Stantec Consulting Services Inc.
10200 Alliance Road, Suite 300
Cincinnati OH 45242-4754

October 14, 2026
Project/File: 173411097
Revision 0

Ohio Valley Electric Corporation
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

RE: Periodic Hazard Potential Classification Assessment
South Fly Ash Pond
EPA Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

1.0 PURPOSE

This letter documents Stantec's certification of the hazard potential classification assessment for the Ohio Valley Electric Corporation (OVEC) Kyger Creek Station's South Fly Ash Pond. The EPA CCR Rule requires a new certification to be performed on a five-year periodic interval under 40 CFR 257.73(a)(2). The initial certification of hazard potential classification was placed in the operating record in October 2016.

2.0 INITIAL HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

The initial hazard potential classification assessment is attached. The results of the initial assessment assigned a hazard potential classification rating of "significant" to the South Fly Ash Pond because a failure or mis-operation would result in no probable loss of human life, but could cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. A breach of the South Fly Ash Pond would likely result in the release of CCR material to Kyger Creek and the Ohio River with no loss of human life.

3.0 PERIODIC HAZARD POTENTIAL CLASSIFICATION ASSESSMENT

3.1 Periodic Assessment (2021)

Stantec reviewed the initial 2016 periodic hazard classification assessment and the changes in site conditions that occurred in the previous five years. The following operational changes and other factors were considered in this periodic assessment:

1. The South Fly Ash Pond's operational pool was at El. 583.6 feet, below the maximum operating pool of El. 585 feet.

2. Cross-sectional geometry of the perimeter dike system had not changed.

3. Annual and weekly inspections conducted since 2015 were reviewed as part of this assessment. There were no observations of deficiencies that would negatively affect the result of the hazard potential classification assessment.

4. Ohio River water levels remained unchanged.

Based on the review, there were no changed conditions in the previous five years that would have a negative effect on the initial hazard potential classification assessment.

3.2 Periodic Assessment (2026)

Stantec reviewed the 2016 and 2021 hazard potential classification assessments and the changes in site conditions that occurred in the previous five years. The following operational changes and other factors were considered in this periodic assessment:

1. Closure construction activities are ongoing at the South Fly Ash Pond. Completion is scheduled in 2027.

2. Flows into the South Fly Ash Pond ceased as of October 2023 prior to construction commencing.

3. The operational pool has been removed to allow closure-in-place activities.

4. The South Fly Ash Pond spillway facility is unchanged. Stormwater and/or porewater during construction are being pumped, discharging through a permitted outfall.

5. Cross-sectional geometry of the perimeter dike system is being modified in accordance with permitted plans approved by the Ohio Department of Natural Resources, Division of Water Resources, Dam Safety program.

6. Annual and weekly inspections conducted since 2015 were reviewed as part of this assessment. There were no observations of deficiencies that would negatively affect the result of the hazard potential classification assessment.

7. Typical Ohio River water levels have remained unchanged.

Based on our review, the conditions that have changed in the past five years would not have a negative effect on the periodic hazard potential classification assessment. Once construction activities are complete, an assessment can be performed to determine if the hazard potential can be reduced.

4.0 SUMMARY OF ASSESSMENT

Based on a review of the initial hazard potential classification assessment and the items listed in Section 3.0, the result of this hazard potential classification assessment is that the South Fly Ash Pond at Kyger Creek Station meets the requirements for classification as a “significant” hazard impoundment (as defined in 40 CFR § 257.53).

RE: Periodic Hazard Potential Classification Assessment
South Fly Ash Pond
EPA Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

5.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

I, Jacqueline S. Harmon, being a Professional Engineer in good standing in the State of Ohio, do hereby certify, to the best of my knowledge, information, and belief:

1. that the information contained in this certification is prepared in accordance with the accepted practice of engineering,

2. that the information contained herein is accurate as of the date of my signature below, and

3. that the periodic hazard potential classification assessment for the OVEC Kyger Creek Station's South Fly Ash Pond meet the requirements specified in 40 CFR 257.73(a)(2).

