

ANNUAL CCR SURFACE IMPOUNDMENT INSPECTION			
Facility Name:		Cleco Brame Energy Center	
Address:		275 Rodemacher Rd. Lena, LA	
Surface Impoundment Name :	Bottom Ash Pond	Owner:	Cleco Power LLC
Surface Impoundment ID:	P-0005	Operator:	Cleco Power LLC
Nearest City:	Boyce	Parish:	Rapides
Inspector:		James C. Van Hoof, P.E.	
Company:		Providence Engineering & Environmental Group LLC	
Date of Inspection:		12/11//2017	
Weather at Time of Inspection:		Sunny, Cool	
DESCRIPTION OF THE OPERATION OF THE SURFACE IMPOUNDMENTS:			
<p>The Brame Energy Center's Bottom Ash and Fly Ash surface impoundments are designed to accept the coal combustion residual (CCR) byproducts derived from burning of the Unit 2 coal for the generation of electricity. The ponds are classified by the Louisiana Department of Environmental Quality (LDEQ) as Type I Surface Impoundments. Water from the Fly Ash surface impoundment is pumped into the Bottom Ash impoundment which discharges by means of three pumps that discharge the wastewater through the outlet pipe on the western end of the pond. This water discharges into Lake Rodemacher via LPDES outfall 401, thence to Bayou Jean de Jean via LPDES outfall 001, then to the Red River. The minimum levee elevation for the Bottom Ash impoundment is 106 feet NAVD 88. To determine the maximum storage capacity, Providence assumed a freeboard of three feet to the top of the impoundment. The bottom elevation of the Bottom Ash Pond as noted in the solid waste permit application is 85 feet MSL. The maximum capacity of this impoundment, with a freeboard of three feet, is approximately 760.5 acre-feet.</p> <p>The minimum levee elevation for the Fly Ash impoundment is 105 feet NAVD 88. The bottom elevation of the Fly Ash Pond as noted in the solid waste permit application is 85 feet MSL. The permitted capacity of this impoundment is 460.0 acre-feet.</p>			
GENERAL			
Owner Contact:	Jacob Hudson	Phone:	318-793-1194
Plant Manager:	George Broussard	Phone:	318-793-1200
Dam Status:	Operational	Year Built:	1982
Latitude:	31° 23.83' N	Longitude:	92° 42.27' W
Dam Size:	760.5 Acre-Feet (3' Freeboard)		
Bottom of Pond Elevation Information:	85 ft. MSL	Top of Dike Elevation:	106 ft. NAVD 88
Low Operating Level Elevation:	90 ft. NAVD 88	High Operating Level Elevation:	96 ft. NAVD 88
High Operating Level Storage:	464.75 acre-feet @ elevation 96.0 ft. NAVD 88		
Maximum Storage:	760.5 acre feet @ elevation 103.0 ft. NAVD 88		
Maximum Surface Area:	42.25 Acres		
Offsite Drainage Area:	Discharges to Lake Rodemacher via LPDES Outfall 401		
Spillway Type:	None, Pumped through HDPE discharge pipe		

QUESTIONS FOR OWNER'S REPRESENTATIVE	
Construction Plans Available?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Site Facility Map Available?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Operations and Maintenance Manual Available?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Emergency Action Plan Available?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Recent Modification or Improvements?	Installed water pumps in 2014 and a new level gauge in 2016
Are Routine Inspections Completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is Routine Maintenance Completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is There Vehicle Access to the Pond?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is Access Available During Heavy Rains?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are Routine Inspection Logs Kept On-site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Offsite Drainage Area:	Discharges to Lake Rodemacher via LPDES Outfall 401
Spillway Type:	None, Pumped through discharge pipe

PHYSICAL DAM FEATURES – RESERVOIR:	
Staff Gauge Type:	Level Gauge Indicator
Staff Gauge Elevation at Time of Inspection:	90.5 ft. NAVD 88
Normal Operating Elevation:	92.0 ft. NAVD 88
Typical Operation:	Discharges to Lake Rodemacher via LPDES Outfall 401
Are there any visible swirls?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size, location, etc.)	
Is there excessive CCR buildup in the surface impoundment?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Approximate volume of Impounded water at time of inspection:	232.38 acre-ft.
Approximate volume of CCR at time of inspection:	501,000 cubic yards
Findings:	The reservoir was inspected and appeared to be in satisfactory condition. No corrective actions are required at this time.
Other observations on the reservoir:	None

