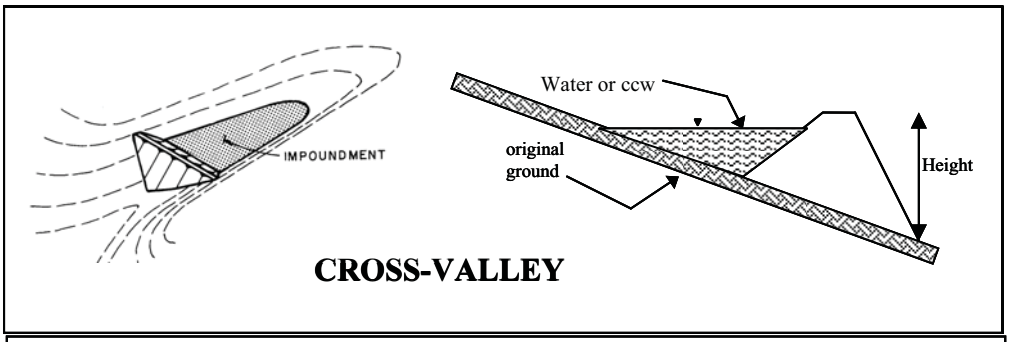
__X__ **SIGNIFICANT HAZARD POTENTIAL:** Dams assigned the significant hazard potential classification are those dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.

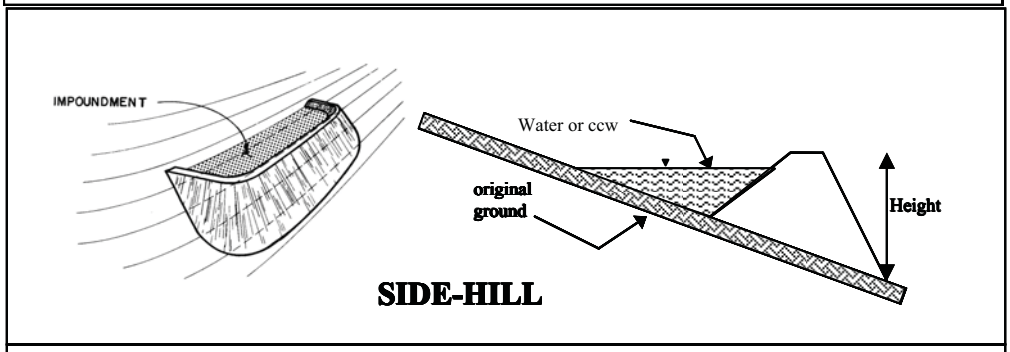
_____ **HIGH HAZARD POTENTIAL:** Dams assigned the high hazard potential classification are those where failure or misoperation will probably cause loss of human life.

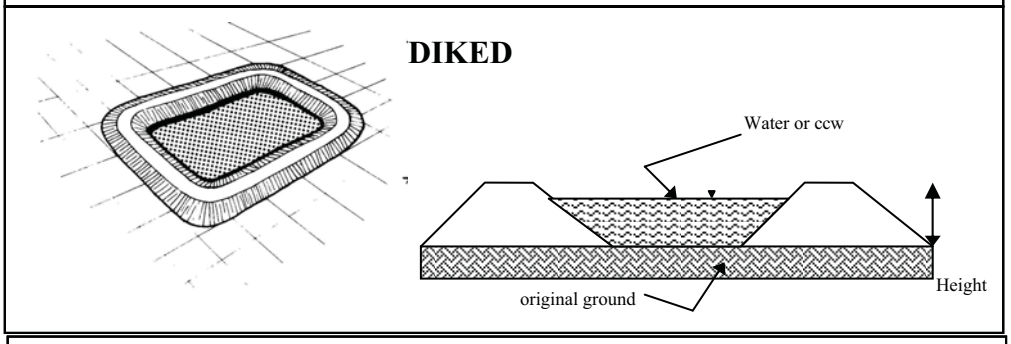
DESCRIBE REASONING FOR HAZARD RATING CHOSEN:

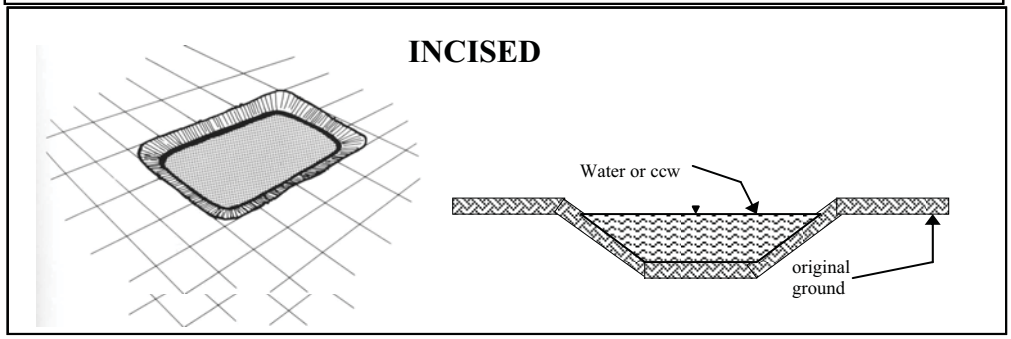
Failure or mis-operation could result in economic loss and damage to plant infrastructure, operations and utilities, and environmental damage to adjacent waterways and downstream areas. Loss of human life as a result of failure or mis-operation is not anticipated.

CONFIGURATION:









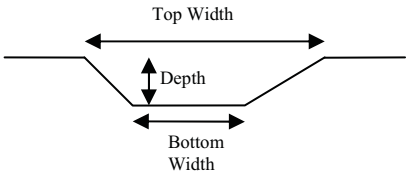
_____ Cross-Valley
_____ Side-Hill
__X__ Diked
_____ Incised (form completion optional)
_____ Combination Incised/Diked

Embankment Height 30 feet
Pool Area 11.4 acres
Current Freeboard 6-1/2 feet
Embankment Material Ash/soil mix
Liner Not Applicable
Liner Permeability Not Applicable

TYPE OF OUTLET (Mark all that apply)

_____ **Open Channel Spillway**
_____ Trapezoidal
_____ Triangular
_____ Rectangular
_____ Irregular

TRAPEZOIDAL



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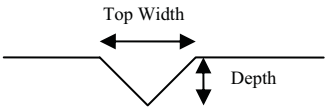

_____ depth
_____ bottom (or average) width
_____ top width
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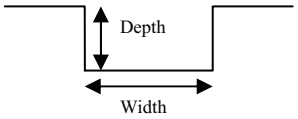
RECTANGULAR



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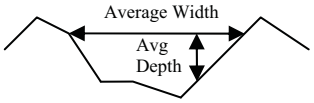
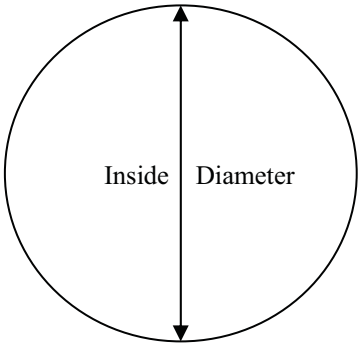


__X__ **Outlet** (vertical riser pipe)

__24"__ inside diameter



Material
_____ corrugated metal
_____ welded steel
_____ concrete
_____ plastic (hdpe, pvc, etc.)
__X__ other (specify) __steel_____

_____

Is water flowing through the outlet? YES __X__ NO _____

_____ **No Outlet**

_____

_____ **Other Type of Outlet** (specify) _____

The Impoundment was Designed By __Southern Company Services_____
_____

Has there ever been a failure at this site? YES _____ NO ____X____

If So When? _____

If So Please Describe : _____

Has there ever been significant seepages at this site? YES _____ NO __x__

If So When? _____

IF So Please Describe: _____

Has there ever been any measures undertaken to monitor/lower Phreatic water table levels based on past seepages or breaches at this site? YES _____ NO __X__

