



## **Reid/HMP&L CCR Surface Impoundment**

### **Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule CCR Impoundment 2024 Annual Inspection Report**

**December 30, 2024**

**Prepared By:**



**Project ID: 24-0198A**

**Big Rivers Electric Corporation  
Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule  
CCR Impoundment 2024 Annual Inspection Report**

**CCR Surface Impoundment Information**

Name: Reid/HMP&L CCR Surface Impoundment  
Operator: Sebree Generating Station  
Address: 9000 Highway 2096  
Robards, Kentucky 42452

**Qualified Professional Engineer**

Name: David A. Lamb  
Company: Associated Engineers, Inc.  
Kentucky P.E. Number: 17822

**Regulatory Applicability**

Per 40 CFR §257.83(b), annual inspections by a qualified professional engineer must ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards.

Annual inspections of any CCR surface impoundment must include, at a minimum: (1) a review of all previously generated information regarding the status and condition of the CCR unit, including, but not limited to, all operating records and publicly accessible internet site entries, design and construction drawings and other documentation; (2) a thorough visual inspection to identify indications of distress, unusual or adverse behavior, or malfunction of the CCR unit and appurtenant structures; and (3) a thorough visual inspection of hydraulic structures underlying the base of the CCR unit and passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

Additionally, following each annual inspection, the qualified professional engineer must prepare an inspection report which documents the following: (1) any changes in geometry of the impounding structure since the previous annual inspection; (2) the location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection; (3) the approximate maximum, minimum, and present depth and elevation of the impounded water and CCR since the previous annual inspection; (4) the storage capacity of the impounding structure at the time of inspection; (5) the approximate volume of the impounded water and CCR at the time of the inspection; (6) any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing

conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and (7) any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

### **Inspection Description**

This is the tenth annual inspection report for the Reid/HMP&L CCR Surface Impoundment pursuant to the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule which became effective April 17, 2015. The inspection was conducted on December 16, 2024, by David A. Lamb, P.E. of Associated Engineers, Inc. of Madisonville, Kentucky. Weekly (7-day) inspections conducted by Big Rivers Electric Corporation are kept in the facility operating record.

The inspection consisted of a visual assessment of the surface impoundment, embankments, and discharge; and began at the northeast corner of the impoundment adjacent to the access road located on the north embankment crest. The inspection revealed that all CCR material has been removed. The pond has been dewatered and the CCR material has been removed from the impoundment and placed in the onsite landfill. The pond closure activities have resulted in the installation of a designed breach in the northwest portion of the dam resulting in no significant water being impounded against the dam. The inspection began at the southeast abutment near the previous location of the discharge structure which has been removed. The access road continues around the impoundment on the crest of the southwest embankment and is adequately rocked and maintained for construction activities.

The inspection continued to the downstream slope of the south embankment. The south downstream slope was vegetated and generally in good condition. As the inspection progressed west, rutting from tracked equipment was present on the southwest corner of the downstream slope. Areas of saturated ground were observed on the lower slope adjacent to the toe were observed. The level of saturation is likely influenced by rainfall events. Signs requiring hand mowing of these areas were noted and few if any mower ruts were present in these areas. Minor mower damage was observed along the upper downstream slope at the north end of the west embankment as well as the north end of the north embankment. This does not require and corrective action. Due to closure activities this embankment no longer impounds water or CCR. The crest of the west embankment was well maintained.

The inspection of the downstream slope of the north embankment noted an area of approximately one-third acre of standing water and very thick vegetation at the east end of the embankment. The crest of the north embankment was in good condition. The surface impoundment no longer receives coal combustion residual (CCR) flow as of February 1, 2019. The northeast corner of the impoundment is currently being used as a construction staging area for pond closure activities.

The south embankment which parallels adjacent cooling towers to the east is the smallest embankment and occurs primarily on the southeast corner of the impoundment. The upstream side is currently bare dirt caused by pond closure related construction activities. The crest and downstream embankment slope were mowed. The impoundment embankment crest supports an access road around the south, west and north perimeters and is adequately maintained to support the intended use.

