

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**IN THE MATTER OF:**

**ELECTRONIC APPLICATION OF EAST KENTUCKY )  
POWER COOPERATIVE, INC. FOR APPROVAL )  
TO AMEND ITS ENVIRONMENTAL )  
COMPLIANCE PLAN AND RECOVER COSTS )  
PURSUANT TO ITS ENVIRONMENTAL )  
SURCHARGE, AND FOR THE ISSUANCE OF )  
A CERTIFICATES OF PUBLIC CONVENIENCE )  
AND NECESSITY AND OTHER RELIEF )**

**CASE NO.**  
**2023-00177**

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**NOTICE OF FILING**

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**Filed:** October 19, 2023

Comes now East Kentucky Power Cooperative, Inc. (“EKPC”), by counsel, and gives notice of filing Attachment JV-1 to its Application, Exhibit G-1, accepted for filing July 21, 2023, an attachment that was inadvertently omitted from the original filing, in the above-styled case. A copy of Attachment JV-1 to its Application, Exhibit G-1, accepted for filing July 21, 2023 is attached. All of the information contained in the attachment was previously filed in the record.

To assist Commission Staff, please see the following references for information. To clarify, EKPC’s filing contains 25 total projects, 22 projects are not related to any certificates of public necessity and convenience (CPCNs), one project was approved in the previous surcharge case which is Spurlock Area D, Phase I (Case No. 2017-00376, *Electronic Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs Pursuant to its Environmental Surcharge, and for the Issuance of Certificates of Public Convenience and Necessity and Other General Relief*); and two projects are CPCNs. Specifically, the testimony of Joseph T. VonDerHaar refers to the 22 projects that are not related to a CPCN in any proceeding on page 7 lines 5-6, and it refers to 23 projects on page 6, including all of the projects, except for the two CPCN projects in this matter. This information is further expanded upon in the testimony of Isaac Scott. The data contained in Attachment JV-1 – ES Fact Sheets relates to 22 projects that are not related to any CPCNs in this proceeding or prior proceedings and has the following information that maps back to the record in the listed locations below:

- 1) Description
  - a. Application page 19, item number 39.

- b. Application Exhibit J, testimony of Isaac Scott, page 7.
  - c. DR 2, Response 6 supporting spreadsheet.
  - 2) Justification
    - a. DR 2, Response 6 supporting spreadsheet.
  - 3) Alternatives Considered
    - a. DR 2, Response 6 supporting spreadsheet.
  - 4) Installed Date
    - a. Application page 19, item number 39.
  - 5) Capital Cost
    - a. Application page 19, item number 39.
    - b. DR 2, Response 6 supporting spreadsheet.
  - 6) O&M Cost
    - a. Application Exhibit J, testimony of Isaac Scott, page 7.
- This 19th day of October, 2023.

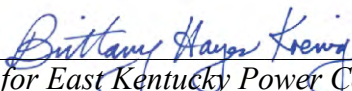
Respectfully submitted,

  
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*Counsel for East Kentucky Power Cooperative,  
Inc.*

**CERTIFICATE OF SERVICE**

This is to certify that foregoing electronic filing was transmitted to the Commission on October 19, 2023; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that pursuant to the Commission's July 22, 2021 Order in Case No. 2020-00085, no paper copies of the filing will be made.

  
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*Counsel for East Kentucky Power Cooperative, Inc.*

**COMMONWEALTH OF KENTUCKY**  
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 PURSUANT TO ITS ENVIRONMENTAL )  
 SURCHARGE, AND FOR THE ISSUANCE OF )  
 CERTIFICATES OF PUBLIC CONVENIENCE )  
 AND NECESSITY AND OTHER RELIEF )**

**CASE NO.  
 2023-00177**

**VERIFICATION OF JOSEPH T. VONDERHAAR**

**STATE OF KENTUCKY )  
 COUNTY OF CLARK )**

Joseph T. VonDerHaar, Plant Manager of Spurlock Power Station for East Kentucky Power Cooperative, Inc., being duly sworn, states that he has supervised the preparation of his Direct Testimony and certain filing requirements in the above referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

*Joseph VonDerHaar*

\_\_\_\_\_  
 Joseph T. VonDerHaar

The foregoing Verification was signed, acknowledged and sworn to before me this 19th day of October, 2023, by Gwyn M. Willoughby.

