AECOM
500 W Jefferson St.
Suite 1600
Louisville, KY 40202
www.aecom.com

502-569-2301 tel
502-569-2304 fax

AECOM

October 17, 2018

Big Rivers Electric Corporation
Sebree Generating Station
9000 Highway 2096
Robards, Kentucky 42452

Engineer's Certification of Wetlands Demonstration
Existing Green CCR Surface Impoundment
EPA Final CCR Rule
Sebree Station
Robards, Kentucky

1.0 PURPOSE

The purpose of this document is to certify that the Wetland Location Restriction Demonstration for the BREC Sebree "Green" Existing CCR Surface Impoundment is in compliance with the Wetland Location Restriction demonstration specified in the Final CCR Rule at 40 CFR §257.61 presented below is the project background, summary of findings, limitations and certification.

2.0 BACKGROUND

As required by 40 CFR §257.61 of the EPA Final CCR Rule, by October 17, 2018, the owner or operator of an existing Surface Impoundment must demonstrate that the unit must not be located in wetlands, as defined in 40 CFR §232.2, unless the owner or operator demonstrates by the date specified in 40 CFR §257.61(c), October 17, 2018 that the CCR unit meets the requirements of paragraphs 40 CFR §257.61(a)(1) through (a)(5).

3.0 SUMMARY OF FINDINGS

The purpose of this report is to document that the requirements in 40 Code of Federal Regulations (CFR) §257.61(a) have been met to support certification for the existing Green CCR Surface Impoundment at Big Rivers Sebree Station. These regulations require the owner or operator to obtain certification from a qualified professional engineer stating that the demonstration meets the specified wetlands requirements of the CCR Rule. In accordance with §257.61(a) the existing CCR Surface Impoundment area complies with all required state and federal programs, including the Clean Water Act (CWA), and Kentucky Pollutant Discharge Elimination System (KPDES). Moreover, in combination of field surveys and delineations performed, no known threatened and endangered (T&E) species have been noted within the site. Also, according to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Webster County that are listed in the Marine Mammal Protection Act. The wetland study determined that there are no wetland soils or dredged fill to pose any erosion stability or migration concerns for the Green CCR Surface Impoundment, and the unit's construction and operation are not expected to result in any substantial impacts to populations of wildlife species. The existing Surface Impoundment is not anticipated to have significant effects on the surrounding environment from a catastrophic release, based

on stability analyses. The footprint of the site was chosen in order to minimize impacts to wetlands. Mitigation measures as determined in consultation with the USACE will be implemented. Based on this assessment, the existing Green CCR Surface Impoundment located at Sebree Station meets the requirements of § 257.61(a) of the EPA Final CCR Rule.

4.0 CERTIFICATION

I, Michael Brian Cole, being a Registered Professional Engineer in good standing in the State of Kentucky, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the demonstration regarding the location of the CCR Unit in the wetlands as included in the Wetlands Demonstration for Coal Combustion Residuals dated October 17, 2018 meets the requirements of 40 CFR § 257.61(a).

M. Brian Cole
Printed Name

October 17, 2018
Date

ADDRESS: AECOM
500 W Jefferson St Suite 1600
Louisville, KY 40202

TELEPHONE: (502)-569-2301

ATTACHMENTS: Wetlands Demonstration for Coal Combustion Residuals

Big Rivers ELECTRIC CORPORATION

Your Touchstone Energy® Cooperative

Existing Green CCR Surface Impoundment

Disposal of Coal Combustion Residuals (CCR) from Electric Utilites Final Rule
Wetlands Demonstration for Coal Combustion Residuals (CCR)

October 17, 2018

Prepared by

AECOM

Project Number: 60570534

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1.0 INTRODUCTION

1.1 OBJECTIVE

The purpose of this demonstration is to document compliance the Green CCR Surface Impoundment with 40 CFR §257.61 of the Environmental Protection Agency Final Coal Combustion Residual (CCR) Rule (EPA Final CCR Rule). This Wetland Location Restriction Demonstration is based on existing documentation such as construction drawings, record drawings, and any other pertinent data and/or investigations to support historic conditions and operations at the existing Green CCR Surface Impoundment at the Big Rivers Electric Corporation Sebree Station.

1.2 RULE REQUIREMENTS

According to 40 CFR §257.61(a) of the EPA Final CCR Rule, any new CCR landfills, existing, and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 40 CFR §232.2, unless the owner or operator demonstrates by the dates specified in 40 CFR §257.61(c) that the CCR unit meets the requirements of paragraphs 40 CFR §257.61(a)(1) through (a)(5). The written demonstration must include, at a minimum, the information specified in paragraphs (a)(1) through (5) of this section.

