

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-1: *Please provide all responses to Requests for Information issued by
Big Rivers or any other party to this proceeding.*

RESPONSE: Subject to its confidentiality agreement with Sierra Club, Big Rivers is
providing Sierra Club its responses to the requests for information issued in this matter.

Witness: Nathaniel A. Berry

IN THE MATTER OF:
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REQUEST NO. 1-2: *Please provide all testimony, exhibits, work papers, and schedules supporting the Company's integrated resource plan in electronic, machine-readable format with formulae intact, including all confidential or highly sensitive testimonies, exhibits, work papers, and schedules supporting the Company's integrated resource plan.*

RESPONSE: Big Rivers objects to this request as overly burdensome and not reasonably tailored to lead to relevant or admissible evidence. Subject to and without waiving the foregoing, Big Rivers states that the Commission's online docket, available at the link below, contains the Company's IRP and supporting documentation, and that confidential information may be made available pursuant to applicable law and an appropriate non-disclosure agreement.

<https://psc.ky.gov/Case/ViewCaseFilings/2023-00310>

Witness: Nathaniel A. Berry

For the Objection(s): Counsel

IN THE MATTER OF:
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REQUEST NO. 1-3: *Refer to Table 2.3(c) on page 35 of the IRP.*

- a. Provide any studies, analyses, documents, or forecasts relied upon in determining an expected retirement date of 2045 for D.B. Wilson.*
- b. When was the last time that the Company analyzed the expected retirement date of D.B. Wilson other than this IRP? What were the results of that analysis?*

RESPONSE: Please see Big Rivers' response to Kentuckians for the Commonwealth and Kentucky Resource Council's Request No. 1-8.

Witness: Nathaniel A. Berry

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FIRST REQUEST FOR INFORMATION

.REQUEST NO. 1-4: *Refer to page 57 of the IRP. Has the Company analyzed proposed retirement of D.B. Wilson and/or replacement generation pursuant to K.R.S. § 278.264?*

- a. If so, please provide the results of all such analysis, including analyses, documents, or forecasts.*
- b. If not, why not?*

RESPONSE: Not at this time.

- a. Not applicable.
- b. Big Rivers has not proposed the retirement of the D.B. Wilson station, and its retirement is not expected for decades. Please see the response to the Sierra Club's Request No. 1-3.

Witness: Nathaniel A. Berry

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REQUEST NO. 1-5: *Refer to pages 93-94 of the IRP. For each of its generation units, has Big Rivers conducted any analysis of the potential costs to comply with EPA's proposed greenhouse gas rule and timing for such costs? If so, provide all documents reflecting such analyses for each unit. If not, why not?*

RESPONSE: Big Rivers has not conducted a formal analysis of the potential amount or timing of costs to comply with EPA's proposed greenhouse gas rule. As stated in the 2023 IRP, EPA is currently working on evaluating over one million comments received on the proposed greenhouse gas rule, with the main impetus of the comments focused on the current assertion that neither carbon capture and sequestration/storage (CCS) nor Green hydrogen co-firing is currently commercially available or affordable. Big Rivers considers a cost analysis study premature until better and more definitive information becomes available on the viability of the aforementioned control technologies. Included as an attachment to Big Rivers' response to Kentuckians for the Commonwealth/Kentucky Resource Council's Request No. 1-60 are comments provided to EPA on August 8, 2023, by the National Rural Electric Cooperative Association (NRECA). NRECA is comprised of 900 not-for-profit electric cooperatives and other rural electric utilities including Big Rivers.

Witness: Michael S. Mizell

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REQUEST NO. 1-6: *Refer to page 96 of the IRP, which states, "With the upgrade of the FGD system by using the recycled Coleman Station FGD/absorber system, Wilson Station can now operate well within its annual emission allowance."*

- a. Please provide the effective date of the upgrade.*
- b. Please provide the total annual SO₂ emissions from D.B. Wilson for each year since the date of the upgrade.*
- c. Please identify the expected year in which the FGD system is anticipated to require replacement were D.B. Wilson to continue to operate.*

RESPONSE:

- a. The in-service date for the Wilson Station FGD was November 19, 2022.
- b. Wilson Station has emitted approximately 2,757 tons of SO₂ in 2023 as of November 30, 2023.
- c. With routine maintenance and repairs, Big Rivers does not have an expected year in which the FGD system would require replacement. The FGD system replacement would likely be due to unforeseen environmental regulation changes, not performance.

Witness: Nathaniel A. Berry

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REQUEST NO. 1-7: *Refer to pages 97-98 of the IRP.*

- a. *Does Big Rivers have a forecast for NOx credit costs under the Cross-State Air Pollution Rule or EPA's proposed Good Neighbor Plan, 87 Fed. Reg. 20,036 (Apr. 6, 2022)? If yes, please provide all forecasts through 2030. If not, why not?*
- b. *Please describe the impact of "Group 3 allowances for the ozone season" on D.B. Wilson.*

RESPONSE:

- a. Please see the response provided in subpart b., below.
- b. Wilson Station is equipped with Selective Catalytic Reduction (SCR) control technology for the reduction of NOx emissions. Based on this particular pollution control configuration, there should be minimal impact from the reduction of Group 3 ozone season allowances required under the Good Neighbor Federal Implementation Plan (FIP) dated March 15, 2023. As an example, Wilson Station emitted approximately 497 tons of NOx emissions during the 2023 ozone season, yet the station received 609 NOx ozone season allowances from the EPA to cover actual emissions for the same period. Additionally, the final rule requires that facilities equipped with SCRs meet a daily NOx emission rate of 0.14 lb/mmBtu beginning in 2024. The average NOx emission rate at Wilson Station during the 2023 ozone season was approximately 0.08 lb/mmBtu. Based on this information, the purchase of additional NOx ozone season allowances above and beyond what is allocated by the EPA is not expected.

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Witness: Michael S. Mizell

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REQUEST NO. 1-8: *For D.B. Wilson, has Big Rivers conducted any analysis of the potential costs to comply with EPA's Regional Haze Rule for the second planning period, 40 C.F.R. § 51.308, and timing for such costs? If so, please provide all documents reflecting such analyses for each unit. If not, why not?*

RESPONSE: Big Rivers has conducted no such cost analysis at this time. Big Rivers has been working in coordination with the Kentucky Energy and Environment Cabinet to address EPA's concerns about regional haze, and at this point, Big Rivers does not believe that any additional actions are necessary for Big Rivers to meet its compliance obligations. As such, any analysis of potential costs would be premature.

Witness: Michael S. Mizell

IN THE MATTER OF:
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REQUEST NO. 1-9: *Refer to page 101 of the IRP. Has Big Rivers conducted any analysis of the compliance costs and timing to comply with EPA's Coal Combustion Residuals Rule ("CCR Rule"), 40 C.F.R. Part 257? [sic], with respect to D.B. Wilson? If so, please provide all documentation reflecting such analyses for each unit. If not, why not?*

RESPONSE: Big Rivers has not conducted an analysis of the future compliance costs and timing to comply with EPA's CCR Rule as it relates to D.B. Wilson Station. Big Rivers believes that D.B. Wilson remains in compliance with all provisions of 40 CFR Part 257.

Witness: Michael S. Mizell

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FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-10: *Refer to page 55 of the IRP. Has Big Rivers conducted any analysis of the costs and timing for such costs to comply with EPA's Effluent Limitations Guidelines ("ELG Rule"), 40 C.F.R. Part 423? If so, please provide all documentation reflecting such analyses for each unit. If not, why not?*

RESPONSE: Big Rivers objects to this request as vague, insofar as it appears to refer to the pending 2023 Supplemental ELG rule which is not yet effective. Subject to the foregoing objection, Big Rivers states that if this request refers to the pending 2023 Supplemental ELG rule which has not yet been finalized by the EPA, Big Rivers has conducted no such analysis as the terms of the rule remain subject to change.

Witness: Michael S. Mizell

For the Objection(s): Counsel

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REQUEST NO. 1-11: *For D.B. Wilson, has Big Rivers conducted any analysis of the potential costs to comply with EPA's mercury and air toxics standards? If so, please provide all documents reflecting such analyses for each unit. If not, why not?*

RESPONSE: Big Rivers objects that the reference to the "EPA's mercury and air toxic standards" is unduly vague and ambiguous insofar as it appears to refer to the April 3, 2023 proposed rule, which has not been finalized. Subject to this objection, if the request is intended to refer to the April 3, 2023 proposed rule, that rule has yet to be finalized; therefore, any cost analysis is premature.

Witness: Michael S. Mizell

IN THE MATTER OF:
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REQUEST NO. 1-12: *Provide a copy of the most recent Kentucky Pollutant Discharge Elimination System ("KPDES") permit, the most recent KPDES permit fact sheet, and the most recent KPDES permit renewal application for D.B. Wilson.*

RESPONSE: Please see the two attachments to this response.

Witness: Michael S. Mizell

**KENTUCKY POLLUTANT
DISCHARGE ELIMINATION
SYSTEM****FACT SHEET****KPDES No.:** KY0054836**AI No.:** 3319

Big Rivers Electric Corporation

D.B. Wilson Station

5663 State Route 85 West

Centertown, Ohio County, Kentucky

Date: June 16, 2020**Public Notice Information**

Public Notice Start Date:

Comment Due Date:

General information concerning the public notice process may be obtained on the Division of Water's Public Notice Webpage at the following address:

<https://eec.ky.gov/Environmental-Protection/Water/Pages/Water-Public-Notices-and-Hearings.aspx>.

Public Notice Comments

Comments must be received by the Division of Water no later than 4:30 PM on the closing date of the comment period. Comments may be submitted by e-mail at: DOWPublicNotice@ky.gov or written comments may be submitted to the Division of Water at 300 Sower Blvd, Frankfort, Kentucky 40601.

Reference Documents

A copy of this proposed fact sheet, proposed permit, the application, other supporting material and the current status of the application may be obtained from the Department for Environmental Protection's Pending Approvals Search Webpage:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30.

Open Records

Copies of publicly-available documents supporting this fact sheet and proposed permit may also be obtained from the Department for Environmental Protection Central Office. Information regarding these materials may be obtained from the Open Records Coordinator at (502) 782-6849 or by e-mail at ECC.KORA@ky.gov.

DEPARTMENT FOR ENVIRONMENTAL PROTECTION**Division of Water, 300 Sower Blvd, Frankfort, Kentucky 40601**

Printed on Recycled Paper

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SECTION 1

FACILITY SYNOPSIS

1. FACILITY SYNOPSIS

1.1. Name and Address of Applicant

Big River Electric Corporation
 201 Third Street
 Henderson, Kentucky 42420

1.2. Facility Location

Big River Electric Corporation
 D.B. Wilson Station
 5663 State Route 85 West
 Centertown, Ohio County, Kentucky

1.3. Description of Applicant’s Operation

The facility is a 417 – megawatt coal – fueled generating station. Wilson is a coal fired steam electric power plant applicable to the ELG rule. While applicable to the ELG rule, no wastewater from the processes of flue gas desulfurization (FGD) or bottom ash handling are discharged. The Wilson Station FGD recirculates wastewater from the FGD back into the process. The bottom ash from the Wilson Station boiler is transported by a dry handling system.

1.4. Wastewaters Collected and Treatment

The following table lists the flow, wastewater types collected, and treatment type for each outfall:

TABLE 1.			
Outfall No.	Average Flow	Wastewater Types Collected	Treatment Type
001	1.69	Non-Domestic Process Water Non-Process Wastewater Noncontact Cooling Water Stormwater Runoff	Chlorine Disinfection Evaporation Neutralization Coagulation Flocculation Sedimentation Discharge to Surface Water
002	0.407	Stormwater Runoff	Sedimentation Discharge to Surface Water
003	0.790	Domestic Sanitary Stormwater Runoff	Chlorine Disinfection Sedimentation
005	No Discharge	Non-Domestic Process Water	Chemical Precipitation Neutralization
006	0.883	Non-Contact Cooling Water	Chlorine Disinfection Evaporation
007	0.024	Domestic Sanitary	Grinding Pre-Aeration Chlorine Disinfection Sedimentation
008	6.00	Plant Intake	Disinfection
009	No Discharge	Stormwater Runoff	Sedimentation Discharge to Surface Water
010	0.08	Stormwater Runoff	Sedimentation Discharge to Surface Water
011	0.03	Stormwater Runoff	Sedimentation Discharge to Surface Water

TABLE 1.			
Outfall No.	Average Flow	Wastewater Types Collected	Treatment Type
012	0.14	Stormwater Runoff	Sedimentation Discharge to Surface Water
013	No Discharge	Stormwater Runoff	Sedimentation Discharge to Surface Water
014	No Discharge	Stormwater Runoff	Sedimentation Discharge to Surface Water
015	2.47	Stormwater Runoff	Sedimentation Discharge to Surface Water

The design flow of the facility is 2.16 MGD. The average annual flow is 1.69 MGD.

1.5. Permitting Action

This is a reissuance of a major KPDES permit for an existing new source coal-fired steam electric power generation and transmission facility [SIC Code 4911].

SECTION 2

RECEIVING/INTAKE WATERS

2. RECEIVING / INTAKE WATERS

2.1. Receiving Waters

All surface waters of the Commonwealth have been assigned stream use designations consisting of one or more of the following designations: Warmwater Aquatic Habitat (WAH), Primary Contact Recreation (PCR), Secondary Contact Recreation (SCR), Domestic Water Supply (DWS), Coldwater Aquatic Habitat (CAH) or Outstanding State Resource Water (OSRW)[401 KAR 10:026].

All surface waters of the Commonwealth are assigned one of the following antidegradation categories: Outstanding National Resource Water (ONRW), Exceptional Water (EW), Impaired Water (IW) or High Quality Water (HQ)[401 KAR 10:030].

Surface waters categorized as an IW are listed in Kentucky’s most recently approved Integrated Report to Congress on the Condition of Water Resources in Kentucky - Volume II. 303(d) List of Surface Waters.

The following table lists the stream use classifications associated with this permit.

TABLE 2.				
Receiving Water Name	Use Designation	Antidegradation Category	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
Green River	WAH PCR SCR DWS	HQ	364	2,781
UT to Green River	WAH PCR SCR DWS	HQ	0.0	0.0
UT’s to Elk Creek	WAH PCR SCR DWS	HQ	0.0	0.0

2.2. Intake Waters – Nearest Downstream Intake

TABLE 3.						
Intake Water Name	Public Water Supply Name	Latitude (N) Decimal Degrees	Longitude (W) Decimal Degrees	Miles Downstream	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
Green River	Livermore Water Works	37.484921°	87.136125°	2.0	414	3,249

SECTION 3

OUTFALL 001

3. OUTFALL 001

3.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 4.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.44667°	87.07944°	Green River	The combined discharge of Cooling Tower Blowdown (Outfall 006), Service Water, Metal Cleaning Waste (Outfall 005), Coal Pile Runoff, Plant Service Water, Demineralizer Regenerant & Chemical Waste Sump, Filter Backwash, and Stormwater Runoff.

3.2. Reported Values

The following table summarizes the reported values for Outfall 001:

TABLE 5.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	1.69	2.53	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	6.69	N/A	N/A	8.82
Temperature	°F	N/A	N/A	N/A	70.9	78.4	N/A
Total Suspended Solids	mg/l	N/A	N/A	N/A	7.87	9.30	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	BDL	BDL	N/A
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	441	477.6	N/A
Total Recoverable Copper	µg/l	N/A	N/A	N/A	5.00	7.51	N/A
Total Recoverable Selenium	µg/l	N/A	N/A	N/A	3.72	4.02	N/A
Total Recoverable Thallium	µg/l	N/A	N/A	N/A	0.377	0.377	N/A
Total Residual Chlorine	mg/l	N/A	N/A	N/A	BDL	BDL	N/A
Acute Toxicity	TU _A	N/A	N/A	N/A	N/A	N/A	1.00

The abbreviation BDL means Below Detection Level

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

3.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 001:

TABLE 6.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Week	Instantaneous
Temperature	°F	N/A	N/A	N/A	Report	100	N/A	1/Week	Grab
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	74.3	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	9.9	12.5	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab
Total Recoverable Thallium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Selenium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Acute WET ¹	TU _A	N/A	N/A	N/A	N/A	N/A	1.00	1/Quarter	(²)

¹WET – Whole Effluent Toxicity

²Two (2) discrete grab samples shall be collected 12 hours apart

3.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

3.4.1. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

3.4.1.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15 (a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the most stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.15(a) (3)

The quantity of pollutants discharged in low volume waste sources, FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, and gasification wastewater shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

TABLE 7.		
NSPS Effluent Requirements – Low volume wastes		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l

40 CFR 423.15(a)(11)

Subject to the provisions of paragraph (a)(12) of this section, the quantity or quality of pollutants or pollutant parameters discharged in coal pile runoff shall not exceed the standards specified below:

TABLE 8.	
NSPS Effluent Requirements – Coal Pile Runoff	
Effluent Characteristic	NSPS for any time
TSS	Not to exceed 50 mg/l

40 CFR 423.15(a)(12)

Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 year, 24 hour rainfall event shall not be subject to the standards in paragraph (a)(11) of this section.

40 CFR 423.15(a)(13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(1) through (a)(13) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15 (a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.15(a)(14)

In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a)(1) through (13) of this section attributable to each wastes source shall not exceed the specified limitation for that waste source.

3.4.1.1. Best Professional Judgment (BPJ)

Coal Pile Runoff

In accordance with 401 KAR 5:080, Section 2(3) – 40 CFR 125.3 in the absence of promulgated technology based standards, the cabinet may develop appropriate technology based standards utilizing its ‘Best Professional Judgment’ (BPJ). The previous permit established the following BPJ limits for coal pile runoff.

TABLE 9.		
BPJ Effluent Requirements – Coal Pile Runoff		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	N/A	30.0 mg/l
Oil and Grease	5.0 mg/l	5.0 mg/l

These limits have not been changed for this permit renewal in accordance with anti-backsliding [40 CFR 122.44(l)].

Cooling Tower Blowdown

In accordance with 401 KAR 5:080, Section 2(3) – 40 CFR 125.3 in the absence of promulgated technology based standards, the cabinet may develop appropriate technology based standards utilizing its ‘Best Professional Judgment’ (BPJ). The previous permit established the following BPJ limits for Cooling Tower Blow.

TABLE 10.		
BPJ Effluent Requirements – Cooling Tower Blowdown		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	50.0 mg/l	30.0 mg/l
Oil and Grease	5.0 mg/l	5.0 mg/l

These limits have not been changed for this permit renewal in accordance with anti-backsliding [40 CFR 122.44(l)].

Stormwater - Total Suspended Solids

The facility treats its storm water for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for the stormwater component of Outfall 001.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

Additionally, BPJ was used in the previous issuance of this permit for Oil and Grease. The determination was made to use 0 mg/l as the daily maximum and monthly average values for the uncontaminated stormwater component of Outfall 001.

3.4.2. Water Quality-Based Effluent Limitations

The following table lists those pollutants and/or pollutant characteristics of concern that DOW has determined exhibit reasonable potential to cause or contribute to an excursion of a water quality-based criterion, and the basis of DOW’s determination. These determinations are consistent with the DOW’s reasonable potential analysis (RPA) procedures outlined in *Permitting Procedures For Determining “Reasonable Potential”* Kentucky Division of Water May 1, 2000.

TABLE 11.	
Pollutant or Pollutant Characteristic	Basis
Whole Effluent Toxicity	The facility is rated as a “major discharger”. The facility’s discharge is a complex wastewater.
Temperature	Thermal pollution or heat loads are typically associated with industrial facilities where large volumes of cooling water are utilized. Therefore, DOW has determined that reasonable potential for this pollutant does exist.
Total Recoverable Selenium Total Recoverable Thallium	The discharge concentration of this pollutant exceeds 70% of the calculated chronic water quality-based effluent limitations (WQBELs) for this pollutant.

3.4.3. Mixing Zone (MZ)

The Kentucky Water Quality Standards (KYWQS) allow the assignment of a MZ for chronic aquatic life (Chronic) and human health fish consumption (Fish) WQBELs and thermal discharges [401 KAR 10:029, Section 4]. The pollutants and/or the pollutant characteristics for which DOW has granted a MZ are listed as follows:

TABLE 12.				
Pollutant or Pollutant Characteristic	Mixing Zone Factor (MZF)	Linear Distance (ft)	Surface Area (sq. ft)	Volume (cfs)
Whole Effluent Toxicity	0.065	20.15	319	23.7

Temperature	0.016	4.96	19.3	5.82
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3.5. Limitation Calculations

3.5.1. Calculations for Technology-Based Effluent Limitations

Flow Calculations					
Source	Coefficient of Runoff	Surface Area (acres)	Average Annual Rainfall (inches)	Average Conversion Factor	Average Flow (MGD)
Coal Pile Runoff	0.22	91.47	45.00	0.0000744	0.067
Coal Pile Pond	1.00	0.50	45.00	0.0000744	0.002
Wastewater Pond	1.00	4.78	45.00	0.0000744	0.016
Waste Impoundment Pond	1.00	2.20	45.00	0.0000744	0.007

Current Operations	Flow	TSS		TSS Cal		Oil & Grease		Oil & Grease Cal	
		Avg	MAX	Avg	MAX	Avg	Max	Avg	Max
Cooling Tower Blowdown & Service Water Basin Combined	0.98	30	50	29.4	49	5	5	4.9	4.9
Unit 1 Boiler Blowdown	0.143	30	100	4.29	14.3	15	20	2.145	2.86
Low Volume Wasts	0.78	30	100	23.4	78	15	20	11.7	15.6
Deminerlizer Regenerant & ChemicalWaste Sump	0.011	30	100	0.33	1.1	15	20	0.165	0.22
Backwash	0.132	30	100	3.96	13.2	15	20	1.98	2.64
Metal Cleaning Waste	0	30	100	0	0	15	20	0	0
Coal Pile Runoff	0.069	30	50	2.07	3.45	5	5	0.345	0.345
Area Runoff	0.052	30	50	1.56	2.6	10	15	0.52	0.78
Wastewater Pond	0.016	30	50	0.48	0.8	0	0	0	0
Waste Impoundment Pond	0.007	30	50	0.21	0.35	0	0	0	0
Total	2.19			65.7	162.8			21.755	27.345
Limits		30	74.3379			9.93379	12.4863		

3.5.2. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	441	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	2.3	2.3	150	340	1.53	0.68	0	APP
Barium	µg/L	67	67	159250.8876	N/A	0.04	N/A	0	APP
Cadmium	µg/L	0.1	0.1	0.755841246	8.731374985	13.23	1.15	0	APP
Chloride	µg/L	33600	33600	600000	1200000	5.60	2.80	0	APP
Chromium	µg/L	0.6	0.6	15925.08876	N/A	0.00	N/A	0	APP
Chromium (III)	µg/L	0.6	0.6	268.2205163	5611.7027	0.22	0.01	0	APP
Chromium (VI)	µg/L	0.6	0.6	11	16	5.45	3.75	0	APP
Color	Platinum Cobalt Units	11	11	11943.81657	N/A	0.09	N/A	0	APP
Copper	µg/L	5	7.51	30.49938305	51.68449826	16.39	14.53	0	DMR
Fluoride	µg/L	0.26	0.26	637003.5503	N/A	0.00	N/A	0	APP
Nickel	µg/L	3	3	168.5409938	1515.921838	1.78	0.20	0	APP
Nitrate (as N)	µg/L	1870	1870	1592508.876	N/A	0.12	N/A	0	APP
Selenium	µg/L	3.72	4.02	5	N/A	74.40	N/A	0	DMR
Sulfate	µg/L	294000	294000	39812721.89	N/A	0.74	N/A	0	APP
Thallium	µg/L	0.377	0.377	0.47	N/A	80.21	N/A	0	DMR
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	1.87	1.87	18643.88166	N/A	0.01	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	0.6	0.6	6214.627219	N/A	0.01	N/A	0	APP
Total gross beta particle activity	pCi/L	5.11	5.11	62146.27219	N/A	0.01	N/A	0	APP

Strontium-90	pCi/L	0.008	0.008	9943.40355	N/A	0.00	N/A	0	APP
Uranium	µg/L	1.2	1.2	37287.76331	N/A	0.00	N/A	0	APP
Summer Ammonia (as N)	mg/l	0.38	0.38	570.0944469	N/A	0.07	N/A	0	APP
Winter Ammonia (as N)	mg/l	0.38	0.38	1415.564695	N/A	0.03	N/A	0	APP
Temperature	°F	70.9	78.4	0	100	70.90	78.40	0.0158116	DMR

Effluent Characteristic	Reported Units	Reported Avg	Reported Max	Toxicity Type	Toxicity Units	Maximum Limitation	%Effluent	MZF	Data Source
Toxicity	TUa	1.00	1.00	AcuteWET	TUa	1.00	100.00	0.0646838	DMR

3.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

3.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

3.6.2. Total Suspended Solids

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for low volume waste [40 CFR 423.15(a)(3)], NSPS requirements for chemical metal cleaning wastes [40 CFR 423.15(a)(4)], NSPS requirements for coal pile runoff [40 CFR 423.15(a)(11)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

3.6.3. Oil & Grease

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for low volume waste [40 CFR 423.15(a)(3)], NSPS requirements for chemical metal cleaning wastes [40 CFR 423.15(a)(4)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

3.6.4. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

3.6.5. Temperature

The limitations for this parameter are consistent with Kentucky's Water Quality Standards [401 KAR 10:031 Section 6 and 401 KAR 10:029 Section 4]. A mixing zone has been granted, in accordance with 401 KAR 10:029 Section 4, for this parameter.

3.6.6. Total Recoverable Selenium and Total Recoverable Thallium

The monitoring requirements for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(i)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

3.6.7. Whole Effluent Toxicity

The limitations for this parameter are consistent with Kentucky's Water Quality Standards [401 KAR 10:031, Sections 4(1)(j)]. A mixing zone has been granted, in accordance with 401 KAR 10:029 Section 4, for this parameter.

3.6.8. Hardness, Total Recoverable Copper, and Total Residual Chlorine

Based on the last five years of DMR data, the facility does not show reasonable potential for these parameters at this outfall. Therefore, the decision to remove these parameters from the permit is based on the Division of Water's EPA-Approved "Permitting Procedures For Determining Reasonable Potential" and 40 CFR 122.44(d). Since none of the remaining parameters are hardness dependent, the monitoring requirements for hardness have also been removed.

SECTION 4

OUTFALL 002

4. OUTFALL 002

4.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 13.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.46222°	87.07944°	UT to Green River	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate

4.2. Reported Values

The following table summarizes the reported values for Outfall 002:

TABLE 14.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.407	0.407	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.07	N/A	N/A	8.78
Total Suspended Solids	mg/l	N/A	N/A	N/A	10.3	10.3	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	2.31	2.31	N/A
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	642	642	N/A
Total Recoverable Arsenic	µg/l	N/A	N/A	N/A	N/A	66.7	N/A
Total Recoverable Antimony	µg/l	N/A	N/A	N/A	N/A	0.45	N/A
Total Recoverable Beryllium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Cadmium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Chromium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Copper	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Lead	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Mercury	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Nickel	µg/l	N/A	N/A	N/A	N/A	0.65	N/A
Total Recoverable Selenium	µg/l	N/A	N/A	N/A	N/A	1.65	N/A
Total Recoverable Silver	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Thallium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A

TABLE 14.

Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Total Recoverable Zinc	µg/l	N/A	N/A	N/A	N/A	1.53	N/A

The abbreviation BDL means Below Detection Level

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

4.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 002:

TABLE 15.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	50.0	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10.0	15.0	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab

4.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

4.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

4.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

4.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.15(a) (3)

The quantity of pollutants discharged in low volume waste sources, FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, and gasification wastewater shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

TABLE 16.		
NSPS Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l

40 CFR 423.15(a)(13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(1) through (a)(13) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15 (a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13(l)

The quantity of pollutants discharged in combustion residual leachate shall not exceed the quantity determined by multiplying the flow of combustion residual leachate times the concentration for TSS listed in 423.12(b)(11).

TABLE 17.		
BAT Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

4.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective then the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for Oil & Grease. The determination was made to use 15 mg/l as the monthly average value and 20 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective then the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

4.5. Limitation Calculations

4.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	642	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Antimony	µg/L	0.45	0.45	640	N/A	0.07	N/A	0	DMR
Arsenic	µg/L	66.7	66.7	150	340	44.47	19.62	0	DMR
Barium	µg/L	25	25	658110.5651	N/A	0.00	N/A	0	APP
Beryllium	µg/L	0	0	2632.44226	N/A	0.00	N/A	0	DMR
Cadmium	µg/L	0	0	0.755841246	8.731374985	0.00	0.00	0	DMR
Chloride	µg/L	83400	83400	600000	1200000	13.90	6.95	0	APP
Chromium	µg/L	0	0	65811.05651	N/A	0.00	N/A	0	DMR
Chromium (III)	µg/L	0.6	0.6	268.2205163	5611.7027	0.22	0.01	0	APP
Chromium (VI)	µg/L	0.6	0.6	11	16	5.45	3.75	0	APP
Color	Platinum Cobalt Units	14	14	49358.29238	N/A	0.03	N/A	0	APP
Copper	µg/L	0	0	30.49938305	51.68449826	0.00	0.00	0	DMR
Fluoride	µg/L	480	480	2632442.26	N/A	0.02	N/A	0	APP
Lead	µg/L	0	0	18.58090366	476.8177624	0.00	0.00	0	DMR
Mercury	µg/L	0	0	0.051	1.4	0.00	0.00	0	DMR
Nickel	µg/L	0.65	0.65	168.5409938	1515.921838	0.39	0.04	0	DMR
Nitrate (as N)	µg/L	280	280	6581105.651	N/A	0.00	N/A	0	APP
Phenol	µg/L	20	20	300	300	6.67	6.67	0	APP
Selenium	µg/L	1.65	1.65	5	N/A	33.00	N/A	0	DMR
Silver	µg/L	0	0	N/A	41.07168773	N/A	0.00	0	DMR
Sulfate	µg/L	1360000	1360000	164527641.3	N/A	0.83	N/A	0	APP
Thallium	µg/L	0	0	0.47	N/A	0.00	N/A	0	DMR
Zinc	µg/L	1.53	1.53	387.8303147	387.8303147	0.39	0.39	0	DMR
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	0.753	0.753	77368.34152	N/A	0.00	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	0.068	0.068	25789.44717	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	4.44	4.44	257894.4717	N/A	0.00	N/A	0	APP
Strontium-90	pCi/L	0	0	41263.11548	N/A	0.00	N/A	0	APP
Uranium	µg/L	0.7	0.7	154736.683	N/A	0.00	N/A	0	APP

4.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall

contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

4.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

4.6.2. Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the BAT, and NSPS requirements for combustion residual leachate [40 CFR 423.13(l)], and [40 CFR 423.15(a)(3)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

4.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

4.6.4. Hardness and Total Recoverable: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc Removal

Based on the last five years of DMR data, the facility does not show reasonable potential for these parameters at this outfall. Therefore, the decision to remove these parameters from the permit is based on the Division of Water's EPA-Approved "Permitting Procedures For Determining Reasonable Potential" and 40 CFR 122.44(d). Since none of the remaining parameters are hardness dependent, the monitoring requirements for hardness have also been removed.

SECTION 5

OUTFALL 003

5. OUTFALL 003

5.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 18.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.44444°	87.08444°	UT to Elk Creek	Stormwater Runoff Outfall 007 Effluent

5.2. Reported Values

The following table summarizes the reported values for Outfall 003:

TABLE 19.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.79	3.47	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.45	N/A	N/A	8.72
Total Suspended Solids	mg/l	N/A	N/A	N/A	10.6	10.9	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	2.42	2.42	N/A
Total Residual Chlorine	mg/l	N/A	N/A	N/A	0.002	0.002	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

5.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 003:

TABLE 20.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	60	N/A	1/Quarter	Grab

TABLE 20.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab
Total Residual Chlorine	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab

5.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

5.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

5.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

5.4.2.1. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

5.4.3. Water Quality-Based Effluent Limitations

The following table lists those pollutants and/or pollutant characteristics of concern that DOW has determined exhibit reasonable potential to cause or contribute to an excursion of a water quality-based criterion, and the basis of DOW’s determination. These determinations are consistent with the DOW’s reasonable potential analysis (RPA) procedures outlined in *Permitting Procedures For Determining “Reasonable Potential”* Kentucky Division of Water May 1, 2000.

TABLE 21.	
Pollutant or Pollutant Characteristic	Basis
Total Residual Chlorine	Since Outfall 007 effluent is treated with chlorine and is ultimately discharged through this Outfall, it is the Divisions Best Professional Judgement to continue monitoring this pollutant.

5.5. Limitation Calculations

5.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also

incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	246	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	2.2	2.2	150	340	1.47	0.65	0	APP
Barium	µg/L	80	80	298650.6329	N/A	0.03	N/A	0	APP
Chloride	µg/L	22600	22600	600000	1200000	3.77	1.88	0	APP
Chromium	µg/L	0.7	0.7	29865.06329	N/A	0.00	N/A	0	APP
Chromium (III)	µg/L	0.7		180.1277872	3768.628902	0.39	0.00	0	APP
Chromium (VI)	µg/L	0.7		11	16	6.36	0.00	0	APP
Color	Platinum Cobalt Units	18	18	22398.79747	N/A	0.08	N/A	0	APP
Fluoride	µg/L	420	420	1194602.532	N/A	0.04	N/A	0	APP
Iron	µg/L	774	774	3500	4000	22.11	19.35	0	APP
Lead	µg/L	1	1	10.00702199	256.7972968	9.99	0.39	0	APP
Nickel	µg/L	3	3	111.710475	1004.766524	2.69	0.30	0	APP
Nitrate (as N)	µg/L	230	230	2986506.329	N/A	0.01	N/A	0	APP
Phenol	µg/L	40	40	300	300	13.33	13.33	0	APP
Selenium	µg/L	1	1	5	N/A	20.00	N/A	0	APP
Sulfate	µg/L	179000	179000	74662658.23	N/A	0.24	N/A	0	APP
Thallium	µg/L	0.2	0.2	0.47	N/A	42.55	N/A	0	APP
Zinc	µg/L	20	20	256.8949921	256.8949921	7.79	7.79	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	2.51	2.51	34126.25316	N/A	0.01	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	0.581	0.581	11375.41772	N/A	0.01	N/A	0	APP
Total gross beta particle activity	pCi/L	3.96	3.96	113754.1772	N/A	0.00	N/A	0	APP
Strontium-90	pCi/L	0.2	0.2	18200.66835	N/A	0.00	N/A	0	APP
Uranium	µg/L	1.4	1.4	68252.50633	N/A	0.00	N/A	0	APP
Total Residual Chlorine	µg/L	2	2	11	19	18.18	10.53	0	DMR

5.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

5.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

5.6.2. Total Suspended Solids and Oil & Grease

The limitations for these parameters are consistent with the requirements of 40 CFR 125.3(c)(2) as incorporated by reference in 401 KAR 5:080, Section 2(3). The limits are representative of the Division of

Water's "Best Professional Judgment" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

5.6.3. Total Residual Chlorine

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(i)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

5.6.4. pH

The limitations for this parameter are consistent Kentucky's Water Quality Standards [401 KAR 10:031, Section 4(1)(b) and Section 7].

SECTION 6

OUTFALL 005

6. OUTFALL 005

6.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 22.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
Internal	37.44611°	87.08111°	Outfall 001	Metal Cleaning Wastes

6.2. Reported Values

The following table summarizes the reported values for Outfall 005:

TABLE 23.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	ND	ND	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	ND	N/A	N/A	ND
Total Recoverable Copper	mg/l	N/A	N/A	N/A	ND	ND	N/A
Total Recoverable Iron	mg/l	N/A	N/A	N/A	ND	ND	N/A

The abbreviation ND means No Discharge. The facility has reported No Discharge on their DMR for the last permit cycle.

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

6.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 005:

TABLE 24.								MONITORING REQUIREMENTS	
EFFLUENT LIMITATIONS								Frequency	Sample Type
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations					
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Batch ¹	Calculated
Total Recoverable Copper	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab
Total Recoverable Iron	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab

TABLE 24.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
¹ Monitoring shall be conducted once per metal cleaning operation.									
Metal cleaning waste shall mean any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to general equipment washes, boiler tube cleaning, boiler fireside cleaning, air preheater cleaning, and hopper washes. In accordance with the conditions of the previous permits, the permittee is allowed to discharge these discharges directly to outfall 001 without limitations or monitoring requirements, pursuant to the Jordan Memorandum. Monitoring is required only when chemical metal cleaning activities are being performed.									

6.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

6.4.1. Jordan Memorandum

According to 40 CFR 423.11(c) the term chemical metal cleaning waste means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning. According to 40 CFR 423.11(d) the term metal cleaning waste means any wastewater resulting from cleaning [with or without chemical compounds] any metal process equipment including, but not limited to, general equipment washes, boiler tube cleaning, boiler fireside cleaning, air preheater cleaning, and hopper washes.

In accordance with the conditions of the previous permits, the permittee is allowed to discharge wastestreams directly to outfall 001 without limitations or monitoring requirements, pursuant to the Jordan Memorandum. Monitoring is required only when chemical metal cleaning activities are being performed. That permitting action was done pursuant to the Jordan Memorandum. The memorandum is from J. William Jordan, US EPA Permit Assistance and Evaluation Division, to Bruce P. Smith, US EPA Enforcement Division Region III, concerning interpretation of the metal cleaning wastes guidelines in the federal effluent limitation guidelines for steam electric power generating point sources. In the memorandum, Mr. Jordan explains that “All water washing operations are ‘low volume’ while any discharge from an operation involving chemical cleaning should be included in the metal cleaning category.” With that in mind, it makes sense that the limitations for chemical metal cleaning wastes do not apply to the air heater wash waters and boiler fireside wash waters at this facility.

It is the BPJ of the DOW to place low volume waste requirements on these wastewaters. The DOW has developed flow-weighted limitations at Outfall 001 to insure compliance with the federal effluent limitation guidelines for low volume wastes, chemical metal cleaning wastes, and other process wastewaters.

6.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

6.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15 (a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the most stringent requirements apply.

40 CFR 423.15(a)(4)

The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration listed in the following table:

TABLE 25.

NSPS Effluent Requirements – Chemical Metal Cleaning Wastes		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l
Copper, Total	1.0 mg/l	1.0 mg/l
Iron, Total	1.0 mg/l	1.0 mg/l

40 CFR 423.15(a) (13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(3) through (10) of this section. Concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15(a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.13(e)

The quantity of pollutants discharged in chemical metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration listed in the following table:

TABLE 26. BAT Effluent Requirements – Chemical Metal Cleaning Wastes		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
Copper, Total	1.0 mg/l	1.0 mg/l
Iron, Total	1.0 mg/l	1.0 mg/l

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section. Concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner.

6.4.3. Total Suspended Solids, and Oil and Grease

Since Outfall 005 effluent is directed to Outfall 001 (which includes process and stormwater flows), the limitations for these pollutants has been applied at Outfall001 after commingling with other waters. The DOW has developed flow-weighted limitations to insure compliance with the federal effluent limitation guidelines.

6.5. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR

122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

6.5.1. Internal Monitoring Point

The monitoring requirements for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(iii)], and the requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

6.5.2. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

6.5.3. Total Copper and Total Iron

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS and BAT requirements for metal cleaning wastes [40 CFR 423.15(a)(4)] and [40 CFR 423.13(e)].

SECTION 7

OUTFALL 006

7. OUTFALL 006

7.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 27.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
Internal	37.44444°	87.07778°	Outfall 001	Cooling Tower Blowdown

7.2. Reported Values

The following table summarizes the reported values for Outfall 006:

TABLE 28.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Flow	MGD	0.883	1.337	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.42	N/A	N/A	8.46
Free Available Chlorine	mg/l	N/A	N/A	N/A	NR	NR	N/A
Total Residual Chlorine	mg/l	N/A	N/A	N/A	NR	NR	N/A
Total Residual Oxidants	mg/l	N/A	N/A	N/A	NR	NR	N/A
Chlorination/Oxidant Time	min/day	N/A	N/A	N/A	NR	NR	N/A
Total Recoverable Chromium	mg/l	N/A	N/A	N/A	0.0007	0.0007	N/A
Total Recoverable Zinc	mg/l	N/A	N/A	N/A	BDL	BDL	N/A
Priority Pollutants	mg/l	N/A	N/A	N/A	N/A	BDL	N/A
The abbreviation NR means Not Required. There were no periods of chlorination or oxidation during the last 5 years of the permit cycle.							
The abbreviation BDL means Below Detection Level.							