The impoundment discharge structure is no longer in service. The structure has been completely removed and a breach has been installed in the northwest portion of the dam resulting in no significant water being impounded against the dam.

### **Inspection Report Specifications**

#### **(i) CCR Surface Impoundment Geometry**

The Reid/HMPL CCR Surface Impoundment is a combined incised/earthen embankment structure. The immediate watershed that drains to the CCR surface impoundment, and in which the CCR surface impoundment is located, is unnamed and 25.45 acres in size. Embankments form the north, west, south and southeast sides of the impoundment. The northeast side is incised. The original terrain on which the impoundment was constructed generally sloped toward the west. The Green River is located approximately 2,500 feet east of the structure. The embankment reaches its greatest relief of approximately 42 feet on the west side. The impoundment originally received fly ash and bottom ash but stopped receiving fly ash in approximately 1985 when the Boothe system was placed in operation.

There have been significant changes to the geometry of the impounding structure since the previous annual inspection. This change is the removal of the historic discharge structure and in installation of the designed breach in the northwest portion of the dam. Placement of additional CCR material in the impoundment has concluded and CCR removal for pond closure has been completed.

## **(ii) CCR Surface Impoundment Instrumentation**

There are five piezometers and one water level indicator associated with the Reid/HMP&L CCR Surface Impoundment.

### **(ii) a – Piezometers**

\*Maximum elevation above mean sea level (AMSL) measured at each piezometer since the 2023 annual inspection report:

Piezometer ID	Northing	Easting	Top of Casing Elevation (AMSL)	Depth to Static Water Level	Static Water Elevation* (AMSL)
P-1A	483464.43	1491086.43	428.95	*	*
P-2A*	483141.96	1491515.32	428.63	*	*
P-3A	483772.54	1491306.43	428.75	22.25 feet	406.50
P-4*	483033.84	1491399.12	397.44	*	*
P-5	483415.93	1490969.80	395.34	8.27 feet	387.07

\*P-1A, P-2A and P-4 have been impacted by pond closure activities.

### **(ii) b – Water Surface Level Indicator**

The maximum water surface elevation since the 2023 annual inspection report is not available. Closure activities initiated in August 2023 dewatered the pond.

## **(iii) CCR Surface Impoundment Contents Depths and Elevations**

The Reid/HMP&L CCR Surface Impoundment contents depths and elevations are provided below. They are based on: 1) available measured water surface elevations, 2) September 11, 2024 flight derived topographic contours and survey data, and 3) best available as-built design data for the impoundment prior to placement of CCR material (i.e. the Burns & McDonnell Engineering Co. October 8, 1971 design plans provided by Big Rivers Electric Corporation).

Elevations are provided as feet above mean sea level and depths are provided as height in feet above the impoundment's design bottom prior to placement of CCR material. All values are rounded off to the nearest tenth of foot.

Minimum depth of impounded water = 0

Minimum elevation of impounded water = 386.4 (Pond Bottom)

Minimum depth of CCR material = 0

Minimum elevation of CCR material = No CCR material present

Maximum depth of impounded water = Not available<sup>1</sup>

Maximum elevation of impounded water = Pond remained dewatered for closure

Maximum depth of CCR material = 0

Maximum elevation of CCR material = All CCR removed.

Present depth of impounded water = 2.4<sup>2</sup>

Present elevation of impounded water = 388.8

Present depth of CCR material = 0

Present elevation of CCR material = All CCR material has been removed

<sup>1</sup>Depth not available due to absence of bathymetric survey data at times of minimum and maximum pool elevations

<sup>2</sup>At location of maximum impounded water depth

#### **(iv) CCR Surface Impoundment Storage Capacity**

The Reid/HMP&L CCR Surface Impoundment storage capacity was estimated to be 758,873 cubic yards (if CCR can be placed to the spillway elevation of 425.8). Volume based on: 1) October 2021 flight derived topographic contours and bathymetric survey data, verified by May 24, 2022 LiDAR and May 18, 2022 Bathymetric Survey. 2) best available as-built design data for the impoundment prior to placement of CCR material (i.e. the Burns & McDonnell Engineering Co. October 8, 1971 design plans provided by Big Rivers Electric Corporation). In August 2023 closure activities began and CCR material is being removed from the pond daily and placed in the landfill. Based on November 28, 2023 aerial photography derived data 207,598 cubic yards of CCR material have been removed from the pond increasing its capacity to 966,471 cubic yards (if CCR can be placed to the spillway elevation of 425.8).