(1) Where applicable under section 404 of the Clean Water Act or applicable state wetland laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve the wetlands.
(2) The construction and operation of the CCR unit will not cause or contribute to any of the following:
    (i) A violation of any applicable state or federal water quality standard;
    (ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
    (iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat; and
    (iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 of the protection of a marine sanctuary.
(3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:
    (i) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the CCR unit;
    (ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;
    (iii) The volume and chemical nature of the CCR;
    (iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;
    (v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and
    (vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.
(4) To the extent required under section 404 of the Clean Water Act or applicable wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by

acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs (a)(1) through (3) of this section, then minimizing unavoidable impacts to the maximum extent reasonable and finally offsetting remaining impacts through all appropriate and reasonable compensatory mitigation actions. (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).

(5) Sufficient information is available to make a reasonable determination with respect to paragraphs (a)(1) through (4).

1.3 SITE BACKGROUND

Big Rivers Electric Corporation (BREC) owns and operates the "Sebree" Station in Sebree, Kentucky. The Sebree Station is located in Webster County, approximately 3.2 miles northeast of the town of Sebree, Kentucky situated immediately east of the Pennyrile Parkway approximately 1.5 miles north of the intersection of the Pennyrile Parkway and Kentucky Route 56 (see **Figure 1**). Sebree Station is composed of 2 Green generating units, one Reid generating unit, and 2 HMP&L generating units. The Green CCR Surface Impoundment is located directly south of the Sebree Station, situated north of the Green CCR Landfill. The current Green CCR Surface Impoundment footprint is approximately 16 acres (**Figure 2**).

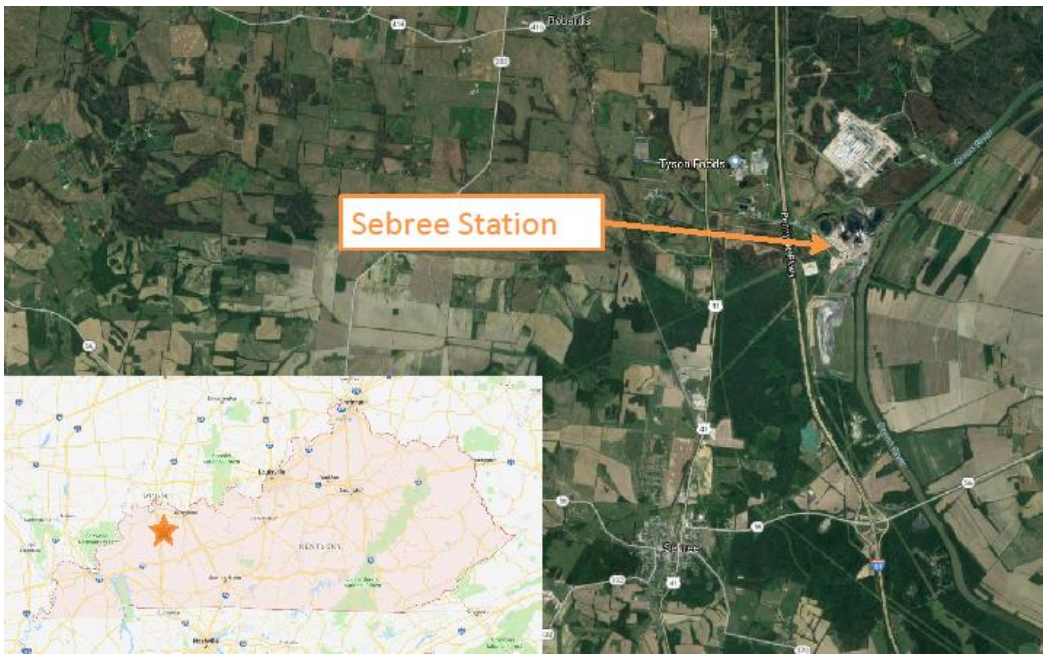

Figure 1: Big Rivers Sebree Site Location

Figure 2: Site Overview

1.4 SITE HISTORY

The CCR unit is used for the placement of coal combustion residual material; currently slurry bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 54.13 acres in size.

The CCR unit is a combined incised/earthen embankment structure. Embankments form the west, south and east sides of the impoundment and the north side is incised. The Green River is located approximately 400 feet east of the structure. Due to surface relief, only the toe area of the south dike is potentially subject to flooding. The predominant features were small stream valleys draining eastward to the Green River. Most of the central portion of the south dike was constructed on a subdued ridge. The toe of the outboard slope intersected a lower drainage area. Underlying preconstruction soils consisted of Loring- Grenada, Loring -Zanesville-Wellston (Henderson County) and Loring-Wellston-Zanesville (Webster County) soil associations which are generally characterized as well drained to moderately well drained soils on nearly level to sloping uplands.

Depth of impounded water and CCR is 16 feet and 46 feet (at respective locations of maximum impounded water and CCR depths). Elevation of impounded water and CCR is 394 feet and 408 feet, respectively, above mean sea level. These approximate depths and respective elevations are based on the most recent (December 2015) flight derived topographic contours and bathymetric survey data.