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

7.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 006:

TABLE 29.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Week	Instantaneous
Free Available Chlorine ¹	mg/l	N/A	N/A	N/A	0.2	0.5	N/A	1/Occurrence ²	Multiple Grab ⁵
Total Residual Oxidants ^{1,6}	mg/l	N/A	N/A	N/A	Report	0.2	N/A	1/Occurrence ³	Multiple Grab ⁵
Oxidant Discharge Time ¹	Min/unit/day	N/A	N/A	N/A	N/A	120	N/A	1/Occurrence ⁴	Log
Total Chromium ¹	mg/l	N/A	N/A	N/A	0.2	0.2	N/A	1/Year	Grab
Total Zinc ¹	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Year	Grab
Priority Pollutants ^{1,7}	No Detectable Amount							1/Year	Calculated ⁸
¹ Sampling of cooling tower blowdown must be taken at the nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.									
² The measurement frequency "Occurrence" means only during periods of chlorination addition to cooling water, but no more frequent than once per week.									
³ The measurement frequency "Occurrence" means only during periods of oxidation addition to cooling water, but no more frequent than once per week.									
⁴ The measurement frequency "Occurrence" means during periods of chlorination or oxidation addition to cooling water, but no more frequent than once per week.									
⁵ The sample type 'Multiple Grab' means grab samples collected at the approximate beginning of oxidant discharge and once every fifteen (15) minutes thereafter until the end of the oxidant discharge.									
⁶ The term Total Residual Oxidants (TRO) means the value obtained by using the amperometric titration or DPD methods for Total Residual Chlorine described in 40 CFR Part 136. In the event of addition of an oxidant other than Chlorine, the permittee shall receive prior approval from the DOW permitting staff before the initial use. TRO monitoring and limits only apply if the applicant chooses to utilize an oxidant other than Chlorine.									
⁷ Priority Pollutants are those contained in chemicals added for cooling tower maintenance and shall be monitored annually by grab sample or by engineering calculations. The results of the analyses/engineering calculations shall be totaled and reported as a single concentration on the DMR. The laboratory bench sheets/engineering or electronic equivalent calculations showing the results for each pollutant shall be attached to the DMR. The term priority pollutants means the 126 priority pollutants listed in 40 CFR Part 423 Appendix A except total chromium and total zinc.									
⁸ Compliance with the limitations, for the 126 priority pollutants, in paragraph (b)(10) of 40 CFR 423.15 may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.									
Neither free available chlorine nor total residual chlorine or oxidants may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available chlorine or total residual chlorine or oxidants at any one time unless the utility can demonstrate to the DOW that the units in a particular location cannot operate at or below this level of chlorination or oxidant addition.									

7.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

7.4.1. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

7.4.1.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15 (a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the most stringent requirements apply.

40 CFR 423.15(a) (10)(i)

The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown time the concentration listed below:

TABLE 30.		
NSPS Effluent Requirements – Cooling Tower Blowdown		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
Free Available Chlorine	0.5 mg/l	0.2 mg/l
The 126 priority pollutants (appendix A) contained in chemicals added for cooling tower maintenance, except:	(¹)	(¹)
Chromium, Total	0.2 mg/l	0.2 mg/l
Zinc, Total	1.0 mg/l	1.0 mg/l
¹ No detectable amount		

40 CFR 423.15(a) (10)(ii)

Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

40 CFR 423.15(a) (10)(iii)

At the permitting authority’s discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the standards for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations demonstrating that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

40 CFR 423.15(a) (13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(3) through (10) of this section. Concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15(a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner.

40 CFR 423.13(d) (1)

The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown time the concentration listed below:

TABLE 31.		
BAT Effluent Requirements – Cooling Tower Blowdown		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
Free Available Chlorine	0.5 mg/l	0.2 mg/l
The 126 priority pollutants (appendix A) contained in chemicals added for cooling tower maintenance, except:	(¹)	(¹)
Chromium, Total	0.2 mg/l	0.2 mg/l
Zinc, Total	1.0 mg/l	1.0 mg/l
¹ No detectable amount		

40 CFR 423.13(d) (2)

Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or state, if the state has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

40 CFR 423.13(d) (3)

At the permitting authority’s discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the standards for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations demonstrating that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section. Concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner.

7.4.2. Best Professional Judgment “BPJ”

Time of Oxidants Discharge

The Division of Water will impose a limit of 120 minutes/day/unit of chlorination / oxidation discharge time. The limit is representative of the BAT requirements for the discharge of chlorine in cooling tower blowdown as specified in 40 CFR 423.13(d)(2) as incorporated in 401 KAR 5:065, Section 2(6). It is the “Best Professional Judgement” (BPJ) of the Division of Water that this requirement is also applicable to the addition of other oxidants as well as chlorine.

Total Residual Oxidants

The Division of Water will impose a daily maximum limit of 0.20 mg/l for this parameter. The limit is representative of the BAT requirements for total residual chlorine in once through cooling water as specified in 40 CFR 423.13(b)(1) as incorporated in 401 KAR 5:065, Section 2(6). It is the Division of Water’s Best Professional Judgment (BPJ) determination to limit the addition of other oxidants as well as chlorine.

7.5. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

7.5.1. Internal Monitoring Point

The monitoring requirements for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(iii)], and the requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

7.5.2. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

7.5.3. Free Available Chlorine

The limits for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], and representative of the NSPS and BAT requirements for cooling tower blowdown [40 CFR 423.15(a)(10)(i)] and [40 CFR 423.13(d)(1)].

7.5.4. Total Chromium, Total Zinc, and Priority Pollutants

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS and BAT requirements for cooling tower blowdown [40 CFR 423.15(a)(10)(i)] and [40 CFR 423.13(d)(1)].

7.5.5. Time of Oxidants Discharge

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS, BAT requirements for chlorine addition in [40 CFR 423.15(a)(10)(ii)], [40 CFR 423.13 (d)(1)(2)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

7.5.6. Total Residual Oxidants

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

SECTION 8

OUTFALL 007

8. OUTFALL 007

8.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 32.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
Internal	37.45167°	87.08389°	Outfall 003	Sanitary Wastewater Treatment Plant Effluent

8.2. Reported Values

The following table summarizes the reported values for Outfall 007:

TABLE 33.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.024	0.031	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.47	N/A	N/A	8.08
BOD ₅	mg/l	N/A	N/A	N/A	5.78	5.95	N/A
Total Suspended Solids	mg/l	N/A	N/A	N/A	9.13	9.13	N/A
Total Residual Chlorine	mg/l	N/A	N/A	1.30	N/A	N/A	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

8.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 007:

TABLE 34.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Maximum Weekly Average	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
BOD ₅	mg/l	N/A	N/A	N/A	30	45	N/A	1/Month	Grab
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	45	N/A	1/Month	Grab
Total Residual Chlorine	mg/l	N/A	N/A	0.20	N/A	N/A	N/A	1/Month	Grab

¹BOD₅ –Biochemical Oxygen Demand, 5-day

8.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

8.4.1. Secondary Treatment Standards

Discharges of biochemically degradable wastes are subject to technology-based effluent limitations (TBELs) known as the Secondary Treatment Standards. Both state and federal regulations establish the requirements for secondary treatment. State regulations for secondary treatment only apply to non-POTWs [401 KAR 5:045].

TABLE 35.		
State Defined Secondary Treatment Standards		
Pollutant or Pollutant Characteristic	30-day average	7-day average
BOD ₅ (mg/l)	30	45
TSS (mg/l)	30	45

8.5. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

8.5.1. Internal Monitoring Point

The monitoring requirements for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(iii)], and the requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

8.5.2. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

8.5.3. BOD₅ and Total Suspended Solids

The limitations for these parameters are consistent with the secondary treatment standards for biochemically degradable wastes as defined in state regulations [401 KAR 5:045, Section 3].

8.5.4. Total Residual Chlorine

The Division of Water will apply an instantaneous minimum limit of 0.2 mg/l of total residual chlorine at Outfall 007. This limit is the Division of Water’s “Best Professional Judgment” (BPJ) determination of the minimum total residual chlorine level required to insure adequate disinfection of sanitary wastewater. This limit is consistent with [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

SECTION 9

OUTFALL 008

9. OUTFALL 008

9.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 36.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45417°	87.10333°	Plant Intake from Green River	Raw Water Intake

9.2. Reported Values

The following table summarizes the reported values for Outfall 008:

TABLE 37.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Influent Flow	MGD	6.00	7.99	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.31	N/A	N/A	8.54
Temperature	°F	N/A	N/A	N/A	62.1	66.8	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

9.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 008:

TABLE 38.								MONITORING REQUIREMENTS	
EFFLUENT LIMITATIONS								Frequency	Sample Type
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations					
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
Temperature	°F	N/A	N/A	N/A	Report	Report	N/A	Daily	Grab
¹ Cooling Water Intake Inspection	Fail=1 Pass=0	N/A	N/A	N/A	N/A	N/A	Report ²	1/Week	Inspection ³

TABLE 38.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
¹ Weekly monitoring of the cooling water intake system shall be performed, during the period the cooling water intake structure is in operation, to ensure that the design and construction technology required by §125.94 is functioning as designed and is being appropriately maintained and operated.									
² If intake system is not functioning as designed a "1" is to be reported. If intake system is functioning as designed a "0" is to be reported.									
³ This inspection may take the form of either visual inspections or the use of remote monitoring devices.									
An annual certification statement signed by the authorized representative shall be submitted to the DOW surface water permits branch no later than January 31 st for the previous year. See Section 5.9.3.3. "Reporting Requirements for Cooling Water Intake" for additional details.									

9.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

9.4.1. Cooling Water Intake

9.4.1.1. Cooling Water Intake Description

Wilson is located near Green River mile point 74, in Centertown, Ohio County, Kentucky. Wilson employs a closed cycle recirculating system (CCRS) that includes a nine-cell, mechanical draft cooling tower located on the southeastern portion of the site. The cooling water system operates as a closed system by continuous recirculation of water between the condenser and the cooling tower. The cooling tower consists of one, three-cell group and three, two-cell groups. The cooling tower operates nine fans. Because a portion of the circulating water is evaporated, makeup water is required. In addition, some water is also required to replace cooling tower blowdown, which is the water that is continuously removed from the cycle to maintain an acceptable dissolved solids concentration. The cooling towers typically operate using five to six cycles of concentration. Makeup water for the cooling tower is withdrawn from the Green River, which has a 7Q₁₀ flow of 364 cfs, through the shoreline Cooling Water Intake Structure (CWIS). The Wilson CWIS, located on the eastern shoreline of the Green River, provides makeup water to the cooling tower. The CWIS was built to provide cooling water for two units (Units 1 and 2); however, Unit 2 was never built. The CWIS consist of a curtain wall, two intake bays, trash racks with a trash rake system, two traveling screens, three circulating water pumps. The concrete curtain wall extends from the operating deck of the intake to approximately 6.5 feet above the river bottom in front of the intake bays. The intake bays are 8 feet wide. The two, vertical, single-flow traveling screens prevent debris and organisms from being pumped into the water pretreatment system. Each traveling scree is 4 feet wide and has 3/8 – inch square openings. Debris and organisms on the screens are removed by a high-pressure back wash spray. The screen Washwater, debris, and organisms are returned to the Green River. Behind the traveling screens are three makeup water pumps, each with a capacity of 9,500 gallons per minute (gpm). However, the maximum intake flow or design intake flow (DIF) that can be achieved for the Unit 1 cooling tower is 12,667 gpm which is equivalent to 7.75% of the Green River 7Q₁₀ flow. It should be noted that typically only one pump is operated at a time, so typical operation is less than 9,500 gpm. Based on the last five years of operating data (2015-2019) Wilson withdrew an average of 9.29 cfs from the Green River, which is equivalent to 2.55% of the 7Q₁₀. The through-screen velocities were estimated using the traveling screen dimensions, and the DIF (12,635 gpm) and typical 1-pump operations during extreme low and normal water elevations. The through-screen velocities at DIF ranged from 1.24 to 4.22 fps under normal and extreme low water surface levels, respectively. The through-screen velocities during typical operations ranged from 0.93 to 3.46 fps under normal and extreme low water surface levels, respectively. There is no emergency intake at the facility.

9.4.1.2. Impingement Mortality BTA Determination

The permittee has selected to comply with the impingement mortality standard in 40 CFR 125.94(c)(1) by implementing a closed cycle recirculating system. This intake structure feeds into a mechanical draft cooling tower that meets the definition of a closed-cycle recirculating system in 40 CFR 125.92(c), as demonstrated by the following: Wilson has a single mechanical draft cooling tower. The cooling water system operates as a closed system by continuous recirculation of water between the condenser and the cooling tower. The cooling tower consists of one, three-cell group and three, two-cell groups. The cooling towers typically operate using five to six cycles of concentration.

9.4.1.3. Entrainment BTA Determination

The current technology and operations for the cooling water intake structure have been identified by the Division as the best technology available for minimizing entrainment at this intake structure. Since the facility already operates with closed-cycle recirculating system the following additional technologies were also evaluated: (1) fine mesh screens with a mesh size of 2mm or smaller with a safe return mechanism, (2) variable speed pumps, and (3) water reuse or alternate sources of cooling water. Each technology was evaluated using the criteria listed in 40 CFR 125.98(f)(2) and, where relevant, the criteria listed in 40 CFR 125.98(f)(3). See the tables below for analyses:

Cooling Towers	
Numbers and Types of organisms entrained	No entrainment studies have been performed at Wilson. However, optimized cooling towers in freshwater areas can reduce entrainment by 97.25%. Additionally, the 316(b) Rule Preamble makes the following statement: "Closed-cycle cooling is indisputably the most effective technology at reducing entrainment." This due to the amount flow reduction by using cooling towers compared to once through cooling systems.
Particulate emissions or other pollutants	The facility is currently in compliance with their permit limitations and therefore this is not considered a critical factor.
Land availability	Cooling towers are not feasible if land is not available on or near the facility .The facility currently has a cooling tower on their unit. Therefore, this is not considered a critical factor.
Remaining useful plant life	Wilson does not have any plans or schedules for new units or decommission of units within the next five years. This was not considered a critical factor.
Quantified and qualitative social benefits	The permittee is not required to provide Cost Evaluation Study (40 CFR 122.21(r)(10)) or Benefits Evaluation (40 CFR 122.21(r)(11)) because AIF is less than 125 MGD. The permittee provided no estimate of cost. However, the facility already has cooling towers on all four of their units.
Conclusion	Division concludes that the closed-cycle recirculating systems already in place at the facility meets BTA requirements for entrainment. In agreement with EPA that closed-cycle cooling is indisputably the most effective technology at reducing entrainment due to the large reduction in flow.

Fine Mesh Screens with a Mesh Size of 2 mm or smaller	
Numbers and Types of organisms entrained	The facility does not have historical, relevant entrainment data that can be compared with data for this technology. In order for any entrainment reductions to be seen a screen with a mesh size of <2.0 mm should be used, as nearly 100% of eggs are still pass through a 2.0 mm mesh screen. Through EPA’s review of control technologies, the Agency found that the survival of “converts” on fine mesh screen was very poor, and in some extreme cases comparable to the extremely low survival of entrained organisms that are allowed to pass entirely through the facility.

Particulate emissions or other pollutants	None expected other than increase in solids clogging the mesh slot size.
Land availability	The size of the screen face may need to be increased to maintain current flow rates. As EPA noted in the 316(b) existing facilities rule technical development document, in order to equip fine mesh screen and maintain a through-screen velocity of 0.5 fps, as many as 68% of facilities would need to expand their intake screen area by more than five times. Due to the large amount of make-up flow required at this facility the Impingement area of influence would be increased significantly. EPA estimated that 17% of existing intake screens in the U.S. could not be enlarged to accommodate a 2 mm screen.
Remaining useful plant life	Wilson does not have any plans or schedules for new units or decommission of units within the next five years. This was not considered a critical factor.
Quantified and qualitative social benefits	The permittee is not required to provide Cost Evaluation Study (40 CFR 122.21(r)(10)) or Benefits Evaluation (40 CFR 122.21(r)(11)) because AIF is less than 125 MGD. The permittee provided no estimate of cost. The data that is available for this factor is not of sufficient rigor to allow the Division to preclude this technology.
Conclusion	The use of a fine mesh screen is not required, in part, because the main entrainment reduction expected from the use of fine mesh screens with a mesh size of 2 mm or smaller as opposed to the screens already in installed is early life stage organisms (i.e. nursery areas). The facility already has a through-screen actual velocity greater than 0.50 fps and the use of smaller screen sizes would increase this velocity even more. Thus, this would require a much larger intake area or it could cause impingement issues. Additionally, the use of fine mesh screens would have the potential to clog more frequently thereby increasing the through screen velocity.

Variable Speed Pumps	
Numbers and Types of organisms entrained	Proper use of variable frequency drives can reduce entrainment mortality by decreasing the volume of water withdrawn. However, using less cooling water increases in-plant and discharge temperatures, lowering the survival rate of entrained. This technology is estimated to provide only minor reductions to entrainment. This is because the facility already cycles pumps to meet water demands. Also, opportunities for flow reduction are expected to be greater during cooler months because of ambient water temperatures. To the extent that this is true and entrainment impacts are less probable during conditions with cooler water temperatures, the reductions achieved will be low.
Particulate emissions or other pollutants	There would probably be both trivial increases and trivial decreases in pollution as part of slight energy penalties caused by increased temperature of condensers and slightly decreased pump energy use, respectively. Lower flow rates in cooling tubes may require use of more chemicals or energy to control scaling.
Land availability	Not typically an issue.

Remaining useful plant life	Wilson does not have any plans or schedules for new units or decommission of units within the next five years. This was not considered a critical factor.
Quantified and qualitative social benefits	The permittee is not required to provide Cost Evaluation Study (40 CFR 122.21(r)(10)) or Benefits Evaluation (40 CFR 122.21(r)(11)) because AIF is less than 125 MGD. The permittee provided no estimate of cost. The data that is available for this factor is not of sufficient rigor to allow the Division to preclude this technology.
Thermal Discharge Impacts	The use of variable speed pumps would not reduce thermal loads but would probably increase temperature and decrease flow so temperature impacts would be variable and probably minimal. But the current thermal impact from the facility is not a concern. This was not considered a significant factor.
Conclusion	Use of variable speed pumps is not required, in part, because each CWIS already uses 3 pumps. One pump for the cooling water intake structure runs continuously and the other 2 are used as needed. This technology is estimated to provide only minor reductions to entrainment. This is because the facility already cycles pumps to meet water demands.

Water Reuse or Alternate Sources of Cooling Water
This is typically not an option for steam electric power plants due to the high volume of cooling water that is required. Recent cooling water withdraw flows average around 6.00 MGD.

9.4.2. Intake Structure Standard Requirements

9.4.2.1. Future BTA Determination

This is a Final BTA determination made in accordance with the requirements of the federal regulations in 40 CFR 125.90-98, based upon the materials submitted by the permittee through 40 CFR 122.21(r). Future BTA determinations will be re-confirmed under the same regulations, but the permittee may request that some application materials be waived under 40 CFR 125.95(c) and 40 CFR 125.98(g).

9.4.2.2. Visual or Remote Inspections

The permittee is required to conduct visual or remote inspections of the intake structure at least weekly during periods of operation, pursuant to 40 CFR 125.96(e).

9.4.2.3. Reporting Requirements

The permittee is required to submit an annual certification statement and report, pursuant to 40 CFR 125.97(c).

9.4.2.4. Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility’s compliance with the Endangered Species Act. 40 CFR 125.98(b)(1) requires the inclusion of this provision in all permits subject to 316(b) requirements. Contact the state Natural Heritage Inventory (NHI) staff with inquiries regarding incidental take of state-listed threatened and endangered species and the US Fish and Wildlife Service with inquiries regarding incidental take of federally-listed threatened and endangered species.

9.5. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

9.5.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

9.5.2. Temperature

The monitoring requirements for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

9.5.3. Cooling Water Intake Inspection

The monitoring requirements for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)], requirements for visual or remote inspections [40 CFR 125.96 (e)], and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

SECTION 10

OUTFALL 009

10. OUTFALL 009

10.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 39.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45417°	87.08611°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate

10.2. Reported Values

The following table summarizes the reported values for Outfall 009:

TABLE 40.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	ND	ND	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	ND	N/A	N/A	ND
Total Suspended Solids	mg/l	N/A	N/A	N/A	ND	ND	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	ND	ND	N/A
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	ND	ND	N/A
Total Recoverable Arsenic	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Antimony	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Beryllium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Cadmium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Chromium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Copper	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Lead	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Mercury	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Nickel	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Selenium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Silver	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Thallium	µg/l	N/A	N/A	N/A	N/A	ND	N/A

TABLE 40.

Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Total Recoverable Zinc	µg/l	N/A	N/A	N/A	N/A	ND	N/A

The abbreviation ND means No Discharge. The facility has reported No Discharge on their DMR for the last permit cycle.

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

10.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 009:

TABLE 41.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	50.0	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10.0	15.0	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab

10.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

10.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

10.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

10.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.15(a) (3)

The quantity of pollutants discharged in low volume waste sources, FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, and gasification wastewater shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

TABLE 42.		
NSPS Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l

40 CFR 423.15(a)(13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(1) through (a)(13) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15 (a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13(l)

The quantity of pollutants discharged in combustion residual leachate shall not exceed the quantity determined by multiplying the flow of combustion residual leachate times the concentration for TSS listed in 423.12(b)(11).

TABLE 43.		
BAT Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

10.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective than the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for Oil & Grease. The determination was made to use 15 mg/l as the monthly average value and 20 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective than the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

10.5. Limitation Calculations

10.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	1550	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	1.5	1.5	150	340	1.00	0.44	0	APP
Barium	µg/L	25	25	268444	N/A	0.01	N/A	0	APP
Chloride	µg/L	16300	16300	600000	1200000	2.72	1.36	0	APP
Color	Platinum Cobalt Units	10	10	20133.3	N/A	0.05	N/A	0	APP
Fluoride	µg/L	730	730	1073776	N/A	0.07	N/A	0	APP
Iron	µg/L	98	98	3500	4000	2.80	2.45	0	APP
Nickel	µg/L	3	3	168.5409938	1515.921838	1.78	0.20	0	APP
Phenol	µg/L	150	150	300	300	50.00	50.00	0	APP
Selenium	µg/L	7	7	5	N/A	140.00	N/A	0	APP
Sulfate	µg/L	1120000	1120000	67111000	N/A	1.67	N/A	0	APP
Thallium	µg/L	0.2	0.2	0.47	N/A	42.55	N/A	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	15.7	15.7	31497.81	N/A	0.05	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	1.16	1.16	10499.27	N/A	0.01	N/A	0	APP
Total gross beta particle activity	pCi/L	9.22	9.22	104992.7	N/A	0.01	N/A	0	APP
Strontium-90	pCi/L	0.8	0.8	16798.832	N/A	0.00	N/A	0	APP
Uranium	µg/L	11	11	62995.62	N/A	0.02	N/A	0	APP

Since this outfall has an intermittent discharge they did not have during the last permit cycle. The application samples were operational samples and are expected to be representative of the discharge from this outfall. Additionally, similar outfalls 002 and 015 did have actual discharge data and they both showed no reasonable potential.

10.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

10.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

10.6.2. Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the BAT, and NSPS requirements for combustion residual leachate [40 CFR 423.13(l)], and [40 CFR 423.15(a)(3)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

10.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

10.6.4. Hardness and Total Recoverable: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc Removal

Since this outfall has an intermittent discharge they did not have during the last permit cycle. However, looking at the DMR from representative outfalls 002 and 015, the facility does not show reasonable potential for these parameters at this outfall. Therefore, the decision to remove these parameters from the permit is based on the Division of Water's EPA-Approved "Permitting Procedures For Determining Reasonable Potential" and 40 CFR 122.44(d). Since none of the remaining parameters are hardness dependent, the monitoring requirements for hardness have also been removed.

SECTION 11

OUTFALL 010

11. OUTFALL 010

11.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 44.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45194°	87.08778°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff

11.2. Reported Values

The following table summarizes the reported values for Outfall 010:

TABLE 45.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.08	0.08	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.55	N/A	N/A	8.39
Total Suspended Solids	mg/l	N/A	N/A	N/A	8.50	8.50	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	2.06	2.06	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

11.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 010:

TABLE 46.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	50	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab

TABLE 46.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

11.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

11.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

11.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

11.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

11.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for the stormwater component of Outfall 010.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

11.5. Limitation Calculations

11.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	178	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	0.4	0.4	150	340	0.27	0.12	0	APP
Barium	µg/L	22	22	3344050	N/A	0.00	N/A	0	APP
Cadmium	µg/L	0.1	0.1	0.414859003	3.833587915	24.10	2.61	0	APP
Chloride	µg/L	3500	3500	600000	1200000	0.58	0.29	0	APP
Color	Platinum Cobalt Units	12	12	250803.75	N/A	0.00	N/A	0	APP
Fluoride	µg/L	200	200	13376200	N/A	0.00	N/A	0	APP
Nickel	µg/L	1	1	84.96070738	764.1689348	1.18	0.13	0	APP
Nitrate (as N)	µg/L	630	630	33440500	N/A	0.00	N/A	0	APP
Selenium	µg/L	1	1	5	N/A	20.00	N/A	0	APP
Sulfate	µg/L	102000	102000	836012500	N/A	0.01	N/A	0	APP
Zinc	µg/L	90	90	195.2977276	195.2977276	46.08	46.08	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	0.788	0.788	393550.125	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	1.57	1.57	1311833.75	N/A	0.00	N/A	0	APP
Strontium-90	pCi/L	1.8	1.8	209893.4	N/A	0.00	N/A	0	APP
Uranium	µg/L	0.7	0.7	787100.25	N/A	0.00	N/A	0	APP

11.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

11.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065,

Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

11.6.2. Total Suspended Solids and Oil & Grease

The limitations for these parameters are consistent with the requirements of 40 CFR 125.3(c)(2) as incorporated by reference in 401 KAR 5:080, Section 2(3). The limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

11.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

SECTION 12

OUTFALL 011

12. OUTFALL 011

12.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 47.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45250°	87.09194°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff

12.2. Reported Values

The following table summarizes the reported values for Outfall 011:

TABLE 48.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.03	0.03	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.97	N/A	N/A	8.09
Total Suspended Solids	mg/l	N/A	N/A	N/A	4.00	4.00	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	4.00	4.00	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

12.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 011:

TABLE 49.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	50	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab

TABLE 49.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

12.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

12.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

12.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

12.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

12.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for the stormwater component of Outfall 011.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

12.5. Limitation Calculations

12.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	196	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	0.6	0.6	150	340	0.40	0.18	0	APP
Barium	µg/L	43	43	8915800	N/A	0.00	N/A	0	APP
Chloride	µg/L	5700	5700	600000	1200000	0.95	0.48	0	APP
Color	Platinum Cobalt Units	25	25	668685	N/A	0.00	N/A	0	APP
Fluoride	µg/L	210	210	35663200	N/A	0.00	N/A	0	APP
Iron	µg/L	311	311	3500	4000	8.89	7.78	0	APP
Nickel	µg/L	1	1	92.17463661	829.0537596	1.08	0.12	0	APP
Nitrate (as N)	µg/L	350	350	89158000	N/A	0.00	N/A	0	APP
Phenol	µg/L	30	30	300	300	10.00	10.00	0	APP
Sulfate	µg/L	80200	80200	2228950000	N/A	0.00	N/A	0	APP
Zinc	µg/L	30	30	211.906799	211.906799	14.16	14.16	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	0.739	0.739	1049442	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	1.76	1.76	3498140	N/A	0.00	N/A	0	APP
Uranium	µg/L	0.9	0.9	2098884	N/A	0.00	N/A	0	APP

Since this outfall has an intermittent discharge and only discharges as a result of a storm event the facility was unable to get an application discharge sample. The application samples were operational samples and are expected to be representative of the discharge from this outfall. Additionally, similar outfalls 010 and 012 did have a discharge application sample and they both showed no reasonable potential.

12.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

12.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

12.6.2. Total Suspended Solids and Oil & Grease

The limitations for these parameters are consistent with the requirements of 40 CFR 125.3(c)(2) as incorporated by reference in 401 KAR 5:080, Section 2(3). The limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

12.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

SECTION 13

OUTFALL 012

13. OUTFALL 012

13.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 50.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45167°	87.09833°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff

13.2. Reported Values

The following table summarizes the reported values for Outfall 012:

TABLE 51.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	0.14	0.14	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.16	N/A	N/A	8.84
Total Suspended Solids	mg/l	N/A	N/A	N/A	4.90	4.90	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	2.28	2.28	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

13.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 012:

TABLE 52.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	50	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab

TABLE 52.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

13.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

13.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

13.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

13.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

13.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for the stormwater component of Outfall 012.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

13.5. Limitation Calculations

13.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	180	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Av	Reported M	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	0.7	0.7	150	340	0.47	0.21	0	APP
Barium	µg/L	31	31	1680600	N/A	0.00	N/A	0	APP
Cadmium	µg/L	0.1	0.1	0.418307584	3.877381034	23.91	2.58	0	APP
Chloride	µg/L	4100	4100	600000	1200000	0.68	0.34	0	APP
Chromium	µg/L	0.7	0.7	168060	N/A	0.00	N/A	0	APP
Chromium (III)	µg/L	0.7	0.7	139.4675086	2917.935606	0.50	0.02	0	APP
Chromium (VI)	µg/L	0.7	0.7	11	16	6.36	4.38	0	APP
Color	Platinum Cobalt Units	32	32	126045	N/A	0.03	N/A	0	APP
Fluoride	µg/L	210	210	6722400	N/A	0.00	N/A	0	APP
Nickel	µg/L	1	1	85.7676157	771.4265752	1.17	0.13	0	APP
Nitrate (as N)	µg/L	110	110	16806000	N/A	0.00	N/A	0	APP
Phenol	µg/L	20	20	300	300	6.67	6.67	0	APP
Sulfate	µg/L	88600	88600	420150000	N/A	0.02	N/A	0	APP
Zinc	µg/L	20	20	197.1554176	197.1554176	10.14	10.14	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	2.16	2.16	192499.9286	N/A	0.00	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	0.258	0.258	64166.64286	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	28.1	28.1	641666.4286	N/A	0.00	N/A	0	APP
Strontium-90	pCi/L	0.1	0.1	102666.6286	N/A	0.00	N/A	0	APP
Uranium	µg/L	3.7	3.7	384999.8571	N/A	0.00	N/A	0	APP

13.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

13.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

13.6.2. Total Suspended Solids and Oil & Grease

The limitations for these parameters are consistent with the requirements of 40 CFR 125.3(c)(2) as incorporated by reference in 401 KAR 5:080, Section 2(3). The limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

13.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

SECTION 14

OUTFALL 013

14. OUTFALL 013

14.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 53.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45750°	87.10278°	Green River	Solid Fuel Conveyor Runoff Stormwater Runoff

14.2. Reported Values

The following table summarizes the reported values for Outfall 013:

TABLE 54.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	ND	ND	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	ND	N/A	N/A	ND
Total Suspended Solids	mg/l	N/A	N/A	N/A	ND	ND	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	ND	ND	N/A

The abbreviation ND means No Discharge. The facility has reported No Discharge on their DMR for the last permit cycle.

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

14.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 013:

TABLE 55.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	50	N/A	1/Quarter	Grab

TABLE 55.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

14.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW's General Procedures for Limitations Development located on DOW's webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

14.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

14.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

14.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

14.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for the stormwater component of Outfall 013.

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

14.5. Limitation Calculations

14.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	232	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	0.7	0.7	150	340	0.47	0.21	0	APP
Barium	µg/L	32	32	2675440	N/A	0.00	N/A	0	APP
Cadmium	µg/L	0.8	0.8	0.504840732	5.018611049	158.47	15.94	0	APP
Chloride	µg/L	1700	1700	600000	1200000	0.28	0.14	0	APP
Color	Platinum Cobalt Units	28	28	200658	N/A	0.01	N/A	0	APP
Copper	µg/L	2	2	19.1487432	30.93585761	10.44	6.46	0	APP
Iron	µg/L	890	890	3500	4000	25.43	22.25	0	APP
Mercury	µg/L	0.2	0.2	0.051	1.4	392.16	14.29	0	APP
Nickel	µg/L	25	25	106.3079229	956.1739154	23.52	2.61	0	APP
Nitrate (as N)	µg/L	900	900	26754400	N/A	0.00	N/A	0	APP
Sulfate	µg/L	200000	200000	668860000	N/A	0.03	N/A	0	APP
Zinc	µg/L	90	90	244.4523922	244.4523922	36.82	36.82	0	APP
Combined radium-226 and radium-228	pCi/L	0.344	0.344	104947.7	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	3.81	3.81	1049477	N/A	0.00	N/A	0	APP
Uranium	µg/L	1.4	1.4	629686.2	N/A	0.00	N/A	0	APP

Since this outfall has an intermittent discharge they did not have during the last permit cycle. The application samples were operational samples and are expected to be representative of the discharge from this outfall. Additionally, similar outfalls 010 and 012 did have a discharge application sample and they both showed no reasonable potential.

14.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

14.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

14.6.2. Total Suspended Solids and Oil & Grease

The limitations for these parameters are consistent with the requirements of 40 CFR 125.3(c)(2) as incorporated by reference in 401 KAR 5:080, Section 2(3). The limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Conventional Pollutant Control Technology" (BCT) requirements for these pollutants.

14.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

SECTION 15

OUTFALL 014

15. OUTFALL 014

15.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 56.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45417°	87.09000°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate

15.2. Reported Values

The following table summarizes the reported values for Outfall 014:

TABLE 57.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	ND	ND	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	ND	N/A	N/A	ND
Total Suspended Solids	mg/l	N/A	N/A	N/A	ND	ND	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	ND	ND	N/A
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	ND	ND	N/A
Total Recoverable Arsenic	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Antimony	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Beryllium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Cadmium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Chromium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Copper	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Lead	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Mercury	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Nickel	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Selenium	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Silver	µg/l	N/A	N/A	N/A	N/A	ND	N/A
Total Recoverable Thallium	µg/l	N/A	N/A	N/A	N/A	ND	N/A

TABLE 57.

Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Total Recoverable Zinc	µg/l	N/A	N/A	N/A	N/A	ND	N/A

The abbreviation ND means No Discharge. The facility has reported No Discharge on their DMR for the last permit cycle.

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

15.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 014:

TABLE 58.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	50.0	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10.0	15.0	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab

15.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

15.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

15.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

15.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.15(a) (3)

The quantity of pollutants discharged in low volume waste sources, FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, and gasification wastewater shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

TABLE 59.		
NSPS Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l

40 CFR 423.15(a)(13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(1) through (a)(13) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15 (a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13(l)

The quantity of pollutants discharged in combustion residual leachate shall not exceed the quantity determined by multiplying the flow of combustion residual leachate times the concentration for TSS listed in 423.12(b)(11).

TABLE 60.		
BAT Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

15.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective than the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for Oil & Grease. The determination was made to use 15 mg/l as the monthly average value and 20 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective then the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

15.5. Limitation Calculations

15.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	1250	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Arsenic	µg/L	1.3	1.3	150	340	0.87	0.38	0	APP
Barium	µg/L	28	28	268444	N/A	0.01	N/A	0	APP
Chloride	µg/L	48100	48100	600000	1200000	8.02	4.01	0	APP
Color	Platinum Cobalt Units	4	4	20133.3	N/A	0.02	N/A	0	APP
Fluoride	µg/L	380	380	1073776	N/A	0.04	N/A	0	APP
Iron	µg/L	74	74	3500	4000	2.11	1.85	0	APP
Nickel	µg/L	3	3	168.5409938	1515.921838	1.78	0.20	0	APP
Selenium	µg/L	2	2	5	N/A	40.00	N/A	0	APP
Sulfate	µg/L	892000	892000	67111000	N/A	1.33	N/A	0	APP
Zinc	µg/L	40	40	387.8303147	387.8303147	10.31	10.31	0	APP
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	0.401	0.401	31497.81	N/A	0.00	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	1.2	1.2	10499.27	N/A	0.01	N/A	0	APP
Total gross beta particle activity	pCi/L	7.82	7.82	104992.7	N/A	0.01	N/A	0	APP
Uranium	µg/L	3.6	3.9	62995.62	N/A	0.01	N/A	0	APP

Since this outfall has an intermittent discharge they did not have during the last permit cycle. The application samples were operational samples and are expected to be representative of the discharge from this outfall. Additionally, similar outfalls 002 and 015 did have actual discharge data and they both showed no reasonable potential.

15.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

15.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

15.6.2. Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the BAT, and NSPS requirements for combustion residual leachate [40 CFR 423.13(l)], and [40 CFR 423.15(a)(3)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

15.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

15.6.4. Hardness and Total Recoverable: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc Removal

Since this outfall has an intermittent discharge they did not have during the last permit cycle. However, looking at the DMR from representative outfalls 002 and 015, the facility does not show reasonable potential for these parameters at this outfall. Therefore, the decision to remove these parameters from the permit is based on the Division of Water's EPA-Approved "Permitting Procedures For Determining Reasonable Potential" and 40 CFR 122.44(d). Since none of the remaining parameters are hardness dependent, the monitoring requirements for hardness have also been removed.

SECTION 16

OUTFALL 015

16. OUTFALL 015

16.1. Outfall Description

The following table lists the outfall type, location, and description:

TABLE 61.				
Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
External	37.45889°	87.09278°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate

16.2. Reported Values

The following table summarizes the reported values for Outfall 015:

TABLE 62.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Effluent Flow	MGD	2.47	2.47	N/A	N/A	N/A	N/A
pH	SU	N/A	N/A	7.34	N/A	N/A	8.84
Total Suspended Solids	mg/l	N/A	N/A	N/A	11.0	11.0	N/A
Oil & Grease	mg/l	N/A	N/A	N/A	BDL	BDL	N/A
Hardness (as mg/l CaCO ₃)	mg/l	N/A	N/A	N/A	714	714	N/A
Total Recoverable Arsenic	µg/l	N/A	N/A	N/A	N/A	13.2	N/A
Total Recoverable Antimony	µg/l	N/A	N/A	N/A	N/A	5.61	N/A
Total Recoverable Beryllium	µg/l	N/A	N/A	N/A	N/A	1.18	N/A
Total Recoverable Cadmium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Chromium	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Copper	µg/l	N/A	N/A	N/A	N/A	4.00	N/A
Total Recoverable Lead	µg/l	N/A	N/A	N/A	N/A	1.24	N/A
Total Recoverable Mercury	µg/l	N/A	N/A	N/A	N/A	0.29	N/A
Total Recoverable Nickel	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Selenium	µg/l	N/A	N/A	N/A	N/A	4.29	N/A
Total Recoverable Silver	µg/l	N/A	N/A	N/A	N/A	BDL	N/A
Total Recoverable Thallium	µg/l	N/A	N/A	N/A	N/A	1.18	N/A

TABLE 62.							
Reported Parameters	Units	EFFLUENT					
		Loadings (lbs./day)		Concentrations			
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum
Total Recoverable Zinc	µg/l	N/A	N/A	N/A	N/A	11.8	N/A

The above values are based on 5-year Discharge Monitoring Report (DMR) averages from 07/31/2015 to 11/30/2019.

16.3. Effluent Limitations and Monitoring Requirements

The following table summarizes the effluent limitations and monitoring requirements for Outfall 015:

TABLE 63.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	50.0	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10.0	15.0	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab

16.4. Pertinent Factors

The effluent limitations for this outfall were developed in accordance with DOW’s General Procedures for Limitations Development located on DOW’s webpage at: <https://eec.ky.gov/Environmental-Protection/Forms%20Library/General%20Procedures%20for%20Limitations%20Development.pdf>

16.4.1. Non-continuous discharge

The discharge from this outfall is not a continuous discharge, and only discharges as result of stormwater. Therefore, only the acute water quality standards apply to the discharge.

16.4.2. Technology-Based Effluent Limitations

Technology-based effluent limitations and standards, based on federally promulgated standards, a case-by-case basis, or a combination of the two, shall be included in all KPDES permits, where applicable.

16.4.2.1. Federal Effluent Limitations Guidelines

EPA has established a minimum level of technology that must be applied to certain industries. Due to the operations at this facility, all applicable sections of 40 CFR 423 shall be applied to this outfall. The following is a list of those requirements:

40 CFR 423.15(a)

Any new source as of November 19, 1982, subject to paragraph (a) of this section, must achieve the following new source performance standards, in addition to the limitations in 423.13 of this part, established on November 3, 2015. In the case of conflict, the more stringent requirements apply.

40 CFR 423.15 (a)(1)

The pH of all discharges except once through cooling water, shall be within the range of 6.0 – 9.0.

40 CFR 423.15 (a)(2)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.15(a) (3)

The quantity of pollutants discharged in low volume waste sources, FGD wastewater, flue gas mercury control wastewater, combustion residual leachate, and gasification wastewater shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

TABLE 64.		
NSPS Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l
Oil and Grease	20.0 mg/l	15.0 mg/l

40 CFR 423.15(a)(13)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (a)(1) through (a)(13) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.15 (a)(13) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

40 CFR 423.13 (a)

There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

40 CFR 423.13(l)

The quantity of pollutants discharged in combustion residual leachate shall not exceed the quantity determined by multiplying the flow of combustion residual leachate times the concentration for TSS listed in 423.12(b)(11).

TABLE 65.		
BAT Effluent Requirements – Combustion Residual Leachate		
Effluent Characteristic	Maximum for any one day	Maximum for monthly average
TSS	100.0 mg/l	30.0 mg/l

40 CFR 423.13(m)

At the permitting authority’s discretion, the quantity of pollutant allowed to be discharged may be expressed as concentration limitations instead of the mass-based limitations specified in paragraphs (b) through (l) of this section concentration limitations shall be those concentrations specified in this section.

In accordance with Sections 423.13 (m) the permitting authority may allow the quantity of pollutant discharge to be expressed as a concentration limitation instead of a mass based limitation. The DOW has determined to apply the requirements of 40 CFR Part 423 in this manner

16.4.2.2. Best Professional Judgment (BPJ)

Stormwater - Total Suspended Solids

The facility treats its stormwater for this parameter before discharge in a holding pond. Sedimentation is a commonly used treatment technology for the removal of total suspended solids that is both efficient and cost effective. Although several factors may influence the final concentration of total suspended solids in the discharge, it has been the experience of the Division that ponds that retain wastewater for 6 hours or more can achieve a total suspended solids concentration of 30 mg/l as a monthly average and 60 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for TSS. The determination was made to use 50 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective than the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

Stormwater - Oil & Grease

The facility does not treat its stormwater for this parameter before discharge. If treatment were to be necessary, an adequately sized oil /water separator with ample retention time would provide appropriate treatment. Flotation or gravity separation of lighter petroleum based products from water is a common and cost effective method for the removal of oil & grease. It has been the experience of the Division that this treatment method can achieve an oil & grease concentration of 10 mg/l as a monthly average and 15 mg/l as a daily maximum.