*Gwyn M. Willoughby*  
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 Notary Public  
**Notary Public**  
 GWYN M. WILLOUGHBY  
 Notary Public  
 Commonwealth of Kentucky  
 Commission Number KYNP38003  
 My Commission Expires Nov 30, 2025

**Attachment JV-1**  
**Environmental Surcharge Fact Sheets**

**Environmental Surcharge Fact Sheet**  
**Spurlock Unit 3 Baghouse (Liner)**  
**Compliance Plan Project Reference: Amendment to Project No. 1 - Gilbert**

**Description:** To engineer, purchase, and install new damper housing assemblies. This includes new turning vanes, inlet isolation dampers, and hopper inlets. All surfaces to be Densit lined, which is a high wear resistance refractory material.

**Justification:** The maintenance on the baghouse has increased over the last couple of years and repair is becoming difficult due to the base metal being too thin for repair. In an effort to reduce outages and maintenance cost, we plan to replace the base metal surfaces and line the turning vanes, damper housing, and the rest of the casing with Densit. This lining has proven its value in the J-duct, which is just upstream and previously had similar issues, and has shown no erosion or corrosion in the first two years since being lined. The project also includes isolation sealing dampers to allow for bag changes while minimizing derates due to vacuum pressure. Some particulate issues have resulted in forced outages.

**Alternatives Considered:** Replacing the surfaces without lining could have been done, but had been done on turning vanes and the life of the metal was low and would require replacement every few years.

**Installed Date:** April 20, 2020

**Capital Cost:** \$5,465,071

**Operations & Maintenance Cost:** Annual cost of \$20,000.

## **Environmental Surcharge Fact Sheet**

### **Spurlock Unit 1 Sonic Horns**

#### **Compliance Plan Project Reference: Amendment to Project No. 3 – Spurlock Unit 1 SCR**

**Description:** Purchase sonic air horns from Acoustic Cleaning System, Inc. and then install on each layer of the Unit 1 SCR. There will be six horns per SCR catalyst layer, with 18 horns in the SCR Reactor. Sonic air horns are used to shake ash particles loose in the SCR catalyst beds. These help remove flow path restrictions.

**Justification:** Devices like SCR sonic horns help to remove ash buildup on SCR catalyst layer by using sonic waves to remove nested fly ash. Without devices like these, flue gas flow restrictions will occur causing a decrease in the Unit generation capacity. In addition, plugging in the catalyst can cause damage to the catalyst, causing the fan to stall, and making the NOx removal rate decline significantly. The installation of sonic horns will add a catalyst cleaning device that will help keep the SCR catalyst clean without the risk of wet soot blowing steam plugging or damaging the catalyst.

**Alternatives Considered:** There were no other alternatives available. After evaluating the performance of sonic air horns on Spurlock Unit 2, installation of sonic air horns on Spurlock Unit 1 was the most reasonable alternative.

**Installed Date:** May 18, 2020

**Capital Cost:** \$162,151

**Operations & Maintenance Cost:** Annual cost of \$18,000

## **Environmental Surcharge Fact Sheet**

### **Spurlock Unit 2 Sonic Horns**

#### **Compliance Plan Project Reference: Amendment to Project No. 4 – Spurlock Unit 2 SCR**

**Description:** Purchase sonic air horns from Acoustic Cleaning System, Inc. and then install on each layer of the Unit 2 SCR. There will be eight horns per SCR catalyst layer, with a total of 24 horns in the SCR Reactor. Sonic air horns are used to shake ash particles loose in the SCR catalyst beds. These help remove flow path restrictions.