#### **(v) CCR Surface Impoundment Contents Volumes**

The Reid/HMP&L CCR Surface Impoundment contents volume of impounded water was estimated to be 4,200 cubic yards and volume of CCR material was estimated to be 513,113 cubic yards. Volumes based on: 1) October 2021 flight derived topographic contours and bathymetric survey data, verified by May 24, 2022 LiDAR and May 18, 2022 Bathymetric Survey, and October 2023 flight derived topographic contours. 2) best available as-built design data for the impoundment prior to placement of CCR material (i.e. the Burns & McDonnell Engineering Co. October 8, 1971 design plans provided by Big Rivers Electric Corporation).

**(vi) CCR Surface Impoundment Structural, Operational, and Safety Items**

The inspection findings consisted of minor maintenance items and there were no appearances of an actual or potential structural weakness of the CCR unit, and no existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures. Due to closure operations no water or CCR material is impounded against the dam.

**(vii) CCR Surface Impoundment Changes**

There have been no significant changes to the Reid/HMP&L CCR Surface Impoundment (or impounding structure) since the previous (2023) annual inspection that may have affected the stability of the impoundment. The CCR surface impoundment no longer contains CCR. It should be noted that the impoundment is closed and is no longer receiving CCR or impounding significant quantities of water.



Flight Date: September 9, 2024



**BIG RIVERS ELECTRIC CORPORATION**

**REID-HMPL CCR Surface Impoundment  
2024 Annual Inspection Aerial Photo**

Job Number:	24-0198A	Revisions:
Date:	01/06/2025	
Scale:	1" = 250'	
Drawn By:	A.E.I.	

2740 North Main St. • Madisonville, KY 42431  
Phone: (270) 821-7732 • Fax: (270) 821-7789  
[www.associatedengineers.com](http://www.associatedengineers.com)

# BREC Final Rule CCR Impoundment 2021 Annual Inspection Checklist

Operator: CCR Surface Impoundment: Date:		Sebree Generating Station Reid/HMP&L October 25, 2024 December 16, 202		Weather: Temperature (Degrees F): Inspector/Qualified Person:		Overcast 74 (high) David A. Lamb, P.E. (AEI)	
ITEM		STATUS			OBSERVATIONS		
		YES	NO	N/A			
<b>1</b>	<b>TOP OF DAM</b>						
	Visual settlement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Misalignment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Cracking	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Access road deterioration (potholes, rutting, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
<b>2</b>	<b>UPSTREAM SLOPE</b>						
	Any erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Erosion is present due to closure activities		
	Longitudinal cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Transverse cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Adequate vegetative cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Closure activities have impacted vegetative condition short term		
	Are trees growing on the slope	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Adequate riprap/slope protection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	Visual depressions	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Visual settlement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Any stone deterioration	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Debris or trash present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
<b>3</b>	<b>DOWNSTREAM SLOPE AND TOE</b>						
	Any erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor erosion at isolated areas primarily related to construction activities		
	Longitudinal cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Transverse cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Adequate vegetative cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	Are trees growing on the slope	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Visual depressions or bulges	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some minor equipment/mower tracking and depressions		
	Visual settlement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Animal Burrows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimal evidence of Animal Burrows Present on South and West Slope		
	Are boils present at the toe or slopes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Are drainage features obstructed or damaged	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Are drainage features flowing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	Is seepage present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wet areas from seepage / percipitation along portions of south, west and north embankments		