2.0 ASSESSMENT OF SITE WETLANDS

2.1 LOCATION AND CONDITION OF WETLANDS

Two wetlands were identified downgradient from the Green CCR Surface Impoundment at Sebree Station. One emergent wetland was identified at the toe of the surface impoundment's southern slope, and is bisected by an intermittent stream. One forested wetland was identified east of the surface impoundment and abutting the Green River. Refer to Table 1 for wetland feature details.

Table 1: Jurisdictional Wetlands within the Limits of Survey Boundary

Wetland ID	Wetland Classification	Wetland Acres
Green PEM-1	PEM	0.4
Green PEM-2	PEM	0.48
	Total:	**0.88**

2.2 IMPACTS

As shown in **Table 1**, a total of 0.88 acres of jurisdictional wetlands were identified inside the survey boundary for the existing CCR surface impoundment. Wetlands are shown in **Figure 2**.

Figure 3: Environmental Features Existing CCR Surface Impoundment

2.2.1 40 CFR §257.61(a)(1) – Location Alternatives

Since the demonstration is for an existing CCR unit, section (a)(1) does not apply.

2.2.2 40 CFR §257.61(a)(2) – Construction and Operation

(i) Applicable Water Quality Standards

In accordance with the EPA CCR Rule, construction and operation of all applicable units that are located in wetlands, must comply with the regulatory standards set forth in all applicable governing documents. In examination of the CCR Rule and the existing surface impoundment, the existing surface impoundment will comply with all required state and federal programs, including the Clean Water Act (CWA) and Kentucky Pollutant Discharge Elimination System (KPDES).

(ii) Applicable Effluent Limitations

Big Rivers is required under KPDES Permit No. KY0001929, effective October 1, 2018, to meet pH, total suspended solids, oil and grease, certain metals, and chronic and acute whole effluent toxicity limits at Outfall 001 prior to discharge. The KPDES permit also requires monitoring for a series of metals. Based upon monitoring under the prior KPDES permit, Big Rivers anticipates compliance with the water quality based limits of its renewed KPDES permit.

Effluent Limitations established in KPDES Permit KY0001929 are managed through existing facilities, Best Management Practices (BMPs), and inspections. Big Rivers has established an Inspection Program that include weekly and annual impoundment inspections, as required by 40 CFR §257.84. In addition, informal inspections may be performed by operations and maintenance personnel.

(iii) Endangered Species

On May 3 and 4, 2018, AECOM had a team of professionals on site to examine potential bat habitat and potential Waters of the US. The project area examined was approximately 53 acres. The area immediately surrounding Green CCR Surface Impoundment was dominated by fescue (*Schedonorus arundinaceus*) and smooth brome (*Bromus inermis*) in upland areas, with common reed (*Phragmites australis*) dominant in wetland areas. An ephemeral stream in the southwest corner of the survey area was lined by sycamore (*Platanus occidentalis*), boxelder (*Acer negundo*), and sweetgum (*Liquidambar styraciflua*) trees approximately 2-6 inches in diameter at breast height (dbh). The wooded area abutting the Green River (east of Green CCR Surface Impoundment) was dominated by silver maple (*Acer saccharinum*) and boxelder (*A. negundo*), hackberry (*Celtis occidentalis*), and green ash (*Fraxinus pennsylvanica*). Coralberry (*Symphoricarpos orbiculatus*, a deciduous shrub) was dominant in the herbaceous stratum throughout upland areas in this portion of the assessment area.

No potential roosting habitat for any of the three federally protected bat species listed above was found to occur in the assessment area. Roosting habitat would have consisted of trees with exfoliating bark creating approximately fist-sized openings, commonly including species such as shagbark hickory or silver maple, or dead trees/snags with exfoliating bark or cavities. As no

habitat was identified in the project area, it does not appear that operations at the Green CCR Surface Impoundment have a negative impact on or jeopardize the existence of threatened and endangered species.

(iv) Marine Protection Act

The 1972, Marine Mammal Protection Act was enacted to protect all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the United States. The act establishes an ending on the taking and importation of marine mammals and marine mammal by products. According to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Sebree County that are found in the Marine Mammal Protection Act. Additionally, based on the definition of "marine" as set forth in 15 CFR § 922.3, the existing surface impoundment site does not include any marine sanctuaries and therefore this requirement is not applicable.

2.2.3 40 CFR §257.61(A)(3) – POTENTIAL FOR SIGNIFICANT DEGRADATION

(i) Erosion Stability and Migration Potential of Wetland Soils

There are no wetland soils, muds, or deposits used to support the existing CCR surface impoundment to pose an erosion stability or migration concern.

(ii) Erosion Stability and Migration Potential of Dredge/Fill

No dredging is proposed in conjunction with the existing CCR surface impoundments at Sebree Station to pose an erosion stability or mitigation concern.