If so, which method (e.g., piezometers, gw pumping,...)? _____

If so Please Describe : _____

Appendix C

Photographs

Appendix C
Photographs GPS Locations

Site: Gulf Power - Plant Scholz
Datum: NAD83
Coordinate Units: Decimal Degrees

Photograph No.	Latitude	Longitude
1	30.667294	-84.887785
2	30.667193	-84.887926
3	30.666788	-84.888340
4	30.666476	-84.888677
5	30.666368	-84.888763
6	30.666202	-84.889134
7	30.666466	-84.888796
8	30.666143	-84.889201
9	30.666063	-84.889299
10	30.665990	-84.889382
11 - 15	30.665702	-84.889070
16	30.665812	-84.888826
17	30.666059	-84.888459
18	30.666157	-84.888335
19	30.665718	-84.889669
20	30.665811	-84.889612
21	30.665657	-84.889903
22	30.665777	-84.889912
23	30.665711	-84.890328
24	30.665838	-84.891014
25	30.665901	-84.891100
26	30.666287	-84.891445
27	30.666347	-84.891559
28	30.666413	-84.891485
29	30.666719	-84.890789
30	30.667423	-84.889823
31	30.667505	-84.889893
32	30.667503	-84.889699
33	30.667664	-84.889686
34	30.667710	-84.889537
35	30.667583	-84.889592
36	30.667829	-84.889654
37	30.667933	-84.889731
38	30.667864	-84.889872
39	30.667878	-84.890099
40	30.667927	-84.889988
41	30.667755	-84.890410
42	30.667821	-84.890299
43	30.668194	-84.889930
44	30.668133	-84.890012
45	30.668517	-84.889419
46	30.668996	-84.889666
47	30.669125	-84.889734
48	30.669095	-84.889588
49	30.669390	-84.889673
50	30.669479	-84.889687
51	30.669670	-84.889856
52	30.670779	-84.890123
53	30.670950	-84.890432

Appendix C
Photographs GPS Locations

Site: Gulf Power - Plant Scholz
Datum: NAD83
Coordinate Units: Decimal Degrees

Photograph No.	Latitude	Longitude
54	30.670790	-84.890322
55	30.670907	-84.890336
56	30.670861	-84.890439
57	30.670181	-84.890239
58	30.670274	-84.890283
59	30.669474	-84.889957
60	30.669394	-84.889922
61	30.671167	-84.890494
62	30.671167	-84.890494
63	30.671119	-84.890797
64	30.671141	-84.890700
65	30.670985	-84.890951
66	30.670959	-84.891067
67	30.670917	-84.891155
68	30.670762	-84.891569
69	30.669328	-84.892616
70	30.669723	-84.892283
71	30.669893	-84.892277
72	30.669838	-84.892188
73	30.669621	-84.892222
74	30.669063	-84.892461
75	30.668946	-84.892609
76	30.669044	-84.892585
77	30.668949	-84.892495
78	30.668720	-84.892239
79	30.668643	-84.892207
80	30.668435	-84.891501
81	30.668372	-84.891407
82	30.668242	-84.891195
83	30.668413	-84.891320
84	30.668367	-84.891255
85	30.668566	-84.891318
86	30.668492	-84.891191
87	30.668614	-84.891155
88	30.669283	-84.891102
89	30.670326	-84.891330
90	30.670503	-84.891364
91	30.670524	-84.891507
92	30.670647	-84.891425
93	30.670534	-84.890820
94	30.670549	-84.890902
95	30.670267	-84.890721
96	30.670255	-84.890850
97	30.669388	-84.890581
98	30.669544	-84.890624
99	30.669461	-84.890491
100	30.669547	-84.890512
101	30.669458	-84.890676
102	30.668766	-84.890435