SIGNATURE Jacqueline S. Harmon DATE 10/14/2026

ADDRESS: Stantec Consulting Services Inc.
10200 Alliance Road, Suite 300
Cincinnati, Ohio 45242

TELEPHONE: (513) 842-8200

ATTACHMENTS:

- Kyger Creek Station South Fly Ash Pond Periodic Hazard Potential Classification Assessment (2021)

STATE OF OHIO
JACQUELINE S HARMON
E-72559
REGISTERED
PROFESSIONAL ENGINEER

Stantec Consulting Services Inc.
11687 Lebanon Road, Cincinnati OH 45241

October 14, 2021
File: 175531034
Revision 0

Ohio Valley Electric Corporation
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

RE: Periodic Hazard Potential Classification Assessment
South Fly Ash Pond
EPA Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

1.0 PURPOSE

This letter documents Stantec's certification of the hazard potential classification assessment for the Ohio Valley Electric Corporation (OVEC) Kyger Creek Station's South Fly Ash Pond. The EPA CCR Rule requires a new certification to be performed on a five-year periodic interval under 40 CFR 257.73(a)(2). The initial certification of hazard potential classification was placed in the operating record in October 2016.

2.0 INITIAL HAZARD CLASSIFICATION ASSESSMENT

The initial hazard potential classification assessment is attached. The results of the initial assessment assigned a hazard potential classification rating of "significant" to the South Fly Ash Pond because a failure or mis-operation would result in no probable loss of human life, but could cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns. A breach of the South Fly Ash Pond would likely result in the release of CCR material to Kyger Creek and the Ohio River with no loss of human life.

3.0 INITIAL HAZARD CLASSIFICATION ASSESSMENT

Stantec reviewed the result of the initial hazard potential assessment and the changes in site conditions that have occurred in the past five years. The following operational changes and other factors were considered in this periodic assessment:

1. The South Fly Ash Pond's operational pool is at El. 583.6 feet, below the maximum operating pool of El. 585 feet.

2. Cross-sectional geometry of the perimeter dike system has not changed.

3. Annual and weekly inspections conducted since 2015 were reviewed as part of this assessment. There were no observations of deficiencies that would negatively affect the result of the hazard potential classification assessment.

Re: **Periodic Hazard Potential Classification Assessment**
South Fly Ash Pond
EPA Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

4. Ohio River water levels have remained unchanged.

Based on our review, there are no conditions that have changed in the past five years that would have a negative effect on the initial hazard potential classification assessment.

4.0 SUMMARY OF ASSESSMENT

Based on a review of the initial hazard potential classification assessment and the items listed in Section 3.0, the result of this hazard potential classification assessment is that the South Fly Ash Pond at Kyger Creek Station meets the requirements for classification as a "significant" hazard impoundment (as defined in 40 CFR § 257.53).

5.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

I, Jacqueline S. Harmon, being a Professional Engineer in good standing in the State of Ohio, do hereby certify, to the best of my knowledge, information, and belief:

1. that the information contained in this certification is prepared in accordance with the accepted practice of engineering,

2. that the information contained herein is accurate as of the date of my signature below, and

3. that the periodic hazard potential classification assessment for the OVEC Kyger Creek Station's South Fly Ash Pond meets the requirements specified in 40 CFR 257.73(a)(2).