Additionally, BPJ was used to in the previous issuance of this permit for Oil & Grease. The determination was made to use 15 mg/l as the monthly average value and 20 mg/l as the daily maximum value for both the stormwater and leachate discharge of Outfall 002. These limits are more protective than the NSPS requirements for combustion residual leachate and will remain a requirement consistent with the provisions of anti-backsliding [40 CFR 122.44(l)].

16.5. Limitation Calculations

16.5.1. Calculations for Water Quality-Based Effluent Limitations

These calculations were performed using a Microsoft EXCEL based workbook developed by DOW. The workbook is designed to compare effluent data to the applicable water quality standards while also incorporating the characteristics of the receiving water and any regulatory ZID and/or MZ. The following table summarizes the results of these calculations for this outfall:

Hardness Dependent Metals Calculations	Units	Effluent Hardness	Stream Hardness	Mixing Zone Granted	MZF	Mixing Zone Mixed Hardness	ZID Granted	ZID Dilution	Acute Mixed Hardness
Hardness	mg/l	714	100	N/A	N/A	N/A	N/A	N/A	N/A

Effluent Characteristic	Units	Reported Average	Reported Maximum	Average Limitation	Maximum Limitation	Average Discharge %	Maximum Discharge %	MZF	Data Source
Antimony	µg/L	5.61	5.61	611.9507692	N/A	0.92	N/A	0	DMR
Arsenic	µg/L	13.2	13.2	150	340	8.80	3.88	0	DMR
Barium	µg/L	36	36	109276.9231	N/A	0.03	N/A	0	APP
Beryllium	µg/L	1.18	1.18	437.1076923	N/A	0.27	N/A	0	DMR
Cadmium	µg/L	0	0	0.755841246	8.731374985	0.00	0.00	0	DMR
Chloride	µg/L	39100	39100	600000	1200000	6.52	3.26	0	APP
Chromium	µg/L	0	0	10927.69231	N/A	0.00	N/A	0	DMR
Chromium (III)	µg/L	0.9	0.9	268.2205163	5611.7027	0.34	0.02	0	APP
Chromium (VI)	µg/L	0.9	0.9	11	16	8.18	5.63	0	APP
Color	Platinum Cobalt Units	22	22	8195.769231	N/A	0.27	N/A	0	APP
Copper	µg/L	4	4	30.49938305	51.68449826	13.12	7.74	0	DMR
Fluoride	µg/L	530	530	437107.6923	N/A	0.12	N/A	0	APP
Lead	µg/L	1.24	1.24	18.58090366	476.8177624	6.67	0.26	0	DMR
Mercury	µg/L	0.29	0.29	0.051	1.4	568.63	20.71	0	DMR
Nickel	µg/L	0	0	168.5409938	1515.921838	0.00	0.00	0	DMR
Nitrate (as N)	µg/L	1330	1330	1092769.231	N/A	0.12	N/A	0	APP
Selenium	µg/L	4.29	4.29	5	N/A	85.80	N/A	0	DMR
Silver	µg/L	0	0	N/A	41.07168773	N/A	0.00	0	DMR
Sulfate	µg/L	832000	832000	27319230.77	N/A	3.05	N/A	0	APP
Thallium	µg/L	1.18	1.18	0.47	N/A	251.06	N/A	0	DMR
Zinc	µg/L	11.8	11.8	387.8303147	387.8303147	3.04	3.04	0	DMR
Gross total alpha particle activity including radium-226 but excluding radon and uranium	pCi/L	4	4	12761.07692	N/A	0.03	N/A	0	APP
Combined radium-226 and radium-228	pCi/L	0.174	0.174	4253.692308	N/A	0.00	N/A	0	APP
Total gross beta particle activity	pCi/L	11.8	11.8	42536.92308	N/A	0.03	N/A	0	APP
Uranium	µg/L	2.6	2.6	25522.15385	N/A	0.01	N/A	0	APP

16.6. Justification of Requirements

Chapters 5 and 10 of Title 401 of the Kentucky Administrative Regulations (KARs), cited in the following, have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

At a minimum, all permits shall contain technology-based effluent limitations (TBELs) [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)]. When necessary to achieve water quality standards, all permits shall contain water quality-based effluent limitations (WQBELs) [401 KAR 5:065, Section 2(4) – 40 CFR

122.44(d)]. Any WQBELs included in this permit are based upon the Kentucky Water Quality Standards (KYWQS) [401 KAR 10:031].

16.6.1. Flow

The monitoring requirements for this parameter are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)(1)(ii)] and requirements for recording and reporting of monitoring results [401 KAR 5:050, Section 4 – 40 CFR 122.48].

16.6.2. Total Suspended Solids and Oil & Grease

The limits for these parameters are consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the BAT, and NSPS requirements for combustion residual leachate [40 CFR 423.13(l)], and [40 CFR 423.15(a)(3)], and imposing Best Professional Judgement [401 KAR 5:080, Section 2(3) – 40 CFR 125.3].

16.6.3. pH

The limit for this parameter is consistent with the KPDES permit program requirements for establishing effluent limitations, standards, and permit conditions [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(a)(1) and 122.44(i)(1)], the criteria and standards for imposing TBELs [401 KAR 5:065, Section 2(6) – 40 CFR 122 Appendix A], representative of the NSPS requirements for pH [40 CFR 423.15(a)(1)], and state water quality standards [401 KAR 10:031, Sections 4(1)(b) and 7].

16.6.4. Hardness and Total Recoverable: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, and Zinc Removal

Based on the last five years of DMR data, the facility does not show reasonable potential for these parameters at this outfall. Therefore, the decision to remove these parameters from the permit is based on the Division of Water's EPA-Approved "Permitting Procedures For Determining Reasonable Potential" and 40 CFR 122.44(d). Since none of the remaining parameters are hardness dependent, the monitoring requirements for hardness have also been removed.

SECTION 17

OTHER CONDITIONS

17. OTHER CONDITIONS**17.1. Schedule of Compliance**

The permittee is required to comply with all effluent limitations by the effective date of the permit unless a compliance schedule is included with the permit.

17.2. Antidegradation

The conditions of Kentucky's Antidegradation Policy have been satisfied [401 KAR 10:029, Section 1]. This permitting action is a reissuance of a KPDES permit that does not authorize an expanded discharge.

17.3. Standard Conditions

The conditions listed in the Standard Conditions Section of the permit are consistent with the conditions applicable to all permits [401 KAR 5:065, Section 2(1) – 40 CFR 122.41].

17.4. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(i)].

17.5. Certified Laboratory

All environmental analysis to be performed by a certified laboratory is consistent with the certified wastewater laboratory requirements [401 KAR 5:320, Section 2].

17.6. Best Management Practices Plan (BMPP)

Permits are to include BMPs to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under Section 402(p) of the CWA for the control of stormwater discharges; 3) numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA [401 KAR 5:065, Section 2(4) – 40 CFR 122.44(k)]

17.7. Certified Operators

Wastewater treatment plants and wastewater collection systems that accept wastewaters containing domestic sewage are to be operated by a certified operator [401 KAR 5:010].

17.8. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals to the Division of Water for review and establishment of appropriate control parameters.

17.9. Polychlorinated Biphenyls

Pursuant to the requirements of 40 CFR Part 423.15(a)(2) and 40 CFR 423.13(a), there shall be no discharge, from any point source, of Polychlorinated Biphenyl compounds such as those commonly used in transformer fluids. The permittee shall implement this requirement as a specific section of the BMP plan developed for this section.

KPDES



**KENTUCKY POLLUTANT
DISCHARGE ELIMINATION
SYSTEM**

PERMIT

**AUTHORIZATION TO DISCHARGE UNDER THE
KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM**

PERMIT NO.: KY0054836

AGENCY INTEREST NO.: 3319

Pursuant to Authority in KRS 224,

Big River Electric Corporation
201 Third Street
Henderson, Kentucky 42420

is authorized to discharge from a facility located at

Big River Electric Corporation
D.B. Wilson Station
5663 State Route 85 West
Centertown, Ohio County, Kentucky

to receiving waters named

Green River
UT to Green River
UT's to Elk Creek

in accordance with effluent limitations, monitoring requirements and other conditions set forth in this permit.

This permit shall become effective on July 1, 2020.

This permit and the authorization to discharge shall expire at midnight, June 30, 2025.

Date Signed: April 17, 2020

A black rectangular box containing a white handwritten signature, which appears to be "Paul Miller".

**Paul Miller, P.E.
Director, Division of Water**

**DEPARTMENT FOR ENVIRONMENTAL PROTECTION
Division of Water, 300 Sower Blvd, Frankfort, Kentucky 40601**

Printed on Recycled Paper

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SECTION 1

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. Compliance Monitoring Locations (Outfalls)

The following table lists the outfalls authorized by this permit, the location and description of each, and the DOW assigned KPDES outfall number:

TABLE 1.					
Outfall No.	Outfall Type	Latitude (N)	Longitude (W)	Receiving Water	Description of Outfall
001	External	37.44667°	87.07944°	Green River	The combined discharge of Cooling Tower Blowdown (Outfall 006), Service Water, Metal Cleaning Waste (Outfall 005), Coal Pile Runoff, Plant Service Water, Demineralizer Regenerant & Chemical Waste Sump, Filter Backwash, and Stormwater Runoff.
002	External	37.46222°	87.07944°	UT to Green River	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate
003	External	37.44444°	87.08444°	UT to Elk Creek	Stormwater Runoff Outfall 007 Effluent
005	Internal	37.44611°	87.08111°	Outfall 001	Metal Cleaning Wastes
006	Internal	37.44444°	87.07778°	Outfall 001	Cooling Tower Blowdown
007	Internal	37.45167°	87.08389°	Outfall 003	Sanitary Wastewater Treatment Plant Effluent
008	External	37.45417°	87.10333°	Plant Intake from Green River	Raw Water Intake
009	External	37.45417°	87.08611°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate
010	External	37.45194°	87.08778°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff
011	External	37.45250°	87.09194°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff
012	External	37.45167°	87.09833°	UT to Elk Creek	Solid Fuel Conveyor Runoff Stormwater Runoff
013	External	37.45750°	87.10278°	Green River	Solid Fuel Conveyor Runoff Stormwater Runoff
014	External	37.45417°	87.09000°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate
015	External	37.45889°	87.09278°	UT to Elk Creek	Coal Combustion Residuals (CCR) Landfill Runoff and Leachate

1.2. Effluent Limitations and Monitoring Requirements

1.2.1. Outfall 001

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 001 shall comply with the following effluent limitations:

TABLE 2.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Week	Instantaneous
Temperature	°F	N/A	N/A	N/A	Report	100	N/A	1/Week	Grab
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	74.3	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	9.9	12.5	N/A	1/Month	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab
Total Recoverable Thallium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Total Recoverable Selenium	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab
Acute WET ¹	TU _A	N/A	N/A	N/A	N/A	N/A	1.00	1/Quarter	(²)

¹WET – Whole Effluent Toxicity

²Two (2) discrete grab samples shall be collected 12 hours apart

1.2.2. Outfalls 002, 009, 014, and 015

Beginning on the effective date and lasting through the term of this permit, discharges from Outfalls 002, 009, 014, and 015 shall comply with the following effluent limitations:

TABLE 3.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30.0	50.0	N/A	1/Month	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10.0	15.0	N/A	1/Month	Grab

TABLE 3.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Month	Grab

1.2.3. Outfall 003

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 003 shall comply with the following effluent limitations:

TABLE 4.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	60	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab
Total Residual Chlorine	mg/l	N/A	N/A	N/A	Report	Report	N/A	1/Quarter	Grab

1.2.4. Outfall 005

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 005 shall comply with the following effluent limitations:

TABLE 5.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Batch ¹	Calculated
Total Recoverable Copper	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab
Total Recoverable Iron	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Batch ¹	Grab

¹Monitoring shall be conducted once per metal cleaning operation.

TABLE 5.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Metal cleaning waste shall mean any wastewater resulting from cleaning (with or without chemical cleaning compounds) any metal process equipment including, but not limited to general equipment washes, boiler tube cleaning, boiler fireside cleaning, air preheater cleaning, and hopper washes. In accordance with the conditions of the previous permits, the permittee is allowed to discharge these discharges directly to outfall 001 without limitations or monitoring requirements, pursuant to the Jordan Memorandum. Monitoring is required only when chemical metal cleaning activities are being performed.									

1.2.5. Outfall 006

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 006 shall comply with the following effluent limitations:

TABLE 6.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Week	Instantaneous
Free Available Chlorine ¹	mg/l	N/A	N/A	N/A	0.2	0.5	N/A	1/Occurrence ²	Multiple Grab ⁵
Total Residual Oxidants ^{1,6}	mg/l	N/A	N/A	N/A	Report	0.2	N/A	1/Occurrence ³	Multiple Grab ⁵
Oxidant Discharge Time ¹	Min/unit/day	N/A	N/A	N/A	N/A	120	N/A	1/Occurrence ⁴	Log
Total Chromium ¹	mg/l	N/A	N/A	N/A	0.2	0.2	N/A	1/Year	Grab
Total Zinc ¹	mg/l	N/A	N/A	N/A	1.0	1.0	N/A	1/Year	Grab
Priority Pollutants ^{1,7}	No Detectable Amount							1/Year	Calculated ⁸
¹ Sampling of cooling tower blowdown must be taken at the nearest accessible point prior to discharge to or mixing with the receiving waters or wastestreams from other outfalls.									
² The measurement frequency "Occurrence" means only during periods of chlorination addition to cooling water, but no more frequent than once per week.									
³ The measurement frequency "Occurrence" means only during periods of oxidation addition to cooling water, but no more frequent than once per week.									
⁴ The measurement frequency "Occurrence" means during periods of chlorination or oxidation addition to cooling water, but no more frequent than once per week.									
⁵ The sample type 'Multiple Grab' means grab samples collected at the approximate beginning of oxidant discharge and once every fifteen (15) minutes thereafter until the end of the oxidant discharge.									

TABLE 6.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
<p>⁶The term Total Residual Oxidants (TRO) means the value obtained by using the amperometric titration or DPD methods for Total Residual Chlorine described in 40 CFR Part 136. In the event of addition of an oxidant other than Chlorine, the permittee shall receive prior approval from the DOW permitting staff before the initial use. TRO monitoring and limits only apply if the applicant chooses to utilize an oxidant other than Chlorine.</p> <p>⁷Priority Pollutants are those contained in chemicals added for cooling tower maintenance and shall be monitored annually by grab sample or by engineering calculations. The results of the analyses/engineering calculations shall be totaled and reported as a single concentration on the DMR. The laboratory bench sheets/engineering or electronic equivalent calculations showing the results for each pollutant shall be attached to the DMR. The term priority pollutants means the 126 priority pollutants listed in 40 CFR Part 423 Appendix A except total chromium and total zinc.</p> <p>⁸Compliance with the limitations, for the 126 priority pollutants, in paragraph (b)(10) of 40 CFR 423.15 may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.</p> <p>Neither free available chlorine nor total residual chlorine or oxidants may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available chlorine or total residual chlorine or oxidants at any one time unless the utility can demonstrate to the DOW that the units in a particular location cannot operate at or below this level of chlorination or oxidant addition.</p>									

1.2.6. Outfall 007

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 007 shall comply with the following effluent limitations:

TABLE 7.

EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Maximum Weekly Average	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Month	Calculated
BOD ₅	mg/l	N/A	N/A	N/A	30	45	N/A	1/Month	Grab
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	45	N/A	1/Month	Grab
Total Residual Chlorine	mg/l	N/A	N/A	0.20	N/A	N/A	N/A	1/Month	Grab

¹BOD₅ –Biochemical Oxygen Demand, 5-day

1.2.7. Outfall 008

Beginning on the effective date and lasting through the term of this permit, discharges from Outfall 008 shall comply with the following effluent limitations:

TABLE 8.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	Continuous	Recorder
Temperature	°F	N/A	N/A	N/A	Report	Report	N/A	Daily	Grab
¹ Cooling Water Intake Inspection	Fail=1 Pass=0	N/A	N/A	N/A	N/A	N/A	Report ²	1/Week	Inspection ³
¹ Weekly monitoring of the cooling water intake system shall be performed, during the period the cooling water intake structure is in operation, to ensure that the design and construction technology required by §125.94 is functioning as designed and is being appropriately maintained and operated.									
² If intake system is not functioning as designed a “1” is to be reported. If intake system is functioning as designed a “0” is to be reported.									
³ This inspection may take the form of either visual inspections or the use of remote monitoring devices.									
An annual certification statement signed by the authorized representative shall be submitted to the DOW surface water permits branch no later than January 31 st for the previous year. See Section 5.9.3.3. “Reporting Requirements for Cooling Water Intake” for additional details.									

1.2.8. Outfalls 010, 011, 012, and 013

Beginning on the effective date and lasting through the term of this permit, discharges from Outfalls 010, 011, 012, and 013 shall comply with the following effluent limitations:

TABLE 9.									
EFFLUENT LIMITATIONS								MONITORING REQUIREMENTS	
Effluent Characteristic	Units	Loadings (lbs./day)		Concentrations				Frequency	Sample Type
		Monthly Average	Daily Maximum	Minimum	Monthly Average	Daily Maximum	Maximum		
Flow	MGD	Report	Report	N/A	N/A	N/A	N/A	1/Quarter	Calculated
Total Suspended Solids	mg/l	N/A	N/A	N/A	30	50	N/A	1/Quarter	Grab
Oil & Grease	mg/l	N/A	N/A	N/A	10	15	N/A	1/Quarter	Grab
pH	SU	N/A	N/A	6.0	N/A	N/A	9.0	1/Quarter	Grab

1.3. Standard Effluent Requirements

The discharges to Waters of the Commonwealth shall not produce floating solids, visible foam or a visible sheen on the surface of the receiving waters.

SECTION 2

STANDARD CONDITIONS

2. STANDARD CONDITIONS

The following conditions apply to all KPDES permits.

2.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of KRS Chapter 224 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Any person who violates applicable statutes or who fails to perform any duty imposed, or who violates any determination, permit, administrative regulation, or order of the Cabinet promulgated pursuant thereto shall be liable for a civil penalty as provided at KRS 224.99.010.

2.2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit.

2.3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2.4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

2.5. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2.6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

2.7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

2.8. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

2.9. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

- (1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2.10. Monitoring and Records

- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 401 KAR 5:065, Section 2(10) [40 CFR 503]), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- (3) Records of monitoring information shall include:
 - a) The date, exact place, and time of sampling or measurements;
 - b) The individual(s) who performed the sampling or measurements;
 - c) The date(s) analyses were performed;
 - d) The individual(s) who performed the analyses;
 - e) The analytical techniques or methods used; and
 - f) The results of such analyses.
- (4) Monitoring must be conducted according to test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136] unless another method is required under 401 KAR 5:065, Section 2(9) or (10) [40 CFR subchapters N or O].
- (5) KRS 224.99-010 provides that any person who knowingly violates KRS 224.70-110 or other enumerated statutes, or who knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall be guilty of a Class D felony and, upon conviction, shall be punished by a fine of not more than \$25,000, or by imprisonment for not less than one (1) year and not more than five (5) years, or by both fine and imprisonment for each separate violation.. Each day upon which a violation occurs shall constitute a separate violation.

2.11. Signatory Requirement

- (1) All applications, reports, or information submitted to the Director shall be signed and certified pursuant to 401 KAR 5:060, Section 4 [40 CFR 122.22].

(2) KRS 224.99-010 provides that any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 shall be guilty of a Class D felony and upon conviction thereof, shall be punished by a fine not to exceed twenty-five thousand dollars (\$25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

2.12. Reporting Requirements

2.12.1. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one (1) of the criteria for determining whether a facility is a new source in KRS 224.16-050 [40 CFR 122.29(b)]; or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under KRS 224.16-050 [40 CFR 122.42(a)(1)].

(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2.12.2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.12.3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under KRS 224 [CWA; see 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory].

2.12.4. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136], or another method required for an industry-specific waste stream under 401 KAR 5:065, Section 2(9) or (10) [40 CFR subchapters N or O], the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

2.12.5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

2.12.6. Twenty-four-Hour Reporting

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) The following shall be included as information which must be reported within twenty-four (24) hours under this paragraph.

- a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See §122.41(g))
- b) Any upset which exceeds any effluent limitation in the permit.
- c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty-four (24) hours.

(3) The Director may waive the written report on a case-by-case basis under 40 CFR 122.41 (l), if the oral report has been received within twenty-four (24) hours.

2.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 2.12.1, 2.12.4, 2.12.5 and 2.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.12.6.

2.12.8. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

2.13. Bypass**2.13.1. Definitions**

(1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

2.13.2. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Section 2.13.3 and 2.13.4.

2.13.3. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 2.12.6.

2.13.4. Prohibition of Bypass

(1) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

- a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c) The permittee submitted notices as required under Section 2.13.3.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three (3) conditions listed above in Section 2.13.4

2.14. Upset**2.14.1. Definition**

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2.14.2. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Section 2.14.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

2.14.3. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
- (2) The permitted facility was at the time being properly operated; and
- (3) The permittee submitted notice of the upset as required in Section 2.12.6; and
- (4) The permittee complied with any remedial measures required under Section 2.4.

2.14.4. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

SECTION 3

BEST MANAGEMENT PRACTICES PLAN (BMPP) REQUIREMENTS

3. BEST MANAGEMENT PRACTICES PLAN (BMPP) REQUIREMENTS

The permittee shall develop and implement a Best Management Practices Plan (BMPP) consistent with 401 KAR 5:065, Section 2(4).

3.1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.1-010(35) and who have operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.1-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

3.2. Plan

The permittee shall develop and implement a BMPP consistent with 401 KAR 5:065, Section 2(4) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage.

3.3. Implementation

The permittee shall implement the BMPP upon the commencement of regulated activity. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be implemented as soon as possible.

3.4. General Requirements

The BMPP shall:

- (1) Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.
- (2) Establish specific objectives for the control of toxic and hazardous pollutants.
 - a. Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.
 - b. Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants", the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.
- (3) Establish specific BMPs to meet the objectives identified under paragraph (2) b of this section, addressing each component or system capable of causing a release of "BMP pollutants".
- (4) Include any special conditions established in part b of this section.
- (5) Be reviewed by engineering staff and the site manager.

3.5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document", and shall include the following baseline BMPs as a minimum:

- (1) BMP Committee
- (2) Reporting of BMP Incidents
- (3) Risk Identification and Assessment
- (4) Employee Training
- (5) Inspections and Records
- (6) Preventive Maintenance
- (7) Good Housekeeping
- (8) Materials Compatibility
- (9) Security
- (10) Materials Inventory

3.6. SPCC Plans

The BMPP may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Clean Water Act and 40 CFR Part 112, and may incorporate any part of such plans into the BMPP by reference.

3.7. Hazardous Waste Management

The permittee shall assure the proper management of solids and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

3.8. Documentation

The permittee shall maintain a copy of the BMPP at the facility and shall make the plan available upon request to EEC personnel.

3.9. BMPP Modification

The permittee shall modify the BMPP whenever there is a change in the facility or change in the operation of the facility that materially increases the potential for the release of "BMP pollutants".

3.10. Modification for Ineffectiveness

The BMPs and the BMPP shall be reviewed and appropriate modifications implemented to utilize other practicable measures if any of the following events occur:

- (1) As a result of either a fixed or episodic event-driven evaluation, the permittee determines the selected BMPs are not achieving the established performance benchmarks;
- (2) As a result of an evaluation or inspection by Cabinet personnel; or
- (3) A release of any petroleum-based product, toxic or hazardous substance.

SECTION 4

WET TESTING REQUIREMENTS

4. WET TESTING REQUIREMENTS

The permittee shall initiate, within thirty (30) days of the effective date of this permit, or continue the series of tests described below to evaluate wastewater toxicity of the discharge from Outfall 001.

4.1. Sampling Requirements

Tests shall be conducted on each of two grab samples collected over the period of discharge, (i.e., discrete sample #1 taken at commencement of discharge, sample #2 taken approximately 12 hours later, sooner if discharge is expected to cease). The elapsed time between the collection of each grab sample and the initiation of each test shall not exceed 36 hours.

4.2. Test Requirements

The Acute WET test requirements consists of two 48-hour static non-renewal toxicity tests with water flea (Ceriodaphnia dubia, Daphnia magna, or Daphnia pulex) and two 48-hour static non-renewal toxicity tests with fathead minnow (Pimephales promelas) performed on discrete grab samples of 100% effluent (1.00 TU_A) at the frequency specified. Testing of each sample shall begin within 36 hours of the collection of that sample.

4.3. Serial Dilutions

Effluent concentrations for the tests must include the percent effluent required by the permit and at least four additional effluent concentrations.

For a required percent effluent of 100%, test concentrations shall be 20%, 40%, 60%, 80% and 100%.

For a required percent effluent less than 100% but greater than or equal to 75%, the test concentrations shall include the required percent effluent, two (2) concentrations below that are based on a 0.5 dilution factor, and two (2) concentrations above: one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

For a required percent effluent less than 75%, test concentrations shall include the required percent effluent, two (2) concentrations below on a 0.5 dilution factor, and two (2) concentrations above the required percent effluent based on a 0.5 dilution factor, if possible; otherwise, one (1) at mid-point between 100% and the required percent effluent, and one (1) at 100% effluent.

Selection of different effluent concentrations must be approved by DOW prior to testing. Controls shall be conducted concurrently with effluent testing using synthetic water.

4.4. Controls

Control tests shall be conducted concurrent with effluent testing using synthetic water. The analysis will be deemed reasonable and good only if the minimum control requirements are met.

Any test that does not meet the control acceptability criteria shall be repeated as soon as practicable within the monitoring period.

Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test.

Control survival is 90% or greater in test organisms held in synthetic water.

4.5. Test Methods

All test organisms, procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-

821-R-02-012 (5th edition), the most recently published edition of this publication, or as approved in advance by DOW.

4.6. Reduction to Single Species Testing

After at least six (6) consecutive passing toxicity tests using both, the water flea and the fathead minnow, a request for testing with only the most sensitive species may be submitted to DOW. Upon approval, the most sensitive species may be considered as representative and all subsequent compliance tests may be conducted using only that species unless directed at any time by DOW to change or revert to both.

4.7. Reduction in Monitoring Frequency

The permittee may request a reduction in the frequency of WET testing upon demonstration that no test failures, incomplete tests, or invalid tests occurred during the following specified timeframes:

- (1) Existing facilities: four (4) consecutive quarters;
- (2) New or expanded facilities: eight (8) consecutive quarters.

New and expanded facilities are defined in the above Requirements Effective Dates Section of this permit. In the event of the failure of an annual test or non-submission by January 28th of the year following the completion of the test, the permittee will again be subject to quarterly WET testing.

4.8. Reporting Requirements

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by DOW (See the Section for Submission of DMRs of this permit). Notification of failed test shall be made to DOW within five days of test completion. Test reports shall be submitted to DOW within thirty (30) days of completion. A control chart including the most recent reference toxicant test endpoints for the effluent test method (minimum of 5, up to 20 if available) shall be part of the report.

4.9. Test Results

If noncompliance occurs in an initial test, the permittee shall repeat the test using new samples. Results of this second round of testing will be used to evaluate the persistence of the toxic event and the possible need for a Toxicity Reduction Evaluation (TRE).

Noncompliance is demonstrated if the LC₅₀ is less than 100% effluent. If noncompliance occurs in an initial test, the permittee shall repeat the test using new grab samples collected approximately twelve (12) hours apart. Sampling must be initiated within ten (10) days of completing the failed test. The second round of testing shall include both species unless approved for only the most sensitive species by DOW.

4.10. Accelerated Testing

If the second round of testing also demonstrates noncompliance, the permittee will be required to perform accelerated testing as specified in the following paragraphs.

Complete four (4) additional rounds of testing to evaluate the frequency and degree of toxicity within sixty (60) days of completing the second failed round of testing. Results of the initial and second rounds of testing specified above plus the four (4) additional rounds of testing will be used in deciding if a TRE shall be required.

If results from any two (2) of six (6) rounds of testing show a significant noncompliance with the Toxicity limit, i.e., ≥ 1.2 times the TU, or results from any four of the six tests show toxicity as defined above, a TRE will be required.

The permittee shall provide written notification to DOW within five (5) days of completing the accelerated testing, stating that: (1) toxicity persisted and that a TRE will be initiated; or (2) that toxicity did not persist and normal testing will resume.

Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within twelve (12) months of the initial failure at a level ≥ 1.2 times the TU, then a TRE shall be required.

4.11. WET TRE

Having determined that a TRE is required, the permittee shall initiate and/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by DOW. A TRE plan shall be developed by the permittee and submitted to DOW within thirty (30) days of determining a TRE is required. The plan shall be developed in accordance with the most recent Environmental Protection Agency (EPA) and DOW guidance. Questions regarding this process may be submitted to DOW.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by DOW, to have duration of at least six (6) months, and not to exceed twenty-four (24) months. The implementation schedule shall include quarterly progress reports being submitted to DOW, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed one-hundred-eighty (180) days.

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify DOW within five (5) days of making that determination and take appropriate actions to implement the solution within one-hundred-eighty (180) days of that notification.

SECTION 5

OTHER CONDITIONS

5. OTHER CONDITIONS

5.1. Schedule of Compliance

The permittee shall attain compliance with all requirements of this permit on the effective date of this permit unless otherwise stated.

5.2. Other Permits

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

5.3. Continuation of Expiring Permit

This permit shall be continued in effect and enforceable after the expiration date of the permit provided the permittee submits a timely and complete application in accordance with 401 KAR 5:060, Section 2(4).

5.4. Antidegradation

For those discharges subject to the provisions of 401 KAR 10:030 Section, 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those identified in the SDAA submitted with the KPDES permit application.

5.5. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

- (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- (2) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

5.6. Cooling Water Additives, FIFRA, and Mollusk Control

The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in cooling water which ultimately may be released to the waters of the Commonwealth is prohibited, except Herbicides, unless specifically identified and authorized by the KPDES permit. In the event the permittee needs to use a biocide or chemical not previously reported for mollusk control or other purpose, the permittee shall submit sufficient information, a minimum of thirty (30) days prior to the commencement of use of said biocides or chemicals to the Division of Water for review and establishment of appropriate control parameters.

5.7. Certified Operators

The wastewater treatment plant the primary responsibility of Class I Wastewater Treatment Plant Certified Operator or higher.

5.8. Outfall Signage

This KPDES permit establishes monitoring points, effluent limitations, and other conditions to address discharges from the permitted facility. In an effort to better document and clarify these locations the permittee should place and maintain a permanent marker at each of the monitoring locations.

5.9. Cooling Water Intake Requirements

5.9.1 Authority to Operate

The permittee shall at all times properly operate and maintain all water intake facilities. The permittee shall give advance notice to the Division of any planned changes in the location, design, operation, or capacity of the intake structure. The permittee is authorized to use the cooling water intake system which consists of the following:

Wilson is located near Green River mile point 74, in Centertown, Ohio County, Kentucky. Wilson employs a closed cycle recirculating system (CCRS) that includes a nine-cell, mechanical draft cooling tower located on the southeastern portion of the site. The cooling water system operates as a closed system by continuous recirculation of water between the condenser and the cooling tower. The cooling tower consists of one, three-cell group and three, two-cell groups. The cooling tower operates nine fans. Because a portion of the circulating water is evaporated, makeup water is required. In addition, some water is also required to replace cooling tower blowdown, which is the water that is continuously removed from the cycle to maintain an acceptable dissolved solids concentration. The cooling towers typically operate using five to six cycles of concentration. Makeup water for the cooling tower is withdrawn from the Green River, which has a 7Q₁₀ flow of 364 cfs, through the shoreline Cooling Water Intake Structure (CWIS). The Wilson CWIS, located on the eastern shoreline of the Green River, provides makeup water to the cooling tower. The CWIS was built to provide cooling water for two units (Units 1 and 2); however, Unit 2 was never built. The CWIS consist of a curtain wall, two intake bays, trash racks with a trash rake system, two traveling screens, three circulating water pumps. The concrete curtain wall extends from the operating deck of the intake to approximately 6.5 feet above the river bottom in front of the intake bays. The intake bays are 8 feet wide. The two, vertical, single-flow traveling screens prevent debris and organisms from being pumped into the water pretreatment system. Each traveling scree is 4 feet wide and has 3/8 – inch square openings. Debris and organisms on the screens are removed by a high-pressure back wash spray. The screen Washwater, debris, and organisms are returned to the Green River. Behind the traveling screens are three makeup water pumps, each with a capacity of 9,500 gallons per minute (gpm). However, the maximum intake flow or design intake flow (DIF) that can be achieved for the Unit 1 cooling tower is 12,667 gpm which is equivalent to 7.75% of the Green River 7Q₁₀ flow. It should be noted that typically only one pump is operated at a time, so typical operation is less than 9,500 gpm. Based on the last five years of operating data (2015-2019) Wilson withdrew an average of 9.29 cfs from the Green River, which is equivalent to 2.55% of the 7Q₁₀. The through-screen velocities were estimated using the traveling screen dimensions, and the DIF (12,635 gpm) and typical 1-pump operations during extreme low and normal water elevations. The through-screen velocities at DIF ranged from 1.24 to 4.22 fps under normal and extreme low water surface levels, respectively. The through-screen velocities during typical operations ranged from 0.93 to 3.46 fps under normal and extreme low water surface levels, respectively. There is no emergency intake at the facility.

5.9.2 Best Technology Available (BTA) Determination

The cooling water intake is approved as BTA for minimizing adverse environmental impact in accordance with the requirements in 40 CFR 125 Subpart J and section 316(b) of the Clean Water Act. The chosen impingement method of compliance is the closed-cycle recirculating system of 40 CFR 125.94(c)(1).

5.9.3 Intake Structure Standard Requirements

5.9.3.1 Future BTA Determinations for Cooling Water Intake Structure(s)

BTA determinations for entrainment mortality and impingement mortality at cooling water intake structures will be re-confirmed in each permit reissuance, in accordance with 40 CFR 125.90-98. In subsequent permit reissuance applications, the permittee shall provide all the information required in 40 CFR 122.21(r).

Exemptions from some permit application requirements are possible in accordance with 40 CFR 125.95(c) and 125.98(g), where information already submitted is sufficient. If an exemption is desired, a request for reduced application material requirements must be submitted at least 2 years and 6 months prior to permit expiration. Past submittals and previously conducted studies may satisfy some or all of the application material requirements.

5.9.3.2 Visual or Remote Inspection

The permittee shall conduct a weekly visual inspection or employ a remote monitoring device during periods when the cooling water intake is in operation. The inspection frequency shall be weekly to ensure the intakes are maintained and operated to function as designed.

5.9.3.3 Reporting Requirements for Cooling Water Intake

The permittee shall adhere to the reporting requirements listed below:

Discharge Monitoring Reports (DMRs)

The monitoring requirements for units at existing facilities under 40 CFR 125.96 for cooling water withdrawals, blowdown volume, and visual or remote inspections have been established at the appropriate outfalls and shall be reported on the DMR for those outfalls.

Annual certification Statement and Report

Submit an annual certification statement to DOW Surface Water Permits Branch signed by the authorized representative with information on the following, no later than January 31st for the previous year:

- Certification that water intake structure technologies are being maintained and operated as set forth in this permit, or a justification to allow a modification of the practices.
- If there are substantial modifications to the operation of any unit that impacts the cooling water withdrawals or operation of the water intake structure, provide a summary of those changes.
- If the information contained in the previous year's annual certification is still applicable, the certification may simply state as such.

Reporting Records Retention

In accordance with 40 CFR 125.97(d) records of all submissions that are part of the permit application and reporting requirements must be retained until the subsequent permit is issued to document compliance. Additionally, all records supporting the determination of BTA for entrainment under 40 CFR 125.98(f) or (g) must be retained until such time the determination of BTA for entrainment in the permit is revised.

5.9.3.4 Endangered Species Act

Nothing in this permit authorizes take for the purpose of a facility's compliance with the Endangered Species Act. Refer to 40 CFR 125.98(b)(1) and (2).

5.10. Polychlorinated Biphenyls

Pursuant to the requirements of 40 CFR Part 423.12(b)(2) and 40 CFR 423.13(a), there shall be no discharge, from any point source, of Polychlorinated Biphenyl compounds such as those commonly used in transformer fluids. The permittee shall implement this requirement as a specific section of the BMP plan developed for this section.

5.11. Point Source Discharge of Combustion Residual Leachate

Pursuant to 40 CFR 423.11(r), the term combustion residual leachate (“leachate”) means “leachate from landfills or surface impoundments containing combustion residuals. Leachate is composed of liquid, including any suspended or dissolved constituents in the liquid, that has percolated through waste or other materials emplaced in a landfill, or that passes through the surface impoundment’s containment structure (*e.g.*, bottom, dikes, berms). Combustion residual leachate includes seepage and/or leakage from a combustion residual landfill or impoundment unit to the surface. Combustion residual leachate includes wastewater from landfills and surface impoundments located on non-adjointing property when under the operational control of the permitted facility.”

This permit authorizes the discharge of leachate from Outfalls 002, 009, 014, and 015. For newly discovered leachate seeps from a CCR surface impoundment or a CCR landfill, as defined at 40 CFR 257.53, to the surface that discharge or have a potential to discharge from a point source to a water of the commonwealth other than through Outfalls 002, 009, 014, and 015, the permittee shall develop and implement a plan to address such surface seeps. The plan shall be included as part of the on-site BMP Plan and shall address, at a minimum, (1) scheduled inspections for identifying surface leachate seeps, (2) maintenance of CCR landfills and/or impoundments to minimize the potential for surface leachate seeps, and (3) corrective measures that will be implemented upon the discovery of a surface leachate seep that is not being controlled by a permitted outfall authorized for discharge of leachate. The permittee shall notify the DOW Surface Water Permits Branch and the appropriate DOW Field Office of planned corrective measures for any identified surface seeps of leachate as soon as feasible after discovery of such a leachate seep, but no later than ten (10) days after the discovery. Such corrective measures may include: (1) plans to reduce or eliminate the leachate seep to the surface; (2) actions to route the surface leachate seep (via a conveyance designed to contain the flow or eliminate the possibility of infiltration) to an outfall permitted to discharge leachate; and (3) combinations of actions to eliminate or, if elimination is not feasible, reduce and control a surface leachate seep and ensure any discharge to a receiving stream is authorized by the permit. Please note that this does not exempt the permittee from 24-hour reporting Section 2.12 of the permit.

SECTION 6

MONITORING AND REPORTING REQUIREMENTS

6. MONITORING AND REPORTING REQUIREMENTS

6.1. KPDES Outfalls

Discharge samples and measurements shall be collected at the compliance point for each KPDES Outfall identified in this permit. Each sample shall be representative of the volume and nature of the monitored discharge.

6.2. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit, i.e. the Method Minimum Level shall be at or below the effluent limit. In the instance where an EPA-approved method does not exist that has a Method Minimum Level at or below the established effluent limitation, the permittee shall:

- (1) Use the method specified in the permit; or
- (2) The EPA-approved method with an ML that is nearest to the established effluent limit.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

6.3. Certified Laboratory Requirements

All laboratory analyses and tests required to demonstrate compliance with the conditions of this permit shall be performed by a laboratory holding the appropriate general or field-only certification issued by the Cabinet pursuant to 401 KAR 5:320.

6.4. Submission of DMRs

The completed DMR for each monitoring period must be entered into the DOW approved electronic system no later than midnight on the 28th day of the month following the monitoring period for which monitoring results were obtained.

For more information regarding electronic submittal of DMRs, please visit the Division's website at: <https://eec.ky.gov/Environmental-Protection/Water/SubmitReport/Pages/NetDMR.aspx> or contact the DMR Coordinator at (502) 564-3410.

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-13: *Provide a copy of the most recent Clean Air Act Title V
operating permit and the most recent Clean Air Act Title V operating permit renewal application
for D.B. Wilson.*

RESPONSE: Please see the two attachments to this response.