Appendix C
Photographs GPS Locations

Site: Gulf Power - Plant Scholz
Datum: NAD83
Coordinate Units: Decimal Degrees

Photograph No.	Latitude	Longitude
103	30.668686	-84.890332
104	30.668244	-84.890329
105	30.668157	-84.890439
106	30.668244	-84.890211
107	30.667953	-84.890557
108	30.667925	-84.890443
109	30.666825	-84.890850
110	30.667058	-84.890421
111	30.667128	-84.890320
112	30.666877	-84.890718
113	30.666616	-84.891956
114	30.666480	-84.891709
115	30.667009	-84.892466
116	30.666959	-84.892520
117	30.667116	-84.892616
118	30.667393	-84.892646
119	30.668148	-84.892650
120	30.668224	-84.892669
121	30.668205	-84.893001
122	30.667897	-84.888167
123	30.667856	-84.888056
124	30.667892	-84.888543
125	30.667917	-84.888904
126	30.667919	-84.889102
127	30.667927	-84.889222

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 1: Lower Pond – Southeast embankment exterior slope, looking southwest. Note trees and dense vegetation.

Photo 2: Lower Pond – Southeast embankment interior slope, looking southwest.

Photo 3: Lower Pond – Southeast embankment exterior slope, looking southwest. Note erosion of crest and trees/dense vegetation on exterior slope.

Photo 4: Lower Pond – Southeast embankment exterior slope, looking east. Note steepness, eroded areas along crest, trees, and dense vegetation.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 5: Lower Pond – Southeast embankment exterior slope, looking south-west. Note steepness, eroded areas along crest, trees, and dense vegetation.

Photo 6: Lower Pond – Southeast embankment interior slope, looking northeast.

Photo 7: Lower Pond – Southeast embankment interior slope, 5-foot long by 1-foot wide by 16-inches deep scarp, looking southeast.

Photo 8: Lower Pond – Southeast embankment exterior slope, chemical storage system looking west.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 9: Lower Pond – Southeast embankment interior slope, Morning glory-type drop inlet structure. Pipe is metal, 24-inches in diameter with a trash rack.

Photo 10: Lower Pond – Southeast embankment interior slope, Morning glory-type drop inlet structure. Pipe is metal, 24-inches in diameter with a trash rack.

Photo 11: Lower Pond – Outside southeast embankment exterior slope, outlet structure looking northeast. Outflow to lined ditch is through V-notch weir.

Photo 12: Lower Pond – Outside southeast embankment exterior slope, outlet structure looking northwest. Outlet from pond is via 27-inch diameter Reinforced Concrete Pipe (RCP).

CDM Smith

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 13: Lower Pond – Outside south embankment exterior slope, outlet structure located at toe of exterior slope, looking southwest.

Photo 14: Lower Pond – Outside south embankment exterior slope, outlet structure with discharge from pond area flowing through lined ditch.

Photo 15: Lower Pond – Outside Southeast embankment exterior slope, general view of outlet structure and flow-meter, looking southeast.

Photo 16: Lower Pond – Southeast embankment exterior slope, looking north From toe. Note steepness, trees, and dense vegetation.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 17: Lower Pond – Southeast embankment exterior slope, looking north from toe. Note scarps, steepness, trees, and dense vegetation.

Photo 18: Lower Pond – Outside southeast embankment exterior slope Fabri-Form installation discharge channel located in wooded area beyond toe of exterior slope looking east.

Photo 19: Lower Pond – Southeast embankment exterior slope, looking southwest. Note trees, dense vegetation, and erosion along crest.

Photo 20: Lower Pond – Southeast embankment interior slope, looking north.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 21: Lower Pond – South embankment exterior slope, Miscellaneous trash and debris.

Photo 22: Lower Pond – South embankment interior slope, looking west.

Photo 23: Lower Pond – South embankment exterior slope, Miscellaneous trash and debris looking west.

Photo 24: Lower Pond – Southwest embankment exterior slope, groundwater monitoring wells looking west.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 25: Lower Pond – Southwest embankment toe of exterior slope, Area of standing/ponded water looking west.

Photo 26: Lower Pond – Southwest embankment interior slope, looking southeast.