**Justification:** In 2018, the reboiler steam line will be out of commission due to the 8-week International Paper outage. This will leave the soot blowers on the Unit 2 SCR without steam. No steam to clean the ash off the catalyst will cause the ash to build up and plug the catalyst. As the catalyst plugs the differential pressure will cause damage to the catalyst, cause the fan to stall, and making the NOx removal rate decline significantly. The installation of sonic horns will add a catalyst cleaning device that will help keep the SCR catalyst clean without the risk of wet soot blowing steam plugging or damaging the catalyst.

**Alternatives Considered:** There were no other alternatives available.

**Installed Date:** December 9, 2017

**Capital Cost:** \$224,529

**Operations & Maintenance Cost:** Annual cost of \$25,000.



**Environmental Surcharge Fact Sheet**

**Spurlock Unit 4 Baghouse (Liner)**

**Compliance Plan Project Reference: Amendment to Project No. 9 – Spurlock Unit 4**

**Description:** To engineer, purchase, and install new damper housing assemblies. This includes new turning vanes, inlet isolation dampers, and hopper inlets. All surfaces to be Densit lined, which is a high wear resistance refractory material.

**Justification:** The maintenance on the baghouse has increased over the last couple of years and repair is becoming difficult due to the base metal being too thin for repair. In an effort to reduce outages and maintenance cost, we plan to replace the base metal surfaces and line the turning vanes, damper housing, and the rest of the casing with Densit. This lining has proven its value in the J-duct, which is just upstream and previously had similar issues, and has shown no erosion or corrosion in the first two years since being lined. The project also includes isolation sealing dampers to allow for bag changes while minimizing derates due to vacuum pressure. Some particulate issues have resulted in forced outages.

**Alternatives Considered:** Replacing the surfaces without lining could have been done, but had been done on turning vanes and the life of the metal was low and would require replacement every few years.

**Installed Date:** November 1, 2020

**Capital Cost:** \$4,827,367

**Operations & Maintenance Cost:** Annual cost of \$20,000.

**Environmental Surcharge Fact Sheet**  
**Cooper Inlet Hopper Discharge Modification with New System**  
**Compliance Plan Project Reference: Amendment to Project No. 11 – Cooper Unit 2 Air**  
**Quality Control System**

**Description:** The EKPC hopper ash inventory control retrofit system is for a reconstruction of an existing ash inventory control at the hoppers “A” and “D” on the west side of the baghouse. The current ash inventory control is made through three overflow discharge pipes connected at the high level of the hoppers and discharging to the by-product disposal bins. The retrofit shall be designed in a way that ash will be automatically discharged through a new discharge control valve and spout connected through an additional opening in the existing hopper discharge box and tied into the existing center overflow pipe.

**Justification:** Current design inhibits operational controls of the levels due to the piping array. Newer generation Andritz Baghouses have a design that controls the flow of lime/ash to the overflow pipes into the byproduct bins. Current design creates operational problems on scrubber startup and wastes a significant amount of lime. These valves will provide feedback to the DCS prompting the operator to close the normally open valve to prevent overflowing lime rich product. Business Goal: Assure plant reliability, increase efficiency, lower lime usage, and lower O&M costs.

**Alternatives Considered:** Given the nature of the work, no other alternatives were considered.

**Installed Date:** June 12, 2018

**Capital Cost:** \$359,709

**Operations & Maintenance Cost:** No additional incremental costs expected.

## **Environmental Surcharge Fact Sheet**

### **Spurlock Landfill-Area C Phase 5**

#### **Compliance Plan Project Reference: Amendment to Project No. 12 – Spurlock Landfill Area C Expansion**

**Description:** Per EKPC’s landfill management program, new construction at ash landfills is sequenced such that one year of capacity is remaining in the existing constructed landfill when the new cell is completed. This provides a one-year buffer at all times to ensure that capacity will be available for Spurlock Station.

**Justification:** Ash Landfills are essential for coal fired power generation. On-site silos usually have around 24 hours of storage before reaching capacity and forcing the power station to shut down. Therefore, at all times the ash from the silos are being emptied and disposed of at the landfill. The Spurlock Station generates approximately 1,265,000 cubic yards of Coal Combustion Residuals annually based on a five-year average and Spurlock Station has the ability to produce up to 2,200,000 cubic yards. Per EKPC’s landfill management plan new construction is sequenced so one year of capacity is remaining in the existing constructed landfill when the new cell is completed. This provides a one-year buffer at all times to ensure that capacity will be available for Spurlock Station.