(iii) CCR Volume and Chemical Nature

The approximate volume of impounded CCR is 856,550 cubic yards.

(iv)Fish and Wildlife Impacts

During operation of the CCR unit, wildlife use of the existing surface impoundment would be limited; however, some scattered herbaceous areas could develop and could be used by grassland species or species adapted to disturbed areas. The existing CCR unit is not expected to result in any substantial impacts to populations of wildlife species.

(v) Environmental Impacts

Based on the Geotechnical Site Evaluation performed by AECOM in 2016 the existing CCR unit shows no erosion or migration potential. The Safety Factor Assessment results are greater than or equal to the required safety factors, indicating the existing surface impoundment is structurally safe, minimizing the risk of impact of a catastrophic release on the downgradient wetlands. The factor of safety for dikes constructed of soils that have susceptibility to liquefaction condition was 1.80 for the cross-sections analyzed. This factor of safety is well

above the target value of 1.20, and indicates the surface impoundment will be stable in the event of the design earthquake.

(vi) Additional Factors

This CCR unit is subject to Big Rivers' CCP Storage Facilities Inspection Program. The inspection program includes scheduled formal, intermediate, and informal inspections as well as unscheduled special (emergency) inspections. Additionally, Sebree Station personnel make daily observations and perform weekly reviews of the disposal areas. Maintenance is performed on an as-needed basis, and Big Rivers all documents repair and maintenance activities. The KPDES permit requires monitoring and control Best Management Practices for seepage outbreaks from the CCR surface impoundment.

2.2.4 40 CFR §257.61(A)(4) – WETLAND MITIGATION

Since this demonstration is for an existing CCR unit, Section (a)(4) does not apply.

3.0 CONCLUSIONS

The purpose of this report is to document that the requirements in 40 Code of Federal Regulations (CFR) §257.61(a) have been met to support certification for the existing Green CCR Surface Impoundment at Big Rivers Sebree Station. These regulations require the owner or operator to obtain certification from a qualified professional engineer stating that the demonstration meets the specified wetlands requirements of the CCR Rule.

In accordance with §257.61(a) the existing CCR surface impoundment area complies with all required state and federal programs, including the Clean Water Act (CWA), and Kentucky Pollutant Discharge Elimination System (KPDES). Moreover, in combination of field surveys and delineations performed, no known threatened and endangered (T&E) species have been noted within the site. Also, according to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Webster County that are listed in the Marine Mammal Protection Act. The wetland study determined that there are no wetland soils or dredged fill to pose any erosion stability or migration concerns for the Green CCR Surface Impoundment, and the unit's construction and operation are not expected to result in any substantial impacts to populations of wildlife species. The existing surface impoundment is not anticipated to have significant effects on the surrounding environment from a catastrophic release, based on stability analyses. The footprint of the site was chosen in order to minimize impacts to wetlands. Mitigation measures as determined in consultation with the USACE will be implemented. Based on this assessment, the existing Green CCR Surface Impoundment located at Sebree Station meets the requirements of § 257.61(a) of the EPA Final CCR Rule.

4.0 REFERENCES

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AECOM
500 W Jefferson St.
Suite 1600
Louisville, KY 40202
www.aecom.com

502-569-2301 tel
502-569-2304 fax

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October 17, 2018

Big Rivers Electric Corporation
Sebree Generating Station
9000 Highway 2096
Robards, Kentucky 42452

Engineer's Certification of Wetlands Demonstration
Existing Reid/HMPL CCR Surface Impoundment
EPA Final CCR Rule
Sebree Station
Robards, Kentucky

1.0 PURPOSE

The purpose of this document is to certify that the Wetland Location Restriction Demonstration for the BREC Sebree "Reid/HMPL" Existing CCR Surface Impoundment is in compliance with the Wetland Location Restriction demonstration specified in the Final CCR Rule at 40 CFR §257.61. Presented below is the project background, summary of findings, limitations and certification.

2.0 BACKGROUND

As required by 40 CFR §257.61 of the EPA Final CCR Rule, by October 17, 2018, the owner or operator of an existing surface impoundment must demonstrate that the unit must not be located in wetlands, as defined in 40 CFR §232.2, unless the owner or operator demonstrates by the date specified in 40 CFR §257.61(c), October 17, 2018 that the CCR unit meets the requirements of paragraphs 40 CFR §257.61(a)(1) through (a)(5).

3.0 SUMMARY OF FINDINGS

The purpose of this report is to document that the requirements in 40 Code of Federal Regulations (CFR) §257.61(a) have been met to support certification for the existing Reid/HMPL CCR Surface Impoundment at Big Rivers Sebree Station. These regulations require the owner or operator to obtain certification from a qualified professional engineer stating that the demonstration meets the specified wetlands requirements of the CCR Rule.