Witness: Michael S. Mizell

**Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601
(502) 564-3999**

Final

**AIR QUALITY PERMIT
Issued under 401 KAR 52:020**

Permittee Name: Big Rivers Electric Corporation
Mailing Address: 201 Third Street
Henderson, KY 42420

Source Name: Big Rivers Electric Corporation - D.B. Wilson
Station
Mailing Address: 5663 State Route 85 West
Centertown, KY 42328

Source Location: State Hwy. 85

Permit: V-21-018
Agency Interest: 3319
Activity: APE20200005, APE20200006, & APE20210001
Review Type: Title V, Construction / Operating
Source ID: 21-183-00069

Regional Office: Owensboro Regional Office
3032 Alvey Park Dr. W., Suite 700
Owensboro, KY 42303
(270) 687-7304

County: Ohio

Application
Complete Date: February 26, 2021
Issuance Date: November 21, 2021
Expiration Date: November 21, 2026

Rick Shewekah

For **Melissa Duff, Director**
Division for Air Quality

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Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action
V-21-018	Renewal	APE20200005/ APE20200006/ APE202100001	2/26/2021	11/21/2021	Title V Renewal; Replace EU 01's WFGD to increase SO₂ removal efficiency to 97%; Add EU 08 Gypsum Handling Operations & EU 09 FGD Emergency Generator; Add Insignificant Activity Fly Ash Barge Loading

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Energy and Environment Cabinet (Cabinet) hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes (KRS) Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS**Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal-Fired Boiler****Description:**

Pulverized coal fired, dry bottom, wall fired boiler with electrostatic precipitator, low NO_x burners, hydrated lime injection, wet flue gas desulfurization (WFGD), and selective catalytic reduction (SCR)

Primary Fuel: Bituminous Coal

Secondary Fuels: No. 2 fuel oil for startup and stabilization; petroleum coke

Maximum Continuous Rating: 4,585 MMBtu/hour

Construction Commenced: December 1978

APPLICABLE REGULATIONS:

401 KAR 52:060, *Acid rain permits*, incorporating the Federal Acid Rain provisions as codified in 40 CFR parts 72 to 78 (See **Section J**)

401 KAR 51:160 *NO_x requirements for large utility and industrial boilers* (see **Section K**)

401 KAR 51:210, *CAIR NO_x annual trading program* (see **Section K**)

401 KAR 51:220, *CAIR NO_x ozone season trading program* (see **Section K**)

401 KAR 51:230, *CAIR SO₂ trading program* (see **Section K**)

401 KAR 51:240, *Cross-State Air Pollution Rule (CSAPR) NO_x annual trading program* (see **Section L**)

401 KAR 51:260, *Cross-State Air Pollution Rule (CSAPR) SO₂ group 1 trading program* (see **Section L**)

401 KAR 59:015, *New indirect heat exchangers*

401 KAR 60:005, Section 2(2)(b), 40 CFR 60.40Da through 60.52Da (**Subpart Da**), *Standards of Performance for Electric Utility Steam Generating Units*

401 KAR 63:002, Section 2(4)(yyyy), 40 CFR 63.9980 through 63.10042, Tables 1 to 9, and Appendices A to B (**Subpart UUUU**), *National Emission Standards for Hazardous Air Pollutants: Coal and Oil-Fired Electric Utility Steam Generating Units*

40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*

40 CFR 97, Subpart GGGGG, *CSAPR NO_x Ozone Season Group 3 Trading Program* (see **Section L**)

PRECLUDED REGULATION:

401 KAR 51:017, *Prevention of significant deterioration*

1. Operating Limitations:

- a) At all times, the permittee shall operate and maintain Emission Unit 01 (W1), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the EPA Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.10000(b)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b) The permittee shall meet the work practice standards of Items 3. and 4. in Table 3 to Subpart UUUUU of Part 63 at all times during startup and shutdown: [401 KAR 59:015, Section 7(2)(b); 40 CFR 63.9991(a)(1); and 40 CFR 63.10000(a)]
- 1) The permittee shall comply with paragraph (1) of the definition of “startup” in 40 CFR 63.10042: *Startup* means the first-ever firing of fuel in Emission Unit 01 for the purpose of producing electricity, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam from the boiler is used to generate electricity for sale over the grid or for any other purpose (including on-site use). Any fraction of an hour in which startup occurs constitutes a full hour of startup. [40 CFR 63.10000(a) and 40 CFR 63.10005(j), referencing Table 3, Item 3a.]
 - i) The permittee shall operate all Continuous Monitoring System(s) (CMS) during startup.
 - ii) For startup of a unit, the permittee shall use clean fuels as defined in 40 CFR 63.10042 for ignition.
 - iii) Once the permittee converts to firing coal, the permittee shall engage all of the applicable control technologies except dry scrubber and SCR. The permittee shall start the dry scrubber and SCR systems, if present, appropriately to comply with relevant standards applicable during normal operation.
 - iv) The permittee shall comply with all applicable emissions limits at all times except for periods that meet the applicable definitions of startup and shutdown in 40 CFR 63, Subpart UUUUU.
 - v) The permittee shall keep records during startup periods.
 - vi) The permittee shall provide reports concerning activities and startup periods, as specified in 40 CFR 63.10011(g) and 40 CFR 63.10021(h) and (i), and 63.10031.
 - vii) To satisfy the initial and continuous compliance requirements of 40 CFR 63.10011(g) and 40 CFR 63.10021(h), the permittee may use the diluent cap and default gross output values, as described in 40 CFR 63.10007(f), during startup periods or shutdown periods. [40 CFR 63.10011(g)(1)]
 - 2) The permittee has the option of using either definition of “startup” defined in 40 CFR 63.10042 and 40 CFR 63, Subpart UUUUU, Table 3, Item 3.a.(1) or Item 3.a.(2) for demonstrating initial compliance. The permittee may switch from paragraph (1) of the definition of “startup” to paragraph (2) (or vice-versa) provided that all the Notification, Reporting, and Recordkeeping requirements of 40 CFR 63.10030(e)(8)(iii)(A) through (E). [40 CFR 63.10030(e)(8) and (e)(8)(iii)]
 - 3) The permittee shall comply with the following during a shutdown: *Shutdown* means the period in which cessation of operation of Emission Unit 01 is initiated for any purpose. Shutdown begins when Emission Unit 01 no longer generates electricity or makes useful thermal energy (such as heat or steam) for industrial, commercial, heating, or cooling purposes or when no coal, liquid oil, syngas, or solid oil-derived fuel is being fired in Emission Unit 01, whichever is earlier. Shutdown ends when Emission Unit 01 no longer generates electricity or makes useful thermal energy (such as steam or heat) for industrial, commercial, heating, or cooling purposes, and no fuel is being fired in Emission Unit 01. Any fraction of an hour in which shutdown occurs constitutes a full hour of shutdown. [40 CFR 63.10000(a) and 40 CFR 63.10005(j), referencing Table 3, Item 4.; 40 CFR 63.10042, *Shutdown*]
 - i) The permittee shall operate all CMS during shutdown.

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- ii) The permittee shall collect appropriate data and calculate the pollutant emission rate for each hour of shutdown for those pollutants for which a CMS is used.
- iii) While firing coal during shutdown, the permittee shall vent emissions to the main stack(s) and operate all applicable control devices and continue to operate those control devices after the cessation of coal fuel being fed into Emission Unit 01 and for as long as possible thereafter considering operational and safety concerns.
- iv) The permittee shall operate the controls when necessary to comply with other standards made applicable to Emission Unit 01 by a permit limit or a rule other than 40 CFR 63, Subpart UUUUU and that require operation of the control devices.
- v) If, in addition to the fuel used prior to initial of shutdown, another fuel shall be used to support the shutdown process, that additional fuel shall be one or a combination of the clean fuels defined in 40 CFR 63.10042 and shall be used to the maximum extent possible, taking into account considerations such as not compromising boiler or control device integrity.
- vi) The permittee shall comply with all applicable emission limits at all times except during periods of startup and shutdown at which time the permittee shall meet the work practice in 40 CFR 63, Subpart UUUUU, Table 3.
- vii) The permittee shall collect monitoring data during shutdown periods, as specified in 40 CFR 63.10020(a).
- viii) The permittee shall maintain records during shutdown periods, as provided in 40 CFR 63.10032 and 40 CFR 63.10021(h).
- ix) The permittee shall provide reports concerning activities and shutdown periods, as specified in 40 CFR 63.10011(g), 40 CFR 63.10021(i), and 40 CFR 63.10031.

Compliance Demonstration:

See **4. Specific Monitoring Requirements i) and o)**, **5. Specific Recordkeeping Requirements b), h), n), and p)**, and **6. Specific Reporting Requirements r)**.

- c) The permittee shall conduct periodic performance tune-ups as specified in 40 CFR 63.10021(e)(1) through (9). The permittee may delay the first burner inspection until the next scheduled unit outage, provided it meets the requirements of 40 CFR 63.10005. Subsequently, the permittee shall perform an inspection of the burner at least once every 36 calendar months unless the EGU employs neural network combustion optimization during normal operations, in which case the permittee shall perform an inspection of the burner and combustion controls at least once every 48 calendar months. If the EGU is offline when a deadline to perform the tune-up passes, the permittee shall perform the tune-up work practice requirements within 30 days after the re-start of the affected unit. [40 CFR 63.10000(e), 40 CFR 63.10006(i), and 40 CFR 63.10021(e)]
 - 1) As applicable, inspect the burner and combustion controls, and clean or replace any components of the burner or combustion controls as necessary upon initiation of the work practice program and at least once every required inspection period. Repair of a burner or combustion control component requiring special order parts may be scheduled as follows: [40 CFR 63.10021(e)(1)]
 - i) Burner or combustion control components parts needing replacement that affect the ability to optimize NO_x and CO shall be installed within 3 calendar months after the burner inspection; [40 CFR 63.10021(e)(1)(i)]

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- ii) Burner or combustion control component parts that do not affect the ability to optimize NO_x and CO may be installed on a schedule determined by the operator; [40 CFR 63.10021(e)(1)(ii)]
- 2) As applicable, inspect the flame pattern and make any adjustments to the burner or combustion controls necessary to optimize the flame pattern. The adjustment shall be consistent with the manufacturer's specifications, if available, or in accordance with best combustion engineering practice for that burner type; [40 CFR 63.10021(e)(2)]
- 3) As applicable, observe the damper operations as a function of mill and/or cyclone loadings, cyclone and pulverizer coal feeder loadings, or other pulverizer and coal mill performance parameters, making adjustments and effecting repair to dampers, controls, mills, pulverizers, cyclones, and sensors; [40 CFR 63.10021(e)(3)]
- 4) As applicable, evaluate windbox pressures and air proportions, making adjustments and effecting repair to dampers, actuators, controls, and sensors; [40 CFR 63.10021(e)(4)]
- 5) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly. Such inspection may include calibrating excess O₂ probes and/or sensors, adjusting overfire air systems, changing software parameters, and calibrating associated actuators and dampers to ensure that the systems are operated as designed. Any component out of calibration, in or near failure, or in a state that is likely to negate combustion optimization efforts prior to the next tune-up, should be corrected or repaired as necessary; [40 CFR 63.10021(e)(5)]
- 6) Optimize combustion to minimize generation of CO and NO_x. This optimization should be consistent with the manufacturer's specifications, if available, or best combustion engineering practice for the applicable burner type. NO_x optimization includes burners, overfire air controls, concentric firing system improvements, neural network or combustion efficiency software, control systems calibrations, adjusting combustion zone temperature profiles, and add-on controls such as SCR and SNCR; CO optimization includes burners, overfire air controls, concentric firing system improvements, neural network or combustion efficiency software, control systems calibrations, and adjusting combustion zone temperature profiles; [40 CFR 63.10021(e)(6)]
- 7) While operating at full load or the predominantly operated load, measure the concentration in the effluent stream of CO and NO_x in ppm, by volume, and oxygen in volume percent, before and after the tune-up adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). The permittee may use portable CO, NO_x and O₂ monitors for this measurement. EGU's employing neural network optimization systems need only provide a single pre- and post-tune-up value rather than continual values before and after each optimization adjustment made by the system; [40 CFR 63.10021(e)(7)]
- 8) Maintain on-site and submit, if requested by the Administrator, an annual report containing the information in paragraphs 40 CFR 63.10021(e)(1) through (e)(9) including: [40 CFR 63.10021(e)(8)]
 - i) The concentrations of CO and NO_x in the effluent stream in ppm by volume, and oxygen in volume percent, measured before and after an adjustment of the EGU combustion systems; [40 CFR 63.10021(e)(8)(i)]
 - ii) A description of any corrective actions taken as a part of the combustion adjustment; and [40 CFR 63.10021(e)(8)(ii)]

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- iii) The type and amount of fuel used over the 12 calendar months prior to an adjustment, but only if the unit was physically and legally capable of using more than one type of fuel during that period; and [40 CFR 63.10021(e)(8)(iii)]
- 9) Prior to January 1, 2024, report the tune-up date electronically, in a PDF file, in your semiannual compliance report, as specified in 40 CFR 63.10031(f)(4) and (6) and, if requested by the Administrator, in hard copy, as specified in 40 CFR 63.10031(f)(5). On and after January 1, 2024, report the tune-up date electronically in your quarterly compliance report, in accordance with 40 CFR 63.10031(g) and Section 10.2 of Appendix E to 40 CFR 63, Subpart UUUUU. The tune-up report date is the date when tune-up requirements in 40 CFR 63.10021(e)(6) and (7) are completed. [40 CFR 63.10021(e)(9)]
- d) If the permittee demonstrates initial compliance with a particular emission limit using a continuous monitoring system, the CMS shall pass a performance evaluation prior to the initial compliance demonstration. If a CMS has been previously certified under another state or federal program and is continuing to meet the on-going quality-assurance (QA) requirements of that program, then, provided that the certification and QA provisions of that program meet the applicable requirements of 40 CFR 63.10010(b) through (h), an additional performance evaluation of the CMS is not required under 40 CFR 63, Subpart UUUUU [40 CFR 63.10005(d)].
- e) The permittee shall operate the monitoring system and collect data at all required intervals at all times that the affected EGU is operating, except for required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments, and any scheduled maintenance as defined in the permittee's site-specific monitoring plan. The permittee is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. [40 CFR 63.10020(b)]
- f) The permittee may not use data recorded during EGU startup or shutdown in calculations used to report emissions, except as otherwise provided in 40 CFR 63.10000(c)(1)(vi)(B) and 40 CFR 63.10005(a)(2)(iii). In addition, data recorded during monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, or required monitoring system quality assurance or control activities may not be used in calculations used to report emissions or operating levels. The permittee shall use all of the quality-assured data collected during all other periods in assessing the operation of the control device and associated control system. [40 CFR 63.10020(c)]
- g) Periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities excluding zero and span checks shall be reported as time the monitor was inoperative (downtime) under 40 CFR 63.10(c). Failure to collect required quality-assured data during monitoring system malfunctions, monitoring system out-of-control periods, or

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repairs associated with monitoring system malfunctions or monitoring system out-of-control periods is a deviation from the monitoring requirements. [40 CFR 63.10020(d)]

- h) The permittee shall comply with the General Provisions as specified in Table 9 of 40 CFR 63, Subpart UUUUU [40 CFR 63.10040].

2. Emission Limitations:

- a) Particulate matter (PM) emissions shall not exceed:

- 1) 0.03 pounds per million British thermal units (lb/MMBtu), based on a boiler operating day, and shall apply at all times except during periods of startup, shutdown, or malfunction; and [40 CFR 60.42Da(a); 40 CFR 60.48Da(a); 40 CFR 52.21]

Compliance Demonstration:

Compliance with the applicable daily average PM emissions limit is determined by calculating the arithmetic average of all hourly emission rates each boiler operating day, except for data obtained during startup, shutdown, or malfunction periods. Daily averages are only calculated for boiler operating days that have non-out-of-control data for at least 18 hours of unit operation during which the standard applies. Instead, all of the non-out-of-control hourly emission rates of the operating day(s) not meeting the minimum 18 hours non-out-of-control data daily average requirement are averaged with all of the non-out-of-control hourly emission rates of the next boiler operating day with 18 hours or more of non-out-of-control PM CEMS data to determine compliance. [40 CFR 60.48Da(f)] See **5. Specific Recordkeeping Requirements k)** and **6. Specific Reporting Requirements a)**.

- 2) 0.030 lb/MMBtu, based on a 30 boiler operating day rolling average, and shall apply at all times except during periods of startup, shutdown, or malfunction. However, the permittee is required to meet the work practice requirements, items 3 and 4, in Table 3 of 40 CFR 63, Subpart UUUUU during periods of startup or shutdown. [40 CFR 63.9991(a)(1), Table 2; 40 CFR 63.10000(a); and 40 CFR 63.10005(j)]

Compliance Demonstration:

See **3. Testing Requirements d)**, **4. Specific Monitoring Requirements k)**, **5. Specific Recordkeeping Requirements g)** and **j)**, and **6. Specific Reporting Requirements e)** and **f)**.

- b) Sulfur dioxide (SO₂) emissions:

- 1) Shall not exceed 1.20 lb/MMBtu heat input and 10 percent of the potential combustion concentration (90 percent reduction); 30 percent of the potential combustion concentration (70 percent reduction) when emissions are less than 0.60 lb/MMBtu heat input; 1.4 lb/MWh gross energy output; or 0.15 lb/MMBtu heat input, on a 30-day rolling average basis. These emission limits shall apply at all times except during periods of startup, shutdown, or malfunction. [40 CFR 60.43Da(a); 40 CFR 60.43Da(g); 40 CFR 60.48Da(a); and 40 CFR 52.21]

Compliance Demonstration:

Compliance with the applicable SO₂ emissions limit and percentage reduction under 40 CFR 60.43Da are based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30-boiler operating day

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rolling average emission rate and a new percent reduction for SO₂ are calculated to demonstrate compliance with the standards. The 30-boiler operating day rolling average is determined by calculating the arithmetic average of all hourly emission rate for the 30 successive boiler operating days, except for data obtained during startup, shutdown, or malfunction. Percentage reduction is determined based on the average inlet and outlet SO₂ emission rates for the 30 successive boiler operating days. [40 CFR 60.48Da(b); 40 CFR 60.48Da(d); and 40 CFR 60.48Da(e)] See **4. Specific Monitoring Requirements a) through d)**, **6. Specific Reporting Requirements a) and h)**.

- 2) Shall not exceed 0.627 lb/MMBtu, based on a 30-day rolling average, upon final action by the U.S. EPA designating Ohio County “unclassifiable/attainment” or “attainment” with the 2010 1-hour SO₂ NAAQS [401 KAR 51:010, Section 9(2) and 401 KAR 53:010].

Compliance Demonstration:

In determining emission rates for SO₂, the permittee shall adhere to **4. Specific Monitoring Requirements a) through d)**, **5. Specific Recordkeeping Requirements e)**, and **6. Specific Reporting Requirements a)**.

- 3) To preclude the applicability of 401 KAR 51:017, Prevention of Significant Deterioration of Air Quality, emissions of sulfur dioxide shall not exceed 12,023 tons during any consecutive 12-month period in which any amount of petroleum coke is combusted.

Compliance Demonstration:

See **4. Specific Monitoring Requirements c)** and **6. Specific Reporting Requirements b)**.

- c) Nitrogen oxides (NO_x) emission shall not exceed:

- 1) 0.60 lb/MMBtu, based on a 30-boiler operating day rolling average, and shall apply at all times except during periods of startup, shutdown, or malfunction. [40 CFR 60.44Da(a)(1); 40 CFR 60.48Da(a); and 40 CFR 52.21]

Compliance Demonstration:

Compliance with the applicable NO_x emissions limit under 40 CFR 60.44Da is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30-boiler operating day rolling average emission rate for NO_x is calculated to demonstrate compliance with the standards. The 30-boiler operating day rolling average is determined by calculating the arithmetic average of all hourly emission rate for the 30 successive boiler operating days, except for data obtained during startup, shutdown, or malfunction. [40 CFR 60.48Da(b) and 40 CFR 60.48Da(d)] See **4. Specific Monitoring Requirements a) and f)** and **6. Specific Reporting Requirements a)**.

- 2) See **Section J, Acid Rain**. [40 CFR Part 76]

- d) For hydrogen chloride (HCl), the permittee shall not exceed 2.0×10^{-3} lb/MMBtu [40 CFR 63.9991(a)(1) Table 2], and shall apply at all times except during periods of startup or shutdown [40 CFR 63.10000(a)]. However, the permittee is required to meet the work practice requirements, items 3 and 4, in Table 3 of 40 CFR 63, Subpart UUUUU during periods of startup or shutdown. [40 CFR 63.10000(a) & 40 CFR 63.10005(j)]

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See **3. Testing Requirements a) through c).**

- e) For mercury (Hg), the permittee shall not exceed 1.2 pounds per trillion British thermal units (lb/TBtu), based on a 30-boiler operating day rolling average derived from the CEMS data, and shall apply at all times except during periods of startup or shutdown. However, the permittee is required to meet the work practice requirements, items 3 and 4, in Table 3 of 40 CFR 63, Subpart UUUUU during periods of startup or shutdown. [40 CFR 63.9991(a)(1), Table 2; 40 CFR 63.10000(a); 40 CFR 63.10005(j); and 40 CFR 63.10031(f)(2)]

Compliance Demonstration:

See **3. Testing Requirements d), 4. Specific Monitoring Requirements j), 5. Specific Recordkeeping Requirements g), and 6. Specific Recordkeeping Requirements d).**

3. Testing Requirements:

- a) The permittee shall perform quarterly stack testing to demonstrate compliance with the applicable HCl emission limit in **2. Emission Limitations d).** [Table 2 of 40 CFR 63, Subpart UUUUU] The permittee:
- 1) Shall conduct the performance test for HCl as defined in 3.a. through 3.f. of Table 5 in 40 CFR 63, Subpart UUUUU and 40 CFR 63.10007 at least quarterly, with results in (lb/MMBtu) [40 CFR 63.10021(d) and 40 CFR 63.10006(d)], and at least 45 calendar days, measured from the test's end date, shall separate performance tests conducted every quarter; and [40 CFR 63.10006(f)(1)(i)]
 - 2) May skip performance testing in those quarters during which less than 168 boiler operating hours occur, except that a performance test shall be conducted at least once every calendar year [40 CFR 63.10021(d)(1)], and shall follow the conditions of **3. Testing Requirements b) and c).** [40 CFR 63.10006(f)]
- b) For units demonstrating compliance through quarterly emission testing, the permittee shall conduct a performance test in the 4th quarter of a calendar year if the EGU has skipped performance tests in the first 3 quarters of the calendar year. [40 CFR 63.10006(f)(2)]
- c) If the EGU misses a performance test deadline due to being inoperative and if 168 or more boiler operating hours occur in the next test period, the permittee shall complete an additional performance test in that period. At least 15 calendar days shall separate two performance tests conducted in the same quarter. [40 CFR 63.10006(f)(3) and (f)(3)(i)]
- d) The permittee shall demonstrate continuous compliance with the Hg and PM limit by using all quality-assured hourly data recorded by the CEMS (or sorbent trap monitoring system) and the other required monitoring systems (e.g., flow rate, CO₂, O₂, or moisture systems) to calculate the arithmetic average emissions rate in units of the standard on a continuous 30-boiler operating day rolling average basis, updated at the end of each new boiler operating day. The permittee shall use Equation 8 in 40 CFR 63, Subpart UUUUU to determine the 30-boiler operating day rolling average [40 CFR 63.10021(b)]. The permittee shall conduct each performance test according to 40 CFR 63.10007 and Table 5 of 40 CFR 63, Subpart UUUUU [40 CFR 63.10007(b)].

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**4. Specific Monitoring Requirements:**

- a) Continuous emissions monitoring systems (CEMS) shall be installed, calibrated, maintained, and operated for measuring SO₂ emissions, NO_x emissions and either oxygen (O₂) or carbon dioxide (CO₂) emissions. Oxygen or carbon dioxide shall be monitored at each location where sulfur dioxide or nitrogen oxides emissions are monitored. Daily calibration drift assessments and quarterly accuracy determinations shall be done in accordance with Procedure 1 in Appendix F of 40 CFR Part 60. The permittee shall ensure the CEMS are in compliance with the requirements of 40 CFR 60.50Da and 40 CFR 75. [401 KAR 59:005, Section 4; Performance Specification 2 or 3 of Appendix B to 40 CFR 60 or Appendix A and B to 40 CFR 75; 401 KAR 52:020, Section 10; 40 CFR 60.49Da(b); 40 CFR 60.49Da(c)(1); and 40 CFR 60.49Da(w)(1)]
- b) To meet the monitoring requirement for sulfur dioxide, the permittee shall use a SO₂ CEMS. If any 30-day rolling average SO₂ value exceeds the standard, as calculated according to **2. Emission Limitations b)**, the permittee shall, as appropriate, initiate an inspection of the control equipment and/or CEM system and make any repairs or take corrective action as soon as practicable. [401 KAR 52:020, Section 10; 40 CFR 60.43Da(g); and 40 CFR Part 76]
- c) The permittee shall use the SO₂ CEMS to determine the monthly and twelve consecutive month emissions from this electrical generating unit. [40 CFR 52.21]
- d) The permittee shall monitor SO₂ emissions using a continuous monitoring system at both the inlet and outlet of the SO₂ control device. An "as fired" fuel monitoring system (upstream of coal pulverizers) meeting the requirements of Reference Method 19 may be used to determine potential SO₂ emissions in place of a continuous emission monitor at the inlet of the SO₂ control device. [40 CFR 60.49Da(b)(1) and (3)]
- e) The following procedures shall be used to conduct monitoring system performance evaluations and calibration checks as required under 401 KAR 59:005, Section 4(3).
 - 1) Reference Method 6 or 7, as applicable shall be used for conducting performance evaluations of SO₂ and NO_x CEMS.
 - 2) SO₂ or NO_x, as applicable, shall be used for preparing calibration mixtures under Performance Specification 2 of Appendix B to 40 CFR 60 filed by reference in 401 KAR 50:015 Section 1(c)2.b.
 - 3) The span value for the continuous monitoring system for measuring nitrogen oxides shall be 1,000 ppm, or span values as specified in 40 CFR 60.49Da(i)(3)(i) or Section 2.1.2 in Appendix A to 40 CFR 75.
 - 4) The span value for the CEMS for measuring SO₂ at the inlet to the SO₂ control device shall be 125 percent of the maximum estimated hourly potential emissions of fuel fired, and the outlet of the control device shall be 50 percent of the maximum estimated hourly potential emissions of the fuel fired, or span values as specified in Appendix A to 40 CFR 75.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- f) To meet the monitoring requirement for NO_x, the permittee shall use a continuous emission monitor. Excluding the startup and shut down periods, if any 30-day rolling average NO_x value exceeds the standard, as calculated according to **2. Emission Limitations c)**, the permittee shall, as appropriate, initiate an investigation of the cause of the exceedance and/or the CEM system and make any repairs or take any corrective actions as soon as practicable. [40 CFR 60.49Da(c)(1) and (2) and 40 CFR Part 76]
- g) All the continuous emission monitoring systems shall be operated and data shall be recorded during all periods of operation of the emission units including periods of startup, shutdown, or malfunction, except for CEMS breakdowns, repairs, calibration checks, and zero and span adjustments. [40 CFR 60.49Da(e)]
- h) When emission data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, the permittee shall obtain emission data for at least 90 percent of all operating hours for each 30 successive boiler operating days by using other monitoring systems as approved by the Division or other data substitution methods, including those described in 40 CFR 60.49Da(h) and 40 CFR 75, to provide emission data for a minimum of 18 hours in at least 22 out of 30 successive boiler operating days. [40 CFR 60.49Da(f)(1) and (2)]
- i) The permittee shall monitor the date, time, and duration for each startup and shutdown event, including the type of startup event that occurs (cold, warm, hot, etc.). [401 KAR 52:020, Section 10]
- j) The permittee shall install, certify, maintain, and operate an Hg CEMS for Emission Unit 01, in accordance with Appendix A of 40 CFR 63, Subpart UUUUU. [40 CFR 63.10000(c)(1)(vi) and 40 CFR 63.10010(g)]
- k) The permittee shall install, certify, maintain, and operate a PM CEMS for Emission Unit 01, in accordance with 40 CFR 60.49Da(v) and 40 CFR 63.10010(i). [40 CFR 60.42a(b) and 40 CFR 63.10005(d)(1)]
- l) The permittee shall install, certify, operate, and maintain a moisture monitoring system in accordance with 40 CFR 75 if the permittee is required to make corrections for stack gas moisture content when converting pollutant concentrations. Alternatively, the permittee may use appropriate fuel-specific default moisture values from 40 CFR 75.11(b) to estimate the moisture content of the stack gas. If the permittee installs and operates a moisture monitoring system, the permittee shall not use substituted moisture data in the emissions calculations. [40 CFR 63.10010(d)]
- m) The permittee shall operate the monitoring system and collect data at all required intervals at all times that the affected EGU is operating, except for periods of monitoring system malfunctions or out-of-control periods and required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments. The permittee is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

operation as expeditiously as practicable. The permittee may not use data recorded during EGU startup or shutdown or monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. The permittee shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. Failure to collect required data is a deviation from the monitoring requirements. [40 CFR 63.10020]

- n) If the permittee demonstrates compliance with any applicable emissions limit through use of a continuous monitoring system (CMS), where a CMS includes a continuous parameter monitoring system (CPMS) as well as a continuous emissions monitoring system (CEMS), the permittee shall develop a site-specific monitoring plan and submit this site-specific monitoring plan, if requested, at least 60 days before the initial performance evaluation (where applicable) of the CMS. This requirement also applies if the permittee petitions the Administrator for alternative monitoring parameters under 40 CFR 63.8(f). This requirement to develop and submit a site-specific monitoring plan does not apply to affected sources with existing monitoring plans that apply to CEMS and CPMS prepared under Appendix B of 40 CFR 60 or 40 CFR 75, and that meet the requirements of 40 CFR 63.10010. Using the process described in 40 CFR 63.8(f)(4), the permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in 40 CFR 63.10000(d) and, if approved, include those in the site-specific monitoring plan. The monitoring plan shall address the provisions in paragraphs (d)(2) through (5) of 40 CFR 63.10000. [40 CFR 63.10000(d)(1)]
- o) The permittee shall collect monitoring data during startup periods, as specified in 40 CFR 63.10020(a) and (e). [40 CFR 63, Subpart UUUUU, Table 3, Item 3.d.]

5. Specific Recordkeeping Requirements:

- a) The permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems and devices; and all other information required by 401 KAR 59:005 and 40 CFR 60 recorded in a permanent form suitable for inspection. The file shall be retained for at least two (2) years following the date of such measurements, maintenance, reports, and records. [401 KAR 59:005, Section 3(4) and 40 CFR 60.7(f)]
- b) The permittee shall maintain the records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the emission unit; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [401 KAR 59:005, Section 3(2) and 40 CFR 60.7(b)]
- c) The permittee shall maintain records of: [401 KAR 52:020, Section 10]
 - 1) Each fuel analysis;
 - 2) The rate of fuel combusted for each fuel type, on a daily basis;

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 3) The heating value and ash content on a weekly basis;
 - 4) The average electrical output and the minimum and maximum hourly generation rate on a daily basis;
 - 5) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted;
 - 6) Data collected either by the continuous monitoring systems or as necessary to convert monitoring data to the units of applicable standard; and
 - 7) Results of compliance tests.
- d) The permittee shall make available to the EPA Administrator such records as may be necessary to determine whether the performance tests have been done according to the requirements in 40 CFR 63.10007. [40 CFR 63.10007(g)]
- e) The permittee shall calculate and record the total SO₂ emissions from Emissions Unit 01 on a monthly and 12-consecutive month basis. [401 KAR 52:020, Section 10]
- f) The permittee shall maintain records of the dates on which any petroleum coke is combusted and the monthly and annual quantities combusted. [401 KAR 52:020, Section 10]
- g) In regards to Hg and PM CEMS, the permittee shall maintain records required under Appendix A and Appendix C of 40 CFR 63, Subpart UUUUU. If electing to conduct periodic (e.g., quarterly or annual) performance stack tests, then, for each test completed on or after January 1, 2024, the permittee shall keep records of the applicable data elements under 40 CFR 63.7(g). The permittee shall also keep records of all data elements and other information in Appendix E to 40 CFR 63, Subpart UUUUU that apply to the permittee's compliance strategy. The permittee shall keep records according to the following: [40 CFR 63.10032(a)]
- 1) In accordance with 40 CFR 63.10(b)(2)(xiv), a copy of each notification or report that the permittee submits to comply with 40 CFR 63, Subpart UUUUU. The permittee shall also keep records of all supporting documentation for the initial Notifications of Compliance Status, semiannual compliance reports, or quarterly compliance reports that the permittee submits. [40 CFR 63.10032(a)(1)]
 - 2) Records of performance stack tests, fuel analyses, or other compliance demonstrations and performance evaluations, as required in 40 CFR 63.10(b)(2)(viii). [40 CFR 63.10032(a)(2)]
- h) For each CEMS, the permittee shall maintain the following records: [40 CFR 63.10032(b)]
- 1) Records described in 40 CFR 63.10(b)(2)(vi) through (xi); [40 CFR 63.10032(b)(1)]
 - 2) Previous versions of the performance evaluation plan as required in 40 CFR 63.8(d)(3); [40 CFR 63.10032(b)(2)]
 - 3) Request for alternatives to relative accuracy test for CEMS as required in 40 CFR 63.8(f)(6)(i); and [40 CFR 63.10032(b)(3)]
 - 4) Records of the date and time that each deviation started and stopped and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period. [40 CFR 63.10032(b)(4)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i) The permittee shall keep the records required in Table 7 of 40 CFR 63, Subpart UUUUU, including records of all monitoring data and calculated averages for applicable CPMS operating limits, to show continuous compliance with each emission limit and operating limit that applies to W1. [40 CFR 63.10032(c)]
- j) The permittee shall record the output of the PM CEMS as specified in 40 CFR 63.10010(i)(1) through (4). [40 CFR 63.10010(i)]
- k) In regards to the applicable emission limitations of 40 CFR 63, Subpart UUUUU, the permittee shall maintain the following records: [40 CFR 63.10032(d)]
 - 1) Monthly fuel use, including the type of fuel and amount used. [40 CFR 63.10032(d)(1)]
 - 2) If the permittee combusts non-hazardous secondary material that has been determined not to be solid waste pursuant to 40 CFR 241.3(b)(1), the permittee shall keep a record which documents how the secondary material meets each of the legitimacy criteria. If the permittee combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR 241.3(b)(2), the permittee shall keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR 241.2 If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR 241.3(c), the permittee shall keep a record which documents how the fuel satisfies the requirements of the petition process. [40 CFR 63.10032(d)(2)]
- l) The permittee shall maintain records of the occurrence and duration of each malfunction of an operation (i.e., process equipment) or the air pollution control and monitoring equipment. [40 CFR 63.10032(g)]
- m) The permittee shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.10000(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.10032(h)]
- n) The permittee shall maintain records of the date, time, and duration for each startup and shutdown event. If applicable, the permittee shall maintain records of the determination of the maximum clean fuel capacity, the maximum hourly clean fuel heat input, the hourly clean fuel heat input and the information required in 40 CFR 63.10020(e). The permittee shall also maintain records of the type of fuel used during each startup and shutdown and the type of startup event that occurs (cold, warm, hot, etc.) [40 CFR 63.10032(f); 40 CFR 63.10032(i); and 401 KAR 52:020, Section 10].
- o) Records shall be in a form suitable and readily available for expeditious review, as specified in 40 CFR 63.10(b)(1). The permittee shall keep each record (i.e. occurrence, measurement, maintenance, corrective action, report, or record) for five (5) years following the date of each occurrence with at least the most recent two (2) years of records (after the date of each occurrence) on-site. [40 CFR 63.10033]
- p) The permittee shall maintain records during startup periods, as specified in 40 CFR

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

63.10021(h) and 40 CFR 63.10032. [40 CFR 63, Subpart UUUUU, Table 3, Item 3.d.]

6. Specific Reporting Requirements:

- a) Minimum data requirements shall be maintained and furnished in the format specified by the Division. The permittee shall submit for every calendar quarter a written report of excess emissions (as defined in applicable sections) to the Division. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter and shall include the following information: [40 CFR 60.51Da]
 - 1) The magnitude of the excess emission computed in accordance with 40 CFR 60.7, any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions.
 - 2) All hourly averages shall be reported for PM, SO₂ and NO_x monitors. The hourly averages shall be made available in the format specified by the Division.
 - 3) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the emission unit. The nature and cause of any malfunction (if known), and the corrective action taken or preventive measures adopted.
 - 4) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
 - 5) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.
 - 6) A data assessment report (DAR), prepared according to Section 7 of Procedure 1 in Appendix F to 40 CFR Part 60, shall be submitted with each compliance report required under 40 CFR 60.51Da. If the permittee elects to implement the alternative data assessment procedures described in 40 CFR 60.49Da(w)(1) through (4), each data assessment report shall include a summary of the results of all of the RATAs, linearity checks, CGAs, and calibration error or drift assessments required. [40 CFR 60.49Da(w)(1) and (5)]
 - 7) For SO₂ and NO_x, all information listed in 40 CFR 60.51Da (b)(1) through (9) shall be reported to the Division for each 24 hour period. [40 CFR 60.51Da(b)]
 - 8) If the minimum quantity of emission data as required by 40 CFR 60.49Da is not obtained for any 30-successive boiler operating days, the information specified in 40 CFR 60.51Da(c)(1) through (5), obtained under the requirements of 40 CFR 60.48Da(h), shall be reported for that 30-day period. [40 CFR 60.51Da(c)]
 - 9) If fuel pretreatment credit toward the SO₂ emission standard under 40 CFR 60.43Da is claimed, the permittee shall submit a signed statement including all information as described in 40 CFR 60.51Da(e)(1) and (2). [40 CFR 60.51Da(e)]
 - 10) For any periods for which SO₂ or NO_x emissions data are not available, the permittee shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and emissions unit during periods of data unavailability are to be compared with operation of the control system and emissions unit before and following the period of data unavailability. [40 CFR 60.51Da(f)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 11) The permittee shall submit a signed statement including all information as described in 40 CFR 60.51Da(h)(1) through (4). [40 CFR 60.51Da(h)]
- b) The permittee shall submit a report of sulfur dioxide emissions for the previous twelve consecutive month period every six months in accordance with **Section F.5 Monitoring, Recordkeeping and Reporting Requirements**. Exceedances of the emission limitation specified in **2) Emission Limitations b)** shall be reported within thirty days following the date when the exceedance is determined. [401 KAR 52:020, Section 10]
- c) For exceedances that occur as a result of start-up, the permittee shall report:
- 1) The type of start-up (cold, warm, or hot);
 - 2) Whether or not the duration of the start-up exceeded the manufacturer's recommendation or typical, historical durations, and if so, an explanation of why the start-up exceeded recommended or typical durations.
- [401 KAR 52:020, Section 10]
- d) In regards to the Hg CEMS, the permittee shall meet the electronic reporting requirements of Appendix A of 40 CFR 63, Subpart UUUUU. [40 CFR 63.10031(a)(1)]
- e) In regards to the PM CEMS, the permittee shall meet the electronic reporting requirements of Appendix C of 40 CFR 63, Subpart UUUUU. Electronic reporting of hourly PM emissions data shall begin with the later of the first operating hour on or after January 1, 2024, or the first operating hour after completion of the initial PM CEMS correlation test. [40 CFR 63.10031(a)(3)]
- f) The permittee shall report the output of the PM CEMS as specified in 40 CFR 63.10010(i)(1) through (4). [40 FR 63.10010(i)]
- g) Prior to January 1, 2024, report the tune-up date electronically, in a PDF file, in the semiannual compliance report, as specified in 40 CFR 63.10031(f)(4) and (6) and, if requested by the Administrator, in hard copy, as specified in 40 CFR 63.10031(f)(5). On and after January 1, 2024, report the tune-up date electronically in the quarterly compliance report, in accordance with 40 CFR 63.10031(g) and section 10.2 of Appendix E to 40 CFR 63, Subpart UUUUU. The tune-up report date is the date when tune-up requirements in 40 CFR 63.10021(e)(6) and (7) are completed. [40 CFR 63.10021(e)(9)]
- h) In regards to the SO₂ CEMS, the permittee shall use the ECMPS Client Tool to submit the following information to EPA (except where it is already required to be reported or has been previously provided under the Acid Rain Program or another emissions reduction program that requires the use of 40 CFR 75): [40 CFR 63.10031(a)(5)]
- 1) Monitoring plan information for the SO₂ CEMS and for any additional monitoring systems that are required to convert SO₂ concentrations to units of the emission standard, in accordance with 40 CFR 75.62 and 75.64(a)(4); [40 CFR 63.10031(a)(5)(i)]
 - 2) Certification, recertification, quality-assurance, and diagnostic test results for the SO₂ CEMS and for any additional monitoring systems that are required to convert SO₂

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- concentrations to units of the emission standard, in accordance with 40 CFR 75.64(a)(5); and [40 CFR 63.10031(a)(5)(ii)]
- 3) Quarterly electronic emissions reports. The permittee shall submit an electronic quarterly report within 30 days after the end for each calendar quarter, starting with a report for the calendar quarter in which the initial 30 boiler-operating day performance test begins. Each report shall include the following information: [40 CFR 63.10031(a)(5)(iii)]
- i) The applicable operating data specified in 40 CFR 75.57(b); [40 CFR 63.10031(a)(5)(iii)(A)]
 - ii) An hourly data stream for the unadjusted SO₂ concentration (in ppm, rounded to one decimal place), and separate unadjusted hourly data streams for the other parameters needed to convert the SO₂ concentrations to units of the standard. (Note: If a default moisture value is used in the emission rate calculations, an hourly data stream is not required for moisture; rather, the default value shall be reported in the electronic monitoring plan.); [40 CFR 63.10031(a)(5)(iii)(B)]
 - iii) An hourly SO₂ emission rate data stream, in units of the standard (i.e., lb/MMBtu or lb/MWh, as applicable), calculated according to 40 CFR 63.10007(e) and (f)(1), rounded to the same precision as the emission standard (i.e., with one leading non-zero digit and one decimal place), expressed in scientific notation; [40 CFR 63.10031(a)(5)(iii)(C)]
 - iv) The results of all required daily quality-assurance tests of the SO₂ monitor and the additional monitors used to convert SO₂ concentration to units of the standard, as specified in Appendix B of 40 CFR 75; and [40 CFR 63.10031(a)(5)(iii)(D)]
 - v) A compliance certification, which includes a statement, based on reasonable inquiry of those persons with primary responsibility for ensuring that all SO₂ emissions from the coal-fired boiler have been correctly and fully monitored, by a responsible official with that official's name, title, and signature, certifying that, to the best of his or her knowledge, the report is true, accurate, and complete. The permittee shall submit such a compliance certification statement in support of each quarterly report. [40 CFR 63.10031(a)(5)(iii)(E)]
- i) The permittee shall submit semiannual compliance reports according to the following: [40 CFR 63.10031(b)]
- 1) The first compliance report shall cover the period beginning on the compliance date that is specified in 40 CFR 63.9984 (or, if applicable, the extended compliance date approved under 40 CFR 63.6(i)(4)) and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for the permittee in 40 CFR 63.9984 (or, if applicable, the extended compliance date approved under 40 CFR 63.6(i)(4)); [40 CFR 63.10031(b)(1)]
 - 2) The first compliance report shall be submitted electronically no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified in 40 CFR 63.9984 (or, if applicable, the extended compliance date approved under 40 CFR 63.6(i)(4)); [40 CFR 63.10031(b)(2)]