**Alternatives Considered:** The alternative to constructing additional capacity is to haul the ash to a privately owned municipal solid waste landfill. Our quoted cost for tipping fees and haul was \$50 per ton. The cost to landfill material in Spurlock Landfill Area C is \$13.41 per ton (including permitting, construction, maintenance, and operations).

**Installed Date:** January 10, 2022

**Capital Cost:** \$5,083,982

**Operations & Maintenance Cost:** \$125,000 – maintenance (annual general maintenance budget for landfill); \$92,000 – environmental (includes general environmental engineering consulting, groundwater sampling, operational/environmental inspections). Spurlock also carries a Landfill Operation Contract, which pays for all ash hauling and placement, temporary cover, pond cleaning, mowing and other services.

**Environmental Surcharge Fact Sheet**  
**Smith CCR Groundwater Well-Purchase and Installation**  
**Compliance Plan Project Reference: Amendment to Project No. 15 – Smith Special Waste Landfill**

**Description:** Install five groundwater monitoring wells that meets KDWM and CCR Rule requirements.

**Justification:** Effective October 19, 2015, the CCR Rule prescribes operational and disposal requirements for coal-fired steam electric facilities that generate and dispose of coal combustion residuals. One of the required components of the CCR Rule is that Hydrogeological studies have to be conducted to develop appropriate groundwater monitoring systems for each CCR unit.

**Alternatives Considered:** There were no viable alternatives available to achieve compliance.

**Installed Date:** June 27, 2017

**Capital Cost:** \$325,446.

**Operations & Maintenance Cost:** \$34,500 – includes engineering consulting, groundwater sampling, analysis, and reporting.

**Environmental Surcharge Fact Sheet**  
**Spurlock Lagoon Re-circulation Pumps**  
**Compliance Plan Project Reference: Amendment to Project No. 16 – Spurlock CCR/ELG**

**Description:** Provide a new pumping system to circulate the lagoons to the current Ash Pond and future Water Mass Balance Pond. The existing Ash Water Pumps are being retired as part of the Spurlock CCR / ELG project. The project will also include modifications to the existing piping header and removal of the existing 1250 hp ash water pumps.

**Justification:** The cost of maintaining the existing 1250 hp Ash Water Pumps to be used only to recirculate the lagoons and the loss of station service electricity to operate the pumps (existing pumps are 1250 hp the new pumps would be approximately 125 hp) provide an opportunity to install a new lagoon re-circulation pumping system and save cost. Additionally, replacing the old pumps would provide the plant with a more reliable system. The re-circulation is designed for any kind of environmental issues; the plant can contain the water instead of it draining out the permitted outfall and in to the Ohio River.

**Alternatives Considered:** No other alternatives were considered.

**Installed Date:** June 1, 2023

**Capital Cost:** \$1,285,901

**Operations & Maintenance Cost:** Estimated annual operation and maintenance cost of \$102,030.

**Environmental Surcharge Fact Sheet**  
**Cooper Treatment Plant pH Adjustment**  
**Compliance Plan Project Reference: Project No. 27 – Cooper Treatment Plant pH Adjustment**

**Description:** Cooper has experienced long periods of offline status for their units since 2016. A system to help protect the condensate paths for the units while offline for more than a month was desired. Filming amines was selected as the system to install.

**Justification:** With the boiler and heaters full of condensate, the boiler systems are susceptible to degradation while not running and exposed to oxygen. Filming amines forms a thin layer of protection on the ID of tubes and heaters to protect against oxidation.

**Alternatives Considered:** Three alternatives were considered: 1) pH increase of boiler water; 2) a nitrogen blanket; or 3) installing filming amines. Research indicated several drawbacks associated with the first and second alternative. Filming amines were chosen due to experience reported at other locations and a comparison of the cost versus achieved protection of equipment.