ITEM	STATUS			OBSERVATIONS
	YES	NO	N/A	
Is seepage or discharge carrying sediment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Soft or spongy zones present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Areas of soft ground along portions of south, west and north embankment toe
<b>4 ABUTMENTS</b>				
Any erosion	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visual differential movement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Any cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are drainage features flowing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is seepage present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is seepage or discharge carrying sediment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>5 PRINCIPAL SPILLWAY</b>				
Any deterioration of the spillway structure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Any deterioration of the spillway conduit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Spillway has been taken out of service due to closure activities
Spillway clear from obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the spillway functioning and discharging correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	New Spillway has been put in service due to manage storm water
Trash racks or skimmer operational	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Any signs of leakage with the structure or conduit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Abnormally high or low pool elevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pool is being maintained at a very low level
<b>6 EMERGENCY SPILLWAY</b>				
Any deterioration of the spillway structure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Spillway clear from obstructions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signs of erosion or slope sloughing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Adequate vegetative cover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Signs of or currently discharging water	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>7 VALVES/GATES</b>				
Are the valves/gates operational	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are the valves/gates broken or bent	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are the valves/gates corroded or rusted	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Have the valves/gates been maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>8 HYDRAULIC STRUCTURES UNDER/THROUGH DAM</b>				
Hydraulic structures under/through embankment are in safe and reliable operating condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Abnormal flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Abnormally colored discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Debris or sediment in discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>9 SEEPAGE</b>				
Seepage from toe drain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wet saturated ground along embankment toe; no discrete discharge visible

ITEM	STATUS			OBSERVATIONS
	YES	NO	N/A	
Seepage from abutment drain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Seepage from blanket drain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wet saturated ground along embankment toe; no discrete visible discharge
Seepage from slope areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>DEFICIENCIES AND MAINTENANCE ITEMS</b>				

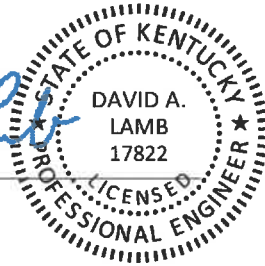
The inspection did not identify any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures. The inspection findings consisted of minor maintenance items that were not observed to be signs or potential signs of significant structural weakness. Finalization of closure activities will resolve all conditions observed.

The current trapping program for borrowing animals appears to be effective currently. Animal activity is continually monitored and adjustments in trapping effort are ongoing.

**Professional Engineer Certification [Per 40 CFR §257.83(b)]**  
**Reid/HMP&L CCR Surface Impoundment**  
**Annual Inspections by a Qualified Professional Engineer**

I hereby certify that myself or an agent under my review has prepared this Annual Inspection Report (Report), and being familiar with the provisions of the final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA), attest that this Report has been prepared in accordance with good engineering practices and meets the intent of 40 CFR Part 257.83(b). To the best of my knowledge and belief, the information contained in this Report is true, complete, and accurate.





David A. Lamb, P.E.

State of Kentucky License No. 17822

Date: January 13, 2025



## **Green CCR Surface Impoundment**

### **Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule CCR Impoundment 2024 Annual Inspection Report**

**December 30, 2024**

**Prepared By:**



**Project ID: 24-0198**

**Big Rivers Electric Corporation  
Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule  
CCR Impoundment 2024 Annual Inspection Report**

**CCR Surface Impoundment Information**

Name: Green CCR Surface Impoundment  
Operator: Sebree Generating Station  
Address: 9000 Highway 2096  
Robards, Kentucky 42452

**Qualified Professional Engineer**

Name: David A. Lamb  
Company: Associated Engineers, Inc.  
Kentucky P.E. Number: 17822

**Regulatory Applicability**

Per 40 CFR §257.83(b), annual inspections by a qualified professional engineer must ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards.