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- 3) Each subsequent compliance report shall cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31; [40 CFR 63.10031(b)(3)]
- 4) Each subsequent compliance report shall be submitted electronically no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period; [40 CFR 63.10031(b)(4)]
- 5) For each affected source that is subject to permitting regulations pursuant to 40 CFR 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), through the reporting period that ends December 31, 2023, the permittee may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of 40 CFR 63.10031; and [40 CFR 63.10031(b)(5)]
- 6) The final semiannual compliance report shall cover the reporting period from July 1, 2023 through December 31, 2023. Quarterly compliance reports shall be submitted thereafter, in accordance with 40 CFR 63.10031(g), starting with a report covering the first calendar quarter of 2024. [40 CFR 63.10031(b)(6)]
- j) The semiannual compliance report shall contain the following information: [40 CFR 63.10031(c)]
 - 1) The information required by the summary report located in 40 CFR 63.10(e)(3)(vi); [40 CFR 63.10031(c)(1)]
 - 2) The total fuel use by Emission Unit 01 (W1) for each calendar month within the semiannual reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by EPA or the basis for concluding that the fuel is not a waste, and the total fuel usage amount with units of measure; [40 CFR 63.10031(c)(2)]
 - 3) Indicate whether the permittee burned new types of fuel during the reporting period. If the permittee did burn new types of fuel, the permittee shall include the date of the performance test where that fuel was in use. [40 CFR 63.10031(c)(3)]
 - 4) Include the date of the most recent tune-up in regards to the performance tune-up requirement according to 40 CFR 63.10021(e). The date of the tune-up is the date the tune-up provisions specified in 40 CFR 63.10021(e)(6) and (7) were completed; [40 CFR 63.10031(c)(4)]
 - 5) Should the permittee rely on paragraph (2) of the definition of “startup” in 40 CFR 63.10042, for each instance of startup or shutdown, the permittee shall include the maximum clean fuel storage capacity and the maximum hourly heat input that can be provided for each clean fuel determined according to the requirements of 40 CFR 63.10032(f) and include the information required to be monitored, collected, or recorded according to the requirements of 40 CFR 63.10020(e); [40 CFR 63.10031(c)(5)]
 - 6) A summary of the results of the annual performance tests and documentation of any operating limits that were reestablished during the test, if applicable; [40 CFR 63.10031(c)(7)]
 - 7) A certification; [40 CFR 63.10031(c)(8)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 8) If there is a deviation from any emission limit, work practice standard, or operating limit, a brief description of the deviation, duration of the deviation, emissions point identification, and the cause of the deviation shall be submitted; and [40 CFR 63.10031(c)(9)]
- 9) If any process or control equipment had malfunction(s) during the reporting period, the permittee shall include the number, duration, and a brief description for each type of malfunction that occurred during the semiannual reporting period, which caused or may have caused any applicable emission limitation to be exceeded. [40 CFR 63.10031(c)(10)]
- k) The semiannual compliance reports described in 40 CFR 63.10031(c) shall include the excess emissions and monitor downtime summary report described in 40 CFR 63.10(e)(3)(vi). However, starting with the first calendar quarter of 2024, reporting of the information under 40 CFR 63.10(e)(3)(vi) (and under 40 CFR 63.10(e)(3)(v), if the applicable excess emissions and/or monitor downtime threshold is exceeded) is discontinued for all CMS, and the permittee shall, instead, include in the quarterly compliance reports described in 40 CFR 63.10031(g) the applicable data elements in Section 13 of Appendix E to 40 CFR 63, Subpart UUUUU for any “deviation” (as defined in 40 CFR 63.10042 and elsewhere in 40 CFR 63, Subpart UUUUU) that occurred during the calendar quarter. If there were no deviations, the permittee shall include a statement to that effect in the quarterly compliance report. [40 CFR 63.10031(d)].
- l) The permittee shall report all deviations as defined in 40 CFR 63, Subpart UUUUU in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If the permittee submits a semiannual compliance report pursuant to 40 CFR 63.10031(c) and (d), or two quarterly compliance reports covering the appropriate calendar half pursuant to 40 CFR 63.10031(g), along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report(s) includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in 40 CFR 63, Subpart UUUUU, submission of the compliance report(s) satisfies any obligation to report the same deviations in the semiannual monitoring report. Submission of the compliance report(s) does not otherwise affect any obligation the permittee may have to report deviations from permit requirements to the permit authority. [40 CFR 63.10031(e)]
- m) The permittee shall report each instance in which the permittee did not meet an applicable emissions limit or operating limit in Table 1 through 4 of 40 CFR 63, Subpart UUUUU or failed to conduct a required tune-up. These instances are deviations from the requirements of 40 CFR 63, Subpart UUUUU and shall be reported according to 40 CFR 63.10031. [40 CFR 63.10021(g)]
- n) The permittee shall submit all of the notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (6) and 40 CFR 63.9(b) through (h) that apply. [40 CFR 63.10030(a)]
- o) The permittee shall submit Notification of Intent to conduct a performance test at least 30 days before the performance test is scheduled to begin. [40 CFR 63.10030(d)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- p) Starting with a report for the first calendar quart of 2024, the permittee shall use the ECMPS Client Tool to submit quarterly electronic compliance reports. Each quarterly compliance report shall include the applicable data elements in Section 2 through 13 of Appendix E to 40 CFR 63, Subpart UUUUU. For each stack test summarized in the compliance report, the permittee shall also submit the applicable reference method information in Section 17 through 31 of Appendix E to 40 CFR 63, Subpart UUUUU. The compliance reports and associated Appendix E information shall be submitted no later than 60 days after the end of each calendar quarter. [40 CFR 63.10031(g)]
- q) For each performance stack test completed prior to January 1, 2024, the permittee shall submit a PDF test report in accordance with 40 CFR 63.10031(f)(6), no later than 60 days after the date on which the testing is completed. For each test completed on or after January 1, 2024, in accordance with 40 CFR 63.10031(g), submit the applicable reference method information in Sections 17 through 31 of Appendix E to 40 CFR 63, Subpart UUUUU along with the quarterly compliance report for the calendar quarter in which the test was completed. [40 CFR 63.10031(f)]
- 1) For each relative accuracy test audit (RATA) of an Hg, HCl, HF, or SO₂ monitoring system completed prior to January 1, 2024, and for each PM CEMS correlation test, each relative response audit (RRA) and each response correlation audit (RCA) of a PM CEMS completed prior to that date, the permittee shall submit a PDF test report in accordance with 40 CFR 63.10031(f)(6), no later than 60 days after the date on which the test is completed. For each SO₂ or Hg RATA completed on or after January 1, 2024, the permittee shall submit the applicable reference method information in Sections 17 through 31 of Appendix E to 40 CFR 63, Subpart UUUUU prior to or concurrent with the relevant quarterly emissions report. For HCl or HF RATAs, and for correlations tests, RRAs, and RCAs of PM CEMS that are completed on or after January 1, 2024, submit the Appendix E reference method information together with the summarized electronic test results, in accordance with 40 CFR 63, Subpart UUUUU, Section 11.4 of Appendix B or Section 7.2.4 of Appendix C, as applicable. [40 CFR 63.10031(f)(1)]
 - 2) The permittee shall submit quarterly PDF reports in accordance with 40 CFR 63.10031(f)(6), which include all of the 30-boiler operating day rolling average emission rates derived from the CEMS data. The quarterly reports are due within 60 days after the reporting periods ending on March 31st, June 30th, September 30th, and December 31st. Submission of these quarterly reports in PDF files shall end with the report that covers the fourth calendar quarter of 2023. Beginning with the first calendar quarter of 2024, the compliance averages shall no longer be reported separately, but shall be incorporated into the quarterly compliance reports described in 40 CFR 63.10031(g). In addition to the compliance averages for PM CEMS and HAP metals CEMS, the quarterly compliance reports described in 40 CFR 63.10031(g) shall also include the 30-boiler operating day rolling average emission rates for Hg, HCl, HF, and/or SO₂ if elected (or required) to continuously monitor these pollutants. Further, if the EGU is an averaging plan, the quarterly compliance reports shall identify all of the EGUs in the plan and shall include all of the 30-group boiler operating day rolling weighted average emission rate (WAERs) for the averaging group. [40 CFR 63.10031(f)(2)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 3) The permittee shall submit semiannual compliance reports as required under 40 CFR 63.10031(b) through (d), ending with a report covering the semiannual period from July 1 through December 31, 2023 as PDF files. Quarterly compliance reports shall be submitted in XML format thereafter, in accordance with 40 CFR 63.10031(g), starting with a report covering the first calendar quarter of 2024. [40 CFR 63.10031(f)(4)]
- 4) All reports required by 40 CFR 63, Subpart UUUUU not subject to the requirements in 40 CFR 63.10031(f) introductory text and 40 CFR 63.10031(f)(1) through (4) shall be sent to the Administrator at the appropriate address listed in 40 CFR 63.13. If acceptable to both the Administrator and the permittee, these reports may be submitted on electronic media. The Administrator retains the right to require submittal of reports subject to 40 CFR 63.10031(f) introductory text and 40 CFR 63.10031(f)(1) through (4) in paper format. [40 CFR 63.10031(f)(5)]
- 5) All reports and notifications described in 40 CFR 63.10031(f) introductory text, 40 CFR 63.10031(f)(1), (2), and (4) shall be submitted to the EPA in the specified format and at the specified frequency, using the ECMPS Client Tool. Each PDF version of a stack test report, CEMS RATA report, PM CEMS correlation test report, RRA report, and RCA report shall include sufficient information to assess compliance and to demonstrate that the reference method testing was done properly. Note that EPA will continue to accept, as necessary, PDF reports that are being phased out at the end of 2023, if the submission deadlines for those reports extend beyond December 31, 2023. The following data elements shall be entered into the ECMPS Client Tool at the time of submission of each PDF file: [40 CFR 63.10031(f)(6)]
 - i) The facility name, physical address, mailing address (if different from the physical address), and county; [40 CFR 63.10031(f)(6)(i)]
 - ii) The ORIS code (or equivalent ID number assigned by EPA's Clean Air Markets Division (CAMD) and the Facility Registry System (FRS) ID; [40 CFR 63.10031(f)(6)(ii)]
 - iii) The EGU to which the report applies. Report the EGU IDs as they appear in the CAMD Business System; [40 CFR 63.10031(f)(6)(iii)]
 - iv) The identification of each emission point to which the report applies. An "emission point" is a point at which source effluent is released to the atmosphere. To identify an emission point, associate it with the EGU or stack ID in the CAMD Business system or the electronic monitoring plan (e.g., "Unit 1 stack"); [40 CFR 63.10031(f)(6)(vi)]
 - v) An indication of the type of PDF report or notification being submitted; [40 CFR 63.10031(f)(6)(vii)]
 - vi) The pollutant(s) being addressed in the report; [40 CFR 63.10031(f)(6)(viii)]
 - vii) The reporting period being covered by the report (if applicable); [40 CFR 63.10031(f)(6)(ix)]
 - viii) The relevant test method that was performed for a performance test (if applicable); [40 CFR 63.10031(f)(6)(x)]
 - ix) The date the performance test was completed (if applicable) and the test number (if applicable); and [40 CFR 63.10031(f)(6)(xi)]
 - x) The responsible official's name, title, and phone number. [40 CFR 63.10031(f)(6)(xii)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- r) The permittee shall provide reports concerning activities and startup periods, as specified in 40 CFR 63.10011(g), 40 CFR 63.10021(i) and 40 CFR 63.10031. If the permittee elects to use paragraph (2) of the definition of startup in 40 CFR 63.10042, the permittee shall report the applicable information in 40 CFR 63.10031(c)(5) concerning startup periods as follows: For startup periods that occur on or prior to December 31, 2023, in PDF files in the semiannual compliance report; for startup periods that occur on or after January 1, 2024, quarterly, in PDF files, according to 40 CFR 63.10031(i). [40 CFR 63.10031(i) and 40 CFR 63, Subpart UUUUU, Table 3, Item 3.d.]

7. Specific Control Equipment Operating Conditions:

- a) The electrostatic precipitator (ESP), wet flue gas desulfurization unit (WFGD), low NO_x burner system, and selective catalytic reduction (SCR) system shall be operated to maintain compliance with permitted emission limitations, consistent with manufacturer's specifications and good operating practices. [401 KAR 50:055]
- b) Records regarding the maintenance of the control equipment shall be maintained. [40 CFR 63.10032 and 401 KAR 52:020, Section 10]
- c) See **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 2a: Coal Conveying and Handling

Description:

Construction Commenced: December 1978

Maximum Operating Rate: 3,600 tons/hr

Emission Unit	Description	Control Device	Efficiency	Control Installation Date	
EU2a-01	Coal Barge Unloader	DMLV45/15 Type F DMLV30/10 Type F	99.9%	2011	
EU2a-02	Transfer Tower 10	CPV-4 Power Core		2010	
EU2a-03	Transfer Tower 7A				
EU2a-04	Transfer Tower 7B				
EU2a-05	Transfer Tower 7C	CPV-6 Power Core			
EU2a-06	Transfer Tower 7D				
EU2a-07	Transfer Tower 8				
EU2a-08	Sample Tower	CPV-12 Power Core			
EU2a-09	Coal Crusher	CPV-4 Power Core			
EU2a-10	Tripper Transfer Tower	Fabric Filter			99.8%
EU2a-11	Coal Railcar/Truck Unloader	CPC-12 Power Core	99.9%		2010

APPLICABLE REGULATIONS:

401 KAR 59:010, *New process operations*

401 KAR 60:005, Section 2(2)(gg), 40 CFR 60.250 through 60.258 (**Subpart Y**), *Standards of Performance for Coal Preparation and Processing Plants*

40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*

1. Operating Limitations:

N/A

2. Emission Limitations:

- a) The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater. [401 KAR 59:010, Section 3(1)(a) and 40 CFR 60.254(a)]

Compliance Demonstration:

See **3. Testing Requirements** b), **4. Specific Monitoring Requirements** a), and **5. Specific Recordkeeping Requirements** a).

- b) PM emissions from any stack shall not exceed the following: [401 KAR 59:010, Section 3(2) referencing Appendix A]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

P = Process Weight Rate (tons/hr)	E = Maximum Allowable Emission Rate (lb/hr)
$P \leq 0.50$	$E = 2.34$
$0.50 < P \leq 30.00$	$E = 3.59P^{0.62}$
$P > 30.00$	$E = 17.31P^{0.16}$

Compliance Demonstration:

See **4. Specific Monitoring Requirements** b) and **5. Specific Recordkeeping Requirements** b).

3. Testing Requirements:

- a) Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 1 and 401 KAR 59:005, Section 2(1)]
- b) The permittee shall conduct at least one U.S. EPA Reference Method 9 evaluation on each emission point stack, each calendar quarter, to demonstrate compliance with the particulate standard. [401 KAR 52:020, Section 10]
- c) The permittee shall conduct all performance tests required by 40 CFR 60.8 to demonstrate compliance with the applicable emission standards using the methods identified in 40 CFR 60.257. [40 CFR 60.255(a)]

4. Specific Monitoring Requirements:

- a) The permittee shall perform a qualitative visual observation of the opacity of emissions at each stack no less than each week while the affected facilities are operating. If visible emission from the stacks are observed (not including condensed water in the plume), the permittee shall determine the opacity using U.S. EPA Reference Method 9. In lieu of determining the opacity using U.S. EPA Reference Method 9, the permittee shall immediately perform a corrective action that results in no visible emissions (not including condensed water in the plume). [401 KAR 52:020, Section 10]
- b) The permittee shall monitor the hours of operation and the amount of coal received and processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) A log of the qualitative visual observations shall be made as specified in **4. Specific Monitoring Requirements** a), including the date, time, initials of observer, whether any emissions were observed (yes/no), and any U.S. EPA Reference Method 9 readings taken. [401 KAR 52:020, Section 10]
- b) The permittee shall maintain records of the hours of operation and the amount of coal received and processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements.**

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

7. Specific Control Equipment Operating Conditions:

- a) The dust collector equipment shall be maintained and operated in accordance with manufacturer's specifications and standard operating practices to ensure the emission units comply with applicable requirements. [401 KAR 50:055, Section 2(1)(c) and 401 KAR 52:020, Section 10]
- b) The permittee shall maintain records regarding the monitoring and maintenance of the control equipment. [401 KAR 52:020, Section 10]
- c) See **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 2b: Limestone Material Handling

Description:

Construction Commenced: December 1978

Maximum Operating Rate: 1,000 tons/hr

Emission Unit	Description	Control Device	Efficiency	Installation Date
EU2b-01	Lime Barge Unloader	DMLV45/15 Type F DMLV30/10 Type F	99.9%	2011
EU2b-02	Transfer Tower 10	CPV-4 Power Core		2010
EU2b-03	Transfer Tower 7A			
EU2b-04	Transfer Tower 7B			
EU2b-05	Transfer Tower 7C	CPV-6 Power Core		
EU2b-06	Transfer Tower 7D			
EU2b-07	Transfer Tower 7E			
EU2b-08	Limestone Silos (4)	CPC-4 Power Core		2011

APPLICABLE REGULATIONS:

401 KAR 59:010, *New process operations*

40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*

40 CFR Part 64, *Compliance Assurance Monitoring (Particulate Matter)*

1. Operating Limitations:

N/A

2. Emission Limitations:

- a) The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with Emission Unit 2b which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration:

See **3. Testing Requirements b)**, **4. Specific Monitoring Requirements a)**, and **5. Specific Recordkeeping Requirements a)**.

- b) PM emissions from any stack shall not exceed the following: [401 KAR 59:010, Section 3(2) referencing Appendix A]

P = Process Weight Rate (tons/hr)	E = Maximum Allowable Emission Rate (lb/hr)
$P \leq 0.50$	$E = 2.34$
$0.50 < P \leq 30.00$	$E = 3.59P^{0.62}$
$P > 30.00$	$E = 17.31P^{0.16}$

Compliance Demonstration:

See **4. Specific Monitoring Requirements b)** and **5. Specific Recordkeeping Requirements b)**.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

3. Testing Requirements:

- a) Performance tests shall be conducted under conditions representative of maximum emissions potential under anticipated operating conditions at the pollutant-specific emissions unit. [40 CFR 64.4(c)(1)]
- b) Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 1 and 401 KAR 59:005, Section 2(1)]
- c) The permittee shall conduct at least one U.S. EPA Reference Method 9 evaluation on each emission point stack, each calendar quarter, to demonstrate compliance with the particulate standard. [401 KAR 52:020, Section 10]

4. Specific Monitoring Requirements:

- a) The permittee shall perform a qualitative visual observation of the opacity of emissions at each stack no less than each day while the affected facilities are operating. If visible emission from the stacks are observed (not including condensed water in the plume), the permittee shall determine the opacity using U.S. EPA Reference Method 9, and an inspection of the control equipment shall be initiated. [40 CFR 64.4(a)(1)]
- b) The permittee shall monitor the hours of operation and the amount of limestone processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]
- c) To satisfy CAM requirements, opacity shall be used as an indicator of particulate matter emissions. See Table 2 for complying with CAM. [40 CFR 64.6]

Table 2 - 40 CFR Part 64 CAM Requirements for Limestone Handling

CAM Monitoring Approach		Indicator No.1
I.	Indicator	Visible Emissions
A.	Measurement Approach	Daily visual observations of the emissions from the control devices shall be performed. U.S. EPA Reference Method 9 shall be performed if visual emissions are observed.
II.	Indicator Range	An excursion is defined as one six minute average opacity reading collected using U.S. EPA Reference Method 9 that is above 15% opacity. An excursion shall initiate an investigation and corrective action. An exceedance is defined as either (1) 4 excursions in a rolling 3-month period or (2) 3 consecutive weekly excursions. An exceedance triggers the threshold for a Quality Improvement Plan (QIP).
III.	Performance Criteria	
A.	Data Representativeness	Visual observation logs will be maintained and audited to ensure visual emission readings are conducted.
B.	Verification of Operational Status	N/A
C.	QA/QC Practices and Criteria	U.S. EPA Reference Method 9 readings shall be performed by individuals certified in reading U.S. EPA Reference Method 9.
D.	Monitoring Frequency	Daily visual observations of the stack shall be performed. U.S. EPA Reference Method 9 shall be performed if visual emissions are observed.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

IV.	Data Collection Procedures	Daily visual observations and U.S. EPA Reference Method 9 readings (if any) shall be kept in a form readily available for inspection.
V.	Averaging Period	U.S. EPA Reference Method 9 readings, if required, shall be reported as 6-minute averages.
VI.	Recordkeeping	Daily visual observations and U.S. EPA Reference Method 9 readings (if any) shall be maintained for a period of 5 years.
VII.	Reporting	The number, the duration, the cause of, and corrective action taken as a result of any excursion or exceedance.

5. Specific Recordkeeping Requirements:

- a) A log of the qualitative visual observations shall be made as specified in **4. Specific Monitoring Requirements a)**, including the date, time, initials of observer, whether any emissions were observed (yes/no), any U.S. EPA Reference Method 9 readings, and any corrective actions taken. [401 KAR 52:020, Section 10]
- b) The permittee shall maintain records of the hours of operation and the amount of limestone processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements.**

7. Specific Control Equipment Operating Conditions:

- a) The dust collector equipment shall be maintained and operated in accordance with manufacturer’s specifications and standard operating practices to ensure the emission units comply with applicable requirements. [401 KAR 50:055, Section 2(1)(c) and 401 KAR 52:020, Section 10]
- b) The permittee shall maintain records regarding the monitoring and maintenance of the control equipment. [401 KAR 52:020, Section 10]
- c) See **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 03: Coal & Limestone Haulage and Material Handling (Fugitive Emissions)

Description:

Emission Unit	Description	Maximum Operating Rate (tons/hr, each)	Construction Commenced	Control Equipment	Control Efficiency
EU03-01	Coal Stockpile	3600	1978	Wet Suppression; Water Sprays; Compaction & Telescopic Chutes	N/A
EU03-02	Unpaved Haul Road				
EU03-03	Paved Haul Road				
EU03-04	Underground Coal Hopper Transfer Point	3600	1999	Enclosure	70%
EU03-05	Limestone Truck Unloading	1000	2004	Enclosure	70%
EU03-06	New Limestone Conveyor Transfer Point				

APPLICABLE REGULATIONS:

401 KAR 63:010, *Fugitive emissions*

40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality*

1. Operating Limitations:

- a) The permittee shall not cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished; or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Reasonable precautions shall include, as applicable: [401 KAR 63:010, Section 3(1)]
 - 1) Use, if possible, of water or suitable chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;
 - 2) Application and maintenance of asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts;
 - 3) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations;
 - 4) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;
 - 5) The maintenance of paved roadways in a clean condition; or
 - 6) The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b) If dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance or to violate any administrative regulation, the secretary may, based on the cause, type, or amount of a fugitive emission, order that the building or equipment in which processing, handling and storage are done be tightly closed and ventilated in such a way that all air and gases and air or gas borne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air. [401 KAR 63:010, Section 3(3)]
- c) At all times while in motion, open bodied trucks, operating outside company property, transporting materials likely to become airborne shall be covered. [401 KAR 63:010, Section 4(1)]
- d) A person shall not cause, suffer, or allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. [401 KAR 63:010, Section 4(3)]

2. Emission Limitations:

A person shall not cause, suffer, or allow visible fugitive dust emissions beyond the lot of the property on which the emissions originate, as determined by Reference Method 22 of Appendix A in 40 C.F.R. Part 60, for: [401 KAR 63:010, Section 3(2)]

- a) More than five (5) minutes of emission time during any sixty (60) minute observation period; or
- b) More than twenty (20) minutes of emission time during any twenty-four (24) hour period.

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 1]

4. Specific Monitoring Requirements:

- a) The permittee shall monitor the amount of coal and limestone received and processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]
- b) The permittee shall monitor the reasonable precautions taken to prevent particulate matter from becoming airborne on a daily basis. [401 KAR 52:020, Section 10]
- c) If fugitive dust emissions beyond the lot line of the property are observed, the permittee shall conduct Reference Method 22 (visual determination of fugitive emissions) observations per Appendix A of 40 C.F.R. Part 60. In lieu of conducting U.S. EPA Reference Method 22, the permittee shall immediately perform a corrective action which results in no visible fugitive dust emissions beyond the lot line of the property. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) The permittee shall maintain records of the amount of coal and limestone received and processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b) The permittee shall maintain a log of the reasonable precautions taken to prevent particulate matter from becoming airborne, on a daily basis. Notation of the operating status, downtime, or relevant weather conditions are acceptable for entry to the log. [401 KAR 52:020, Section 10]
 - c) The permittee shall maintain a log of the following: [401 KAR 52:020, Section 10]
 - 1) Qualitative fugitive emissions observations conducted including the date, time, initials of observer, whether any fugitive dust emissions were observed;
 - 2) Any Reference Method 22 performed and field records identified in Reference Method 22; and
 - 3) Any correction action taken and the results.
- 6. Specific Reporting Requirements:**
See **Section F – Monitoring, Recordkeeping, and Reporting Requirements**, Conditions 5, 6, 7 and 8.
- 7. Specific Control Equipment Operating Conditions:**
- a) The water spray, compaction, and telescopic chutes shall be operated to maintain compliance with the applicable requirements, in accordance with manufacturer’s specifications and standard operating practices. [401 KAR 50:055]
 - b) Records regarding the maintenance of the control equipment shall be maintained. [401 KAR 52:020, Section 10]
 - c) See **Section E – Source Control Equipment Requirements** for further requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 04: Ash and Sludge Handling Operations

Description:

Emission Unit	Description	Maximum Operating Rate	Construction Commenced	Control Equipment
EU04-01	Flyash Truck Loadout	310 tons/hr	December 1978	Process Enclosed
EU04-02	Sludge Conveyor			Inherent Moisture
EU04-03	Sludge Stockpile			Water Suppression
EU04-04	Sludge Truck Loadout			
EU04-05	Paved Haulroad			
EU04-06	Unpaved Haulroad			

APPLICABLE REGULATIONS:

401 KAR 63:010, Fugitive emissions

40 CFR 52.21, Prevention of Significant Deterioration of Air Quality

1. Operating Limitations:

- a) The permittee shall not cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished; or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Reasonable precautions shall include, as applicable: [401 KAR 63:010, Section 3(1)]
 - 1) Use, if possible, of water or suitable chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;
 - 2) Application and maintenance of asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts;
 - 3) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations;
 - 4) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;
 - 5) The maintenance of paved roadways in a clean condition; or
 - 6) The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water.

- b) If dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance or to violate any administrative regulation, the secretary may, based on the cause, type, or amount of a fugitive emission, order that the building or equipment in which processing, handling and storage are done be tightly closed and ventilated in such a way that all air and gases and air or gas borne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air. [401 KAR 63:010, Section 3(3)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- c) At all times while in motion, open bodied trucks, operating outside company property, transporting materials likely to become airborne shall be covered. [401 KAR 63:010, Section 4(1)]
- d) A person shall not cause, suffer, or allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. [401 KAR 63:010, Section 4(3)]

2. Emission Limitations:

A person shall not cause, suffer, or allow visible fugitive dust emissions beyond the lot of the property on which the emissions originate, as determined by Reference Method 22 of Appendix A in 40 C.F.R. Part 60, for: [401 KAR 63:010, Section 3(2)]

- a) More than five (5) minutes of emission time during any sixty (60) minute observation period; or
- b) More than twenty (20) minutes of emission time during any twenty-four (24) hour period.

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 4]

4. Specific Monitoring Requirements:

- a) The permittee shall monitor the amount of material processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]
- b) The permittee shall monitor the reasonable precautions taken to prevent particulate matter from becoming airborne on a daily basis. [401 KAR 52:020, Section 10]
- c) If fugitive dust emissions beyond the lot line of the property are observed, the permittee shall conduct Reference Method 22 (visual determination of fugitive emissions) observations per Appendix A of 40 C.F.R. Part 60. In lieu of conducting U.S. EPA Reference Method 22, the permittee shall immediately perform a corrective action which results in no visible fugitive dust emissions beyond the lot line of the property. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) The permittee shall maintain records of the amount of material processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]
- b) The permittee shall maintain a log of the reasonable precautions taken to prevent particulate matter from becoming airborne, on a daily basis. Notation of the operating status, downtime, or relevant weather conditions are acceptable for entry to the log. [401 KAR 52:020, Section 10]
- c) The permittee shall maintain a log of the following: [401 KAR 52:020, Section 10]
 - 1) Qualitative fugitive emissions observations conducted including the date, time, initials of observer, whether any fugitive dust emissions were observed;

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 2) Any Reference Method 22 performed and field records identified in Reference Method 22; and
- 3) Any correction action taken and the results.

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements**, Conditions 5, 6, 7, and 8.

7. Specific Control Equipment Operating Conditions:

- a) The enclosures shall be operated to maintain compliance with applicable requirements, in accordance with manufacturer’s specifications and standard operating practices. [401 KAR 50:055]
- b) Records regarding maintenance of the control equipment shall be maintained. [401 KAR 52:020, Section 10]
- c) See **Section E – Source Control Equipment Requirements** for further requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 05: Cooling Tower (W61)

Description:

Maximum Operating Rate: 10.8 million gallons of cooling water per hour
 Construction Commenced: December 1978

APPLICABLE REGULATION:

401 KAR 59:010, *New process operations*

1. Operating Limitations:

To preclude applicability of 40 CFR 63, Subpart Q, the permittee shall not use chromium-based water treatment chemicals in the cooling towers. [40 CFR 63.400(a)]

2. Emission Limitations:

- a) No person shall cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than twenty (20) percent opacity. [401 KAR 59:010, Section 3(1)(a)]
- b) PM emissions shall not exceed the following: [401 KAR 59:010, Section 3(2), referencing Appendix A]

Process Weight Rate, P (tons/hr)	Maximum Allowable Emission Rate, E (lb/hr)
$P \leq 0.50$	2.34
$0.50 < P \leq 30.00$	$E = 3.59P^{0.62}$
$P > 30.00$	$E = 17.31P^{0.16}$

Compliance Demonstration:

Compliance with the applicable 401 KAR 59:010 opacity and PM emission standards shall be assumed when monthly observations indicate that the processes and controls are operating normally.

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 1 and 401 KAR 59:005, Section 2(1)]

4. Specific Monitoring Requirements:

The permittee shall monitor the cooling water usage rate and the total dissolved solids content of the circulating water on a monthly basis. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the cooling water usage rate and the total dissolved solids content of the circulating water on a monthly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

See Section F – Monitoring, Recordkeeping, and Reporting Requirements, Conditions 5, 6, 7, and 8.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Unit 06: Existing CI Emergency RICE****Description:**

Equipment: Fire Pump Engine

Fuel: Diesel

Maximum Continuous Rating: 380 HP

Manufacture Date: 1980

APPLICABLE REGULATION:

401 KAR 63:002, Section 2(4)(eeee), 40 CFR 63.6580 through 63.6675 Tables 1a through 8, and Appendix A (**Subpart ZZZZ**), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

1. Operating Limitations:

- a) The permittee shall comply with the following requirements, except during periods of startup:
 - 1) Change oil and filter every 500 hours of operation or annually, whichever comes first;
 - 2) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary;
 - 3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary; and
 - 4) During periods of startup, minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
[40 CFR 63.6602, referencing Table 2c and 40 CFR 63.6625(h)]
- b) The permittee shall use diesel fuel that meets the requirements in 40 CFR 1090.305 for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted. [40 CFR 63.6604(b)]
- c) The permittee shall be in compliance with the emission limitations, operating limitations, and other requirements in 40 CFR 63, Subpart ZZZZ that apply at all times. [40 CFR 63.6605(a)]
- d) At all times, the permittee shall operate and maintain the engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require any further efforts to reduce emissions if levels required by 40 CFR 63, Subpart ZZZZ have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)]

- e) The permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which shall provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)(2) and 40 CFR 63.6640(a) referencing Table 6.9.a.i. and ii.]
- f) The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirements in **1. Operating Limitations a)1**). The oil analysis shall be performed at the same frequency specified for changing the oil. The analysis program shall at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine permittee is not required to change the oil. If any of the limits are exceeded, the engine permittee shall change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine permittee shall change the oil within 2 business days or before commencing operation, whichever is later. The analysis program shall be part of the maintenance plan for the engine. [40 CFR 63.6625(i)]
- g) The permittee shall operate the emergency stationary RICE according to the requirements in 40 CFR 63.6640(f)(1) through (4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 63.6640(f)(1) through (4), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 63.6640(f)(1) through (4), the engine will not be considered an emergency engine and shall meet all requirements for non-emergency engines. [40 CFR 63.6640(f)]
 - 1) There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)]
 - 2) The permittee may operate the emergency stationary RICE for any combination of the purposes specified in 40 CFR 63.6640(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. The emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of the

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

emergency engine beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2) and f(2)(i)]

- 3) The emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640(f)(3)]

2. Emission Limitations:

N/A

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 4]

4. Specific Monitoring Requirements:

- a) The permittee shall install a non-resettable hour meter if one is not already installed. [40 CFR 63.6625(f)]
- b) The permittee shall monitor the amount of fuel combusted (in gallons) and the hours of operation on a monthly basis. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) If the permittee opts to utilize an oil analysis program in order to extend the specified oil change requirement, the permittee shall maintain records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. [40 CFR 63.6625(i)]
- b) The permittee shall maintain the following records in a form suitable and readily available for expeditious review in hard copy or electronic form for 5 years following the date of each occurrence: [40 CFR 63.6655(a) and 40 CFR 63.6660]
 - 1) A copy of each notification and report that the permittee submitted to comply with 40 CFR 63, Subpart ZZZZ, including all documentation supporting any Notification of Compliance Status submitted according to the requirement in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.6655(a)(1)]
 - 2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(2)]
 - 3) Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 63.6655(a)(4)]
 - 4) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.6655(a)(5)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 5) Records required in **1. Operating Limitations d)** to show continuous compliance with each emission or operating limitation that applies. [40 CFR 63.6655(d)]
 - 6) Records of the maintenance conducted on the stationary RICE in order to demonstrate that the permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the maintenance plan. [40 CFR 63.6655(e)(2)]
 - 7) Records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee shall document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [40 CFR 63.6655(f)(1)]
- c) The permittee shall maintain records of the amount of fuel combusted (in gallons) and the hours of operation on a monthly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

- a) The permittee shall report each instance in which they did not meet the operating limitations in 40 CFR 63, Subpart ZZZZ, Table 2c. These instances are deviations from the operating limitations and shall be reported according to the requirements in 40 CFR 63.6650. [40 CFR 63.6640(b)]
- b) The permittee shall report each instance in which they did not meet the requirements in 40 CFR 63, Subpart ZZZZ, Table 8. The permittee is not required to submit the notifications in 40 CFR 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), (g), and (h). [40 CFR 63.6640(e) and 40 CFR 63.6645(a)(5)]
- c) See **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Unit 07: Existing CI Emergency RICE****Description:**

Equipment: Emergency Generator

Fuel: Diesel

Maximum Continuous Rating: 1,130 HP

Manufacture Date: 1980

APPLICABLE REGULATION:

401 KAR 63:002, Section 2(4)(eeee), 40 CFR 63.6580 through 63.6675 Tables 1a through 8, and Appendix A (**Subpart ZZZZ**), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 63, Subpart ZZZZ that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 63.6640(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

1. Operating Limitations:

The permittee shall operate the emergency stationary RICE according to the requirements in 40 CFR 63.6640(f)(1) through (4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 63.6640(f)(1) through (4), is prohibited. If the permittee does not operate the engine according to the requirements in 40 CFR 63.6640(f)(1) through (4), the engine will not be considered an emergency engine and shall meet all requirements for non-emergency engines. [40 CFR 63.6640(f)]

- a) There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)]
- b) The permittee may operate the emergency stationary RICE for any combination of the purposes specified in 40 CFR 63.6640(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. The emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of the emergency engine beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2) and f(2)(i)]
- c) The emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640(f)(3)]

2. Emission Limitations:

N/A

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 4]

4. Specific Monitoring Requirements:

The permittee shall monitor the amount of fuel combusted (in gallons) and the hours of operation on a monthly basis. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

The permittee shall maintain records of the amount of fuel combusted (in gallons) and the hours of operation on a monthly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 08: Gypsum Handling Operations

Description:

Description	Maximum Operating Rate	Proposed Construction	Control Equipment
Transfer Points	55.2 tons/hr	October 2021	Dust Suppression
Storage Pile			
Transport			

APPLICABLE REGULATION:

401 KAR 63:010, *Fugitive emissions*

1. Operating Limitations:

- a) A person shall not cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished; or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Reasonable precautions shall include, as applicable: [401 KAR 63:010, Section 3(1)]
 - 1) Use, if possible, of water or suitable chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land;
 - 2) Application and maintenance of asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts;
 - 3) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations;
 - 4) Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne;
 - 5) The maintenance of paved roadways in a clean condition; or
 - 6) The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water.

- b) If dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance or to violate any administrative regulation, the secretary may, based on the cause, type, or amount of a fugitive emission, order that the building or equipment in which processing, handling and storage are done be tightly closed and ventilated in such a way that all air and gases and air or gas borne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air. [401 KAR 63:010, Section 3(3)]

- c) At all times while in motion, open bodied trucks, operating outside company property, transporting materials likely to become airborne shall be covered. [401 KAR 63:010, Section 4(1)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d) A person shall not cause, suffer, or allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. [401 KAR 63:010, Section 4(3)]

2. Emission Limitations:

A person shall not cause, suffer, or allow visible fugitive dust emissions beyond the lot of the property on which the emissions originate, as determined by Reference Method 22 of Appendix A in 40 C.F.R. Part 60, for: [401 KAR 63:010, Section 3(2)]

- a) More than five (5) minutes of emission time during any sixty (60) minute observation period; or

- b) More than twenty (20) minutes of emission time during any twenty-four (24) hour period.

3. Testing Requirements:

Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 4]

4. Specific Monitoring Requirements:

- a) The permittee shall monitor the amount of material processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

- b) The permittee shall monitor the reasonable precautions taken to prevent particulate matter from becoming airborne on a daily basis. [401 KAR 52:020, Section 10]

- c) If fugitive dust emissions beyond the lot line of the property are observed, the permittee shall conduct Reference Method 22 (visual determination of fugitive emissions) observations per Appendix A of 40 C.F.R. Part 60. In lieu of conducting U.S. EPA Reference Method 22, the permittee shall immediately perform a corrective action which results in no visible fugitive dust emissions beyond the lot line of the property. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) The permittee shall maintain records of the amount of material processed (in tons) on a weekly basis. [401 KAR 52:020, Section 10]

- b) The permittee shall maintain a log of the reasonable precautions taken to prevent particulate matter from becoming airborne, on a daily basis. Notation of the operating status, downtime, or relevant weather conditions are acceptable for entry to the log. [401 KAR 52:020, Section 10]

- c) The permittee shall maintain a log of the following: [401 KAR 52:020, Section 10]
- 1) Qualitative fugitive emissions observations conducted including the date, time, initials of observer, whether any fugitive dust emissions were observed;
 - 2) Any Reference Method 22 performed and field records identified in Reference Method 22; and
 - 3) Any correction action taken and the results.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

6. Specific Reporting Requirements:

See Section F – Monitoring, Recordkeeping, and Reporting Requirements, Conditions 5, 6, 7, and 8.