**Installed Date:** December 31, 2019

**Capital Cost:** \$23,276

**Operations & Maintenance Cost:** Based on expected run times for Cooper, cost is estimated to be \$23,550.

**Environmental Surcharge Fact Sheet**

**Spurlock CCR Groundwater Well-Purchase and Installation**

**Compliance Plan Project Reference: Project No. 28 – Spurlock CCR Groundwater Well Monitoring**

**Description:** Install 13 groundwater monitoring wells that meets the CCR Rule requirements at Spurlock Station’s ash pond and landfill.

**Justification:** Effective October 19, 2015, the CCR Rule prescribes operational and disposal requirements for coal-fired steam electric facilities that generate and dispose of coal combustion residuals. One of the required components of the CCR Rule is that Hydrogeological studies have to be conducted to develop appropriate groundwater monitoring systems for each CCR unit.

**Alternatives Considered:** There were no viable alternatives available to achieve compliance.

**Installed Date:** April 18, 2017

**Capital Cost:** \$249,045

**Operations & Maintenance Cost:** \$125,150 – includes engineering consulting, groundwater sampling, analysis, and reporting.

**Environmental Surcharge Fact Sheet**

**Spurlock Air Heater Wash Water Pumping System 2021-2022**

**Compliance Plan Project Reference: Project No. 29 – Spurlock Air Heater Wash Water/Pumping System**

**Description:** Spurlock wash their Unit 1 / Unit 2 air heaters twice a year. Currently, they have to assembly a long run of temporary piping to pump the wash water to the coal pile lagoon. This new system will have catch basins with forward pumps, operating off level floats, to pump through permanent piping to the lagoon.

**Justification:** The temporary piping was labor intensive and cumbersome to assemble biannually. The first 12 hours of the wash included very low pH water from the air heaters that could be a safety concern. This system will contain the wash water and transfer it to the lagoon.

**Alternatives Considered:** The only alternative would be to continue with the twice a year temporary approach, which was labor intensive and time consuming. The original design considered was more extensive, including both Units 3 and 4. It was determined a scaled back project would be effective and is 25% of the costs of the original design.

**Installed Date:** September 13, 2022

**Capital Cost:** \$2,002,438

**Operations & Maintenance Cost:** Do not expect an increase in O&M vs the temporary system.



**Environmental Surcharge Fact Sheet**  
**Spurlock Ash Haul Bridge Expansion Joint Plate Protectors**  
**Compliance Plan Project Reference: Project No. 30 – Spurlock Ash Haul Bridge Expansion Joint Plate Protectors**

**Description:** Install new plate covers to protect the (14) expansion joints located on the Spurlock Ash Haul Bridge. Each plate is rated for the current bridge load capacity of 200 kips. Replace existing EMSEAL expansion joints with upgraded BASF product (expected 20 years life product if protected via the plate covers).

**Justification:** Environmental compliance in order to maintain ash containment over Lawrence Creek at Spurlock. Due to the 200 kip truck loading on the bridge, the residual ash builds up across the existing expansion joint and forces it to fail and fall. Installation of these protection plates will protect and seal the cavity thus minimizing ash coming into contact with the expansion joints and allowing the bridge expansion joints to retain service up to 20 years.

**Alternatives Considered:** Several alternatives were considered regarding the cover plate design (thickness, through bolting, overall general arrangement) along with more of a “do nothing” option where the cover plates were not utilized. Based on over 23 years of service life, the service life of the expansion joints has shown to last approximate 7-8 years with a cost to replace of approximately \$125,000. In addition, to maintain the expansion joints without covering is estimated to be \$10,000 annually due to necessary cleaning and inspections (at the surface and underside of the concrete deck).