PHYSICAL DAM FEATURES – INTAKE WORKS:	
Number of Intakes:	Five
Description (1):	Primary Bottom Ash Sluice Pipe
Size and Type:	12 Inch Steel Pipe
Control:	Controlled by Pumps at Plant
Can Flow be Shutoff or Bypassed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description (2):	Secondary Bottom Ash Sluice Pipe
Size and Type:	12 Inch Steel Pipe
Control:	Controlled by Pumps at Plant
Can Flow be Shutoff or Bypassed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description (3):	Boiler Area Storm water Sump Pipe
Size and Type:	12 Inch Steel Pipe
Control:	Controlled by Pumps at Plant
Can Flow be Shutoff or Bypassed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description (4):	Fly Ash Discharge Pipe into Bottom Ash Pond
Size and Type:	6 inch HDPE Pipe
Control:	Controlled by Pump from Fly Ash Pond
Can Flow be Shutoff or Bypassed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description (5):	Bottom Ash Sluice Trench Stormwater Pipe
Size and Type:	24 inch corrugated metal pipe
Control:	None
Can Flow be Shutoff or Bypassed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the in-flow piping free of debris and otherwise unobstructed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If no, describe (type of debris, reason for obstruction, etc.)	
Describe the quality of discharge from hydraulic structure (turbidity, depth, etc.)	The inflowing water contains bottom ash which is sluiced out of solution. Also, Fly Ash storm water is pumped into the Bottom Ash Pond.
Findings:	The intake works were inspected and appeared to be in satisfactory condition. No corrective actions are required at this time.
Other observations on the intake works:	None

PHYSICAL DAM FEATURES – OUTLET WORKS:	
Number of Outlets:	One
Outlets/Culvert Pipe Sizes:	12 Inches
Type of Pipes:	HDPE that runs through 24 inch CMP
Control:	Pump level controls
Can Flow be Shutoff or Bypassed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe the overall condition of the hydraulic structure: (Check all that apply)	<input checked="" type="checkbox"/> Functioning Normally <input type="checkbox"/> Not Functional <input type="checkbox"/> Deteriorated <input type="checkbox"/> Damaged <input type="checkbox"/> Adequate <input type="checkbox"/> Inadequate Other:(describe)
Is there evidence of erosion around the hydraulic structure?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Is the hydraulic structure outlet flowing freely and unobstructed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If no, describe (type of debris, reason for obstruction, etc.)	
Describe the quality of discharge from the hydraulic structure (turbidity, depth, etc.)	The outflowing water is relatively clear and discharges to Lake Rodemacher via LPDES Outfall 401 which cycles back to the plant.
Findings:	The outlet works were inspected and appeared to be in satisfactory condition. No corrective actions are required at this time.
Other observations on the outlet works:	None

SLOPE PROTECTION – EXTERIOR SLOPES:	
Describe the vegetation on the exterior slope: (Check all that apply)	<input type="checkbox"/> Recently Mowed <input checked="" type="checkbox"/> Good Cover <input type="checkbox"/> Sparse <input type="checkbox"/> Other: (describe)
Is there any erosion on the exterior slope?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Is there any erosion protection on the exterior slopes? (e.g. riprap, other)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (riprap - adequate, inadequate, etc.)	
Are there any Crack/Rills Observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Are there any Sinkholes Observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Are there any trees on the slopes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (type of vegetation, size, location, etc.)	
Findings:	The exterior slope was inspected and appeared to be in satisfactory condition. Only minor corrective actions are required at this time based on other observations below.
Other observations on the exterior slopes:	Feral hogs have rooted an approximate 1,500 square foot area on the exterior slope of the Bottom Ash Pond along the north levee. Cleco will smooth the rutted area, then seed and fertilize to prevent erosion.