Photo 27: Lower Pond – Southwest embankment exterior slope looking southeast.

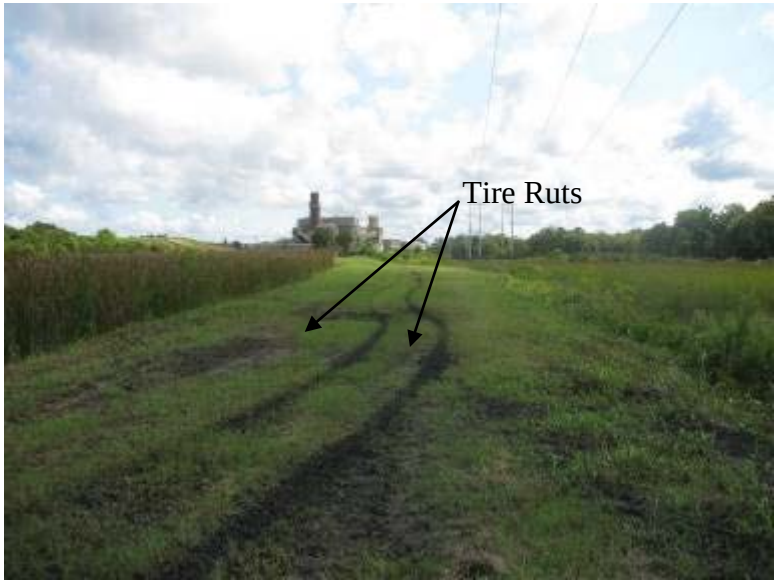


Photo 28: Lower and Middle pond – General view of crest of divider embankment looking northeast. Note tire ruts.

CDM Smith

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 29: Lower pond – Divider embankment interior slope looking northeast.

Photo 30: Lower pond – Divider embankment interior slope looking south.

Photo 31: Middle pond – Divider embankment interior slope looking southwest. Note erosion rills on slope.

Photo 32: Lower pond – Divider embankment interior slope, general view of pond surface looking south. Note the vegetation (cattails).

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 33: Middle Pond – Divider embankment interior slope, Morning glory-type drop inlet structure looking northwest. Pipe is 18-inch diameter metal.

Photo 34: Lower Pond – Divider embankment interior slope looking south. Note scarp.

Photo 35: Lower Pond – Divider embankment interior slope looking south.

Photo 36: Middle Pond – General view of pond surface looking south.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 37: Middle Pond – North embankment interior slope, erosion rill looking west.

Photo 38: Middle Pond – North embankment interior slope, erosion rill looking south.

Photo 39: Middle Pond – North embankment interior slope, general view of pond surface looking southwest. Note vegetation (cattails).

Photo 40: Middle Pond – North embankment interior slope, scarp looking west.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 41: Middle Pond – North embankment interior slope, scarp looking east.

Photo 42: Middle Pond – North embankment interior slope, erosion looking east.

Photo 43: Upper East Pond –East embankment interior slope, general view of inflow pipes looking northeast.

Photo 44: Upper East Pond – Divider embankment, general view looking north.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 45: Upper East Pond – East embankment exterior toe of slope looking north. Note recently repaired/backfilled areas where prior erosion had occurred.

Photo 46: Upper East Pond – East embankment exterior slope, looking south.

Photo 47: Upper East Pond – East embankment exterior slope, looking north.

Photo 48: Upper East Pond – East embankment exterior slope looking north. Note recent repair of erosion rills.

CDM Smith

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 49: Upper East Pond – East embankment exterior slope looking west. Note saturated area at toe of slope.

Photo 50: Upper East Pond – East embankment exterior toe of slope looking west. Note saturated area at toe of slope.

Photo 51: Upper East Pond – East embankment exterior toe of slope, looking west. Note area of possible seepage and depression 3-foot wide by 10-foot long by 6-inches deep.

Photo 52: Upper East Pond – East embankment exterior slope, looking south.