SIGNATURE Jacqueline S. Harmon DATE 10/14/2021

STATE OF OHIO
JACQUELINE S HARMON
E-72559
REGISTERED
PROFESSIONAL ENGINEER

ADDRESS: Stantec Consulting Services Inc.
11687 Lebanon Road
Cincinnati, Ohio 45241

TELEPHONE: (513) 842-8200

ATTACHMENTS: Kyger Creek Station South Fly Ash Pond Initial Hazard Potential Classification Assessment

Stantec Consulting Services Inc.
11687 Lebanon Road, Cincinnati OH 45241

October 17, 2016
File: 175534017
Revision 0

Ohio Valley Electric Corporation
3932 U.S. Route 23
P.O. Box 468
Piketon, Ohio 45661

RE: Initial Hazard Potential Classification Assessment
South Fly Ash Pond and Boiler Slag Pond
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

1.0 PURPOSE

This letter documents Stantec's certification of the initial hazard potential classification assessment for the Ohio Valley Electric Corporation (OVEC) Kyger Creek Station's South Fly Ash Pond and Boiler Slag Pond. The EPA Final CCR Rule requires owners or operators of CCR surface impoundments to conduct initial and periodic hazard potential classification assessments of the unit, assign one of three potential hazard classification ratings to it, and provide the basis for the rating, as per 40 CFR 257.73(a)(2). Hazard potential classification ratings define the consequences in the event of a failure – the ratings have nothing to do with the likelihood of failure or the structural stability of the impoundment. Based on this assessment, the South Fly Ash Pond and Boiler Slag Pond have been assigned a significant hazard potential classification rating.

2.0 BASIS FOR CLASSIFICATION RATING

As described in the attached assessment report, the hazard potential classification rating of "significant" was assigned to the South Fly Ash Pond and Boiler Slag Pond because a failure or mis-operation would result in economic loss or environmental damage, but loss of human life is improbable. The hazard potential classifications were determined by observation of current conditions and review of a previous assessment provided in the existing emergency action plans. A breach would likely result in the release of CCR materials into the Ohio River and/or Kyger Creek.

3.0 SUMMARY OF FINDINGS

The attached report presents the analysis for the initial hazard potential classification assessment. The results demonstrate that the impoundment meets the hazard potential classification of "significant."

Re: **Initial Hazard Potential Classification Assessment**
South Fly Ash Pond and Boiler Slag Pond
EPA Final Coal Combustion Residuals (CCR) Rule
Kyger Creek Station
Cheshire, Gallia County, Ohio

4.0 QUALIFIED PROFESSIONAL ENGINEER CERTIFICATION

I, Stan A. Harris, being a Professional Engineer in good standing in the State of Ohio, do hereby certify, to the best of my knowledge, information, and belief:

1. that the information contained in this certification is prepared in accordance with the accepted practice of engineering;

2. that the information contained herein is accurate as of the date of my signature below; and

3. that the initial hazard potential classification assessment for the OVEC Kyger Creek Station's South Fly Ash Pond and Boiler Slag Pond meet the requirements specified in 40 CFR 257.73(a)(2).

SIGNATURE Stan A. Harris DATE 10/17/16

ADDRESS: Stantec Consulting Services Inc.
11687 Lebanon Road
Cincinnati, Ohio 45241

TELEPHONE: (513) 842-8200

ATTACHMENTS: Kyger Creek Station Initial Hazard Potential Classification Assessment

STATE OF OHIO
STAN A. HARRIS
53083
REGISTERED
PROFESSIONAL ENGINEER

Stan A. Harris 10/17/16

Initial Hazard Potential Classification Assessment

Kyger Creek Station
South Fly Ash Pond and Bottom Slag Pond
Cheshire, Gallia County, Ohio

Prepared for:
Ohio Valley Electric Corporation
Piketon, Ohio

Prepared by:
Stantec Consulting Services Inc.
Cincinnati, Ohio

October 17, 2016

Table of Contents

1.0 RATING 1

2.0 BASIS OF RATING 1
2.1 INTRODUCTION 1
2.1.1 SFAP Facility Description 2
2.1.2 BSP Facility Description 2
2.2 SOURCE DATA 3
2.3 POTENTIAL FAILURE SCENARIOS 3
2.3.1 SFAP Failure Scenarios 3
2.3.2 BSP Failure Scenarios 4

3.0 CONCLUSION 5

4.0 REFERENCES 5

LIST OF FIGURES

Figure 1 Plan View of Kyger Creek Station **6**

1.0 RATING

On April 17, 2015 the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities rule (Environmental Protection Agency, 2015) was published in the Federal Register.