SLOPE PROTECTION – INTERIOR SLOPES:	
Describe the vegetation on the interior slopes: (Check all that apply)	<input type="checkbox"/> Recently Mowed <input checked="" type="checkbox"/> Good Cover <input type="checkbox"/> Sparse <input type="checkbox"/> Other: (describe)
Is there any erosion on the interior slope?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Is there any erosion protection on the interior slopes? (e.g. riprap, other)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, describe what type and it's condition (riprap - adequate, inadequate, etc.) Riprap at 24" CMP storm water pipe outlet. Protection is adequate.	
Are there any Crack/Rills Observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Are there any Sinkholes Observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Findings:	The interior slope was inspected and appeared to be in satisfactory condition. Only minor corrective actions are required at this time based on other observations below.
Other observations on the interior slopes:	Feral hogs have rooted an approximate 4,000 square foot area on the interior slope of the Bottom Ash Pond along the south levee. Cleco will smooth the rutted area, then seed and fertilize to prevent erosion.

SLOPE PROTECTION – ABUTMENT/TOE:	
Describe the vegetation on the Abutment/Toe: (Check all that apply)	<input type="checkbox"/> Recently Mowed <input checked="" type="checkbox"/> Good Cover <input type="checkbox"/> Sparse <input type="checkbox"/> Other: (describe)
Is there any erosion on the abutment/toe?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Is there any erosion protection on the abutment/toe? (e.g. riprap, other)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe what type and it's condition (riprap - adequate, inadequate, etc.)	
Are there any Crack/Rills Observed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Is there any Seepage Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size of area, location, severity, etc.)	
Findings:	The abutment/toe was inspected and appeared to be in satisfactory condition. No corrective actions are required at this time.
Other observations on the abutment/toe:	None

SURFACE IMPOUNDMENT CREST:	
Describe the vegetation on the crest: (Check all that apply)	<input type="checkbox"/> Recently Mowed <input checked="" type="checkbox"/> Good Cover <input type="checkbox"/> Sparse <input checked="" type="checkbox"/> Other: (describe) Gravel
Is there a road or driveway on the crest?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, describe (good condition, numerous cracks, etc.) Good Condition	
Are there any ruts, depressions, or holes on the crest?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size, location, etc.)	
Are there any cracks on the crest?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (length and width, location and direction of cracking, etc.)	
Are there any trees or other undesired vegetation on the crest?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size, location, etc.)	
Are there any sinkholes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe (size, location, etc.)	
Findings:	The crest was inspected and appeared to be in satisfactory condition. No corrective actions are required at this time.
Other observations on the crest:	None

PHYSICAL DAM FEATURES – SPILLWAY:	
Type:	None - Pumped through discharge pipe
Slope Protection:	NA
Approach:	NA
Erosion:	NA
Vegetation:	NA
Findings:	NA
Other observations on the spillway:	NA

DOCUMENTATION REVIEW:	
Weekly Inspections Reviewed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Findings: Feral hogs rutted topsoil along interior and exterior slopes.	
Monthly Instrument Inspections Reviewed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Findings: No issues	
Groundwater Monitoring:	Monitoring wells are in-place.
Drawings Reviewed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are there any changes in the geometry of the surface impoundment structure since the previous inspection?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
If yes, describe (size, location, etc.)	
Other observations:	None

Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Easterly

Comments:

Floating pump structure in Bottom Ash Pond.



Bottom Ash Pond

Direction:

Easterly

Comments:

Level Gauge near floating pump structure in Bottom Ash Pond.



Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Easterly

Comments:

Northern slope of internal levee.



Bottom Ash Pond

Direction:

Easterly

Comments:

Crest of northern levee.



Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Southerly

Comments:

Inside slope of eastern levee.



Bottom Ash Pond

Direction:

Westerly

Comments:

Discharge pipe from the Fly Ash Pond into the Bottom Ash Pond.



Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Westerly

Comments:

Sluice pipe discharging into the Bottom Ash Pond.



Bottom Ash Pond

Direction:

Northerly

Comments:

Storm water discharge pipe from sluice pipe trench.



Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Easterly

Comments:

Area along the northern exterior levee showing where the feral hogs have recently rooted the topsoil.