CDM Smith

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 53: Upper East Pond – North embankment interior slope looking west. Note buttressed slope from previous repairs.

Photo 54: Upper East Pond – Crest of divider embankment, looking south.

Photo 55: Upper East Pond – Crest of divider embankment interior slope, looking south.

Photo 56: Upper East Pond – Divider embankment interior slope, general view of pond surface, looking southwest.

EPA Assessment Gulf Power - Scholz Plant Photos August 22, 2012

Photo 57: Upper East Pond, Divider embankment interior slope looking south at embankment erosion.

Photo 58: Upper East Pond – Divider embankment interior slope, Inflow pipe looking west. Note eroded areas at discharge of pipe.

Photo 59: Upper East Pond – Crest of east embankment looking north.

Photo 60: Upper East Pond – Crest of East embankment looking south.

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Photo 61: Upper East Pond – North embankment exterior slope, repair of seepage area.

Photo 62: Upper East Pond – North embankment exterior slope, Repaired area where seepage from pond had previously occurred at toe of slope.

Photo 63: Upper East Pond –North embankment toe of exterior slope looking south. Note saturation at toe of slope.

Photo 64: Upper East Pond – North embankment toe of exterior slope looking south. Note saturation at toe of slope.

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Photo 65: Upper East Pond – North embankment exterior slope, looking east.

Photo 66: Upper East Pond –North embankment mid-slope, Animal burrow. Note burrow is about 1-foot deep.

Photo 67: Upper East Pond – North embankment exterior slope, looking west.

Photo 68: Upper East Pond – North embankment exterior slope, looking east.

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Photo 69: Upper West Pond – West embankment exterior slope, general view looking north.

Photo 70: Upper West Pond – West embankment exterior slope, general view looking southwest.

Photo 71: Upper West Pond – West embankment interior slope, general view looking south. Note shallow scarps over approximate 50-foot length.

Photo 72: Upper West Pond – West embankment interior slope, scarp looking east.

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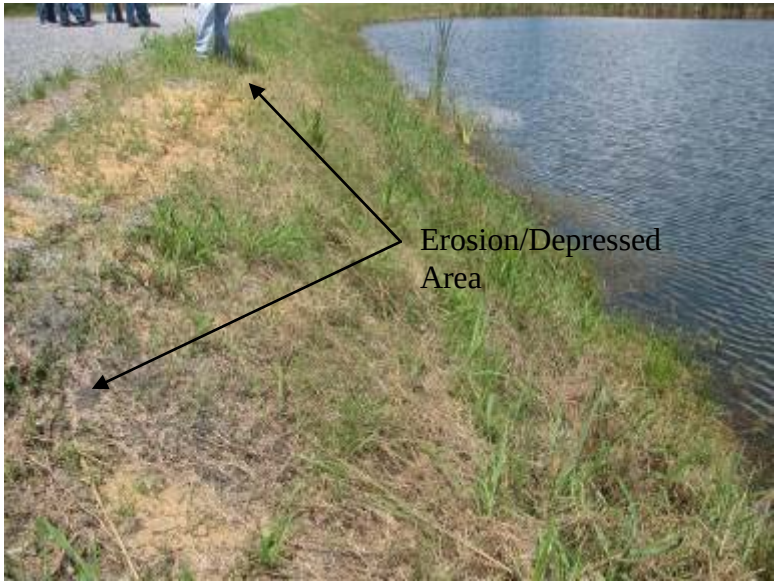

Photo 73: Upper West Pond – West embankment interior slope, showing erosion/depressed area approximately 30-foot long, looking north.

Photo 74: Upper West Pond – Southwest embankment interior slope, morning glory-type drop inlet structure looking southeast.

Photo 75: Middle Pond – Divider embankment interior slope at discharge of structure shown in Photo 74, looking southeast. Note water flowing from Upper West Pond to Middle Pond.

Photo 76: Middle Pond – Divider embankment interior slope at discharge of structure shown in Photo 74, looking southeast. Note water flowing from Upper West Pond to Middle Pond.