Annual inspections of any CCR surface impoundment must include, at a minimum: (1) a review of all previously generated information regarding the status and condition of the CCR unit, including, but not limited to, all operating records and publicly accessible internet site entries, design and construction drawings and other documentation; (2) a thorough visual inspection to identify indications of distress, unusual or adverse behavior, or malfunction of the CCR unit and appurtenant structures; and (3) a thorough visual inspection of hydraulic structures underlying the base of the CCR unit and passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

Additionally, following each annual inspection, the qualified professional engineer must prepare an inspection report which documents the following: (1) any changes in geometry of the impounding structure since the previous annual inspection; (2) the location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection; (3) the approximate maximum, minimum, and present depth and elevation of the impounded water and CCR since the previous annual inspection; (4) the storage capacity of the impounding structure at the time of inspection; (5) the approximate volume of the impounded water and CCR at the time of the inspection; (6) any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing

conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and (7) any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

### **Inspection Description**

This is the tenth annual inspection report for the Green CCR Surface Impoundment pursuant to the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Final Rule which became effective April 17, 2015. The inspection was conducted on December 16, 2024, by David A. Lamb, P.E. of Associated Engineers, Inc. of Madisonville, Kentucky. Weekly (7-day) inspections conducted by Big Rivers Electric Corporation are kept in the facility operating record.

It should be noted that a contractor has been on site and has completed executing implementation of the closure plan for this facility. The pond has been dewatered and excavated to the extent that the spillway is no longer functional, and the dam no longer impounds water or CCR. **The Division of Waste Management performed an inspection on August 7, 2024 and confirmed that the pond had achieved closure by removal of all CCR material.**

The inspection consisted of a visual assessment of the surface impoundment, embankments and out of service discharge; and began at the southwest corner of the impoundment on the embankment crest access road. The crest access road is adequately rocked and maintained. The upstream embankment slope was mostly bare due to recently completed closure activities. The downstream slope was adequately vegetated. The embankment no longer impounds water or CCR. Additionally, minor erosion and mower wheel tracking was present along the downstream slope. Otherwise, the south embankment downstream slope was generally well vegetated and mowed. Dense vegetation along the ditch located adjacent to the south embankment toe that directs drainage east towards the Green River had been mowed and water was present at the time of the inspection due to rainfall.

The northeast, north and northwest portions of the impoundment are incised, and the upstream slopes were observed to be disturbed by recently completed closure activities.

The west embankment crest and upstream slope was generally observed to be minimally disturbed by the recently completed closure activities. All CCR material has been removed down to the original soil. Moderate erosion and equipment tracking were observed throughout the impoundment. This was related to the recently completed closure operation. This activity does not pose a stability issue with the structure.

The south embankment contains the discharge structure (two corrugated steel discharge pipes; each 30 inches in diameter). The upstream end of the discharge structure has a concrete

common headwall. Due to the completed closure the pool was being maintained in excess of 30 feet below the discharge elevation in the southern portion of the impoundment. The pipe conveyances are no longer active. Only water that falls directly into the pond is being impounded temporarily. Pumps are utilized to transfer rainwater to the IW Pond and it is discharged through the 009 discharge point.

### **Inspection Report Specifications**

#### **(i) CCR Surface Impoundment Geometry**

The Green CCR Surface Impoundment is a combined incised/earthen embankment structure. The immediate watershed that drains to the CCR surface impoundment, and in which the CCR surface impoundment is considered to be located, is unnamed and 54.13 acres in size. Embankments form the west, south and east sides of the impoundment and the north side is incised. The original terrain on which the impoundment was constructed consisted of small stream valleys draining eastward to the Green River. Most of the central portion of the south dike was constructed on a subdued ridge and the toe of the outboard slope intersected a lower drainage area. The Green River is located approximately 400 feet east of the structure. The west dike is generally less than five feet in height and the south dike reaches a maximum height of 19.5 feet. The east dike reaches a maximum height of approximately eight feet and is buttressed with a secondary parallel embankment that serves as a 40-foot-wide roadway.

There have been no significant changes to the geometry of the impounding structure since the previous (2023) annual inspection. Placement of additional CCR material in the impoundment ceased on April 4, 2022, when the coal fired unit was retired. All CCR material has been removed from the impoundment and placed in the adjacent landfill. The August 7, 2024, inspection performed by the Kentucky Division of Waste Management confirms that CCR removal is complete.

#### **(ii) CCR Surface Impoundment Instrumentation**

There are five piezometers and two water level indicators associated with the Green CCR Surface Impoundment.