As described in 40 CFR 257.73(a)(2) of the EPA Final CCR Rule, an owner or operator of any existing CCR surface impoundment must determine which of the following hazard potential classifications characterizes their particular CCR unit. Hazard potential classifications are based on the consequences of failure or mis-operation and are not a measure of the condition of the unit. From the EPA Final CCR Rule §257.53, the classifications are defined as follows:

1.) **High hazard potential CCR surface impoundment** means a diked surface impoundment where failure or mis-operation will probably cause loss of human life.

2.) **Significant hazard potential CCR surface impoundment** means a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

3.) **Low hazard potential CCR surface impoundment** means a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment's owner's property.

Based on these definitions, the Kyger Creek Station's SFAP and BSP are classified as significant hazard potential CCR surface impoundments.

This report contains supporting documentation for the assessment. The hazard potential classifications were determined by observation of current conditions and review of a previous assessment provided in the existing emergency action plans (EAPs) (OVEC, 2016).

2.0 BASIS OF RATING

2.1 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) was contracted by the Ohio Valley Electric Corporation (OVEC) to provide engineering support evaluating existing information to address a hazard potential classification for the Kyger Creek Station's South Fly Ash Pond (SFAP) and Boiler Slag Pond (BSP) as required per §257.73 of the EPA Final CCR Rule.

The Kyger Creek Station SFAP and BSP are owned and operated by OVEC. They are located south of the town of Cheshire, Ohio along the western bank of the Ohio River. Kyger Creek flows along the west and south side of the Station. According to the CHA (2010), the ponds were constructed

in 1955 and serve as a processing and disposal area for CCRs. Figure A-1 provides a plan view of the Kyger Creek Station and its surface impoundments.

2.1.1 SFAP Facility Description

The SFAP facility is located immediately to the southwest of the Kyger Creek Station CCR Landfill and about 500 feet to the northwest of the Kyger Creek Station. The pond is northwest of the facility's waste water treatment plant. State Route 7 (Ohio River Scenic Byway) runs parallel to the east side of the pond, approximately 20 feet from the toe of the embankment.

The SFAP is a diked reservoir with a maximum embankment height of approximately 40 feet. The top of the embankment is at elevation 590 feet. At the top of the embankment, the storage capacity is approximately 2,500 acre-feet. The normal pool elevation of the pond is 582 feet, which is the crest of the principal spillway. At normal pool, the storage capacity is approximately 1,952 acre-feet. Using concrete stop-logs, the spillway can be raised up to five feet to an elevation of 585 feet. The spillway intake structure consists of a 36-inch concrete pipe with a 42-inch by 39-inch concrete riser (CHA, 2010). The outlet pipe from the spillway structure is a 30-inch diameter corrugated metal pipe (CMP) discharging into Kyger Creek. In addition to the process flows from the station, storm water runoff is generated from approximately 67 acres. This area is limited to pond surface water and the interior slopes of the pond's diked embankments. The SFAP does not have an emergency spillway.

2.1.2 BSP Facility Description

The BSP facility is located to the southwest of the Kyger Creek Station, about 1,750 feet to the Kyger Station power station. The pond is between State Route 7 and the Ohio River. State Route 7 is parallel to the west side of the pond, approximately 30 feet from the toe of the embankment. The Ohio River is immediately to the east and south of the BSP dam.

The pond is a diked reservoir with a maximum dam height of approximately 41 feet. The maximum operating pond elevation is 558 feet and the top of the embankment is at elevation 582 feet. A splitter dike separates the BSP and the Clearwater Pond, which was constructed in about 1980.