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Photo 77: Middle Pond – Divider embankment interior slope discharge Structure, looking southeast. Note water flowing from Upper West Pond to Middle Pond.

Photo 78: Middle Pond – Divider embankment interior slope looking northwest.

Photo 79: Crest of divider embankment between Middle Pond and Upper West Pond, looking southeast at excavator tracks.

Photo 80: Crest and interior slope of divider embankment between Middle Pond and Upper West Pond, looking northwest.

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Photo 81: Upper West Pond – Divider embankment interior slope, 18-inch diameter corrugated HDPE inlet pipe, looking north.

Photo 82: Upper Middle Pond – Divider embankment interior slope, 18-inch diameter corrugated HDPE outlet pipe looking northwest.

Photo 83: Crest of divider embankment between Upper West Pond and Upper Middle Pond, looking north.

Photo 84: Upper West Pond – Divider embankment interior slope, looking north.

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Photo 85: Upper Middle Pond – Divider embankment interior slope and crest, looking north.

Photo 86: Upper Middle Pond – Divider embankment interior slope looking north. Typical of four scarps along approximate 50-foot length of slope.

Photo 87: Upper Middle Pond – Divider embankment Interior slope scarp looking northwest.

Photo 88: Upper West Pond – Divider embankment interior slope and crest, looking north.

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Photo 89: Upper Middle Pond – Divider embankment interior slope, 18-inch diameter corrugated HDPE inlet pipe, looking north. Note scarp adjacent to pipe.

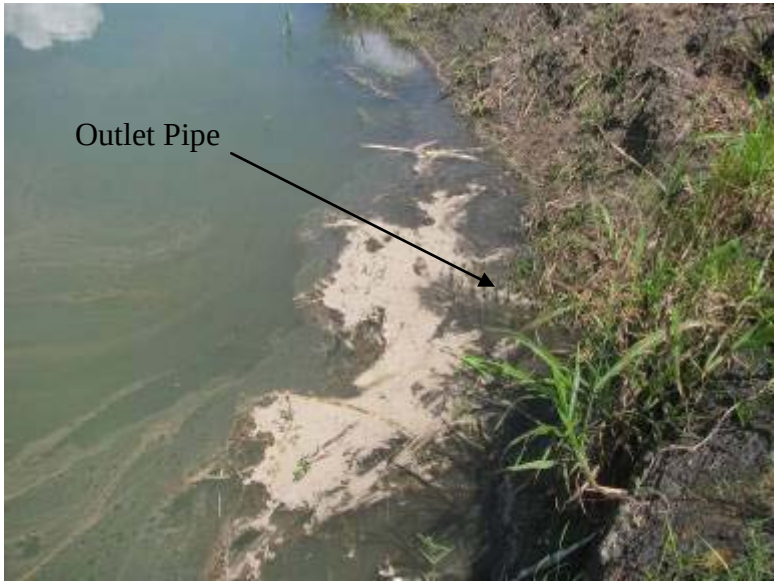

Photo 90: Upper East Pond – Divider embankment interior slope, 18-inch diameter corrugated HDPE outlet pipe, looking east. Pipe is submerged.

Photo 91: Upper East Pond – Divider embankment interior slope, general view of pond surface, looking east.

Photo 92: Upper East Pond – North embankment interior slope, general view of pond surface, looking northeast.

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Photo 93: Crest of divider embankment between Upper East Pond and Upper Middle Pond, looking south.

Photo 94: Crest of divider embankment between Upper East Pond and Upper Middle Pond, looking west.

Photo 95: Upper East Pond – Divider embankment interior slope, general view of pond surface, looking south.

Photo 96: Upper Middle Pond – Divider embankment interior slope, general view of pond surface, looking south.

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Photo 97: Upper Middle Pond – Divider embankment interior slope, general view of pond surface, looking south.

Photo 98: Upper Middle Pond – Divider embankment interior slope, general view of pond surface, looking north.

Photo 99: Upper East Pond – Divider embankment interior slope, general view of pond surface, looking south.