In accordance with §257.61(a) the existing CCR surface impoundment area complies with all required state and federal programs, including the Clean Water Act (CWA), and Kentucky Pollutant Discharge Elimination System (KPDES). Moreover, in combination of field surveys and delineations performed, no known threatened and endangered (T&E) species have been noted within the site. Also, according to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Webster County that are listed in the Marine Mammal Protection Act. The wetland study determined that there are no wetland soils or dredged fill to pose any erosion stability or migration concerns for the Reid/HMPL CCR Surface Impoundment, and the unit's construction and operation are not expected to result in any substantial impacts to populations of wildlife species. The existing surface impoundment is not anticipated to have significant effects on the surrounding environment from a catastrophic release, based on stability analyses. The footprint of the site was chosen in order to minimize impacts to wetlands. Mitigation measures as determined in consultation with the USACE will be implemented.

Based on this assessment, the existing Reid/HMPL CCR Surface Impoundment located at Sebree Station meets the requirements of § 257.61(a) of the EPA Final CCR Rule.

4.0 CERTIFICATION

I, Michael Brian Cole, being a Registered Professional Engineer in good standing in the State of Kentucky, do hereby certify, to the best of my knowledge, information, and belief, that the information contained in this certification has been prepared in accordance with the accepted practice of engineering. I certify, for the above-referenced CCR Unit, that the demonstration regarding the location of the CCR Unit in the wetlands as included in the Wetlands Demonstration for Coal Combustion Residuals dated October 17, 2018 meets the requirements of 40 CFR § 257.61(a).

M. Brian Cole
Printed Name

October 17, 2018
Date

ADDRESS: AECOM
500 W Jefferson St Suite 1600
Louisville, KY 40202

TELEPHONE: (502)-569-2301

ATTACHMENTS: Wetlands Demonstration for Coal Combustion Residuals

Existing Reid/HMPL CCR Surface Impoundment

Disposal of Coal Combustion Residuals (CCR) from Electric Utilites Final Rule

Wetlands Demonstration for Coal Combustion Residuals (CCR)

October 17, 2018

Prepared by

AECOM

Project Number: 60571713

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1.0 INTRODUCTION

1.1 OBJECTIVE

The purpose of this demonstration is to document the Reid/HMPL CCR Surface Impoundment compliance with 40 CFR §257.61 of the Environmental Protection Agency Final Coal Combustion Residual (CCR) Rule (EPA Final CCR Rule). This Wetland Location Restriction Demonstration is based on existing documentation such as construction drawings, record drawings, and any other pertinent data and/or investigations to support historic conditions and operations at the existing CCR surface impoundment at the Big Rivers Electric Corporation Sebree Station.

1.2 RULE REQUIREMENTS

According to 40 CFR §257.61(a) of the EPA Final CCR Rule, any new CCR landfills, existing, and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 40 CFR §232.2, unless the owner or operator demonstrates by the dates specified in 40 CFR §257.61(c) that the CCR unit meets the requirements of paragraphs 40 CFR §257.61(a)(1) through (a)(5). The written demonstration must include, at a minimum, the information specified in paragraphs (a)(1) through (5) of this section.

(1) Where applicable under section 404 of the Clean Water Act or applicable state wetland laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve the wetlands.
(2) The construction and operation of the CCR unit will not cause or contribute to any of the following:
    (i) A violation of any applicable state or federal water quality standard;
    (ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;
    (iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat; and
    (iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 of the protection of a marine sanctuary.
(3) The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:
    (i) Erosion, stability, and migration potential of native wetland soils, muds, and deposits used to support the CCR unit;
    (ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;
    (iii) The volume and chemical nature of the CCR;
    (iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;
    (v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and
    (vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.
(4) To the extent required under section 404 of the Clean Water Act or applicable wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by

acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by paragraphs (a)(1) through (3) of this section, then minimizing unavoidable impacts to the maximum extent reasonable and finally offsetting remaining impacts through all appropriate and reasonable compensatory mitigation actions. (e.g., restoration of existing degraded wetlands or creation of man-made wetlands).

(5) Sufficient information is available to make a reasonable determination with respect to paragraphs (a)(1) through (4).

1.3 SITE BACKGROUND

Big Rivers Electric Corporation (BREC) owns and operates the "Sebree" Station in Sebree, Kentucky. The Sebree Station is located in Webster County, approximately 3.2 miles northeast of the town of Sebree, Kentucky situated immediately east of the Pennyrile Parkway approximately 1.5 miles north of the intersection of the Pennyrile Parkway and Kentucky Route 56 (see **Figure 1**). Sebree Station is composed of 2 Green generating units, one Reid generating unit, and 2 HMP&L generating units. The Reid/HMPL CCR Surface Impoundment is located directly northwest of the Sebree Station. The current Reid/HMPL CCR Surface Impoundment footprint is approximately 21 acres (**Figure 2**).