**(ii) a – Piezometers**

\*Maximum elevation above mean sea level (AMSL) measured at each piezometer since the 2023 annual inspection report:

Piezometer ID	Northing	Easting	Top of Casing Elevation (AMSL)	Depth to Static Water Level	Static Water Elevation* (AMSL)
P-1A	480202.55	1492104.21	396.17	14.6 feet	381.57
P-2A	480186.48	1492464.48	395.98	14.98 feet	381.00
P-3A	480175.11	1492692.75	395.91	**	**
P-6	480122.51	1492462.58	379.33	4.41 feet	392.92
P-7	480137.28	1492099.00	380.26	4.34 feet	375.92

\*\*Impacted by closure activities

**(ii) b – Water Surface Level Indicator**

The maximum water surface elevation since the 2023 annual inspection report is not available. The pond has now been dewatered and the water elevation in this area is being maintained below 365.0 feet above mean sea level.

**(iii) CCR Surface Impoundment Contents Depths and Elevations**

The Green CCR Surface Impoundment contents depths and elevations are provided below. They are based on: All CCR material has been removed.

Elevations are provided as feet above mean sea level and depths are provided as height in feet above the impoundment's design bottom prior to placement of CCR material. All values are rounded off to the nearest tenth of foot.

Minimum depth of impounded water = 0

Minimum elevation of impounded water = 355

Minimum depth of CCR material = 0

Minimum elevation of CCR material = NA CCR completely removed in areas.

Maximum depth of impounded water = Not available<sup>1</sup>

Maximum elevation of impounded water = 357.0 (Isolated pool on north end of pond)

Maximum depth of CCR material = 0

Maximum elevation of CCR material = N/A

Present depth of impounded water = 2

Present elevation of impounded water = 357.0

Present depth of CCR material = 0

Present elevation of CCR material = NA All CCR material removed.

**(iv) CCR Surface Impoundment Storage Capacity**

The Green CCR Surface Impoundment no longer has CCR storage capacity. All CCR material has been removed and the pond has achieved closure.

**(v) CCR Surface Impoundment Contents Volumes**

The Green CCR Surface Impoundment contents volume of impounded water was estimated to be 1,745 cubic yards and all CCR material has been removed. Volumes based on: 1) August 2024 flight derived topographic contours developed to

**(vi) CCR Surface Impoundment Structural, Operational, and Safety Items**

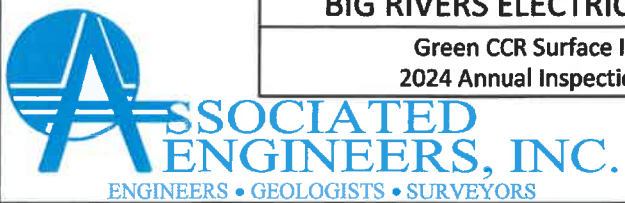
The inspection findings consisted of maintenance items primarily related to active construction activities, and there were no appearances of an actual or potential structural weakness of the CCR unit, and no existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures.

**(vii) CCR Surface Impoundment Changes**

There have been no significant changes to the Green CCR Surface Impoundment (or impounding structure) since the previous (2023) annual inspection that may have affected the stability of the impoundment. However, the approved closure means the CCR surface impoundment is no longer operational as a CCR Surface Impoundment.



Flight Date: August 5th, 2024



## BIG RIVERS ELECTRIC CORPORATION

Green CCR Surface Impoundment  
2024 Annual Inspection Aerial Photo

Job Number:	24-0198	Revisions:
Date:	01/06/2025	
Scale:	1" = 250'	
Drawn By:	A.E.I.	