Photo 100: Upper East Pond – Divider embankment interior slope, general view of pond surface, looking north.

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Photo 101: Upper Middle Pond – Divider embankment interior slope, 2-foot x 2-foot x 6-foot long erosion rill, looking west.

Photo 102: Upper Middle Pond – Divider embankment interior slope, close up of erosion rill, looking west.

Photo 103: General view of Ash Dry Stack area, looking southwest.

Photo 104: Crest of divider embankment between Upper East Pond and Upper Middle Pond, looking north.

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Photo 105: Upper Middle Pond – Divider embankment interior slope, general looking north.

Photo 106: Upper East Pond – Divider embankment interior slope, looking north.

Photo 107: Ash Dry stack – General view looking southwest.

Photo 108: Ash Dry Stack looking southwest.

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Photo 109: Crest of divider embankment between Middle Pond and Lower Pond, looking southwest.

Photo 110: Crest of divider embankment between Middle Pond and Lower Pond, looking northeast.

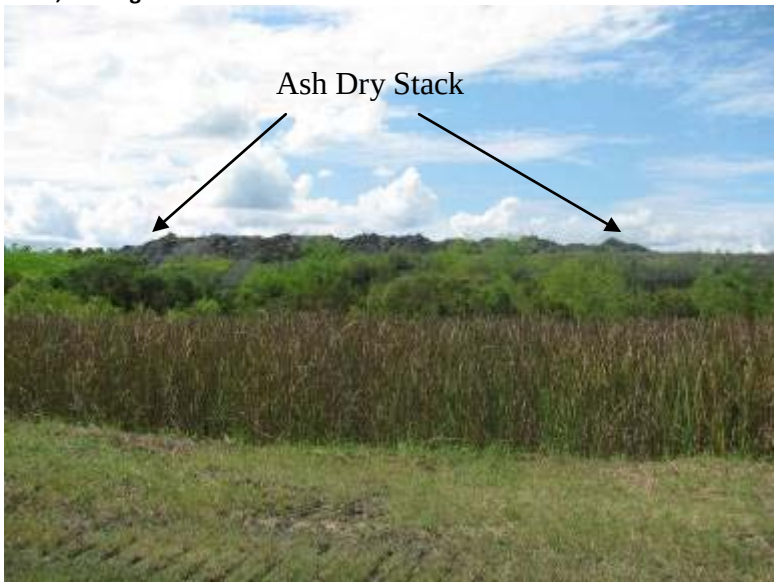

Photo 111: Middle Pond - Southside of Ash Dry stack area, looking northwest. Slope along South side of Ash Dry Stack area is nearly vertical and inaccessible.

Photo 112: Southside of Ash Dry Stack area, looking northeast. Slope along South side of Ash Dry Stack area is nearly vertical and inaccessible.

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Photo 113: Middle Pond – West embankment exterior slope, crest looking northwest.

Photo 114: Middle Pond – West embankment exterior slope, trash and miscellaneous debris looking northwest.

Photo 115: Middle Pond – West embankment interior slope, crest looking southeast.

Photo 116: Middle Pond – West embankment exterior slope, crest looking southeast.

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Photo 117: Middle Pond – West embankment interior slope, crest looking north.

Photo 118: Middle Pond – West embankment interior slope scarp, looking south.

Photo 119: Middle Pond – West embankment interior slope, looking south.

Photo 120: Middle Pond – West embankment interior slope, looking west.

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Photo 121: Middle Pond – West embankment interior slope, looking north.

Photo 122: Lower Pond – North embankment interior slope, looking south.

Photo 123: Lower Pond – North embankment interior slope, general view of crest looking north.

Photo 124: Lower Pond – North embankment interior slope, looking northwest.

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Photo 125: Lower Pond – North embankment interior slope, PVC inlet pipe from plant, looking southeast.

Photo 126: Lower Pond – North embankment interior slope, looking east.

Photo 127: Lower Pond – North embankment interior slope, looking west.

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