At the top of the embankment (582 feet), the storage capacity is approximately 1,435 acre-feet. The normal pool elevation of the pond is 557 feet, which is the crest of the principal spillway. At normal pool water surface elevation, the storage is approximately 512 acre-feet. Using concrete stop-logs, the spillway can be raised up in five-foot increments to an elevation of 577 feet. The spillway intake structure consists of a 36-inch concrete pipe with a 42-inch by 39-inch concrete riser (CHA, 2010). The outlet pipe from the spillway structure is a 30-inch diameter CMP discharging into the Clearwater Pond through the splitter dike. In addition to the process flows from the Station, storm water runoff is generated from approximately 32 acres. This area is limited to pond surface water and the interior slopes of the pond's diked embankments. The BSP does not have an emergency spillway.

2.2 SOURCE DATA

The SFAP was reviewed as part of an assessment included in Appendix D – "Dam Break and Flood Inundation Analysis" from the SFAP/BSP Dam EAP (OVEC, 2016). A dam breach analysis was conducted for the SFAP using Boss Dambrk™ software, version 3.00 (Boss Corporation, 1992) to determine possible inundation limits for use in the EAP. Breach analyses included dynamic runoff routing, reservoir pool routing and breach failure, and hydraulic flood routing of the flood wave downstream of the dam.

2.3 POTENTIAL FAILURE SCENARIOS

2.3.1 SFAP Failure Scenarios

Stantec reviewed potential breach scenarios for the SFAP dike perimeter. Topographic mapping, aerial photography, and previously completed analyses were utilized.

The SFAP dike will not breach to the north due to the presence of higher grades at the previously closed North Fly Ash Pond.

A breach to the south would flow overland through plant-owned property to Kyger Creek and then to the Ohio River. The previously performed breach analysis simulates the effects of a potential breach towards the south. Section C of Appendix D from the EAP summarizes the results of a breach failure on the southern embankment of the SFAP facility.

> "In the event of a failure, the flood plain below the railroad crossing is inundated, including State Route 7, and Gravel Hill Road. Flooding depths are approximately 20 feet above the normal creek levels. However, no inhabited structures are affected by the flooding. Flooding on the downstream side of the State Route 7 bridge is confined to open, agricultural land that is in the flood plain of the Ohio River. The flood wave has an insignificant effect on the water levels along the Ohio River, typically less than 3 feet."

Attachment II of the EAP shows the limit of flooding due to a failure along the southern embankment of the SFAP facility. The floodplain shown is generally confined to the low lying land along Kyger Creek. The inundation mapping based on the analysis described shows no structures within the impact limits of the breach scenario; however, an off-site parking lot and portions of State Route 7 and Gravel Hill Road were identified on aerial imagery that could be inundated by up to three feet.

A breach to west would enter the low lying floodplain of Kyger Creek and eventually flow to the Ohio River. A breach analysis was not specifically performed for the west dike. However, the breach analysis for the south dike conservatively represents the potential impacts of a breach to the west of pond. Water surface elevations would be expected to increase to the north and west of the pond and be slightly lower as the flood wave is routed downstream to the south and east. Residential structures and transportation routes to the west of the pond are located at an

elevation equal to or greater than the elevation of the dike or are separated by distances which would permit the dissipation of a potential breach wave.

A breach to the east would flow along the State Route 7 corridor between the SFAP and the plant likely splitting flows north and south both before flowing into the Ohio River. No breach analysis was performed for this failure scenario. Based on observation of the existing topography, a breach would inundate State Route 7 to the north and south before flowing into the Ohio River. The resultant flood wave is not expected to impact the Kyger Creek Plant to the east of State Route 7. Impacts to the Ohio River are expected to be less than the 3 feet as reported in the south dike breach analysis.

In summary, no impacts to permanently inhabited structures are anticipated from a breach of the SFAP. Minor flooding could be expected of Gravel Hill Road. From a breach to the east and south, inundation of State Route 7 is expected to be equal to or less than three feet. More significant inundation of State Route 7 would be expected of a breach to the east.