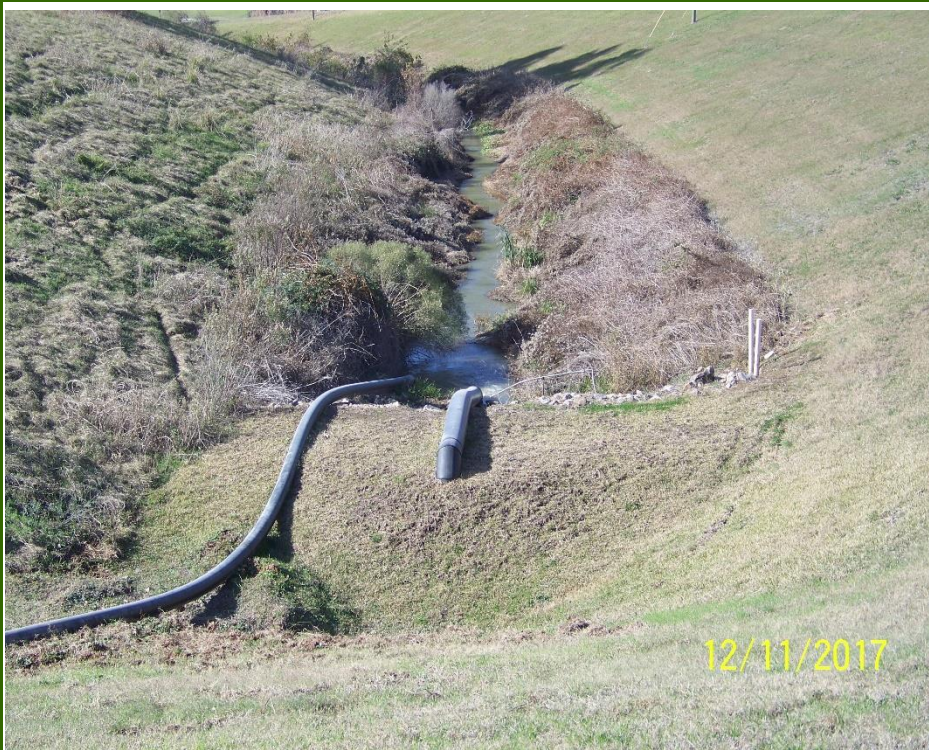
Bottom Ash Pond

Direction:

Westerly

Comments:

Bottom Ash discharge pipe shown outside the western levee towards Lake Rodemacher.



Site Name: Brame Energy Center – Bottom Ash Pond

Site Location: Lena, Rapides Parish, LA

Date: December 11, 2017

Bottom Ash Pond

Direction:

Easterly

Comments:

Area along the southern interior levee showing where the feral hogs have recently rooted the topsoil.



Bottom Ash Pond

Direction:

Westerly

Comments:

Bottom Ash discharge pipe shown on interior of the western levee.



**BOTTOM ASH POND
CCR ANNUAL INSPECTION**

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I have inspected Cleco's Brame Energy Center Bottom Ash Pond in accordance with the Annual CCR Inspection requirements. This inspection has determined that the design, operation, and maintenance of the Bottom Ash Pond is in accordance with generally accepted engineering standards and are adequate for the facility.

James C. Van Hoof

Name

24630

Registration No.

LA

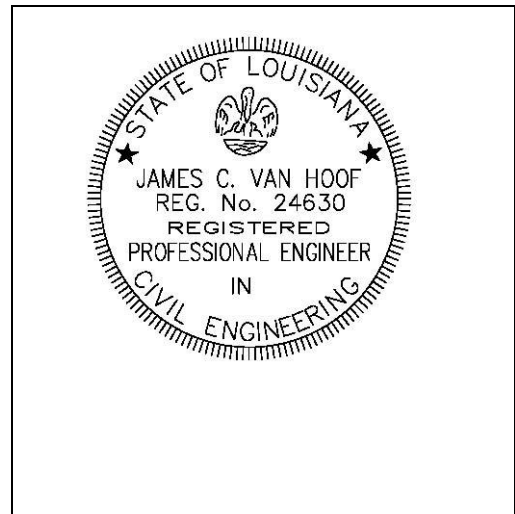
State

James C. Van Hoof, P.E.

Signature

1-10-2018

Date



(Seal)

This inspection was conducted to assess the general overall condition of the reservoir/dam, identify visible deficiencies, and recommend areas for monitoring, and corrective actions. The inspection is based only on visible features/areas of the dam on the day of inspection. The owner should verify the findings of this report and take corrective actions. This inspection does not relieve the owner/operator from their responsibility to conduct routine inspections, maintenance, repairs, modifications, monitoring, and documentation.