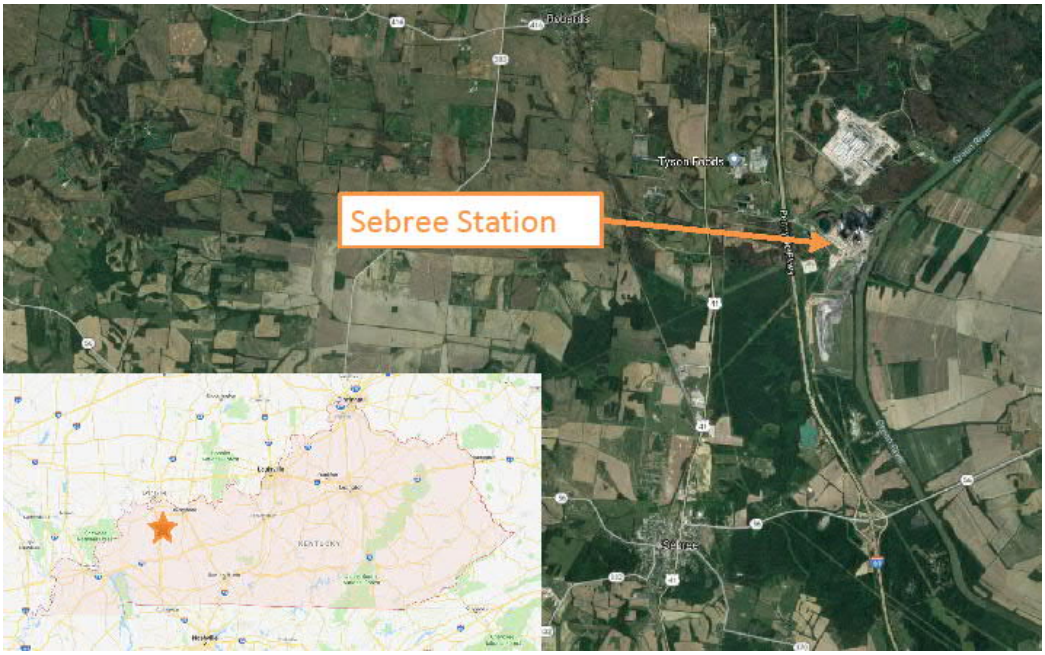

Figure 1: Big Rivers Sebree Site Location

Figure 2: Site Overview

1.4 SITE HISTORY

The CCR unit is used for the placement of coal combustion residual material; currently slurry bottom ash. The immediate watershed that drains to the CCR unit, and in which the CCR unit is considered to be located, is unnamed and 25.45 acres in size. The CCR unit is a combined incised/earthen embankment structure. Embankments form the west, south and east sides of the impoundment and the north side is incised. The original terrain on which the pond was constructed generally sloped toward the west. Although the Green River is located less than 0.5 miles from the site, the structure does not extend significantly into the floodplain.

Underlying preconstruction soils consisted of Loring- Grenada, Loring-Zanesville-Wellston (Henderson County) and Loring- Wellston -Zanesville (Webster County) soil associations which are generally characterized as well drained to moderately well drain soils on nearly level to sloping uplands. The embankment reaches its greatest relief of approximately 42 feet on the west side.

Depth of impounded water and CCR is 16 feet and 39 feet (at respective locations of maximum impounded water and CCR depths). Elevation of impounded water and CCR is 426 feet and 440 feet, respectively, above mean sea level. These approximate depths and respective elevations are based on the most recent (December 2015) flight derived topographic contours and bathymetric survey data.

2.0 ASSESSMENT OF SITE WETLANDS

2.1 LOCATION AND CONDITION OF WETLANDS

Four wetlands were identified downgradient from the Reid/HMPL CCR Surface Impoundment at Sebree Station. All of these wetlands were found at the toe of slopes surrounding Reid/HMPL CCR Surface Impoundment, to the north and west. One wetland consists of a series of four seep features with similar character. Three emergent features identified were dominated by Phragmites australis, and two of these are bisected by the same ephemeral stream. Photographs of the wetlands are included in Attachment 1 (Appendix B). Refer to Table 1 for wetland feature details.

Table 1: Jurisdictional Wetlands within the Limits of Survey Boundary

Wetland ID	Wetland Classification	Wetland Acres
Reid PEM-1	PEM	0.29
Reid PEM-2	PEM	0.05
Reid PEM-3	PEM	0.18
Reid PEM-4	PEM	0.28
	Total:	**0.8**

2.2 IMPACTS

As shown in **Table 1**, a total of 0.8 acres of jurisdictional wetlands were identified inside the survey boundary downgradient of the existing CCR surface impoundment. Wetlands are shown in **Figure 2**.