7. Specific Control Equipment Operating Conditions:

a) The enclosures shall be operated to maintain compliance with applicable requirements, in accordance with manufacturer’s specifications and standard operating practices. [401 KAR 50:055]

b) Records regarding maintenance of the control equipment shall be maintained. [401 KAR 52:020, Section 10]

c) See Section E – Source Control Equipment Requirements for further requirements.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Unit 09: New CI Emergency RICE****Description:**

Equipment: FGD Emergency Generator

Fuel: Diesel

Maximum Continuous Rating: 954 HP

Manufacture Date: 2010

Installation Date: 2021

APPLICABLE REGULATIONS:

401 KAR 60:005, Section 2(2)(dddd), 40 CFR 60.4200 to 60.4219, Table 1 to 8 (**Subpart IIII**), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

401 KAR 63:002, Section 2(4)(eeee), 40 CFR 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (**Subpart ZZZZ**), *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

1. Operating Limitations:

- a) This engine shall meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII for compression ignition engines. No further requirements under 40 CFR 63, Subpart ZZZZ apply. [40 CFR 63.6590(c)(1)]
- b) The permittee shall use diesel fuel that meets the following requirements: [40 CFR 60.4207(b)]
 - 1) A maximum sulfur content of 15 ppm; and [40 CFR 80.510(b)(1)(i)]
 - 2) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent. [40 CFR 80.510(b)(2)(i) and (ii)]
- c) The permittee shall operate the emergency stationary ICE according to the requirements in 40 CFR 60.4211(f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the engine is not operated according to the requirements of 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine under 40 CFR 60, Subpart IIII and must meet all requirements for non-emergency engines. [40 CFR 60.4211(f)]
 - 1) There is no time limit on the use of emergency stationary ICE in emergency situations. [40 CFR 60.4211(f)(1)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 2) Emergency stationary ICE may be operated for any combination of the purposes specified in 40 CFR 60.4211(f)(2)(i) through (iii) for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by 40 CFR 60.4211(f)(2). Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [40 CFR 60.4211(f)(2) and 60.4211(f)(2)(i)]
- 3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [40 CFR 60.4211(f)(3) and 60.4211(f)(3)(i)]
 - i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [40 CFR 60.4211(f)(3)(i)(A)]
 - ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [40 CFR 60.4211(f)(3)(i)(B)]
 - iii) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [40 CFR 60.4211(f)(3)(i)(C)]
 - iv) The power is provided only to the facility itself or to support the local transmission and distribution system. [40 CFR 60.4211(f)(3)(i)(D)]
 - v) The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine permittee. [40 CFR 60.4211(f)(3)(i)(E)]

2. Emission Limitations:

The permittee shall meet the requirements of 40 CFR 89, 94, and/or 1068, as they apply, over the life of the engine. [40 CFR 60.4202(a)(2), 40 CFR 60.4205(b), 40 CFR 60.4206(c), 40 CFR 60.4211(a)(3) and 40 CFR 60.4211(c)]

Compliance Demonstration:

- I) The permittee shall meet the requirements of 40 CFR 89, 94, and/or 1068, as they apply, and operate and maintain the engines and control devices according to the manufacturer's

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

emission-related written instructions, changing only the emission-related settings that are permitted by the manufacturer, except as permitted by 40 CFR 60.4211(g). [40 CFR 60.4211(a)(1) and (2)]

- II) The permittee shall purchase an engine certified to the emission standards in 40 CFR 60.4205(b), as applicable, for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g). [40 CFR 60.4211(c)]
- III) If the permittee does not install, configure, operate, and maintain each engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, see **3. Testing Requirements b)** and **5. Specific Recordkeeping Requirements a)**. [40 CFR 60.4211(g)]

3. Testing Requirements:

- a) If the permittee conducts a performance test pursuant to 40 CFR 60, Subpart IIII, the procedures in 40 CFR 60.4212(a) through (e) shall be followed [40 CFR 60.4212]
- b) The permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the permittee changes emission-related settings in a way that is not permitted by the manufacturer. The permittee shall conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards. [40 CFR 60.4211(g)(3)]
- c) Testing shall be conducted at such times as may be requested by the Cabinet. [401 KAR 50:045, Section 4]

4. Specific Monitoring Requirements:

- a) If the engine does not meet the standards applicable to non-emergency engines, the permittee shall install a non-resettable hour meter prior to startup of the engine. [40 CFR 60.4209(a)]
- b) The permittee shall monitor the hours of operation and the amount of fuel combusted (in gal) on a monthly basis. [401 KAR 52:020, Section 10]

5. Specific Recordkeeping Requirements:

- a) If the permittee does not install, configure, operate, and maintain each engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 60.4211(g)(3)]

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b) If the emergency engine is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in 40 CFR 60.4211(f)(3)(i), the permittee shall submit an annual report according to the following requirements: [40 CFR 60.4214(d)]
- 1) The report shall contain the following information: [40 CFR 60.4214(d)(1)]
 - i) Company name and address where the engine is located. [40 CFR 60.4214(d)(1)(i)]
 - ii) Date of the report and beginning and ending dates of the reporting period. [40 CFR 60.4214(d)(1)(ii)]
 - iii) Engine site rating and model year. [40 CFR 60.4214(d)(1)(iii)]
 - iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place. [40 CFR 60.4214(d)(1)(iv)]
 - v) Hours operated for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii). [40 CFR 60.4214(d)(1)(v)]
 - vi) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii). [40 CFR 60.4214(d)(1)(vi)]
 - vii) Hours spent for operation for the purposes specified in 40 CFR 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(3)(i). The report shall also identify the entity that dispatched the engine and the situation that necessitate the dispatch of the engine. [40 CFR 60.4214(d)(1)(vii)]
 - 2) The first annual report shall cover the calendar year 2020 and shall be submitted no later than March 31, 2021. Subsequent annual reports for each calendar year shall be submitted no later than March 31 of the following calendar year. [40 CFR 60.4214(d)(2)]
 - 3) The annual report shall be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to 40 CFR 60, Subpart IIII is not available in CEDRI at the time that the report is due, the written report shall be submitted to the Administrator at the appropriate address listed in 40 CFR 60.4. [40 CFR 60.4214(d)(3)]
- c) The permittee shall maintain records of the hours of operation and the amount of fuel combusted (in gal) on a monthly basis. [401 KAR 52:020, Section 10]

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements.**

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. Although these activities are designated as insignificant, the permittee shall comply with the applicable regulation. Process and emission control equipment at each insignificant activity subject to an opacity standard shall be inspected monthly and a qualitative visible emissions evaluation made. Results of the inspection, evaluation, and any corrective action shall be recorded in a log.

<u>Description</u>	<u>Generally Applicable Regulation</u>
1. Bottom ash handling	401 KAR 63:010
2. Fire pump diesel fuel storage tank (500 gallons)	N/A
3. Diesel fuel storage tank (550 gallons)	N/A
4. Gasoline storage and dispensing tank (2,000 gallons)	N/A
5. Landfill eqpt. diesel fuel storage (2,000 gallons)	N/A
6. Kerosene tank-North (500 gallons)	N/A
7. Kerosene tank-South (500 gallons)	N/A
8. Mobile diesel tank (1,000 gallons)	N/A
9. DBA tank-T1	N/A
10. Sodium sulfite tank-T2	N/A
11. Coal handling diesel fuel storage tank (10,000 gallons)	N/A
12. Diesel fuel storage tanks (2 each 300,000 gallons)	N/A
13. Direct-fired space heater, W64 (propane)	N/A
14. Direct-fired space heater, W65 (propane)	N/A
15. Storage tank for emergency diesel generator (2,000 gallons)	N/A
16. Day tank for diesel generator (55 gallons)	N/A
17. Pressure washer, Maintenance (propane)	GHG Rule
18. Pressure washer, Coal handling (diesel)	GHG Rule
19. Cooling tower water treatment operation	N/A
20. Closed cooling water system	N/A
21. Demineralizer process operation	N/A
22. Freeze protection operation for coal conveyors	N/A
23. Sewage treatment plant operations	N/A
24. Wastewater treatment plant operations	N/A

SECTION C - INSIGNIFICANT ACTIVITIES (CONTINUED)

- | | |
|---|---|
| 25. Potable water treatment operations | N/A |
| 26. Pneumatic conveying of fly ash/storage | 401 KAR 63:010 |
| 27. Dry Sorbent Injection system (DSI) | 401 KAR 59:010, Permittee shall monitor the amount of hydrated lime received and processed on a weekly basis. |
| 28. Contractor's mobile diesel tank (100 gallons) | N/A |
| 29. Leachate treatment plant operations | N/A |
| 30. Fly Ash Barge Loading | 401 KAR 59:010 |

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
2. Particulate matter, sulfur dioxide, nitrogen oxides, and visible (opacity) emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan shall not exceed the respective limitations specified herein.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

1. Pursuant to Section 1b-IV-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a) Date, place as defined in this permit, and time of sampling or measurements;
 - b) Analyses performance dates;
 - c) Company or entity that performed analyses;
 - d) Analytical techniques or methods used;
 - e) Analyses results; and
 - f) Operating conditions during time of sampling or measurement.
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five (5) years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b-IV-2 and 1a-8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. In accordance with the requirements of 401 KAR 52:020, Section 3(1)h, the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
 - a) Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
 - b) To access and copy any records required by the permit;
 - c) Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Sections 1b-V-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020, Section 23. If continuous emission and opacity monitors are required by regulation or this permit, data shall be reported in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1, the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - a) When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - b) When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
8. The permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken shall be submitted to the Regional Office listed on the front of this permit. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement does not identify a specific time frame for reporting deviations, prompt reporting, as required by Sections 1b-V, 3 and 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, shall be defined as follows:
 - a) For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence.
 - b) For emissions of any regulated air pollutant, excluding those listed in F.8.a., that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.
 - c) All deviations from permit requirements, including those previously reported, shall be included in the semiannual report required by F.6.
9. Pursuant to 401 KAR 52:020, Title V permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
 - a) Identification of the term or condition;
 - b) Compliance status of each term or condition of the permit;
 - c) Whether compliance was continuous or intermittent;
 - d) The method used for determining the compliance status for the source, currently and over the reporting period.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

- e) For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
- f) The certification shall be submitted by January 30th of each year. Annual compliance certifications shall be sent to the following addresses:

Division for Air Quality
Owensboro Regional Office
3032 Alvey Park Dr. W. STE 700
Owensboro, KY 42303-2191

U.S. EPA Region 4
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St. SW
Atlanta, GA 30303-8960

- 10. In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within 30 days of the date the Kentucky Emissions Inventory System (KYEIS) emissions survey is mailed to the permittee.

SECTION G - GENERAL PROVISIONS

1. General Compliance Requirements:

- a) The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020, Section 3(1)(b), and a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act). Noncompliance with this permit is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- b) The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- c) This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - 1) If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
 - 2) The Cabinet or the United States Environmental Protection Agency (U. S. EPA) determines that the permit shall be revised or revoked to assure compliance with the applicable requirements;
 - 3) The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; and
 - 4) New requirements become applicable to a source subject to the Acid Rain Program.

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

- d) The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the conditions of this permit [Sections 1a- 7 and 8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- e) Emission units described in this permit shall demonstrate compliance with applicable requirements if requested by the Division [401 KAR 52:020, Section 3(1)(c)].

SECTION G - GENERAL PROVISIONS (CONTINUED)

- f) The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].
- g) Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- h) The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- i) All emission limitations and standards contained in this permit shall be enforceable as a practical matter. All emission limitations and standards contained in this permit are enforceable by the U.S. EPA and citizens except for those specifically identified in this permit as state-origin requirements. [Section 1a-15 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- j) This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a-10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- k) Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3) b].
- l) This permit does not convey property rights or exclusive privileges [Section 1a-9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- m) Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.
- n) Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3) d.].
- o) Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3) a.].

SECTION G - GENERAL PROVISIONS (CONTINUED)

- p) This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.
- q) Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with:
 - 1) Applicable requirements that are included and specifically identified in this permit; and
 - 2) Non-applicable requirements expressly identified in this permit.

2. Permit Expiration and Reapplication Requirements:

- a) This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six (6) months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].
- b) The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020, Section 8(2)].

3) Permit Revisions:

- a) A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the State Implementation Plan (SIP) or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
- b) This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

SECTION G - GENERAL PROVISIONS (CONTINUED)**4. Construction, Start-Up, and Initial Compliance Demonstration Requirements:**

Pursuant to a duly submitted application, the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein, emission units 08 and 09 in accordance with the terms and conditions of this permit (V-21-018).

- a) Construction of any process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
- b) Within thirty (30) days following commencement of construction and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Regional Office listed on the front of this permit in writing, notification of the following:
 - 1) The date when construction commenced.
 - 2) The date of start-up of the affected facilities listed in this permit.
 - 3) The date when the maximum production rate specified in the permit application was achieved.
- c) Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the Cabinet may extend these time periods if the source shows good cause.
- d) Pursuant to 401 KAR 50:055, Section 2(1)(a), an owner or operator of any affected facility subject to any standard within the administrative regulations of the Division for Air Quality shall demonstrate compliance with the applicable standard(s) within sixty (60) days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of such facility. Pursuant to 401 KAR 52:020, Section 3(3)(c), sources that have not demonstrated compliance within the timeframes prescribed in 401 KAR 50:055, Section 2(1)(a), shall operate the affected facility only for purposes of demonstrating compliance unless authorized under an approved compliance plan or an order of the cabinet.
- e) This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct a performance demonstration on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. Testing must also be conducted in accordance with General Provisions G.5 of this permit.
- f) Terms and conditions in this permit established pursuant to the construction authority of 401 KAR 51:017 or 401 KAR 51:052 shall not expire.

SECTION G - GENERAL PROVISIONS (CONTINUED)**5. Testing Requirements:**

- a) Pursuant to 401 KAR 50:045, Section 2, a source required to conduct a performance test shall submit a completed Compliance Test Protocol form, DEP form 6028, or a test protocol a source has developed for submission to other regulatory agencies, in a format approved by the cabinet, to the Division's Frankfort Central Office a minimum of sixty (60) days prior to the scheduled test date. Pursuant to 401 KAR 50:045, Section 7, the Division shall be notified of the actual test date at least thirty (30) days prior to the test.
- b) Pursuant to 401 KAR 50:045, Section 5, in order to demonstrate that a source is capable of complying with a standard at all times, any required performance test shall be conducted under normal conditions that are representative of the source's operations and create the highest rate of emissions. If [When] the maximum production rate represents a source's highest emissions rate and a performance test is conducted at less than the maximum production rate, a source shall be limited to a production rate of no greater than 110 percent of the average production rate during the performance tests. If and when the facility is capable of operation at the rate specified in the application, the source may retest to demonstrate compliance at the new production rate. The Division for Air Quality may waive these requirements on a case-by-case basis if the source demonstrates to the Division's satisfaction that the source is in compliance with all applicable requirements.
- c) Results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days or sooner if required by an applicable standard, after the completion of the fieldwork.

6. Acid Rain Program Requirements:

- a) If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.
- b) The permittee shall comply with all applicable requirements and conditions of the Acid Rain Permit and the Phase II permit application (including the Phase II NOx compliance plan and averaging plan, if applicable) incorporated into the Title V permit issued for this source. The source shall also comply with all requirements of any revised or future acid rain permit(s) issued to this source.

7. Emergency Provisions:

- a) Pursuant to 401 KAR 52:020, Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - 1) An emergency occurred and the permittee can identify the cause of the emergency;

SECTION G - GENERAL PROVISIONS (CONTINUED)

- 2) The permitted facility was at the time being properly operated;
 - 3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - 4) Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.1-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
 - 5) This requirement does not relieve the source of other local, state or federal notification requirements.
- b) Emergency conditions listed in General Condition G.7.a above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
- c) In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].

8. Ozone Depleting Substances:

- a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
- 1) Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - 2) Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - 3) Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - 4) Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.155.
 - 5) Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156 and 40 CFR 82.157.
 - 6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
- b) If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.

SECTION G - GENERAL PROVISIONS (CONTINUED)

9. Risk Management Provisions:

- a) The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to U.S. EPA using the RMP* eSubmit software.

- b) If requested, submit additional relevant information to the Division or the U.S. EPA.

SECTION H - ALTERNATE OPERATING SCENARIOS

N/A

SECTION I - COMPLIANCE SCHEDULE

N/A

SECTION J - ACID RAIN

1. Statutory and Regulatory Authority:

In accordance with KRS 224.10-100 and Title IV and V of the Clean Air Act, the Kentucky Environmental and Public Protection Cabinet, Division for Air Quality issues this permit pursuant to 401 KAR 52:020, Title V permits, 401 KAR 52:060, Acid rain permits, and 40 CFR Part 76, Acid Rain Nitrogen Oxides Emission Reduction Program.

2. Permit Requirements:

This Acid Rain Permit covers Acid Rain Unit 1 (Emission Unit 01) at the Wilson Station (ORIS Code: 6823). Unit 1 is a coal-fired base load electric generating unit. The Acid Rain Permit Application and NO_x Compliance Plan received on December 16, 2020 for Phase II are hereby incorporated into and made part of this permit, and the permittee shall comply with the standard requirements and special provisions set forth in the application. [40 CFR 72.9(a)(2)]

3. Acid Rain Program Emission and Operating Limitations:

The applicable Acid Rain emission limitations for the permittee are as follows: [40 CFR 73.10, Table 2, 40 CFR 76.7, and 40 CFR 76.11]

Affected Unit: Wilson Station Emission Unit 01 (W1)					
Year for SO₂ Allowances*	2021	2022	2023	2024	2025
40 CFR Part 73.10	12,487*	12,487*	12,487*	12,487*	12,487*
NO_x Limits and Requirements					
Pursuant to 40 CFR Part 76, the Kentucky Division for Air Quality approves the NO _x emissions averaging plan for this unit. This plan is effective for calendar years 2021 through 2025. Under this plan, the unit’s NO _x emissions shall not exceed 0.46 lb/MMBtu of heat input on an annual average basis. [40 CFR 76.7(a)(2)]					
This unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO _x compliance plan and requirements covering excess emissions.					

* The number of allowances allocated to Phase II affected units by the U.S. EPA may change under 40 CFR Part 73. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitates a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR 72.84).

SECTION K – CLEAN AIR INTERSTATE RULE (CAIR)**1. Statutory and Regulatory Authorities:**

In accordance with KRS 224.10-100, the Kentucky Energy and Environmental Cabinet issues this permit pursuant to 401 KAR 52:020, Title V permits, 401 KAR 51:210, CAIR NO_x annual trading program, 401 KAR 51:220, CAIR NO_x ozone season trading program and 401 KAR 51:230, CAIR SO₂ trading program.

2. Application and Requirements:

The CAIR application for one electrical generating unit was submitted to the Division and received on September 10, 2007. The standard requirements and special provisions set forth in the application are hereby incorporated into and made part of this CAIR Permit. [401 KAR 51:210, 401 KAR 51:220, and 401 KAR 51:230] Pursuant to 401 KAR 52:020, Section 3, the source shall operate in compliance with those requirements.

3. Unit Description:

The affected unit is a dry bottom wall-fired boiler rated at 4,585 MMBtu/hr (EU 01). This unit has a capacity to generate 25 megawatts or more of electricity, which is offered for sale. The unit uses pulverized coal as a fuel source and is authorized as a base load electric generating unit.

4. Summary of Actions:

The CAIR Permit is being issued as part of the Title V permit for this source. Public, affected state, and U.S. EPA review will follow procedures specified in 401 KAR 52:100.

CSAPR implementation is now in place and replaces requirements under EPA's 2005 Clean Air Interstate Rule.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CSAPR)

The CSAPR subject unit, and the unit-specific monitoring provisions at this source, are identified in the following table. The unit is subject to the requirements for the CSAPR NO_x Annual Trading Program, CSAPR NO_x Ozone Season Group 3 Trading Program, and CSAPR SO₂ Group 1 Trading Program

Unit ID: 01, Pulverized coal fired, dry bottom, wall fired boiler					
Parameter	Continuous emission monitoring system or systems (CEMS) requirements pursuant to 40 CFR part 75, subpart B (for SO ₂ monitoring) and 40 CFR part 75, subpart H (for NO _x monitoring)	Excepted monitoring system requirements for gas- and oil-fired units pursuant to 40 CFR part 75, appendix D	Excepted monitoring system requirements for gas- and oil-fired peaking units pursuant to 40 CFR part 75, appendix E	Low Mass Emissions excepted monitoring (LME) requirements for gas- and oil-fired units pursuant to 40 CFR 75.19	EPA-approved alternative monitoring system requirements pursuant to 40 CFR part 75, subpart E
SO ₂	X				
NO _x	X				
Heat input	X				

1. The above description of the monitoring used by a unit does not change, create an exemption from, or otherwise affect the monitoring, recordkeeping, and reporting requirements applicable to the unit under 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(30) (CSAPR NO_x Annual Trading Program), 40 CFR 97.1030 through 40 CFR 97.1035 (CSAPR NO_x Ozone Season Group 3 Trading Program), and 401 KAR 51:260 Section 3(25) through 401 KAR 51:260, Section 3(30) (CSAPR SO₂ Group 1 Trading Program). The monitoring, recordkeeping, and reporting requirements applicable to each unit are included below in the standard conditions for the applicable CSAPR trading programs.
2. Owners and operators shall submit to the Administrator a monitoring plan for each unit in accordance with 40 CFR 75.53, 75.62 and 75.73, as applicable. The monitoring plan for each unit is available at the EPA’s website:
<http://www.epa.gov/airmarkets>.
3. Owners and operators that want to use an alternative monitoring system shall submit to the Administrator a petition requesting approval of the alternative monitoring system in accordance with 40 CFR 75, Subpart E, 40 CFR 75.66, 401 KAR 51:240, Section 3(30) (CSAPR NO_x Annual Trading Program), 40 CFR 97.1035 (CSAPR NO_x

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

Ozone Season Group 3 Trading Program), and/or 401 KAR 51:260, Section 3(30) (CSAPR SO₂ Group 1 Trading Program). The Administrator's response approving or disapproving any petition for an alternative monitoring system is available on the EPA's website at <http://www.epa.gov/airmarkets/part-75-petition-responses>.

4. Owners and operators that want to use an alternative to any monitoring, recordkeeping, or reporting requirements under 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(29) (CSAPR NO_x Annual Trading Program), 40 CFR 97.1030 through 40 CFR 97.1034 (CSAPR NO_x Ozone Season Group 3 Trading Program), and/or 401 KAR 51:260, Section 3(25) through 401 KAR 51:260, Section 3(29) (CSAPR SO₂ Group 1 Trading Program) must submit to the Administrator a petition requesting approval of the alternative in accordance with 401 KAR 51:240, Section 3(30) (CSAPR NO_x Annual Trading Program), 40 CFR 97.1035 (CSAPR SO₂ Group 1 Trading Program), and 401 KAR 51:260, Section 3(30) (CSAPR NO_x Ozone Season Group 3 Trading Program). The Administrator's response approving or disapproving any petition for an alternative to a monitoring, recordkeeping, or reporting requirement is available on the EPA's website at <https://www.epa.gov/airmarkets/data-resources>.
5. The descriptions of monitoring applicable to the unit included above meet the requirement of 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(29) (CSAPR NO_x Annual Trading Program), 40 CFR 97.1030 through 40 CFR 97.1034 (CSAPR NO_x Ozone Season Group 3 Trading Program), and 401 KAR 51:260, Section 3(25) through 401 KAR 51:260, Section 3(29) (CSAPR SO₂ Group 1 Trading Program), and therefore minor permit modification procedures, in accordance with 40 CFR 70.7(e)(2)(i)(B), may be used to add or change this unit's monitoring system description.

CSAPR NO_x Annual Trading Program requirements (401 KAR 51:240, Section 3(4))**a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 401 KAR 51:240, Section 3(10) through 401 KAR 51:240, Section 3(15).

b) Emissions monitoring, reporting, and recordkeeping requirements.

- 1) The owners and operators, and the designated representative, of each CSAPR NO_x Annual source and each CSAPR NO_x Annual unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 401 KAR 51:240, Section 3(25) (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 401 KAR 51:240, Section 3(26) (initial monitoring system certification and recertification procedures), 401 KAR 51:240, Section 3(27) (monitoring system out-of-control periods), 401 KAR 51:240, Section 3(28) (notifications concerning monitoring), 401 KAR 51:240, Section 3(29) (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 401 KAR 51:240, Section 3(30) (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- 2) The emissions data determined in accordance with 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(30) shall be used to calculate allocations of CSAPR NO_x Annual allowances under 401 KAR 51:240, Section 3(8) (40 CFR 97.411(a)(2) and (b)) and 401 KAR 51:240, Section 3(9) and to determine compliance with the CSAPR NO_x

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

Annual emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(30) and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

c) NO_x emissions requirements.**1) CSAPR NO_x Annual emissions limitation.**

- i) As of the allowance transfer deadline for a control period in a given year, the owners and operators of each CSAPR NO_x Annual source and each CSAPR NO_x Annual unit at the source shall hold, in the source's compliance account, CSAPR NO_x Annual allowances available for deduction for such control period under 401 KAR 51:240, Section 3(20) (40 CFR 97.424(a)) in an amount not less than the tons of total NO_x emissions for such control period from all CSAPR NO_x Annual units at the source.
- ii) If total NO_x emissions during a control period in a given year from the CSAPR NO_x Annual units at a CSAPR NO_x Annual source are in excess of the CSAPR NO_x Annual emissions limitation set forth in paragraph (c)(1)(i) above, then:
 - A) The owners and operators of the source and each CSAPR NO_x Annual unit at the source shall hold the CSAPR NO_x Annual allowances required for deduction under 401 KAR 51:240, Section 3(20) (40 CFR 97.424(d)); and
 - B) The owners and operators of the source and each CSAPR NO_x Annual unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 401 KAR 51:240 (40 CFR 97, Subpart AAAAA) and the Clean Air Act.

2) CSAPR NO_x Annual assurance provisions.

- i) If total NO_x emissions during a control period in a given year from all CSAPR NO_x Annual units at CSAPR NO_x Annual sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_x emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) CSAPR NO_x Annual allowances available for deduction for such control period under 401 KAR 51:240, Section 3(21) (40 CFR 97.425(a)) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 401 KAR 51:240, Section 3(21) (40 CFR 97.425(b)), of multiplying— (A) The quotient of the amount by which the common designated representative's share of such NO_x emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO_x emissions exceeds the respective common designated representative's assurance level; and (B) The amount by which total NO_x emissions from all CSAPR NO_x Annual units at CSAPR NO_x Annual sources in the state for such control period exceed the state assurance level.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- ii) The owners and operators shall hold the CSAPR NO_x Annual allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
 - iii) Total NO_x emissions from all CSAPR NO_x Annual units at CSAPR NO_x Annual sources in the State during a control period in a given year exceed the state assurance level if such total NO_x emissions exceed the sum, for such control period, of the state NO_x Annual trading budget under 401 KAR 51:240, Section 3(7)(a)(1) and the state's variability limit under 401 KAR 51:240, Section 3(7)(a)(3).
 - iv) It shall not be a violation of 401 KAR 51:240, 40 CFR 97, Subpart AAAAA, or of the Clean Air Act if total NO_x emissions from all CSAPR NO_x Annual units at CSAPR NO_x Annual sources in the State during a control period exceed the state assurance level or if a common designated representative's share of total NO_x emissions from the CSAPR NO_x Annual units at CSAPR NO_x Annual sources in the state during a control period exceeds the common designated representative's assurance level.
 - v) To the extent the owners and operators fail to hold CSAPR NO_x Annual allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
 - A) The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
 - B) Each CSAPR NO_x Annual allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 401 KAR 51:240, 40 CFR 97, Subpart AAAAA, and the Clean Air Act.
- 3) Compliance periods.
- i) A CSAPR NO_x Annual unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015, or the deadline for meeting the unit's monitor certification requirements under 401 KAR 51:240, Section 3(25) (40 CFR 97.430(b)) and for each control period thereafter.
 - ii) A CSAPR NO_x Annual unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 401 KAR 51:240, Section 3(25) (40 CFR 97.430(b)) and for each control period thereafter.
- 4) Vintage of allowances held for compliance.
- i) A CSAPR NO_x Annual allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year shall be a CSAPR NO_x Annual allowance that was allocated for such control period or a control period in a prior year.
 - ii) A CSAPR NO_x Annual allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year shall be a CSAPR NO_x Annual allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
- 5) Allowance Management System requirements. Each CSAPR NO_x Annual allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 401 KAR 51:240.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- 6) Limited authorization. A CSAPR NO_x Annual allowance is a limited authorization to emit one ton of NO_x during the control period in one year. Such authorization is limited in its use and duration as follows:
 - i) Such authorization shall only be used in accordance with the CSAPR NO_x Annual Trading Program; and
 - ii) Notwithstanding any other provision of 40 CFR 97, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
 - 7) Property right. A CSAPR NO_x Annual allowance does not constitute a property right.
- d) Title V permit revision requirements.**
- 1) No Title V permit revision shall be required for any allocation, holding, deduction, or transfer of CSAPR NO_x Annual allowances in accordance with 401 KAR 51:240.
 - 2) This permit incorporates the CSAPR emissions monitoring, recordkeeping, and reporting requirements pursuant to 401 KAR 51:240, Section 3(25) through 401 KAR 51:240, Section 3(30), and the requirements for a continuous emission monitoring system (pursuant to 40 CFR 75, Subparts B and H), an excepted monitoring system (pursuant to 40 CFR 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR 75, Subpart E). Therefore, the Description of CSAPR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this Title V permit using minor permit modification procedures in accordance with 401 KAR 51:240, Section 3(4) (40 CFR 97.406(d)(2)) and 70.7(e)(2)(i)(B).
- e) Additional recordkeeping and reporting requirements.**
- 1) Unless otherwise provided, the owners and operators of each CSAPR NO_x Annual source and each CSAPR NO_x Annual unit at the source shall maintain on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
 - i) The certificate of representation under 401 KAR 51:240, Section 3(13) for the designated representative for the source and each CSAPR NO_x Annual unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 401 KAR 51:240, Section 3(13) changing the designated representative.
 - ii) All emissions monitoring information, in accordance with 401 KAR 51:240.
 - iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the CSAPR NO_x Annual Trading Program.
 - 2) The designated representative of a CSAPR NO_x Annual source and each CSAPR NO_x Annual unit at the source shall make all submissions required under the CSAPR NO_x Annual Trading Program, except as provided in 401 KAR 51:240, Section 3(15). This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a Title V operating permit program in 40 CFR 70.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)**f) Liability.**

- 1) Any provision of the CSAPR NO_x Annual Trading Program that applies to a CSAPR NO_x Annual source or the designated representative of a CSAPR NO_x Annual source shall also apply to the owners and operators of such source and of the CSAPR NO_x Annual units at the source.
- 2) Any provision of the CSAPR NO_x Annual Trading Program that applies to a CSAPR NO_x Annual unit or the designated representative of a CSAPR NO_x Annual unit shall also apply to the owners and operators of such unit.

g) Effect on other authorities.

No provision of the CSAPR NO_x Annual Trading Program or exemption under 401 KAR 51:240, Section 3(3) shall be construed as exempting or excluding the owners and operators, and the designated representative, of a CSAPR NO_x Annual source or CSAPR NO_x Annual unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

CSAPR NO_x Ozone Season Group 3 Trading Program Requirements (40 CFR 97.1006)**a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 40 CFR 97.1013 through 40 CFR 97.1018.

b) Emissions monitoring, reporting, and recordkeeping requirements.

- 1) The owners and operators, and the designated representative, of each CSAPR NO_x Ozone Season Group 3 source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 40 CFR 97.1030 through 40 CFR 97.1035.
- 2) The emissions data determined in accordance with 40 CFR 97.1030 through 40 CFR 97.1035 shall be used to calculate allocations of CSAPR NO_x Ozone Season Group 3 allowances under 40 CFR 97.1011(a)(2) and (b) and 40 CFR 97.1012 and to determine compliance with the CSAPR NO_x Ozone Season Group 3 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 40 CFR 97.1030 through 40 CFR 97.1035 and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

c) NO_x emissions requirements.

- 1) CSAPR NO_x Ozone Season Group 3 emissions limitation.
 - i) As of the allowance transfer deadline for a control period in a given year, the owners and operators of each CSAPR NO_x Ozone Season Group 3 source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall hold, in the source's compliance account, CSAPR NO_x Ozone Season Group 3 allowances available for deduction for such control period under 40 CFR 97.1024(a) in an amount not less than the tons of total NO_x emissions for such control period from all CSAPR NO_x Ozone Season Group 3 units at the source.
 - ii) If total NO_x emissions during a control period in a given year from the CSAPR NO_x Ozone Season Group 3 units at a CSAPR NO_x Ozone Season Group 3 source are in

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

excess of the CSAPR NO_x Ozone Season Group 3 emissions limitation set forth in paragraph (c)(1)(i) above, then:

- A) The owners and operators of the source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall hold the CSAPR NO_x Ozone Season Group 3 allowances required for deduction under 40 CFR 97.1024(d); and
 - B) The owners and operators of the source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation of 40 CFR 97, Subpart GGGGG, and the Clean Air Act.
- 2) CSAPR NO_x Ozone Season Group 3 assurance provisions.
- i) If total NO_x emissions during a control period in a given year from all base CSAPR NO_x Ozone Season Group 3 units at CSAPR NO_x Ozone Season Group 3 sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such NO_x emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) CSAPR NO_x Ozone Season Group 3 allowances available for deduction for such control period under 40 CFR 97.1025(a) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 40 CFR 97.1025(b), of multiplying—
 - A) The quotient of the amount by which the common designated representative's share of such NO_x emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such NO_x emissions exceeds the respective common designated representative's assurance level; and
 - B) The amount by which total NO_x emissions from all base CSAPR NO_x Ozone Season Group 3 units at base CSAPR NO_x Ozone Season Group 3 sources in the state for such control period exceed the state assurance level.
 - ii) The owners and operators shall hold the CSAPR NO_x Ozone Season Group 3 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after the year of such control period.
 - iii) Total NO_x emissions from all CSAPR NO_x Ozone Season Group 3 units at CSAPR NO_x Ozone Season Group 3 sources in the state during a control period in a given year exceed the state assurance level if such total NO_x emissions exceed the sum, for such control period, of the State NO_x Ozone Season Group 3 trading budget under 40 CFR 97.1010(a), the state's variability limit under 40 CFR 97.1010(b), and, for the control period in 2021 only, the product (rounded to the nearest allowance) of 1.21 multiplied by the supplemental amount of CSAPR NO_x Ozone Season Group 3 allowances determined for the state under 40 CFR 97.1010(d).
 - iv) It shall not be a violation of 40 CFR 97, Subpart GGGGG, or of the Clean Air Act if total NO_x emissions from all base CSAPR NO_x Ozone Season Group 3 units at base CSAPR NO_x Ozone Season Group 3 sources in the state during a control period exceed

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- the state assurance level or if a common designated representative's share of total NO_x emissions from the base CSAPR NO_x Ozone Season Group 3 units at base CSAPR NO_x Ozone Season Group 3 sources in the state during a control period exceeds the common designated representative's assurance level.
- v) To the extent the owners and operators fail to hold CSAPR NO_x Ozone Season Group 3 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
 - A) The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
 - B) Each CSAPR NO_x Ozone Season Group 3 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 40 CFR 97, Subpart GGGGG and the Clean Air Act.
 - 3) Compliance periods.
 - i) A CSAPR NO_x Ozone Season Group 3 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of May 1, 2021 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.1030(b) and for each control period thereafter.
 - ii) A base CSAPR NO_x Ozone Season Group 3 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of May 1, 2021 or the deadline for meeting the unit's monitor certification requirements under 40 CFR 97.1030(b) and for each control period thereafter.
 - 4) Vintage of CSAPR NO_x Ozone Season Group 3 allowances held for compliance.
 - i) A CSAPR NO_x Ozone Season Group 3 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year shall be a CSAPR NO_x Ozone Season Group 3 allowance that was allocated or auctioned for such control period or a control period in a prior year.
 - ii) A CSAPR NO_x Ozone Season Group 3 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year shall be a CSAPR NO_x Ozone Season Group 3 allowance that was allocated or auctioned for a control period in a prior year or the control period in the given year or in the immediately following year.
 - 5) Allowance Management System requirements. Each CSAPR NO_x Ozone Season Group 3 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 40 CFR 97, Subpart GGGGG.
 - 6) Limited authorization. A CSAPR NO_x Ozone Season Group 3 allowance is a limited authorization to emit one ton of NO_x during the control period in one year. Such authorization is limited in its use and duration as follows:
 - i) Such authorization shall only be used in accordance with the CSAPR NO_x Ozone Season Group 3 Trading Program; and
 - ii) Notwithstanding any other provision of 40 CFR 97, Subpart GGGGG, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
 - 7) Property right. A CSAPR NO_x Ozone Season Group 3 allowance does not constitute a property right.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)**d) Title V permit requirements.**

- 1) No Title V permit revision shall be required for any allocation, holding, deduction, or transfer of CSAPR NO_x Ozone Season Group 3 allowances in accordance with 40 CFR 97, Subpart GGGGG.
- 2) A description of whether a unit is required to monitor and report NO_x emissions using a continuous emission monitoring system (pursuant to 40 CFR 75, Subpart H), an excepted monitoring system (pursuant to 40 CFR 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), or an alternative monitoring system (pursuant to 40 CFR 75, Subpart E) in accordance with 40 CFR 97.1030 through 40 CFR 97.1035 may be added to, or changed in, this Title V permit using minor permit modification procedures in accordance with 40 CFR 70.7(e)(2) and 40 CFR 71.7(e)(1), provided that the requirements applicable to the described monitoring and reporting (as added or changed, respectively) are already incorporated in such permit. This paragraph explicitly provides that the addition of, or change to, a unit's description as described in the prior sentence is eligible for minor permit modification procedures in accordance with 40 CFR 70.7(e)(2)(i)(B) and 40 CFR 71.7(e)(1)(i)(B).

e) Additional recordkeeping and reporting requirements.

- 1) Unless otherwise provided, the owners and operators of each CSAPR NO_x Ozone Season Group 3 source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall maintain on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
 - i) The certificate of representation under 40 CFR 97.1016 for the designated representative for the source and each CSAPR NO_x Ozone Season Group 3 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.1016 changing the designated representative.
 - ii) All emissions monitoring information, in accordance with 40 CFR 97, Subpart GGGGG.
 - iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the CSAPR NO_x Ozone Season Group 3 Trading Program.
- 2) The designated representative of a CSAPR NO_x Ozone Season Group 3 source and each CSAPR NO_x Ozone Season Group 3 unit at the source shall make all submissions required under the CSAPR NO_x Ozone Season Group 3 Trading Program, except as provided in 40 CFR 97.1018. This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a Title V operating permit program in 40 CFR Parts 70 and 71.

f) Liability.

- 1) Any provision of the CSAPR NO_x Ozone Season Group 3 Trading Program that applies to a CSAPR NO_x Ozone Season Group 3 source or the designated representative of a CSAPR NO_x Ozone Season Group 3 source shall also apply to the owners and operators of such source and of the CSAPR NO_x Ozone Season Group 3 units at the source.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- 2) Any provision of the CSAPR NO_x Ozone Season Group 3 Trading Program that applies to a CSAPR NO_x Ozone Season Group 3 unit or the designated representative of a CSAPR NO_x Ozone Season Group 3 unit shall also apply to the owners and operators of such unit.

g) Effect on other authorities.

No provision of the CSAPR NO_x Ozone Season Group 3 Trading Program or exemption under 40 CFR 97.1005 shall be construed as exempting or excluding the owners and operators, and the designated representative, of a CSAPR NO_x Ozone Season Group 3 source or CSAPR NO_x Ozone Season Group 3 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.

CSAPR SO₂ Group 1 Trading Program requirements (401 KAR 51:260, Section 3(4))**a) Designated representative requirements.**

The owners and operators shall comply with the requirement to have a designated representative, and may have an alternate designated representative, in accordance with 401 KAR 51:260, Section 3(10) through 401 KAR 51:260, Section 3(15).

b) Emissions monitoring, reporting, and recordkeeping requirements.

- 1) The owners and operators, and the designated representative, of each CSAPR SO₂ Group 1 source and each CSAPR SO₂ Group 1 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of 401 KAR 51:260, Section 3(25) (general requirements, including installation, certification, and data accounting, compliance deadlines, reporting data, prohibitions, and long-term cold storage), 401 KAR 51:260, Section 3(26) (initial monitoring system certification and recertification procedures), 401 KAR 51:260, Section 3(27) (monitoring system out-of-control periods), 401 KAR 51:260, Section 3(28) (notifications concerning monitoring), 401 KAR 51:260, Section 3(29) (recordkeeping and reporting, including monitoring plans, certification applications, quarterly reports, and compliance certification), and 401 KAR 51:260, Section 3(30) (petitions for alternatives to monitoring, recordkeeping, or reporting requirements).
- 2) The emissions data determined in accordance with 401 KAR 51:260, Section 3(25) through 401 KAR 51:260, Section 3(30) shall be used to calculate allocations of CSAPR SO₂ Group 1 allowances under 401 KAR 51:260, Section 3(8) (40 CFR 97.611(a)(2)) and (b)) and 401 KAR 51:260, Section 3(9) and to determine compliance with the CSAPR SO₂ Group 1 emissions limitation and assurance provisions under paragraph (c) below, provided that, for each monitoring location from which mass emissions are reported, the mass emissions amount used in calculating such allocations and determining such compliance shall be the mass emissions amount for the monitoring location determined in accordance with 401 KAR 51:260, Section 3(25) through 401 KAR 51:260, Section 3(30) and rounded to the nearest ton, with any fraction of a ton less than 0.50 being deemed to be zero.

c) SO₂ emissions requirements.