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# BREC Final Rule CCR Impoundment 2024 Annual Inspection Checklist

Operator: CCR Surface Impoundment: Date:		Sebree Generating Station Green December 16, 2024		Weather: Overcast Temperature (Degrees F): 44 (high) Inspector/Qualified Person: David Lamb P.E. (AEI)	
ITEM		STATUS			OBSERVATIONS
		YES	NO	N/A	
<b>1 TOP OF DAM</b>					
Visual settlement		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Misalignment		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cracking		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Access road deterioration (potholes, rutting, etc.)		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor rutting along north and west side. Primarily Construction related
<b>2 UPSTREAM SLOPE</b>					
Any erosion		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor erosion at isolated areas
Longitudinal cracks		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Transverse cracks		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Adequate vegetative cover		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vegetative cover on interior removed as part of construction activity
Are trees growing on the slope		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Adequate riprap/slope protection		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Visual depressions		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visual settlement		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Any stone deterioration		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Debris or trash present		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>3 DOWNSTREAM SLOPE AND TOE</b>					
Any erosion		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor erosion southeast embankment corner
Longitudinal cracks		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Transverse cracks		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Adequate vegetative cover		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Isolated bare areas
Are trees growing on the slope		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Visual depressions or bulges		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Areas of minor tracking/rutting from tractor and mower tires
Visual settlement		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Animal Burrows		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimal small animal burrows on south embankment
Are boils present at the toe or slopes		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are drainage features obstructed or damaged		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are drainage features flowing		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is seepage present		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

ITEM		STATUS			OBSERVATIONS
		YES	NO	N/A	
	Is seepage or discharge carrying sediment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Soft or spongy zones present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>4</b>	<b>ABUTMENTS</b>				
	Any erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minor erosion on southeast downstream groin
	Visual differential movement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Any cracks	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Are drainage features flowing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Is seepage present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Is seepage or discharge carrying sediment	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>5</b>	<b>PRINCIPAL SPILLWAY</b>				
	Any deterioration of the spillway structure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Any deterioration of the spillway conduit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Spillway clear from obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Is the spillway functioning and discharging correctly	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spillway appears functional but not discharging at time of inspection
	Trash racks or skimmer operational	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Any signs of leakage with the structure or conduit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Abnormally high or low pool elevation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low pool elevation is being maintained
<b>6</b>	<b>EMERGENCY SPILLWAY</b>				
	Any deterioration of the spillway structure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Spillway clear from obstructions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Signs of erosion or slope sloughing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Adequate vegetative cover	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Signs of or currently discharging water	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>7</b>	<b>VALVES/GATES</b>				
	Are the valves/gates operational	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Are the valves/gates broken or bent	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Are the valves/gates corroded or rusted	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Have the valves/gates been maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>8</b>	<b>HYDRAULIC STRUCTURES UNDER/THROUGH DAM</b>				
	Hydraulic structures under/through embankment are in safe and reliable operating condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Abnormal flow	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Structure is no longer in use
	Abnormally colored discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	Debris or sediment in discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>9</b>	<b>SEEPAGE</b>				
	Seepage from toe drain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

ITEM	STATUS			OBSERVATIONS
	YES	NO	N/A	
Seepage from abutment drain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Seepage from blanket drain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Seepage from slope areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>DEFICIENCIES AND MAINTENANCE ITEMS</b>				

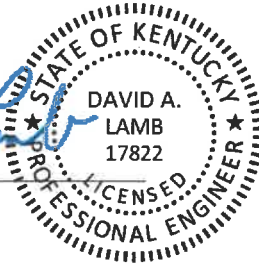
The inspection did not identify any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures. The inspection findings consisted of maintenance items that were not observed to be signs or potential signs of significant structural weakness.

The structure has been removed from service. At this time no water or CCR is impounded against the dam.

**Professional Engineer Certification [Per 40 CFR §257.83(b)]  
Green CCR Surface Impoundment  
Annual Inspections by a Qualified Professional Engineer**

I hereby certify that myself or an agent under my review has prepared this Annual Inspection Report (Report), and being familiar with the provisions of the final rule to regulate the disposal of coal combustion residuals (CCR) as solid waste under subtitle D of the Resource Conservation and Recovery Act (RCRA), attest that this Report has been prepared in accordance with good engineering practices and meets the intent of 40 CFR Part 257.83(b). To the best of my knowledge and belief, the information contained in this Report is true, complete, and accurate.





David A. Lamb, P.E.

State of Kentucky License No. 17822

Date: January 13, 2025