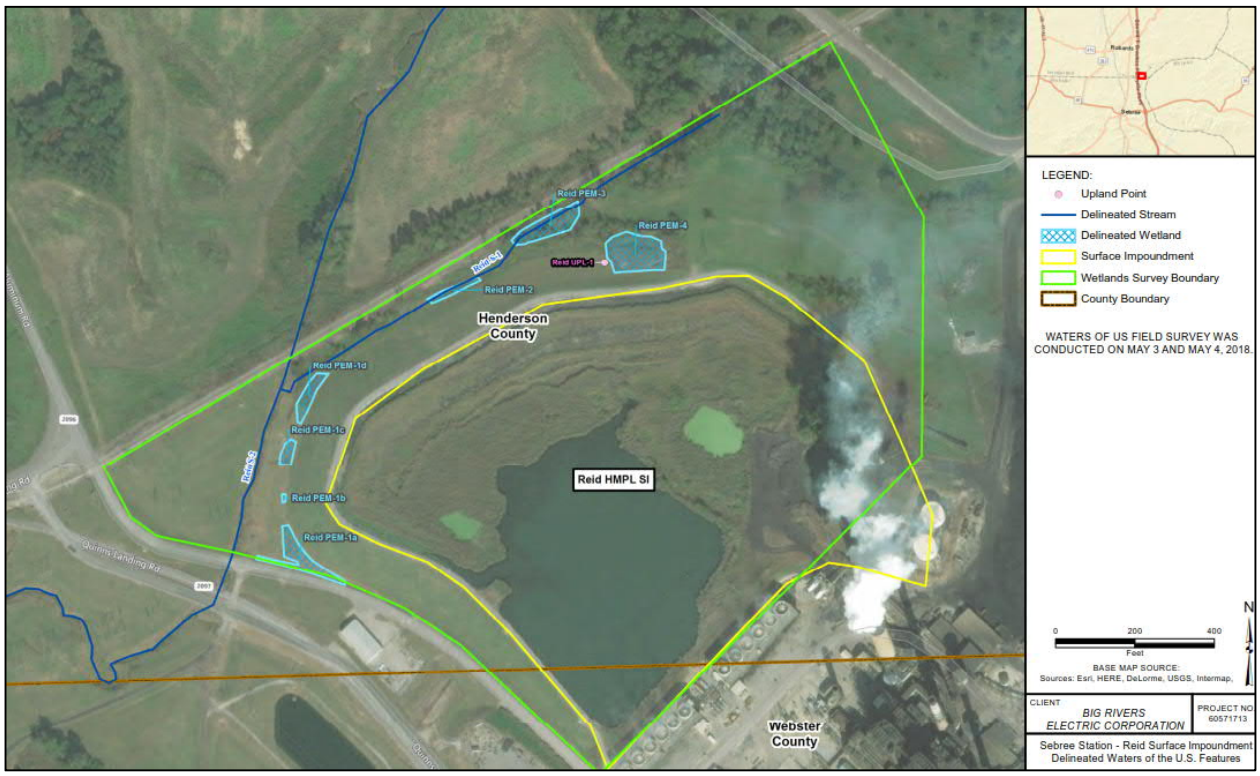

Figure 3: Environmental Features Existing CCR Surface Impoundment

2.2.1 40 CFR §257.61(a)(1) – Location Alternatives

Since this demonstration is for an existing CCR unit, Section (a)(1) does not apply.

2.2.2 40 CFR §257.61(a)(2) – Construction and Operation

(i) Applicable Water Quality Standards

In accordance with the EPA CCR Rule, construction and operation of all applicable units that are located in wetlands, must comply with the regulatory standards set forth in all applicable governing documents. In examination of the CCR Rule and the existing surface impoundment, the existing surface impoundment will comply with all required state and federal programs, including the Clean Water Act (CWA) and Kentucky Pollutant Discharge Elimination System (KPDES).

(ii) Applicable Effluent Limitations

Big Rivers is required under KPDES Permit No. KY0001929, effective October 1, 2018, to meet pH, total suspended solids, oil and grease, certain metals, and chronic and acute whole effluent toxicity limits at Outfall 001 prior to discharge. The KPDES permit also requires monitoring for a series of metals. Based upon monitoring under the prior KPDES permit, Big Rivers anticipates compliance with the water quality based limits of its renewed KPDES permit.

Effluent Limitations established in KPDES Permit KY0001929 are managed through existing facilities, Best Management Practices (BMPs), and inspections. Big Rivers has established an Inspection Program that include weekly and annual impoundment inspections, as required by 40 CFR §257.84. In addition, informal inspections may be performed by operations and maintenance personnel.

(iii) Endangered Species

On May 3 and 4, 2018, AECOM had a team of professionals on site to examine potential bat habitat and potential Waters of the US. The project area examined was approximately 42 acres. The area immediately surrounding Reid Surface Impoundment was dominated by Kentucky bluegrass (*Poa pratensis*) and fescue (*Schedonorus arundinaceus*) in upland areas, with common reed (*Phragmites australis*) and narrowleaf cattail (*Typha angustifolia*) dominant in wetland areas. The area surrounding ephemeral stream Reid S-2 was very scrubby, though some larger trees were observed near the boundary of emergent wetland Reid PEM-3 (see **Figure 1** for site overview/feature locations). Trees in this area included sycamore (*Platanus occidentalis*), green ash (Fraxinus *pennsylvanica*), and American elm (*Ulmus americana*).