- 1) CSAPR SO₂ Group 1 emissions limitation.
 - i) As of the allowance transfer deadline for a control period in a given year, the owners and operators of each CSAPR SO₂ Group 1 source and each CSAPR SO₂ Group 1 unit at the source shall hold, in the source's compliance account, CSAPR SO₂ Group 1 allowances available for deduction for such control period under 401 KAR 51:260, Section 3(20) (40 CFR 97.624(a)) in an amount not less than the tons of total SO₂ emissions for such control period from all CSAPR SO₂ Group 1 units at the source.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- ii) If total SO₂ emissions during a control period in a given year from the CSAPR SO₂ Group 1 units at a CSAPR SO₂ Group 1 source are in excess of the CSAPR SO₂ Group 1 emissions limitation set forth in paragraph (c)(1)(i) above, then:
 - A) The owners and operators of the source and each CSAPR SO₂ Group 1 unit at the source shall hold the CSAPR SO₂ Group 1 allowances required for deduction under 401 KAR 51:260, Section 3(20) (40 CFR 97.624(d)); and
 - B) The owners and operators of the source and each CSAPR SO₂ Group 1 unit at the source shall pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act, and each ton of such excess emissions and each day of such control period shall constitute a separate violation 401 KAR 51:260, 40 CFR 97, Subpart CCCCC, and the Clean Air Act.
- 2) CSAPR SO₂ Group 1 assurance provisions.
 - i) If total SO₂ emissions during a control period in a given year from all CSAPR SO₂ Group 1 units at CSAPR SO₂ Group 1 sources in the state exceed the state assurance level, then the owners and operators of such sources and units in each group of one or more sources and units having a common designated representative for such control period, where the common designated representative's share of such SO₂ emissions during such control period exceeds the common designated representative's assurance level for the state and such control period, shall hold (in the assurance account established for the owners and operators of such group) CSAPR SO₂ Group 1 allowances available for deduction for such control period under 401 KAR 51:260, Section 3(21) (40 CFR 97.625(a)) in an amount equal to two times the product (rounded to the nearest whole number), as determined by the Administrator in accordance with 401 KAR 51:260, Section 3(21) (40 CFR 97.625(b)), of multiplying—
 - A) The quotient of the amount by which the common designated representative's share of such SO₂ emissions exceeds the common designated representative's assurance level divided by the sum of the amounts, determined for all common designated representatives for such sources and units in the state for such control period, by which each common designated representative's share of such SO₂ emissions exceeds the respective common designated representative's assurance level; and
 - B) The amount by which total SO₂ emissions from all CSAPR SO₂ Group 1 units at CSAPR SO₂ Group 1 sources in the state for such control period exceed the state assurance level.
 - ii) The owners and operators shall hold the CSAPR SO₂ Group 1 allowances required under paragraph (c)(2)(i) above, as of midnight of November 1 (if it is a business day), or midnight of the first business day thereafter (if November 1 is not a business day), immediately after such control period.
 - iii) Total SO₂ emissions from all CSAPR SO₂ Group 1 units at CSAPR SO₂ Group 1 sources in the state during a control period in a given year exceed the state assurance level if such total SO₂ emissions exceed the sum, for such control period, of the state SO₂ Group 1 trading budget under 401 KAR 51:260, Section 3(7)(a)(1) and the state's variability limit under 401 KAR 51:260, Section 3(7)(a)(3).
 - iv) It shall not be a violation of 401 KAR 51:260, 40 CFR 97, Subpart CCCCC, or of the Clean Air Act if total SO₂ emissions from all CSAPR SO₂ Group 1 units at CSAPR SO₂ Group 1 sources in the state during a control period exceed the state assurance level or if a common designated representative's share of total SO₂ emissions from the

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- CSAPR SO₂ Group 1 units at CSAPR SO₂ Group 1 sources in the state during a control period exceeds the common designated representative's assurance level.
- v) To the extent the owners and operators fail to hold CSAPR SO₂ Group 1 allowances for a control period in a given year in accordance with paragraphs (c)(2)(i) through (iii) above,
 - A) The owners and operators shall pay any fine, penalty, or assessment or comply with any other remedy imposed under the Clean Air Act; and
 - B) Each CSAPR SO₂ Group 1 allowance that the owners and operators fail to hold for such control period in accordance with paragraphs (c)(2)(i) through (iii) above and each day of such control period shall constitute a separate violation of 401 KAR 51:260, 40 CFR 97, Subpart CCCCC and the Clean Air Act.
 - 3) Compliance periods.
 - i) A CSAPR SO₂ Group 1 unit shall be subject to the requirements under paragraph (c)(1) above for the control period starting on the later of January 1, 2015 or the deadline for meeting the unit's monitor certification requirements under 401 KAR 51:260, Section 3(25) (40 CFR 97.630(b)) and for each control period thereafter.
 - ii) A CSAPR SO₂ Group 1 unit shall be subject to the requirements under paragraph (c)(2) above for the control period starting on the later of January 1, 2017 or the deadline for meeting the unit's monitor certification requirements under 401 KAR 51:260, Section 3(25) (40 CFR 97.630(b)) and for each control period thereafter.
 - 4) Vintage of allowances held for compliance.
 - i) A CSAPR SO₂ Group 1 allowance held for compliance with the requirements under paragraph (c)(1)(i) above for a control period in a given year shall be a CSAPR SO₂ Group 1 allowance that was allocated for such control period or a control period in a prior year.
 - ii) A CSAPR SO₂ Group 1 allowance held for compliance with the requirements under paragraphs (c)(1)(ii)(A) and (2)(i) through (iii) above for a control period in a given year shall be a CSAPR SO₂ Group 1 allowance that was allocated for a control period in a prior year or the control period in the given year or in the immediately following year.
 - 5) Allowance Management System requirements. Each CSAPR SO₂ Group 1 allowance shall be held in, deducted from, or transferred into, out of, or between Allowance Management System accounts in accordance with 401 KAR 51:260.
 - 6) Limited authorization. CSAPR SO₂ Group 1 allowance is a limited authorization to emit one ton of SO₂ during the control period in one year. Such authorization is limited in its use and duration as follows:
 - i) Such authorization shall only be used in accordance with the CSAPR SO₂ Group 1 Trading Program; and
 - ii) Notwithstanding any other provision of 401 KAR 51:260, the Administrator has the authority to terminate or limit the use and duration of such authorization to the extent the Administrator determines is necessary or appropriate to implement any provision of the Clean Air Act.
 - 7) Property right. CSAPR SO₂ Group 1 allowance does not constitute a property right.
- d) Title V permit revision requirements.**
- 1) No Title V permit revision shall be required for any allocation, holding, deduction, or transfer of CSAPR SO₂ Group 1 allowances in accordance with 401 KAR 51:260.

SECTION L – CROSS-STATE AIR POLLUTION RULE (CONTINUED)

- 2) This permit incorporates the CSAPR emissions monitoring, recordkeeping and reporting requirements pursuant to 401 KAR 51:260, Section 3(25) through 401 KAR 51:260, Section 3(30), and the requirements for a continuous emission monitoring system (pursuant to 40 CFR 75, Subparts B and H), an excepted monitoring system (pursuant to 40 CFR 75, Appendices D and E), a low mass emissions excepted monitoring methodology (pursuant to 40 CFR 75.19), and an alternative monitoring system (pursuant to 40 CFR 75, Subpart E). Therefore, the Description of CSAPR Monitoring Provisions table for units identified in this permit may be added to, or changed, in this Title V permit using minor permit modification procedures in accordance with 401 KAR 51:260, Section 3(4) (40 CFR 97.606(d)(2)) and 70.7(e)(2)(i)(B).

e) Additional recordkeeping and reporting requirements.

- 1) Unless otherwise provided, the owners and operators of each CSAPR SO₂ Group 1 source and each CSAPR SO₂ Group 1 unit at the source shall maintain on site at the source each of the following documents (in hardcopy or electronic format) for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the Administrator.
 - i) The certificate of representation under 401 KAR 51:260, Section 3(13) for the designated representative for the source and each CSAPR SO₂ Group 1 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such certificate of representation and documents are superseded because of the submission of a new certificate of representation under 40 CFR 97.616 changing the designated representative.
 - ii) All emissions monitoring information, in accordance with 401 KAR 51:260.
 - iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under, or to demonstrate compliance with the requirements of, the CSAPR SO₂ Group 1 Trading Program.
- 2) The designated representative of a CSAPR SO₂ Group 1 source and each CSAPR SO₂ Group 1 unit at the source shall make all submissions required under the CSAPR SO₂ Group 1 Trading Program, except as provided in 401 KAR 51:260, Section 3(15). This requirement does not change, create an exemption from, or otherwise affect the responsible official submission requirements under a Title V operating permit program in 40 CFR 70.

f) Liability.

- 1) Any provision of the CSAPR SO₂ Group 1 Trading Program that applies to a CSAPR SO₂ Group 1 source or the designated representative of a CSAPR SO₂ Group 1 source shall also apply to the owners and operators of such source and of the CSAPR SO₂ Group 1 units at the source.
- 2) Any provision of the CSAPR SO₂ Group 1 Trading Program that applies to a CSAPR SO₂ Group 1 unit or the designated representative of a CSAPR SO₂ Group 1 unit shall also apply to the owners and operators of such unit.

g) Effect on other authorities.

No provision of the CSAPR SO₂ Group 1 Trading Program or exemption under 401 KAR 51:260, Section 3(3) shall be construed as exempting or excluding the owners and operators, and the designated representative, of a CSAPR SO₂ Group 1 source or CSAPR SO₂ Group 1 unit from compliance with any other provision of the applicable, approved state implementation plan, a federally enforceable permit, or the Clean Air Act.



201 Third Street
P.O. Box 24
Henderson, KY 42419-0024
270-827-2561
www.bigrivers.com

December 16, 2020

Mr. Zachary Bittner
Permit Review Branch
Combustion Section Supervisor
Kentucky Division for Air Quality
300 Sower Blvd., 2nd Floor
Frankfort, KY 40601

RE: Title V Permit Renewal Application
Big Rivers Electric Corporation - D.B. Wilson Station; AI 3319
Centertown, Kentucky

Dear Mr. Bittner:

Big Rivers Electric Corporation (Big Rivers) operates a coal-fired electric generating unit (EGU) in Centertown, KY, called the D.B. Wilson Station (Wilson Station). The Wilson Station is regulated as a "major source" under 401 KAR 52:020 and operates under the authority of Title V Permit V-16-032 R2, issued by the Kentucky Division for Air Quality (KDAQ) on June 20, 2016, and most recently revised on February 23, 2019. The permit expires on June 20, 2021; therefore, a complete Title V Renewal (TVR) application must be submitted prior to December 20, 2020.

Through this application, Big Rivers is satisfying the renewal obligations by submitting a complete renewal application to convey information related to corrections or updates that is new or different from the most recent source-wide permit application. To facilitate processing of the TVR application and the desired revisions to the Title V permit, Big Rivers has enclosed DEP 7007 series forms AI and DD (Attachment A).

ACTIVITIES OVER THE FIVE-YEAR TERM

Besides the most recent submittal of a Minor Permit Revision application, all Off-Permit Changes, Section 502(b)(10) Change notifications, etc. have been adequately addressed within V-16-013 R2. Here is list of applications submitted since the last Title V renewal permit was issued on June 20, 2016.

MINOR PERMIT REVISION V-16-013 *TBD* (October 19, 2020)

On September 25, 2020, the Division received an application for minor permit revision to Wilson's Title V permit (V-16-013 R2). The application was deemed complete on October 19, 2020. The minor revision included a replacement for the existing FGD with a newer, more efficient system that will reduce potential emissions of SO₂.

ADMINISTRATIVE CHANGE: V-16-013 R2 (February 25, 2019)

The Division received an application for administrative change to the Title V permit V-16-013 R1. This application sought to revise the Phase II NO_x Averaging and Compliance plan effective 2017-2021 for emission unit 01 (W1). Big Rivers terminated the averaging plan and reverted to Title IV NO_x emission limit as out lined in 40 CFR 76.7. The administrative change was incorporated in the Title V Permit.

MINOR PERMIT REVISION V-16-013 R2 (September 1, 2017)

On September 14, 2016, the Division received an application for minor permit revision to Wilson's Title V permit (V-16-013). The minor revision included a change to the averaging time for the particulate matter (PM) limit as required by 40 CFR 60, Subpart Da and 40 CFR 52.21 for W1. The request was to change the averaging time from a six-hour average to a boiler operating day average. The Division reviewed available records and determined that the BACT limit was originally met by complying with 401 KAR 59:016. 401 KAR 59:016 contained the provisions of 40 CFR 60, Subpart Da, so when the provisions of the NSPS were adopted in 401 KAR 60:005, 401 KAR 59:016 was repealed. Therefore since BACT was met by meeting 401 KAR 59:016, which contained the provisions of 40 CFR 60, Subpart Da, compliance with BACT is still met by using alternate compliance averaging times in 40 CFR 60, Subpart Da while using PM CEMS. 40 CFR 63, Subpart UUUUU (MATS) was revised; therefore, the revision also contained revisions to requirements under MATS.

OFF PERMIT CHANGE to V-16-013 (May 30, 2017)

Big Rivers requested approval to temporarily treat coal with CoalStar E² enzyme solution and fire the treated coal in W1 between April 21 and June 16, 2017.

OFF PERMIT CHANGE to V-16-013 (November 11, 2016)

Big Rivers requested approval to temporarily treat coal with CoalStar E² enzyme solution and fire the treated coal in W1 between April 1 and May 15, 2017.

OFF PERMIT CHANGE to V-16-013 (September 20, 2016)

Big Rivers requested approval to temporarily treat coal with CoalStar E² enzyme solution and fire the treated coal in W1 between October 10 and December 10, 2016.

EDITS TO PERMIT

As the Division renews the Wilson Title V permit, please review the changes made to Big River's Green Station (V-19-020) that was finalized on July 5, 2020.

- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Please make edits to the applicable MATS section of the permit consistent with the Final Rule published in the Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - 1. a), page 2 of 63 – please replace the 1st paragraph with the following, “a) The permittee is required to meet work practice requirements specified in 40 CFR 63, Subpart UUUUU, Table 3, Items 3 and 4 at all times during periods of startup per paragraph 1. **Operating Limitations:** (a)(i) and (ii) and shutdown requirements per 1. **Operating Limitations:** (b) [40 CFR 63.9991(a) and 40 CFR 63.10000(a)]” and move the following elsewhere in the operating limitations where Table 3a items are mentioned, “The permittee shall use clean fuels as defined in 40 CFR 63.10042 for ignition. The permittee shall operate all continuous emissions monitoring systems (CEMS) during startup. The permittee may use the diluent cap and default electrical load values, as described in 40 CFR 63.10007(f), during startup periods or shutdown periods. Any fraction of an hour in which startup occurs constitutes a full hour of startup.”
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Please revise various references to Table 3 throughout the permit consistent with the regulatory citations in the Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.

- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **1.** d) 9), page 5 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10021(e)(9) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **1.** f), page 5 of 63 – please replace entire paragraph with the regulatory citation of 40 CFR 63.10020(b) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **1.** h), page 6 of 63 – please replace entire paragraph with the regulatory citation of 40 CFR 63.10020(d) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **5.** a), page 11 of 63 – please add the following to the citation at the end of the paragraph, "... [401 KAR 59:005, Section 3(4), 40 CFR 60.7(f)]".
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **5.** b), page 11 of 63 – please add the following to the citation at the end of the paragraph, "... [401 KAR 59:005, Section 3(4), 40 CFR 60.7(b)]".
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **5.** g), page 11 of 63 – please replace entire paragraph with the regulatory citation of 40 CFR 63.10032(a) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **5.** h), page 11 of 63 – please replace entire paragraph with the regulatory citation of 40 CFR 63.10032(a)(1) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **5.** l), page 12 of 63 – please replace entire paragraph with the regulatory citation of 40 CFR 63.10010(i)(5) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6.** d), page 14 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10031(c) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6.** After e), on page 15 of 63 – recommend adding a new paragraph with the information in 40 CFR 63.10031(e) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.

- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6. f**), page 15 of 63 – please replace entire paragraph with the following, “Prior to January 1, 2024, report the tune-up date electronically, in a PDF file, in your semiannual compliance report, as specified in 40 CFR 63.10031(f)(4) and (6) and, if requested by the Administrator, in hard copy, as specified in 40 CFR 63.10031(f)(5). On and after January 1, 2024, report the tune-up date electronically in your quarterly compliance report, in accordance with 40 CFR 63.10031(g) and section 10.2 of appendix E to this subpart. The tune-up report date is the date when tune-up requirements in paragraphs (e)(6) and (7) of this section are completed.” pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6. m**), page 15 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10030(e) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6. n**), page 16 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10031(b) and Table 8 pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6. p**), page 16 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10031(g) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Emissions Unit 01 (W1): Indirect Heat Exchanger – Coal Fired Boiler
Section B - **6. r**), pages 17 and 18 of 63 – please revise the paragraph with the regulatory citation of 40 CFR 63.10031(f) pursuant to Federal Register / Vol. 85, No. 175 / Wednesday, September 9, 2020, pages 55744-55780.
- Section J – Acid Rain Permit
In reference to the Acid Rain section of the permit on pages 48 and 49 of 63, please see Attachment B for the Acid Rain Permit Renewal and NOx Compliance Plan.

Please update the allowances for SO₂.

REGULATORY ANALYSIS

The state and federal regulatory citations remain unchanged.

Certification Statement

Based on information and belief formed after reasonable inquiry, the statements and information contained in this notification are true, accurate, and complete and the planned changes meets the criteria of an off-permit change. This declaration is affirmed by the Wilson Station’s responsible official via the signature on the DEP 7007AI form in Attachment A. Through this letter and application, Big Rivers requests use of these procedures in accordance with 401 KAR 52:020, Section 17.

Mr. Bittner - Page 5
December 16, 2020

If you have any questions or comments about the information presented in this application, please do not hesitate to contact Mike Galbraith at (270) 844-5203 or Michael.Galbraith@bigrivers.com.

Sincerely,

Big Rivers

A handwritten signature in blue ink that reads "Nathan Berry". The signature is written in a cursive style.

Nathan Berry
Plant Manager, Wilson Station

Attachments

cc: Mr. Mike Pullen, Big Rivers
Mr. Mike Mizell, Big Rivers
Mr. Mike Galbraith, Big Rivers
Mr. Mike Zimmer, Trinity

ATTACHMENT A

DEP 7007 Forms

<p style="text-align: center;">Division for Air Quality</p> <p style="text-align: center;">300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999</p>	<p>DEP7007AI</p> <p>Administrative Information</p> <p><input type="checkbox"/> Section AI.1: Source Information</p> <p><input type="checkbox"/> Section AI.2: Applicant Information</p> <p><input type="checkbox"/> Section AI.3: Owner Information</p> <p><input type="checkbox"/> Section AI.4: Type of Application</p> <p><input type="checkbox"/> Section AI.5: Other Required Information</p> <p><input type="checkbox"/> Section AI.6: Signature Block</p> <p><input type="checkbox"/> Section AI.7: Notes, Comments, and Explanations</p>	<p style="text-align: center;">Additional Documentation</p> <p style="text-align: center;">___ Additional Documentation attached</p>																				
<p>Source Name: <u>Big Rivers Electric Corporation - D.B. Wilson Station</u></p> <p>KY EIS (AFS) #: <u>21- 183-00069</u></p> <p>Permit #: <u>V-16-013 R2</u></p> <p>Agency Interest (AI) ID: <u>3319</u></p> <p>Date: <u>12/16/2020</u></p>																						
<p>Section AI.1: Source Information</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Physical Location</td> <td style="width: 15%;">Street:</td> <td colspan="3"><u>5663 State Route 85 West</u></td> </tr> <tr> <td>Address:</td> <td>City:</td> <td>County:</td> <td>Ohio</td> <td>Zip Code: <u>42328</u></td> </tr> <tr> <td>Mailing Address:</td> <td>Street or P.O. Box:</td> <td colspan="3"><u>201 Third Street</u></td> </tr> <tr> <td></td> <td>City:</td> <td>State:</td> <td>KY</td> <td>Zip Code: <u>42420</u></td> </tr> </table>			Physical Location	Street:	<u>5663 State Route 85 West</u>			Address:	City:	County:	Ohio	Zip Code: <u>42328</u>	Mailing Address:	Street or P.O. Box:	<u>201 Third Street</u>				City:	State:	KY	Zip Code: <u>42420</u>
Physical Location	Street:	<u>5663 State Route 85 West</u>																				
Address:	City:	County:	Ohio	Zip Code: <u>42328</u>																		
Mailing Address:	Street or P.O. Box:	<u>201 Third Street</u>																				
	City:	State:	KY	Zip Code: <u>42420</u>																		
<p>Standard Coordinates for Source Physical Location</p> <p>Longitude: <u>-87.079096</u> (decimal degrees) Latitude: <u>37.452104</u> (decimal degrees)</p>																						
<p>Primary (NAICS) Category: <u>Fossil Fuel Electric Power Generation</u> Primary NAICS #: <u>221112</u></p>																						

Classification (SIC) Category: <u>Fossil Fuel Electric Power Generation</u>		Primary SIC #: <u>4911006</u>	
Briefly discuss the type of business conducted at this site: <div style="border: 1px solid black; padding: 5px; min-height: 20px;">Fossil fuel-fired electric power generation</div>			
Description of Area Surrounding Source:	<input checked="" type="checkbox"/> Rural Area	<input type="checkbox"/> Industrial Park	<input type="checkbox"/> Residential Area
	<input type="checkbox"/> Urban Area	<input type="checkbox"/> Industrial Area	<input type="checkbox"/> Commercial Area
		Is any part of the source located on federal land?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
			Number of Employees: 108
Approximate distance to nearest residence or commercial property: <u>1 mile</u>		Property Area: <u>2034</u>	Is this source portable? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?			
NPDES/KPDES:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
Solid Waste:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
RCRA:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
UST:	<input checked="" type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input type="checkbox"/> N/A
Type of Regulated Waste Activity:	<input type="checkbox"/> Mixed Waste Generator	<input checked="" type="checkbox"/> Generator	<input type="checkbox"/> Recycler
	<input type="checkbox"/> U.S. Importer of Hazardous Waste	<input type="checkbox"/> Transporter	<input type="checkbox"/> Treatment/Storage/Disposal Facility
		<input type="checkbox"/> Other: _____	<input type="checkbox"/> N/A

Section AI.2: Applicant Information	
Applicant Name:	<u>Nathan Berry</u>
Title: (if individual)	<u>Plant Manager</u>
Mailing Address:	Street or P.O. Box: <u>5663 State Route 85 West</u>
	City: <u>Centertown</u> State: <u>KY</u> Zip Code: <u>42328</u>
Email: (if individual)	<u>nathan.berry@bigrivers.com</u>
Phone:	<u>270-844-5009</u>
Technical Contact	
Name:	<u>Mike Galbraith</u>
Title:	<u>Environmental Services Manager</u>
Mailing Address:	Street or P.O. Box: <u>5663 State Route 85 West</u>
	City: <u>Centertown</u> State: <u>KY</u> Zip Code: <u>42328</u>
Email:	<u>Michael.Galbraith@bigrivers.com</u>
Phone:	<u>270-844-5023</u>
Air Permit Contact for Source	
Name:	<u>Same as Technical Contact</u>
Title:	_____
Mailing Address:	Street or P.O. Box: _____
	City: _____ State: _____ Zip Code: _____
Email:	_____
Phone:	_____

Section AI.3: Owner Information	
<input checked="" type="checkbox"/> Owner same as applicant	
Name:	_____
Title:	_____
Mailing Address:	Street or P.O. Box: _____
	City: _____ State: _____ Zip Code: _____
Email:	_____
Phone:	_____
List names of owners and officers of the company who have an interest in the company of 5% or more.	
Name	Position
_____	_____
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status: Title V Conditional Major State-Origin General Permit Registration None

Name Change Initial Registration Significant Revision Administrative Permit Amendment

Requested Action: Renewal Permit Revised Registration Minor Revision Initial Source-wide Operating Permit
(check all that apply)

502(b)(10)Change Extension Request Addition of New Facility Portable Plant Relocation Notice

Revision Off Permit Change Landfill Alternate Compliance Submittal Modification of Existing Facilities

Ownership Change Closure

Requested Status: Title V Conditional Major State-Origin PSD NSR Other: _____

Is the source requesting a limitation of potential emissions? Yes No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
<input type="checkbox"/> Particulate Matter	_____	<input type="checkbox"/> Single HAP	_____
<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____	<input type="checkbox"/> Combined HAPs	_____
<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____
<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Carbon Dioxide	_____
<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____
<input type="checkbox"/> Lead	_____	<input type="checkbox"/> Other	_____

For New Construction:

Proposed Start Date of Construction: _____ **Proposed Operation Start-Up Date:** (MM/YYYY) _____
 (MM/YYYY)

For Modifications:

Proposed Start Date of Modification: _____ **Proposed Operation Start-Up Date:** (MM/YYYY) _____
 (MM/YYYY)

Applicant is seeking coverage under a permit shield. Yes No **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- | | |
|--|---|
| <input type="checkbox"/> DEP7007A Indirect Heat Exchangers and Turbines | <input checked="" type="checkbox"/> DEP7007CC Compliance Certification See CY2019 ACC |
| <input type="checkbox"/> DEP7007B Manufacturing or Processing Operations | <input checked="" type="checkbox"/> DEP7007DD Insignificant Activities |
| <input checked="" type="checkbox"/> DEP7007C Incinerators and Waste Burners | <input type="checkbox"/> DEP7007EE Internal Combustion Engines |
| <input type="checkbox"/> DEP7007F Episode Standby Plan | <input type="checkbox"/> DEP7007FF Secondary Aluminum Processing |
| <input type="checkbox"/> DEP7007J Volatile Liquid Storage | <input type="checkbox"/> DEP7007GG Control Equipment |
| <input type="checkbox"/> DEP7007K Surface Coating or Printing Operations | <input type="checkbox"/> DEP7007HH Haul Roads |
| <input type="checkbox"/> DEP7007L Mineral Processes | <input type="checkbox"/> Confidentiality Claim |
| <input type="checkbox"/> DEP7007M Metal Cleaning Degreasers | <input type="checkbox"/> Ownership Change Form |
| <input type="checkbox"/> DEP7007N Source Emissions Profile | <input type="checkbox"/> Secretary of State Certificate |
| <input type="checkbox"/> DEP7007P Perchloroethylene Dry Cleaning Systems | <input type="checkbox"/> Flowcharts or diagrams depicting process |
| <input type="checkbox"/> DEP7007R Emission Offset Credit | <input type="checkbox"/> Digital Line Graphs (DLG) files of buildings, roads, etc. |
| <input type="checkbox"/> DEP7007S Service Stations | <input type="checkbox"/> Site Map |
| <input type="checkbox"/> DEP7007T Metal Plating and Surface Treatment Operations | <input type="checkbox"/> Map or drawing depicting location of facility |
| <input type="checkbox"/> DEP7007V Applicable Requirements and Compliance Activities | <input type="checkbox"/> Safety Data Sheet (SDS) |
| <input type="checkbox"/> DEP7007Y Good Engineering Practice and Stack Height Determination | <input type="checkbox"/> Emergency Response Plan |
| <input type="checkbox"/> DEP7007AA Compliance Schedule for Non-complying Emission Units | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> DEP7007BB Certified Progress Report | |

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.



 Authorized Signature

12/16/2020

 Date

Nathan Berry

 Type or Printed Name of Signatory

Plant Manager - D.B. Wilson Station

 Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007DD Insignificant Activities ___ Section DD.1: Table of Insignificant Activities ___ Section DD.2: Signature Block ___ Section DD.3: Notes, Comments, and Explanations
Source Name:	<u>Big Rivers Electric Corporation - D.B. Wilson Station</u>
KY EIS (AFS) #:	21- <u>183-00069</u>
Permit #:	<u>V-16-013 R2</u>
Agency Interest (AI) ID:	<u>3319</u>
Date:	<u>12/16/2020</u>

Section DD.1: Table of Insignificant Activities


*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
1	Bottom Ash Handling		401 KAR 61.010	< 5 tpy
2	Fire pump diesel fuel storage tank (500 gallons)		None	<0.001 tpy VOC
3	Diesel fuel storage tank (550 gallons)		None	<0.001 tpy VOC
4	Gasoline storage and dispensing tank (2,000 gallons)		None	<0.4 tpy VOC and < 0.1 tpy HAPs
5	Landfill eqpt. diesel fuel storage (2,000 gallons)		None	<0.001 tpy VOC
6	Kerosene tank-North (500 gallons)		None	<0.001 tpy VOC
7	Kerosene tank-South (500 gallons)		None	<0.001 tpy VOC
8	Mobile kerosene diesel tank (1,000 gallons)		None	<0.001 tpy VOC
9	DBA tank-T1		None	Negligible
10	DBA Sodium sulfite tank-T2		None	
11	Coal handling diesel fuel storage tank (10,000 gallons)		None	<0.006 tpy VOC
12	Diesel fuel storage tanks (2 each 300,000 gallons)		None	<0.015 tpy VOC
13	Direct-fired space heater, W64 (propane)		None	
14	Direct-fired space heater, W65 (propane)		None	
15	Storage tank for emergency diesel generator (2,000 gallons)		None	<0.001 tpy VOC

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
16	Day tank for diesel generator (85-55 gallons)		None	<0.001 tpy VOC
17	Pressure Washer, Maintenance (Propane)		GHG Rule	
18	Pressure Washer, Coal Handling (Diesel)		GHG Rule	
19	Cooling tower for water treatment operation		None	
20	Closed cooling water system		None	
21	Demineralizer process operation		None	
22	Freeze protection operation for coal conveyors		None	
23	Sewage treatment plant operations		None	
24	Wastewater treatment plant operations		None	
25	Potable water treatment operations		None	
26	Pneumatic conveying of flyash/storage		401 KAR 63:010	
27	Dry Sorbent Injection System (DSI)		401 KAR 59:010, Permittee shall monitor the amount of hydrated lime received and processed on a weekly basis.	
28	Contractor's Mobile diesel tank (100 gallons)		None	<0.001 tpy VOC
29	Leachate treatment plant operations		None	Negligible

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:	 _____ Authorized Signatory	12/16/2020 _____ Date	
	Nathan Berry _____ Type/Print Name of Signatory	Plant Manager - D.B. Wilson Station _____ Title of Signatory	

Section DD.3: Notes, Comments, and Explanations

ATTACHMENT B

Acid Rain Permit Forms

D. B. Wilson
Facility (Source) Name (from STEP 1)

STEP 3

Read the standard requirements.

Permit Requirements

- (1) The designated representative of each affected source and each affected unit at the source shall:
 - (i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
 - (ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
- (2) The owners and operators of each affected source and each affected unit at the source shall:
 - (i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
 - (ii) Have an Acid Rain Permit.

Monitoring Requirements

- (1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.
- (2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the source or unit, as appropriate, with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
- (3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

- (1) The owners and operators of each source and each affected unit at the source shall:
 - (i) Hold allowances, as of the allowance transfer deadline, in the source's compliance account (after deductions under 40 CFR 73.34(c)), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the affected units at the source; and
 - (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
- (2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
- (3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
 - (i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
 - (ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
- (4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
- (5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
- (6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
- (7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Nitrogen Oxides Requirements

The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

D. B. Wilson
Facility (Source) Name (from STEP 1)

STEP 3, Cont'd.

Excess Emissions Requirements

- (1) The designated representative of an affected source that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
- (2) The owners and operators of an affected source that has excess emissions in any calendar year shall:
 - (i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
 - (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

- (1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting authority:
 - (i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
 - (ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
 - (iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
 - (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
- (2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

- (1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
- (2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
- (3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
- (4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.
- (5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
- (6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit.
- (7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

D. B. Wilson
Facility (Source) Name (from STEP 1)

STEP 3, Cont'd.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:


- (1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
- (2) Limiting the number of allowances a source can hold; provided, that the number of allowances held by the source shall not affect the source's obligation to comply with any other provisions of the Act;
- (3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
- (4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
- (5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

STEP 4

Certification

Read the certification statement, sign, and date.

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	Nathan Berry, Plant Manager	
Signature		Date 12/16/2020



Acid Rain NO_x Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

This submission is: New Revised

Page 1 of 2

STEP 1

Indicate plant name, State, and Plant code from the current Certificate of Representation covering the facility.

D. B. Wilson	KY	6823
Plant Name	State	Plant Code

STEP 2

Identify each affected Group 1 and Group 2 boiler using the unit IDs from the current Certificate of Representation covering the facility. Also indicate the boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom, and select the compliance option for each unit by making an 'X' in the appropriate row and column.

	W1				
ID#	ID#	ID#	ID#	ID#	ID#
Type	Type	Type	Type	Type	Type
(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for Phase I dry bottom wall-fired boilers)					
(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase I tangentially fired boilers)					
(c) Standard annual average emission limitation of 0.46 lb/mmBtu (for Phase II dry bottom wall-fired boilers)	X				
(d) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)					
(e) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)					
(f) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)					
(g) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)					
(h) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)					
(i) NO _x Averaging Plan (include NO _x Averaging form)					
(j) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)					
(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO _x Averaging (check the NO _x Averaging Plan box and include NO _x Averaging form)					
(l) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17(a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)					

D. B. Wilson
Plant Name (from Step 1)

STEP 3
Identify the first calendar year in which this plan will apply.

January 1, 2021

STEP 4
Read the special provisions and certification, enter the name of the designated representative, sign and date.

Special Provisions

General.

This source is subject to the standard requirements in 40 CFR 72.9. These requirements are listed in this source's Acid Rain Permit.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Nathan Berry, Plant Manager	
Signature <i>Nathan A. Berry</i>	Date 12/16/2020

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-14: *Has Big Rivers conducted any analysis or assessment of
the public health impacts of D.B. Wilson?*

- a. If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*
- b. If not, please explain why Big Rivers has chosen not to conduct such an analysis.*

RESPONSE: Big Rivers has not conducted an analysis or assessment of the public health impacts of Wilson Station.

- a. Not applicable.
- b. Big Rivers makes a concerted effort on a continuous basis to ensure that Wilson Station complies with all applicable federal and state environmental rules and regulations. By doing so, all potential environmental impacts from Wilson Station are believed to be minimized. Therefore, no additional analysis is needed.

Witness: Michael S. Mizell

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-15: *Has Big Rivers conducted any analysis or assessment of
the economic impacts of public health impacts generated by D.B. Wilson?*

- a. If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*
- b. If not, please explain why Big Rivers has chosen not to conduct such an analysis.*

RESPONSE: Big Rivers has not conducted an analysis or assessment of economic impacts of the public health impacts of Wilson Station.

- a. Not applicable.
- b. Big Rivers makes a concerted effort on a continuous basis to ensure Wilson Station complies with all applicable federal and state environmental rules and regulations. By doing so, all potential environmental impacts from D.B. Wilson Station are believed to be minimized. Therefore, no additional analysis is needed.

Witness: **Michael S. Mizell**

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-16: *Please refer to pages 41-42 of the IRP.*

- a. *Please describe the relationship between SERC and Big Rivers with respect to reliability.*
- b. *Please provide the Critical Infrastructure Protection Audit of Big Rivers.*
- c. *Please describe with specificity the “additional upgrades which increased reliability and allowed integration of significant new loads within their respective territories” by Big Rivers’ member cooperatives.*

RESPONSE:

a. SERC is one of six Regional Entities responsible for reducing risks to the reliability and security of the electric grid. SERC works under the Federal Energy Regulatory Commission approved delegation agreements with the North American Electric Reliability Corporation. Big Rivers is a member of SERC.

b. Big Rivers objects to this request on the grounds that it seeks highly sensitive cybersecurity information unrelated to this matter and because it is not reasonably tailored to lead to relevant or admissible evidence.

c. The additional upgrades include 1) 161 kV and 345 kV facilities in Meade County as described in Case No. 2019-00270; 2) 161 kV facilities in McCracken County as described in Case No. 2021-00275; and 3) 161 kV facilities in Henderson County as described in Case No. 2022-00012.

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

Witness: Christopher S. Bradley

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-17: *Please refer to page 58 of the IRP, "A Focus on Reliability."*

- a. *Please confirm that Big Rivers' balancing authority is MISO. If not confirmed, please state Big Rivers' balancing authority.*
- b. *Please confirm that Big Rivers' reliability coordinator is MISO. If not confirmed, please state Big Rivers' reliability coordinator.*
- c. *For each year from 2014 to 2022, inclusive, please provide a list of the ten days with the highest total "MWh lost," and the ten days with the highest MW of forced outages for D.B. Wilson.*
 - i. *For each of those days, please provide a list of units with MWh lost, with, for each:*
 - i. *Total MWh lost per unit*
 - ii. *The reason(s) for the outage and/or derate, including planned outage, maintenance outage, and forced outage. For forced outage, please provide a further breakdown: forced outage due to extreme weather (please specify the type of extreme weather, if known), forced outage due to mechanical problems, unavailability due to fuel supply disruption, and any other type of forced outage (with the greatest amount of specificity possible).*
- d. *For each year from 2014 to 2022, inclusive, please provide the annual figures for D.B. Wilson for:*
 - i. *The percentage of MWh lost due to:*
 - i. *Planned outages*
 - ii. *Maintenance outages*
 - iii. *Forced outages due to:*

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

- A. *Extreme weather (please break down by percentage for the type of extreme weather, if known—i.e., 5% due to extreme cold weather, 5% due to extreme heat)*
 - B. *Mechanical problems*
 - C. *Fuel supply disruption not caused by extreme weather (if this is not in the forced outage category, then please provide it in its own category)*
 - D. *Any other type of forced outage (please break down by percentage with greater specificity, if known—i.e., 5% due to strike, 5% for other reasons)*
- ii. *In each category for the percentage of MWh lost that year, please provide the percentage of MWh lost from a unit that was, at the time of outage, primarily a coal-fired unit, a gas-fired unit, a hydro unit, a solar unit, or other (with, for the “other” category, the maximum specificity possible).*
- i. *For example: X% of MWh lost in 2014 due to maintenance outages were due to maintenance outages of coal-fired units; Y% were due to maintenance outages of gas-fired units; etc.*

RESPONSE:

- a. MISO is the Balancing Authority for Big Rivers.
- b. MISO is the Reliability Coordinated for Big Rivers.
- c. See Tables 1 and 2 attached to this response.
- d. See Table 3 attached to this response.