The Kyger Creek Fossil Plant is a continually operated and manned facility. The SFAP is located within the immediate vicinity of the station with the eastern dike along State Route 7 fully visible from the station. During the daylight hours, a dam safety event along this dike section will be readily observable by station personnel. Sufficient warning time is expected to erect barriers and close State Route 7 during the daylight hours. An event may not be as easily observed during overnight hours when visibility is diminished; however, traffic volumes along State Route 7 are anticipated to be substantially reduced during this timeframe. There is a potential of life loss to vehicle passengers on State Route 7 from a hypothetical breach; however, given the conditions stated above, it is the opinion of Stantec that life loss is not probable.

A breach would also likely result in the off-site release of CCRs into waters of the United States (Kyger Creek and/or Ohio River). Therefore, the impoundment fits the definition for a significant hazard potential CCR surface impoundment (as defined in the EPA Final CCR Rule §257.53).

2.3.2 BSP Failure Scenarios

Stantec reviewed potential breach scenarios for the BSP dike perimeter including the Clearwater pond. Topographic mapping, aerial photography, and previously completed analyses were utilized.

According to the Inflow Design Flood analysis (DLZ, 2015), the maximum pool elevation of the BSP is El. 558 ft. The BSP will not breach to the north or west because the surrounding ground levels are higher than the maximum pool elevation. A breach to the south would inundate agricultural land and then flow directly into the Ohio River. A breach to the east would flow directly into the Ohio River. A breach of the BSP into the Ohio River is not expected to significantly impacted river levels with most of the impact limited to the area along the river's edge. Due to the transient nature of people within this area, life loss is not probable. However, a breach could result in off-site release

of CCRs. Therefore, the impoundment fits the definition for a significant hazard potential CCR surface impoundment (as defined in the EPA Final CCR Rule §257.53).

3.0 CONCLUSION

Findings of this review and assessment demonstrate that a breach of the impoundments' embankments result in economic loss or environmental damage, but loss of human life is improbable. It is Stantec's opinion that the impoundments fit the definition for a significant hazard potential CCR surface impoundment (as defined by the EPA Final CCR Rule §257.53).

4.0 REFERENCES

Ohio Valley Electric Corporation (OVEC) (2016). *Ohio Valley Electric Corporation Kyger Creek Plant Emergency Action Plan South Fly Ash Pond Dam/Bottom Ash Pond Dam.* April, 2013. Revised April 6, 2016.

CHA (2010). *Assessment of Dam Safety of Coal Combustion Surface Impoundments (Task 3) Final Report - Ohio Valley Electric Corporation Kyger Creek Power Station - Gallipolis, Ohio.* February 24. Prepared for Lockheed Martin.

Boss Corporation (1992). *Boss Dambrk™ software, Version 3.00*. (An enhanced version of Professor D. L. Fread's 1991 National Weather Service DAMBRK program).

DLZ Ohio, Inc. (DLZ) (2015). Professional Engineer Certification Report for: South Fly Ash Pond and Boiler Slag Pond Embankments at the Ohio Valley Electric Corporation Kyger Creek Station. Gallipolis, Ohio. Prepared for American Electric Power. December 8.

Figure No.
A-1

Title
Plan View of Kyger Creek Station

Client/Project
Kyger Creek Station
South Fly Ash Pond and Boiler Slag Pond

Project Location
Cheshire
Gallia County, OH

175534017
Prepared by AP on 2016-10-13
Technical Review by JH on 2016-10-13
Independent Review by SH on 2016-10-13

0 300 600 Feet
1:3,600 (At original document size of 11x17)

Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Ohio Statewide Imagery Program (OSIP) - 2014

Stantec
OVEC IKEC
Ohio Valley Electric Corporation / Indiana-Kentucky Electric Corporation

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