



**Charles R. Lowman Power Plant
Leroy, AL**

CCR Impoundment Inspection Report

January 2017



CDG Engineers and Associates, Inc.
1840 East Three Notch St.
Andalusia, AL 36421
| cdge.com

CCR Impoundment Inspections

Table of Contents

Certification

Overview	1
Table 1 – Summary for Unit 1 Bottom Ash Pond Inspection	2
Table 2 – Summary for Unit 2/3 Bottom Ash Pond Inspection.....	3
Table 3 – Summary for FGD Waste Pond Inspection	4

Engineer's Certification

I hereby certify that it is my professional understanding that the inspections conducted and resulting CCR Annual Inspection Report presented herein meet the requirements of Section 257.83 (b) of Title 40 of the Code of Federal Regulations as amended upon the date of this certification.

Scott W. Trott, P.E.
CDG Engineer's and Associates, Inc.
1830 Hartford Highway
Dothan, AL 36301
(334) 488-3617
Alabama Registration Number 31542



The Charles R. Lowman Power Plant campus in Leroy, AL includes three impoundments for the storage of coal combustion residual (CCR) material. These are noted as shown in Figure 1.



Figure 1
Identification of Ponds

The field inspections outlined herein were completed on December 21, 2016. The inspection staff consisted of staff from CDG Engineers and Associates, Inc. (CDG) as indicated below.

Company	Name / Title
CDG	Scott W. Trott, P.E. / Senior Project Manager
CDG	Carmen Chosie, P.E. / Project Engineer

Inspection procedures were completed in accordance with § 257.83(b)(1)(i)-(iii). Documentation including pertinent previous report documents and documents within the facility's operating record were reviewed as part of the inspection efforts. The visual inspections examined the overall condition of each structure to identify any potential signs of distress or malfunction. Piping and related hydraulic structures traversing each impoundment were also visually inspected to address the condition and ability of each to meet its intended design purpose.

Findings have been generated by CDG's inspection team and are found in Tables 1 – 3 contained herein.

Table 1
Summary for Unit 1 Bottom Ash Pond Inspection

Unit 1 Bottom Ash Pond		
Item	Reference	Comment
Changes in Geometry	§ 257.83(b)(2): (i)	<ul style="list-style-type: none"> • No changes to impoundment footprint • Downstream berm actively being reduced in elevation
Existing Instrumentation	§ 257.83(b)(2): (ii)	<ul style="list-style-type: none"> • Two pumps with hour meters
Minimum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 0'-0" • 10.00' MSL
Maximum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 3'-0" • 13.00' MSL
Present Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Varying depth, not continuous surface • Average water depth if distributed over impoundment area estimated at 8" over CCR • Average water elevation estimated at 17.58' MSL
Minimum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Minimum CCR depth 0'-0" in cleaned areas • Minimum CCR elevation 10'-0" MSL
Maximum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Maximum CCR depth estimated at 16'-0" • Maximum CCR elevation is 26'-0"
Present CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • CCR depth not uniform across impoundment • Present CCR depth is averaged to 7'-0" • Present CCR elevation is averaged to 17'0"
Storage Capacity	§ 257.83(b)(2): (iv)	<ul style="list-style-type: none"> • 408,000 yd³
Volume of Impounded Water	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded water volume estimated at 20,435 yd³
Volume of Impounded CCR	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded CCR estimated at 214,873 yd³
Observed Actual or Potential Structural Weakness	§ 257.83(b)(2): (vi)	<ul style="list-style-type: none"> • None observed
Observations of Changes Impacting Stability or Operation	§ 257.83(b)(2): (vii)	<ul style="list-style-type: none"> • None observed

Table 2
Summary for Unit 2/3 Bottom Ash Pond Inspection

Unit 2/3 Bottom Ash Pond		
Item	Reference	Comment
Changes in Geometry	§ 257.83(b)(2): (i)	<ul style="list-style-type: none"> • None observed
Existing Instrumentation	§ 257.83(b)(2): (ii)	<ul style="list-style-type: none"> • Flow totalizer on pumping units • Visual water level indicator at northwest corner
Minimum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 2'-0" per visual level indicator • 43.50' MSL
Maximum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 3'-0" per visual level indicator • 44.50' MSL
Present Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 2'-3" per visual level indicator • 43.75' MSL
Minimum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Minimum CCR depth estimated at 2'-0" • Minimum CCR elevation 26.00' MSL
Maximum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Maximum CCR depth estimated at 19'-0" • Maximum CCR elevation is 43.00' MSL
Present CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • CCR depth not uniform across impoundment • Average CCR depth estimated at 17'-6" • Average CCR elevation estimated at 41.50' MSL
Storage Capacity	§ 257.83(b)(2): (iv)	<ul style="list-style-type: none"> • 1,065,000 yd³
Volume of Impounded Water	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded water volume estimated at 133,369 yd³
Volume of Impounded CCR	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded CCR volume estimated at 875,233 yd³
Observed Actual or Potential Structural Weakness	§ 257.83(b)(2): (vi)	<ul style="list-style-type: none"> • None observed
Observations of Changes Impacting Stability or Operation	§ 257.83(b)(2): (vii)	<ul style="list-style-type: none"> • None observed

Table 3
Summary for FGD Waste Pond Inspection

FGD Waste Pond		
Item	Reference	Comment
Changes in Geometry	§ 257.83(b)(2): (i)	<ul style="list-style-type: none"> • None observed
Existing Instrumentation	§ 257.83(b)(2): (ii)	<ul style="list-style-type: none"> • Two pumps with hour meters • Visual water level indicator at southwest corner
Minimum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 4'-0" per visual level indicator • 41.50' MSL
Maximum Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 5'-5" per visual level indicator • 43.00' MSL
Present Water Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • 5'-2" per visual level indicator • 42.75' MSL
Minimum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Minimum CCR depth estimated at 1'-0" • Minimum CCR elevation 26.00' MSL
Maximum CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • Maximum CCR depth estimated at 18'-0" • Maximum CCR elevation is 43.00' MSL
Present CCR Depth and Elevation	§ 257.83(b)(2): (iii)	<ul style="list-style-type: none"> • CCR depth not uniform across impoundment • Average CCR depth estimated at 12'-5" • Average CCR elevation estimated at 37.50' MSL
Design Storage Capacity	§ 257.83(b)(2): (iv)	<ul style="list-style-type: none"> • 1,281,450 yd³
Volume of Impounded Free Water	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded water volume estimated at 308,416 yd³
Volume of Impounded CCR	§ 257.83(b)(2): (v)	<ul style="list-style-type: none"> • Impounded CCR volume estimated at 1,108,323 yd³
Observed Actual or Potential Structural Weakness	§ 257.83(b)(2): (vi)	<ul style="list-style-type: none"> • None observed
Observations of Changes Impacting Stability or Operation	§ 257.83(b)(2): (vii)	<ul style="list-style-type: none"> • None observed