No potential roosting habitat for any of the three federally protected bat species listed above was found to occur in the assessment area. Roosting habitat would have consisted of trees with exfoliating bark creating approximately fist-sized openings, commonly including species such as shagbark hickory or silver maple, or dead trees/snags with exfoliating bark or cavities. As no habitat was identified in the project area, it does not appear that operations at the Reid Surface

Impoundment have a negative impact on or jeopardize the existence of threatened and endangered species.

(iv) Marine Protection Act

The 1972, Marine Mammal Protection Act was enacted to protect all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the United States. The act establishes an ending on the taking and importation of marine mammals and marine mammal by products. According to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Sebree County that are found in the Marine Mammal Protection Act. Additionally, based on the definition of "marine" as set forth in 15 CFR § 922.3, the existing surface impoundment site does not include any marine sanctuaries and therefore this requirement is not applicable.

2.2.3 40 CFR §257.61(a)(3) – Potential for Significant Degradation

(i) Erosion Stability and Migration Potential of Wetland Soils

There are no wetland soils, muds or deposits used to support the existing CCR surface impoundment to pose an erosion stability or migration concern.

(ii) Erosion Stability and Migration Potential of Dredge/Fill

No dredging is proposed in conjunction with the existing CCR surface impoundment at Sebree Station to pose an erosion stability or migration concern.

(iii) CCR Volume and Chemical Nature

The approximate volume of impounded CCR is estimated to be 682,000 cubic yards.

(iv)Fish and Wildlife Impacts

During operation of the CCR unit, wildlife use of the existing surface impoundment would be limited; however, some scattered herbaceous areas could develop and could be used by grassland species or species adapted to disturbed areas. The existing CCR unit is not expected to result in any substantial impacts to populations of wildlife species.

(v) Environmental Impacts

Based on the Geotechnical Site Evaluation, existing CCR unit, performed by AECOM in 2016 shows no erosion or migration potential. The Safety Factor Assessment results are greater than or equal to the required safety factors indicating the existing surface impoundment is structurally safe.

The factor of safety for dikes constructed of soils that have susceptibility to liquefaction condition was 1.585 for the cross-sections analyzed. This factor of safety is well above the target value of

1.20, and indicates the surface impoundment will be stable in the event of the design earthquake.

(vi) Additional Factors

This CCR unit is subject to Big Rivers' CCP Storage Facilities Inspection Program. The inspection program includes scheduled formal, intermediate, and informal inspections as well as unscheduled special (emergency) inspections. Additionally, Big Rivers plant personnel make daily observations and perform weekly reviews of the disposal areas. Maintenance is performed on an as-needed basis, and Big Rivers all documents repair and maintenance activities. The KPDES permit requires monitoring and control Best Management Practices for seepage outbreaks from the CCR surface impoundment.

2.2.4 40 CFR §257.61(A)(4) – WETLAND MITIGATION

Since this demonstration is for an existing CCR unit, Section (a)(4) does not apply.

3.0 CONCLUSIONS

The purpose of this report is to document that the requirements in 40 Code of Federal Regulations (CFR) §257.61(a) have been met to support certification for the existing Reid/HMPL CCR Surface Impoundment at Big Rivers Sebree Station. These regulations require the owner or operator to obtain certification from a qualified professional engineer stating that the demonstration meets the specified wetlands requirements of the CCR Rule.

In accordance with §257.61(a) the existing CCR surface impoundment area complies with all required state and federal programs, including the Clean Water Act (CWA), and Kentucky Pollutant Discharge Elimination System (KPDES). Moreover, in combination of field surveys and delineations performed, no known threatened and endangered (T&E) species have been noted within the site. Also, according to County Report of Endangered, Threatened, Proposed & Candidate Species in Webster County, Kentucky, there are no known aquatic and/or marine mammals present within Webster County that are listed in the Marine Mammal Protection Act. The wetland study determined that there are no wetland soils or dredged fill to pose any erosion stability or migration concerns for the Reid/HMPL CCR Surface Impoundment, and the unit's construction and operation are not expected to result in any substantial impacts to populations of wildlife species. The existing surface impoundment is not anticipated to have significant effects on the surrounding environment from a catastrophic release, based on stability analyses. The footprint of the site was chosen in order to minimize impacts to wetlands. Mitigation measures as determined in consultation with the USACE will be implemented. Based on this assessment, the existing Reid/HMPL CCR Surface Impoundment located at Sebree Station meets the requirements of § 257.61 of the EPA Final CCR Rule.

4.0 REFERENCES

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