Witnesses: Christopher S. Bradley (a and b) and Nathaniel A. Berry (c and d)

Table 1: 10 Days with the Highest Total MWh Lost Yearly

2014			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/4/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/5/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/10/2014	10,008.00	DB Wilson	Forced Outage Mechanical
5/11/2014	10,008.00	DB Wilson	Planned Outage
5/20/2014	10,008.00	DB Wilson	Planned Outage
6/8/2014	10,008.00	DB Wilson	Planned Outage
6/17/2014	10,008.00	DB Wilson	Planned Outage
6/22/2014	10,008.00	DB Wilson	Planned Outage
7/1/2014	10,008.00	DB Wilson	Forced Outage Mechanical
9/13/2014	10,008.00	DB Wilson	Forced Outage Mechanical

2015			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/12/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical
4/27/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical
4/29/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical
7/30/2015	10,008.00	DB Wilson	Forced Outage Mechanical
9/20/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical
9/21/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical
12/5/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/6/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/8/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/12/2015	10,008.00	DB Wilson	Maintenance Outage Mechanical

2016			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/24/2016	10,008.00	DB Wilson	Forced Outage Mechanical
4/12/2016	10,008.00	DB Wilson	Forced Outage Mechanical
5/1/2016	10,008.00	DB Wilson	Maintenance outage Mechanical
6/26/2016	10,008.00	DB Wilson	Forced Outage Mechanical
9/14/2016	10,008.00	DB Wilson	Forced Outage Mechanical
9/17/2016	10,008.00	DB Wilson	Forced Outage Mechanical
10/14/2016	10,008.00	DB Wilson	Forced Outage Mechanical
10/31/2016	10,008.00	DB Wilson	Forced Outage Mechanical
11/6/2016	10,008.00	DB Wilson	Forced Outage Mechanical
12/25/2023	10,008.00	DB Wilson	Forced Outage Mechanical

2017			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/5/2017	10,008.00	DB Wilson	Maintenance Outage Mechanical
2/13/2017	10,008.00	DB Wilson	Forced outage Mechanical
2/20/2017	10,008.00	DB Wilson	Foced outage Mechanical
3/4/2017	10,008.00	DB Wilson	Maintenance Outage Mechanical
4/13/2017	10,008.00	DB Wilson	Maintenance Outage Mechanical
5/1/2017	10,008.00	DB Wilson	Forced outage Mechanical
5/6/2017	10,008.00	DB Wilson	Maintenance Outage Mechanical
6/10/2017	10,008.00	DB Wilson	Maintenance Outage Mechanical
7/26/2017	10,008.00	DB Wilson	Forced outage Mechanical
8/18/2017	10,008.00	DB Wilson	Forced outage Mechanical

Table 1: 10 Days with the Highest Total MWh Lost Yearly

2018			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/17/2018	10,008.00	DB Wilson	Forced Outage Mechanical
2/24/2018	10,008.00	DB Wilson	Forced Outage Mechanical
4/5/2018	10,008.00	DB Wilson	Forced Outage Mechanical
6/3/2018	10,008.00	DB Wilson	Forced Outage Mechanical
7/25/2018	10,008.00	DB Wilson	Forced Outage Mechanical
9/13/2018	10,008.00	DB Wilson	Forced Outage Mechanical
10/1/2018	10,008.00	DB Wilson	Planned Outage
11/2/2018	10,008.00	DB Wilson	Planned Outage
11/30/2018	10,008.00	DB Wilson	Planned Outage
12/15/2018	10,008.00	DB Wilson	Planned Outage

2019			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/23/2019	10,008.00	DB Wilson	Forced Outage Mechanical
3/9/2019	10,008.00	DB Wilson	Maintenance Outage Mechanical
3/25/2019	10,008.00	DB Wilson	Maintenance Outage Mechanical
4/9/2019	10,008.00	DB Wilson	Maintenance Outage Mechanical
4/20/2019	10,008.00	DB Wilson	Forced Outage Mechanical
8/9/2019	10,008.00	DB Wilson	Maintenance Outage Mechanical
9/9/2019	10,008.00	DB Wilson	Forced Outage Mechanical
10/24/2019	10,008.00	DB Wilson	Forced Outage Mechanical
10/27/2019	10,008.00	DB Wilson	Forced Outage Mechanical
12/27/2019	10,008.00	DB Wilson	Forced Outage Mechanical

2020			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/3/2020	10,008.00	DB Wilson	Forced Outage Mechanical
3/7/2020	10,008.00	DB Wilson	Forced Outage Mechanical
3/15/2020	10,008.00	DB Wilson	Planned Outage
3/30/2020	10,008.00	DB Wilson	Planned Outage
4/3/2020	10,008.00	DB Wilson	Planned Outage
4/11/2020	10,008.00	DB Wilson	Forced Outage Mechanical
5/23/2020	10,008.00	DB Wilson	Forced Outage Mechanical
7/4/2020	10,008.00	DB Wilson	Forced Outage Mechanical
11/7/2020	10,008.00	DB Wilson	Forced Outage Mechanical
11/17/2020	10,008.00	DB Wilson	Maintenance Outage Mechanical

2021			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/23/2021	10,008.00	DB Wilson	Forced Outage Mechanical
3/13/2021	10,008.00	DB Wilson	Maintenance Outage Mechanical
5/17/2021	10,008.00	DB Wilson	Maintenance Outage Mechanical
6/10/2021	10,008.00	DB Wilson	Forced Outage Mechanical
7/14/2021	10,008.00	DB Wilson	Forced Outage Mechanical
9/8/2021	10,008.00	DB Wilson	Maintenance Outage Mechanical
10/29/2021	10,008.00	DB Wilson	Forced Outage Mechanical
11/15/2021	10,008.00	DB Wilson	Forced Outage Mechanical
11/18/2021	10,008.00	DB Wilson	Forced Outage Mechanical
11/21/2021	10,008.00	DB Wilson	Forced Outage Mechanical

Table 1: 10 Days with the Highest Total MWh Lost Yearly

2022			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/16/2022	10,008.00	DB Wilson	Maintenance Outage Mechanical
2/7/2022	10,008.00	DB Wilson	Forced Outage Mechanical
4/9/2022	10,008.00	DB Wilson	Forced Outage Mechanical
5/23/2022	10,008.00	DB Wilson	Forced Outage Mechanical
6/18/2022	10,008.00	DB Wilson	Forced Outage Mechanical
7/9/2022	10,008.00	DB Wilson	Maintenance Outage Mechanical
8/7/2022	10,008.00	DB Wilson	Maintenance Outage Mechanical
8/30/2022	10,008.00	DB Wilson	Maintenance Outage Mechanical
9/13/2022	10,008.00	DB Wilson	Maintenance Outage Mechanical
10/20/2022	10,008.00	DB Wilson	Planned Outage

Table 2: 10 Days with Highest MWh Lost Forced Outage

2014			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/2/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/3/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/4/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/5/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/8/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/9/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/10/2014	10,008.00	DB Wilson	Forced Outage Mechanical
1/11/2014	10,008.00	DB Wilson	Forced Outage Mechanical
7/8/2014	10,008.00	DB Wilson	Forced Outage Mechanical
9/13/2014	10,008.00	DB Wilson	Forced Outage Mechanical

2015			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
7/30/2015	10,008.00	DB Wilson	Forced Outage Mechanical
9/20/2015	10,008.00	DB Wilson	Forced Outage Mechanical
9/21/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/5/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/6/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/8/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/9/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/10/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/11/2015	10,008.00	DB Wilson	Forced Outage Mechanical
12/13/2015	10,008.00	DB Wilson	Forced Outage Mechanical

2016			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/24/2016	10,008.00	DB Wilson	Forced Outage Mechanical
1/25/2016	10,008.00	DB Wilson	Forced Outage Mechanical
4/12/2016	10,008.00	DB Wilson	Forced Outage Mechanical
6/26/2016	10,008.00	DB Wilson	Forced Outage Mechanical
9/15/2016	10,008.00	DB Wilson	Forced Outage Mechanical
9/17/2016	10,008.00	DB Wilson	Forced Outage Mechanical
10/14/2016	10,008.00	DB Wilson	Forced Outage Mechanical
10/31/2016	10,008.00	DB Wilson	Forced Outage Mechanical
11/6/2016	10,008.00	DB Wilson	Forced Outage Mechanical
12/25/2016	10,008.00	DB Wilson	Forced Outage Mechanical

2017			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/13/2017	10,008.00	DB Wilson	Forced Outage Mechanical
2/20/2017	10,008.00	DB Wilson	Forced Outage Mechanical
3/7/2017	10,008.00	DB Wilson	Forced Outage Mechanical
3/8/2017	10,008.00	DB Wilson	Forced Outage Mechanical
4/16/2017	10,008.00	DB Wilson	Forced Outage Mechanical
4/18/2017	10,008.00	DB Wilson	Forced Outage Mechanical
5/1/2017	10,008.00	DB Wilson	Forced Outage Mechanical
7/24/2017	10,008.00	DB Wilson	Forced Outage Mechanical
7/26/2017	10,008.00	DB Wilson	Forced Outage Mechanical
8/18/2017	10,008.00	DB Wilson	Forced Outage Mechanical

Table 2: 10 Days with Highest MWh Lost Forced Outage

2018			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/28/2018	10,008.00	DB Wilson	Forced Outage Mechanical
3/24/2018	10,008.00	DB Wilson	Forced Outage Mechanical
4/2/2018	10,008.00	DB Wilson	Forced Outage Mechanical
4/3/2018	10,008.00	DB Wilson	Forced Outage Mechanical
4/4/2018	10,008.00	DB Wilson	Forced Outage Mechanical
4/5/2018	10,008.00	DB Wilson	Forced Outage Mechanical
6/2/2018	10,008.00	DB Wilson	Forced Outage Mechanical
6/3/2018	10,008.00	DB Wilson	Forced Outage Mechanical
7/25/2018	10,008.00	DB Wilson	Forced Outage Mechanical
7/26/2018	10,008.00	DB Wilson	Forced Outage Mechanical

2019			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/23/2019	10,008.00	DB Wilson	Forced Outage Mechanical
4/17/2019	10,008.00	DB Wilson	Forced Outage Mechanical
4/18/2019	10,008.00	DB Wilson	Forced Outage Mechanical
4/19/2019	10,008.00	DB Wilson	Forced Outage Mechanical
4/20/2019	10,008.00	DB Wilson	Forced Outage Mechanical
5/2/2019	10,008.00	DB Wilson	Forced Outage Mechanical
5/4/2019	10,008.00	DB Wilson	Forced Outage Mechanical
5/10/2019	10,008.00	DB Wilson	Forced Outage Mechanical
9/9/2019	10,008.00	DB Wilson	Forced Outage Mechanical
9/10/2019	10,008.00	DB Wilson	Forced Outage Mechanical

2020			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
1/2/2020	10,008.00	DB Wilson	Forced Outage Mechanical
1/11/2020	10,008.00	DB Wilson	Forced Outage Mechanical
3/7/2020	10,008.00	DB Wilson	Forced Outage Mechanical
3/15/2020	10,008.00	DB Wilson	Forced Outage Mechanical
5/24/2020	10,008.00	DB Wilson	Forced Outage Mechanical
7/4/2020	10,008.00	DB Wilson	Forced Outage Mechanical
11/10/2020	10,008.00	DB Wilson	Forced Outage Mechanical
11/11/2020	10,008.00	DB Wilson	Forced Outage Mechanical
11/12/2020	10,008.00	DB Wilson	Forced Outage Mechanical
12/5/2020	10,008.00	DB Wilson	Forced Outage Mechanical

2021			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
2/6/2021	10,008.00	DB Wilson	Forced Outage Mechanical
2/23/2021	10,008.00	DB Wilson	Forced Outage Mechanical
5/15/2021	10,008.00	DB Wilson	Forced Outage Mechanical
6/10/2021	10,008.00	DB Wilson	Forced Outage Mechanical
7/13/2021	10,008.00	DB Wilson	Forced Outage Mechanical
7/14/2021	10,008.00	DB Wilson	Forced Outage Mechanical
10/29/2021	10,008.00	DB Wilson	Forced Outage Mechanical
10/30/2021	10,008.00	DB Wilson	Forced Outage Mechanical
11/18/2021	10,008.00	DB Wilson	Forced Outage Mechanical
11/19/2021	10,008.00	DB Wilson	Forced Outage Mechanical

Table 2: 10 Days with Highest MWh Lost Forced Outage

2022			
<u>Date</u>	<u>MWH</u>	<u>Unit</u>	<u>Reason</u>
5/16/2022	10,008.00	DB Wilson	Forced Outage Mechanical
5/22/2022	10,008.00	DB Wilson	Forced Outage Mechanical
5/23/2022	10,008.00	DB Wilson	Forced Outage Mechanical
2/24/2022	10,008.00	DB Wilson	Forced Outage Mechanical
7/30/2022	10,008.00	DB Wilson	Forced Outage Mechanical
7/31/2022	10,008.00	DB Wilson	Forced Outage Mechanical
11/26/2022	10,008.00	DB Wilson	Forced Outage Mechanical
12/1/2022	10,008.00	DB Wilson	Forced Outage Mechanical
12/29/2022	10,008.00	DB Wilson	Forced Outage Mechanical
12/30/2022	10,008.00	DB Wilson	Forced Outage Mechanical

Table 3: % MWh Lost By Category

<u>% MWh Lost</u>			
	<u>Forced Outage</u>	<u>Maintenance Outage</u>	<u>Planned Outage</u>
2014	25.34%	1.59%	73.07%
2015	21.64%	78.36%	0.00%
2016	62.51%	37.49%	0.00%
2017	31.25%	54.75%	14.00%
2018	15.10%	8.05%	76.85%
2019	58.35%	41.65%	0.00%
2020	54.92%	14.35%	30.73%
2021	70.98%	29.02%	0.00%
2022	33.33%	28.26%	38.41%

Notes:				
DB Wilson is a coal fired unit. All % MWh lost are attributed to this coal fired unit.				
All Forced Outage MWh lost are attributed to forced maintenance.				

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-18: *Please refer to page 61 of the IRP.*

- a. *Please provide all available information about the performance of D.B. Wilson specifically during Winter Storm Elliott, including information about forced outages. Include analyses, documents, and after-action reports.*
- b. *Please provide all available information about the performance of D.B. Wilson specifically during Winter Storm Uri, including information about forced outages. Include analyses, documents, and after-action reports.*
- c. *Please provide all available information about the performance of the Company's generating units during Winter Storm Elliott, including information about forced outages. Include analyses, documents, and after-action reports.*
- d. *Please provide all available information about the performance of the Company's generating units during Winter Storm Uri, including information about forced outages. Include analyses, documents, and after-action reports.*

RESPONSE:

- a. See Attachments 1A and 1B to this response.
- b. Wilson Station did not have any impairments during Winter Storm Uri that affected generation. See Attachment 4 to this response.
- c. In addition to the information provided in subparts a and b, above, please see Attachment 2 regarding a mechanical component failure on the Reid CT. See also Attachment 1B to this response.

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

d. Big Rivers units did not experience any issues that affected generation during Winter Storm Uri. Green 2 finished a tube leak repair on February 13, 2021, but it was unrelated to the winter storm or weather. See Attachments 3 and 4 to this response.

Witness: Nathaniel A. Berry

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Event End Date	Event End Time	Time Zone	Event Type	Type of Unit Trip	Winter Net MW Rating
D.B. Wilson Station	12/19/2022	6:06:00 AM	1/2/2023	7:22:00 PM	Central	Forced Derate		417 NET
D.B. Wilson Station	12/22/2022	11:21:00 PM	12/23/2022	1:56:00 AM	Central	Forced Outage	Automatic Trip	417 NET
D.B. Wilson Station	12/23/2022	7:53:00 PM	12/23/2022	11:06:00 PM	Central	Forced Outage	Automatic Trip	417 NET
Robert Reid Station	12/23/2022	4:45:00 PM	12/23/2022	6:15:00 PM	Central	Startup Failure	Automatic Trip	65 NET
Robert Reid Station	12/24/2022	4:30:00 AM	12/24/2022	11:00:00 AM	Central	Startup Failure	Automatic Trip	65 NET

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Actual Output Prior to Trip or Derate (MW)	Actual Output After Trip or Derate (MW)	Unavailable MW	Event Cause
D.B. Wilson Station	12/19/2022	6:06:00 AM	417 NET	220 NET	197 NET	Mechanical/Electrical Issues
D.B. Wilson Station	12/22/2022	11:21:00 PM	220 NET	220 NET	197 NET	Mechanical/Electrical Issues
D.B. Wilson Station	12/23/2022	7:53:00 PM	220 NET	220 NET	197 NET	Mechanical/Electrical Issues
Robert Reid Station	12/23/2022	4:45:00 PM	0 NET	65 NET	65 NET	Mechanical/Electrical Issues
Robert Reid Station	12/24/2022	4:30:00 AM	0 NET	65 NET	65 NET	Mechanical/Electrical Issues

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Event Sub-Cause	Explanation of Event Cause/Sub Cause	Event Description/ Summary of Event
D.B. Wilson Station	12/19/2022	6:06:00 AM	Equipment Failure/Issues	#2 ID fan motor failed	#2 ID fan motor tripped, troubleshooting revealed the motor to need replacement.
D.B. Wilson Station	12/22/2022	11:21:00 PM	Frozen Coal	#1 coal feeder stopped feeding due to frozen coal. Loss of the feeder caused a unit upset.	With only one available ID fan, this upset caused the fan to over amp and trip.
D.B. Wilson Station	12/23/2022	7:53:00 PM	Frozen Coal	#1 coal feeder stopped feeding due to frozen coal. Loss of the feeder caused a unit upset.	With only one available ID fan, this upset caused the fan to over amp and trip.
Robert Reid Station	12/23/2022	4:45:00 PM	Equipment Failure/Issues	Generator Breaker Issue	Starting Failure
Robert Reid Station	12/24/2022	4:30:00 AM	Equipment Failure/Issues	Air Compressor Solenoid Problem	Starting Failure

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Were Actions Taken to Restore Unit	Details of Actions Taken to Restore Unit	Plant System Containing Equipment
D.B. Wilson Station	12/19/2022	6:06:00 AM	Yes	A new fan motor was procured and installed	Air and Gas Systems
D.B. Wilson Station	12/22/2022	11:21:00 PM	Yes	Restored coal flow and put the unit back in service	Air and Gas Systems
D.B. Wilson Station	12/23/2022	7:53:00 PM	Yes	Restored coal flow and put the unit back in service	Air and Gas Systems
Robert Reid Station	12/23/2022	4:45:00 PM	Yes	Serviced breaker	Generator Controls System
Robert Reid Station	12/24/2022	4:30:00 AM	Yes	Reconfigured air supply	Gas Turbine Auxiliary Systems

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Equipment or Component Involved	Environmental Limitations	Explanation of Environmental Limitations	Ambient Design Temperature Prevented Unit Restart
D.B. Wilson Station	12/19/2022	6:06:00 AM	#2 Induced Draft Fan	No	N/A	No
D.B. Wilson Station	12/22/2022	11:21:00 PM	#1 Induced Draft Fan	No	N/A	No
D.B. Wilson Station	12/23/2022	7:53:00 PM	#1 Induced Draft Fan	No	N/A	No
Robert Reid Station	12/23/2022	4:45:00 PM	Generator Field Breaker	No	N/A	No
Robert Reid Station	12/24/2022	4:30:00 AM	Air Compressor	No	N/A	No

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Did You Fail to Provide Ancillary Services	Type of Ancillary Services	Black Start Unit	Outage Communicated to BA/RC as required	Describe RC/BA Attempted Modification of Planned Outages
D.B. Wilson Station	12/19/2022	6:06:00 AM	No	N/A	No	Yes	N/A
D.B. Wilson Station	12/22/2022	11:21:00 PM	No	N/A	No	Yes	N/A
D.B. Wilson Station	12/23/2022	7:53:00 PM	No	N/A	No	Yes	N/A
Robert Reid Station	12/23/2022	4:45:00 PM	No	N/A	No	Yes	N/A
Robert Reid Station	12/24/2022	4:30:00 AM	No	N/A	No	Yes	N/A

Big Rivers Electric Corp.
Winter Storm Elliott Generator Outages

Power Plant Name	Event Start Date	Event Start Time	Additional Information
D.B. Wilson Station	12/19/2022	6:06:00 AM	
D.B. Wilson Station	12/22/2022	11:21:00 PM	Although frozen coal was involved it was not the cause of the trip. The unit would not have tripped if both ID fans had been available
D.B. Wilson Station	12/23/2022	7:53:00 PM	Although frozen coal was involved it was not the cause of the trip. The unit would not have tripped if both ID fans had been available
Robert Reid Station	12/23/2022	4:45:00 PM	
Robert Reid Station	12/24/2022	4:30:00 AM	

Big Rivers Electric Corp.
Event Report
12/22/2022 To 12/26/2022 (Inc. OMC)

Green Unit 1

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
12/16/2022 18:30	12/22/2022 02:54	2.90	0.00	47	1	RS	0	0	0			Reserve shutdown
12/26/2022 23:59	01/01/2023 00:00	0.02	0.00	48	1	RS	0	0	0			Reserve shutdown

Big Rivers Electric Corp.
Event Report
12/22/2022 To 12/26/2022 (Inc. OMC)

Green Unit 2

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
12/16/2022 18:30	12/25/2022 04:41	76.68	0.00	64	1	RS	0	0	0			Reserve shutdown
12/26/2022 23:28	01/01/2023 00:00	0.53	0.00	65	1	RS	0	0	0			Reserve shutdown

Big Rivers Electric Corp.
Event Report
12/22/2022 To 12/26/2022 (Inc. OMC)

Reid CT

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
12/11/2022 18:30	12/23/2022 16:45	40.75	0.00	14	1	RS	0	0	0			Reserve shutdown
12/23/2022 16:45	12/23/2022 18:15	1.50	1.50	11	1	SF	65	0	5250	72		Had to free up linkage and change actuator and solenoids
12/23/2022 18:15	12/24/2022 04:30	10.25	0.00	12	1	RS	0	0	0			Reserve shutdown
12/24/2022 04:30	12/24/2022 11:00	6.50	6.50	13	1	SF	65	0	5250	72		Had to free up linkage and change solenoids
12/24/2022 11:00	01/01/2023 00:00	61.00	0.00	15	1	RS	0	0	0			Reserve shutdown

Big Rivers Electric Corp.
Event Report
12/22/2022 To 12/26/2022 (Inc. OMC)

Wilson Unit 1

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
12/19/2022 13:54	12/22/2022 23:21	23.35	11.42	133	1	D2	204	213	1455	59		#2 IDF out of service
12/22/2022 23:21	12/23/2022 01:56	2.58	2.58	134	1	U1	417	0	1455	T1		wet/frozen fuel led to air flow issues with #2 IDF out of service
12/23/2022 01:56	12/23/2022 19:53	17.95	8.78	135	1	D2	204	213	1455	59		#2 IDF out of service

**BIG RIVERS ELECTRIC CORPORATION
PRODUCTION OUTAGE REPORT**

Subject: Generation No. RCT-22-09

Location: Reid

Unit: CT

Time:	<u>18:30</u>	Date:	<u>December 11, 2022</u>	Duration:	<u>286 Hrs. 15 Min.</u>	(RS)
Status Change:	<u>16:45</u>	Date:	<u>December 23, 2022</u>	Duration:	<u>1 Hrs. 30 Min.</u>	(UO)
Status Change:	<u>18:15</u>	Date:	<u>December 23, 2022</u>	Duration:	<u>10 Hrs. 15 Min.</u>	(RS)
Status Change:	<u>4:30</u>	Date:	<u>December 24, 2022</u>	Duration:	<u>6 Hrs. 30 Min.</u>	(UO)
Status Change:	<u>11:00</u>	Date:	<u>December 24, 2022</u>	Duration:	<u>652 Hrs. 24 Min.</u>	(RS)
Normal: Reason:	<u>15:44</u>	Date:	<u>January 20, 2023</u>	Duration:	<u>957 Hrs. 14 Min.</u>	

The unit was taken offline and placed into reserve standby due to economics at 18:30 on 12/11/2022.
The unit was called upon and experienced a start failure on 12/23/22 at 16:45. The unit was placed on
reserve standby at 18:15 on 12/23/22. The unit was called upon and experienced a start failure on
12/24/22 at 4:30. The unit went back on reserve standby at 11:00 on 12/24/22. The unit tied back online
on January 20, 2023 at 15:24.

December Hours - 485 Hrs. 30 Min.

January Hours - 471 Hrs. 44 Min.

Total Hours Offline - 957 Hours and 14 Minutes

Forced Outage Report

To: Mike Pullen

From: Steve Stearsman

Date: 22 February 2021

Plant: Green

Unit: 2

GADS Class: U1

Duration

Trip Time: 11 February 2021 at 12:36

Tie Time: 13 February 2021 at 11:22

Total Time Offline: 58:46

Outage Description

Green Unit 2 was removed from service on, Thursday, 11-February-2021 at 12:36, due to a reheat outlet boiler tube failure. Tube failure was the 3rd back in the 30th panel from the east wall at elevation 592'. The 21st screen-wall tube from the east at elevation 587' was washed out from blow-out. A total of 2 dutchmen was installed during this outage.

Root Cause

The tube failure appears to be a Thin-Lipped Rupture with External Wall Thinning normally caused from fly ash erosion.



Forced Outage Report

Failure History

Green Unit 2 was removed from service on, Tuesday, 19-November-2019 at 22:56, due to a reheat outlet leading edge boiler tube leak. The 23rd tube from the east wall in the reheat outlet - leading edge tube ruptured at elevation 605'. It was a brand new tube that was installed 4 days earlier. The blowout was in the middle of an 18' Dutchman. The 24th, 25th and 28th tubes were also replaced with 18' Dutchman. At 0145 on 11/21/2019 repairs were completed and the unit classification was changed to reserve standby.

Green Unit 2 was removed from service on, Thursday, 14-November-2019 at 03:30, due to Reheat Outlet Bank Tube Leak. Installed four 18 foot Dutchmen on elements #23, #26 #27, and #28.

Green Unit 2 was removed from service on, Wednesday, 06-November-2019 at 22:22, due to reheat outlet leading edge boiler tube leak. The tube failure was the 25th tube from the east at elevation 600'. The 19th tube from east in the secondary super heater section directly across from the tube failure was washed and also needed repairs made.

Green Unit 2 was removed from service on, Tuesday, 11-December-2018 at 00:42, due to a Reheat Outlet boiler tube leak. The tube failure was the leading edge tube in the 31rst bank from east @ elevation 596'. UT readings were taken in the Reheat Intermediate element determining the 33rd leading edge tube to be cut out for sampling @ elevation 600'.

Corrective Action

- 12ft dutchman was installed in the 3rd tube back from leading edge in the 30th panel from east. (Blow-out).
- 12ft dutchman was installed in the 21st screen-wall tube from east.

Other Work Completed While Unit Was Offline

- Stroked dampers and made sure working properly.

Forced Outage Report

SOE Report

Start time:	02/11/2021 06:05:44.0
End time:	02/11/2021 12:36:48.0
Creation time:	02/11/2021 12:40:36.9
Trigger time:	02/11/2021 12:36:34.0

Event Time	ms	Tag Name	Tag Description	Value	Quality	Trigger
02/11/2021 12:36:48	13	G232ANN329-SOE	B MILL RATING DAMPER CLOSED<	CLOSED	OK	
02/11/2021 12:36:48	05	G240ANN442-SOE	TURBINE NO-LOAD TRIP	RESET	OK	
02/11/2021 12:36:46	6	G232ANN286-SOE	FURNACE VACUUM HIGH<	NORMAL	OK	
02/11/2021 12:36:45	3	G240ANN442-SOE	TURBINE NO-LOAD TRIP	TRIPPD	OK	
02/11/2021 12:36:45	06	G232ANN288-SOE	EMGNCY FURN PRS CNTRLR OPER	ACTIVE	OK	
02/11/2021 12:36:44	9	G202ANN057-SOE	161 KV OCB 0100 AUTO TRP	TRIPPD	OK	
02/11/2021 12:36:44	65	G202ANN056-SOE	161 KV OCB 0116 AUTO TRIP	TRIPPD	OK	
02/11/2021 12:36:44	57	G250ANN070-SOE	GEN EXCITER FLD BKR AUTO TRIP	TRIPPD	OK	
02/11/2021 12:36:44	56	G250ANN058-SOE	GENERATOR RELAY 86G1 TRIP	TRIPPD	OK	
02/11/2021 12:36:38	68	G230ANN256-SOE	IGNITION OIL PRESS HIGH/LOW<	NORMAL	OK	
02/11/2021 12:36:37	2	G230ANN256-SOE	IGNITION OIL PRESS HIGH/LOW<	ALARM	OK	
02/11/2021 12:36:36	93	G232ANN286-SOE	FURNACE VACUUM HIGH<	HIGH	OK	
02/11/2021 12:36:36	4	G243ANN174-SOE	EMERGENCY TRIP SYSTEM TROUBLE<	TROUBL	OK	
02/11/2021 12:36:36	69	G241ANN172-SOE	EMGNCY BRNG OIL PMP STATUS	RUNG	OK	
02/11/2021 12:36:36	55	G203APASTS-SOE	2A PA FAN STATUS	OPENE	OK	
02/11/2021 12:36:36	3	G203BPASTS-SOE	2B PA FAN STATUS	OPENE	OK	
02/11/2021 12:36:36	2	G240ANN441-SOE	ALL GOV VALVES CLOSED	D	OK	
02/11/2021 12:36:35	7	G233PBDCSMFT-SOE	MFT TRIP PB OR OPER DCS TRIP	CLOSED	OK	
02/11/2021 12:36:35	5	G240ANN158-SOE	TURBINE TRIP	RESET	OK	
02/11/2021 12:36:34	86	G233PBDCSMFT-SOE	MFT TRIP PB OR OPER DCS TRIP	RESET	OK	
02/11/2021 12:36:34	8	G233ANN319-SOE	MASTER FUEL TRIP	TRIPPD	OK	TRG
02/11/2021 12:36:34	3	G203BPULVSTS-SOE	2B PULVERIZER STATUS	OPENE	OK	
02/11/2021 12:33:50	5	G203BMNTRP-SOE	G2 B MAIN TRIP	D	OK	
02/11/2021 12:32:10	50	G203BMNTRP-SOE	G2 B MAIN TRIP	RESET	OK	
02/11/2021 12:32:10	3	G203BMNSTS-SOE	G2 B MAIN STATUS	OPENE	OK	
02/11/2021 12:32:10	8	G203BMNTRP-SOE	G2 B MAIN TRIP	D	OK	
02/11/2021 12:32:10	41	G203BMNTRP-SOE	G2 B MAIN TRIP	TRIPPD	OK	

Forced Outage Report

02/11/2021 12:32:09	76 4	G2032T2TIESTS-SOE	G2 B BUS 2T2 TIE STATUS	CLOSE D	OK
02/11/2021 12:32:00	87 0	G203AMNTRP-SOE	G2 A MAIN TRIP	RESET OPENE D	OK OK
02/11/2021 12:32:00	84 5	G203AMNSTS-SOE	G2 A MAIN STATUS	CLOSE D	OK OK
02/11/2021 12:32:00	82 1	G2032T1TIESTS-SOE	G2 A BUS 2T1 TIE STATUS	CLOSE D	OK OK
02/11/2021 12:32:00	81 1	G203AMNTRP-SOE	G2 A MAIN TRIP	TRIPPD	OK

Operators Event Log

Date: 2/11/2021 **Time:** 08 : 00 **SHIFT:** none A B C
 D

SUPERVISOR: Choose

SAFETY	
Time	Status/Notes
08 :00	SAFETY BRIEFING. CONTINUE TO BE AWARE OF THE ICY CONDITIONS ON THE BOILERS AND OUTSIDE OF PLANT AREA. DON'T TAKE CHANCES.

STAFF				
Names				
Hayes	Bachman	Whitledge	D. O'Nan	Breedon/SL
Travis	J. Woods	Teague	Simpson	Buttrum
Bowley				

Forced Outage Report

ENVIRONMENTAL/COMPLIANCE

Time	Status/Notes
12 : 47	G2 EXCESS EMISSIONS ON OPACITY, UNIT OFF LINE DUE TO TUBE LEAK. FANNING BOILER DOWN FOR COOLDOWN. FILLED OUT METHOD 9 SHEET. COULD NOT GET A GOOD READ ON STACK DUE TO OVERCAST AND PLUMES ARE INTERMINGLING.

UNIT DATA

Units	Load	CAP	SO2	NOX	Opacity	Hg hrly	MILLS		Precip/ OUT	A.D.S.
G-1	253	250	.234	.158	12.2	.646	1A	ON	5	IN
							1B	ON		
							1C	ON		
							1D	ON		
G-2	240	242	.310	.307	5	1.1	2A	ON	1	IN
							2B	ON		
							2C	ON		
							2D	ON		
CT	0	65								

PRIORITY 1 WORK ORDERS

Priority 1			
Work Order #	Unit	Description	Red Tag?

G1 NOTES

Time	Status/Notes
13 : 40	FLY ASH IN SERVICE.

Forced Outage Report

G2 NOTES	
Time	Status/Notes
08 : 20	2C MILL HAS A LEAK AT EXPANSION JOINT NEAR THE RATING DAMPER.
09 : 05	HCL AND PM TESTING STARTED.
09 : 39	AUX. OPERATOR CALLED AND NEEDED ME TO COME BACK DOWN AND LOOK AT 2C MILL WHERE THE EXPANSION JOINT IS LEAKING. GOING TO REMOVE 2C MILL OFF AFTER THE 1 ST RUN OF THE STACK TEST IS OVER. NOTIFIED GREG DICK TO TO PASS THAT INFORMATION BACK TO ME.
10 : 23	INSTRUMENTATION PERFORMING SIC TEST ON MERCURY.
10 : 30	GREG DICK INFORMED ME THAT THE 1 ST RUN ON STACK TEST IS COMPLETE. GOING TO REMOVE 2C MILL FROM SERVICE AT THIS TIME.
10 : 47	2C MILL OFF, NOTIFIED GREG DICK.
Hh : mm	2C MILL OFF, NOTIFIED GREG DICK.
11 : 35	AUX REPORTED PRETTY LOUD UP ON 10 TH FLOOR. STARTING HOTWELL CHECK. NOTIFIED CHRIS JOHNSON.
Hh : mm	NOTE: LOST 5" IN 10 MINUTES ON HOTWELL CHECK. NOTIFIED GREG DICK AS WELL, DUE TO FACT WE HAD TO DROP SOME LOAD OFF OF THE UNIT.
12 : 03	NOTIFIED ACES THAT WE ARE REMOVING G2 FROM SERVICE.
12 : 11	"A" MILL OFF.
12 : 36	UNIT OFF LINE.
12 : 42	COOLING TOWER BYPASSED.
12 : 45	AUX. OPERATOR REPORTED THAT THERE WAS ONE DRAIN ON THE STEAM COILS THAT HE COULD NOT GET TO. TALKED TO MAINTENANCE IN THE 1 O'CLOCK MEETING AND WAS INFORMED THAT, THAT VALVE WOULD NOT OPEN ANYWAY.
13 : 50	STARTING OPL 152 PROCEDURE FOR 2X FLOODING OF THE DRUM.

Forced Outage Report

G2 NOTES	
Time	Status/Notes
14 : 42	FLOODING OF THE DRUM COMPLETE. GOING TO SET UP FOR HYDRO.
15 : 30	BACKFILLING BOILER THROUGH THE SUPERHEAT SPRAYS.
16 : 54	2B CIRCULATING WATER PUMP OFF.
17 : 56	BOILER READY TO SQUEEZE

CT	
Time	Status/Notes
08 : 00	ON STANDBY 65 MW'S AND ADS AVAILABLE.
14 : 45	24V DC PS-3 OFF OR FAILED ALARM IN. NOTIFIED BRUCE SHELTON. NIGHT SHIFT INSTRUMENTATION IS LOOKING INTO ALARM.

SCRUBBER NOTES	
Time	Status/Notes
11 : 20	PH POTS HAVE NORMAL FLOW.
13 : 21	FLUSHED "A" AND "B" BLEED SLURRY LINES ON G2.

COMMON NOTES	
Time	Status/Notes
11 : 31	HYDRATED LIME TRUCK HERE. OFF LOADING IN G2 DSI SILO.
18 : 00	MAIN ENTRANCE IS OPENED BACK UP.

Forced Outage Report

SLAKERS						
SLAKERS	IN/OUT	#ON	C1	C2	PREP	SILO
G-1	IN	4	25	25		#1
G-2	IN	1	25.3	23.2		#4
PREP						

FEED RATE/PASTE POWER									
Time	FR/PP	1C1	1C2	1C3	1C4	2C1	2C2	2C3	2C4
08 : 00	FEED RATE	80	30	85	75			80	
	PASTE POWER	20		20	20			20	

SOLIDWASTE									
Time	IN/OUT	CONV	DRUMS	F/A SILO	F/A TONS	SMOOT	SMOOT RATE	SLUDGE. TANKS (ft)	
								A	B
08 :00	In	B	B,C	#1	12			19	19

FLYASH SILO						
SILO	LEVEL	EAST	WEST	SILO	SAFETY	
# 1	ICE					
# 2	ICE					

UNDERFLOWS							
Time	UNDER FLOWS	ON/OFF	GPM	SOLIDS	TORQUE	BED LEVEL	
						ft	in
08 :00	1A	ON	180	29.4	0	6	8
	1B	ON	190	32.8	12	6	8
	2A	ON	200	33.8	0	6	9
	2B	ON	160	34	12	6	8

Forced Outage Report

12 :00	1A	OFF			0	6	8
	1B	OFF			0	6	8
	2A	OFF			0	6	9
	2B	ON	164	33.1	10	6	8
16 :00	1A	OFF			0	6	8
	1B	ON	198	32.7	0	6	8
	2A	OFF			0	6	9
	2B	ON	191	32.9	8	6	8

STACK DRAINS		
Time	STACK	DRAIN
08 :00	G-1	OPEN
	G-2	OPEN

Forced Outage Report

Boiler Tube Leak Record No. 1

Plant: Green

Unit: 2

Type of Leak: (Check One)

Pin Hole Thick Lip Failure Crack Thin Lip Failure
 Tube Wall Thinning Other _____

Orientation of Rupture: (Check One)

Longitudinal Circumferential

Probable Cause: (Check One)

Stress Overheat Erosion Internal Corrosion
 External Corrosion Weld Failure (Shop Field
 Internal Obstruction to Flow Sootblower Erosion
 Other _____

Type of Repair: (Check One)

Dutchman (Length of Dutchman) 12ft Pad Weld
 Plug Tube Short Circuit Other _____

Description of Repair:

Tube Size OD 2-1/4"OD Wall Thickness 0.148"MW
 Tube Material SA213T22 Welding Rod Used ER90S
 Welded By: Greywolfe

Forced Outage Report

Boiler Tube Leak Record No. 2

Plant: Green

Unit: 2

Type of Leak: (Check One)

Pin Hole Thick Lip Failure Crack Thin Lip Failure

Tube Wall Thinning Other _____

Orientation of Rupture: (Check One)

Longitudinal Circumferential

Probable Cause: (Check One)

Stress Overheat Erosion Internal Corrosion

External Corrosion Weld Failure (Shop Field)

Internal Obstruction to Flow Sootblower Erosion

Other Wash-Out

Type of Repair: (Check One)

Dutchman (Length of Dutchman) 12ft Pad Weld

Plug Tube Short Circuit Other _____

Description of Repair:

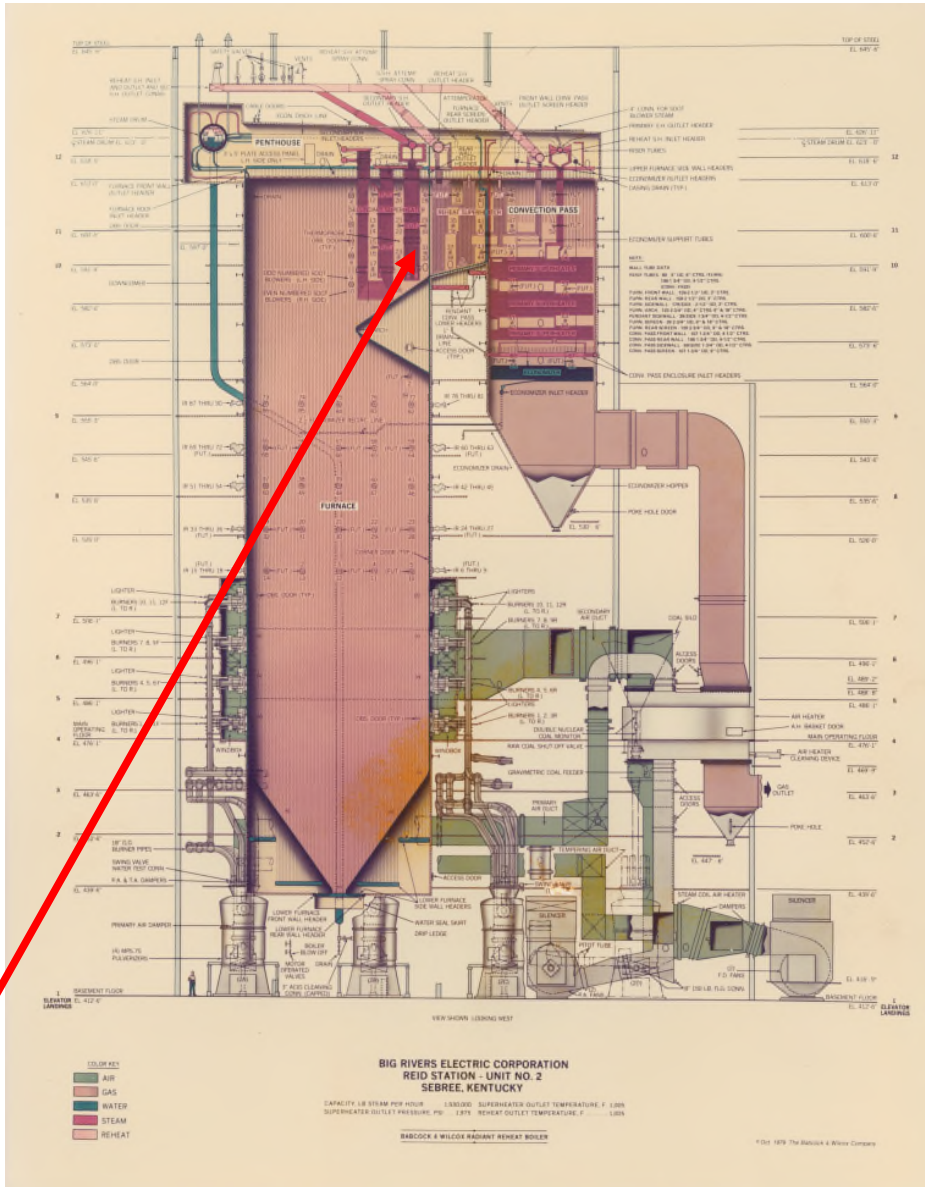
Tube Size OD 2-3/4"OD Wall Thickness 0.240"MW

Tube Material SA210A1 Welding Rod Used ER70S

Welded By: Greywolfe

Forced Outage Report

Exact Location of Leak:



G2 reheat outlet element 3rd tube back from leading edge in the 30th panel from east boiler wall.

Forced Outage Report

Estimated Outage Cost

Lost Sales Opportunity Report

(To be provided by Others)

Big Rivers Electric Corp.
Event Report
02/13/2021 To 02/17/2021 (Inc. OMC)

Green Unit 2

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
02/11/2021 12:36	02/13/2021 11:22	11.37	11.37	4	1	U2	223	0	1060	54		Reheater Outlet Leak - 30th Panel from East Wall - 3rd tube back - screen wall leak

Big Rivers Electric Corp.
Event Report
02/13/2021 To 02/17/2021 (Inc. OMC)

Reid CT

Event Start	Event End	Event Duration	Eq Hrs	Event Num	Event Index	Event Type	Event Red	Event Cap	Cause Code	Amp Code	Fail Code	Event Description
02/12/2021 19:05	03/24/2021 07:13	120.00	0.00	3	1	RS	0	0	0			Reserve shutdown

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-19: *Please refer to pages 23-24 of the IRP.*

- a. *Has Big Rivers conducted any analysis or assessment of future transmission expansion and/or upgrades by Big Rivers?*
- i. *If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*
- ii. *If not, please explain why Big Rivers has chosen not to conduct such an analysis.*
- b. *Has Big Rivers conducted any analysis or assessment of the impact of future transmission expansion and/or upgrades by other entities on Big Rivers and its customers?*
- i. *If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*
- ii. *If not, please explain why Big Rivers has chosen not to conduct such an analysis.*
- c. *Has Big Rivers conducted any analysis or assessment of the value and opportunities that regional and interregional transmission provide for the Company and its customers?*
- i. *If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*
- ii. *If not, please explain why Big Rivers has chosen not to conduct such an analysis.*
- d. *Has Big Rivers conducted any analysis or assessment of the value and opportunities that imports provide for the Company and its customers?*
- i. *If so, please provide all copies of such analysis or assessment and all communications regarding such analysis or assessment.*

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

- ii. If not, please explain why Big Rivers has chosen not to conduct such an analysis.*

RESPONSE: Big Rivers objects to the extent that this request seeks critical energy infrastructure information that is not publicly available. Subject to this objection, Big Rivers states as follows.

- a. Please see objection, above.
- b. The models used when preparing the CWP include other systems and their planned projects. Therefore, the Big Rivers studies capture the impact of those facilities.
- c. Big Rivers participates in the MISO MTEP and Long Range Transmission planning (LRTP) processes. Additional information and reports are available on the MISO website.
- d. The CWP includes loss of generation study scenarios to ensure all planning criteria can be met under various import situations. Various scenarios are also evaluated by MISO and by SERC through near-term and long-term study groups.

Witness: Christopher S. Bradley

For the Objection(s): Counsel

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-20: *Please provide all studies, analyses, documents, or forecasts regarding the effects of the Inflation Reduction Act on Big Rivers' generation portfolio.*

a. If no such analysis exists, please explain why not.

RESPONSE: Big Rivers' IRP, as submitted in the instant docket, reflects the impact of the programs created by the Inflation Reduction Act, including PACE and New ERA, on Big Rivers' generation portfolio.

Witness: Erin M. Murphy

IN THE MATTER OF:
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

REQUEST NO. 1-21: *Please provide all studies, analyses, documents, or forecasts conducted by the Company regarding carbon capture and sequestration, including the feasibility of carbon capture and sequestration.*

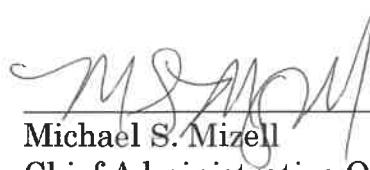
RESPONSE: Big Rivers is in the early stages of evaluating carbon capture and sequestration, including its feasibility, and has nothing to produce at this time.

Witness: Erin M. Murphy

IN THE MATTER OF
ELECTRONIC 2023 INTEGRATED RESOURCE PLAN OF
BIG RIVERS ELECTRIC CORPORATION
CASE NO. 2023-00310

BIG RIVERS ELECTRIC CORPORATION'S RESPONSES TO SIERRA CLUB'S
FIRST REQUEST FOR INFORMATION

I, Michael S. Mizell verify, state, and affirm that the information request responses filed with this verification for which I am listed as a witness are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Michael S. Mizell
Chief Administrative Officer
Big Rivers Electric Corporation

STATE OF KENTUCKY)
) ss:
COUNTY OF DAVIESS)

SUBSCRIBED AND SWORN TO before me by Michael S. Mizell on this the 3 day of JANUARY, 2024.

My commission expires: 1-14-2026


Notary Public

Notary ID: KYNP43026