**Installed Date:** November 12, 2020

**Capital Cost:** \$342,996

**Operations & Maintenance Cost:** Annual cost of \$5,000.

**Environmental Surcharge Fact Sheet**  
**Spurlock Backup Limestone Conveyor and TDF/Alternate Fuel Feeder**  
**Compliance Plan Project Reference: Project No. 31 – Spurlock Backup Limestone Conveyor**

**Description:** Prior to implementation of this project, there was no backup to the limestone conveyance for Units 3 and 4, presenting a single point of failure common to both units. This project installed a backup limestone conveyor that can alternatively be used to convey TDF or other fuel. The previous transference of TDF used the limestone conveying system. The process required the logic to be bypassed, which allowed the limestone conveyor to operate only when the tripper conveyor was aligned with the limestone bunkers. This function created a potential for tires to be conveyed to the limestone bunkers rather than the coalbunkers. It also had the potential to allow conveying limestone to the coalbunkers if the logic were to remain bypassed after the TDF conveying was complete. Improvements made in this upgrade mitigated the danger of incorrect feeding. Cross feeding occurred prior to this project, but has not happened since.

**Justification:** Loss of a single limestone feed to two units with no backup would result in a derate and/or shut down. The previous configuration presented risks related to cross contamination of fuels; thereby increasing the risk of unit derates. Completion of this project has addressed both of those shortcomings.

**Alternatives Considered:** The only alternative was to use a temporary portable conveyor. However, this approach was not considered to be cost effective.

**Installed Date:** March 12, 2020

**Capital Cost:** \$2,646,723

**Operations & Maintenance Cost:** Annual cost of \$15,039.

**Environmental Surcharge Fact Sheet**

**Spurlock Fly Ash Silo Exhausters**

**Compliance Plan Project Reference: Project No. 32 – Spurlock Fly Ash Silo Exhausters**

**Description:** Replace common Spurlock Units 1 and 2 fly ash silo exhausters.

**Justification:** The existing Units 1 and 2 fly ash silo exhausters have degraded and have a reduced capacity. During the period between the Unit 1 and Unit 2 outages in 2020, both the new and old ash transport systems will be transporting ash to the existing fly ash silo. The silo exhausters must be able to remove gas at its fully rated capacity, which it cannot currently do in its current degraded state.

**Alternatives Considered:** There were no reasonable alternatives to consider. Doing nothing would likely lead to the inability to keep up with fly ash removal which could lead to reduced operating capacity or cause the silo to over pressure which would cause particulate emissions from the silo.

**Installed Date:** May 7, 2020

**Capital Cost:** \$953,827

**Operations & Maintenance Cost:** No increase in expected operations and maintenance costs.

**Environmental Surcharge Fact Sheet**  
**Spurlock Site Wide Service Water Project Phase 1**  
**Compliance Plan Project Reference: Project No. 33 – Spurlock Site Wide Service Water Project**

**Description:** Spurlock Site Wide Service Water Project Phase 1 has two parts: first, provide a tank and pump near the new ELG WWT plant that will provide sufficient pressure and flow necessary to operate the WWT Plant. Second, takes a holistic approach (including testing and modeling the system) at the service water system at Spurlock Station to identify any additional deficiencies currently within the system and gain a better knowledge moving forward of how to spend to improve/maintain the system.

**Justification:** Service water is an essential system at a power station. It is used for many environmental controls such as bottom ash silo mixer, fly ash silo mixers, plant wide fugitive dust control, ELG WWT Plant flush water and chemical mixing water, and Unit 1 & 2 FGD (air pollution control). Due to the number of environmental controls added over the last twenty years and amount of water being used the system has become taxed and at times has issues providing enough flow and pressure to the ash silos. Once limited testing was run it became clear it also would not have enough flow and pressure for the ELG WWT Plant. Instead of installing a separate system for only the WWT Plant it was decided that the least cost and least risk option would to be a holistic approach to resolve any issues due to its importance within the plant.

**Alternatives Considered:** The alternative to construct new wells that could be its own separate service water system or connected to the existing service water system at the ELG WWT plant. However, this was a more expensive option and if it were to be tied into the existing service water system it is unknown whether this would provide the necessary flow and pressure. These uncertainties lead to looking at these issues holistically since each user and supplier effects one another.

**Installed Date:** December 31, 2023

**Capital Cost:** Estimated cost: \$342,448.

**Operations & Maintenance Cost:** The additional assets on the system are estimated to cost \$26,000 yearly for maintenance and operations.

**Environmental Surcharge Fact Sheet**  
**Spurlock Units 1 and 2 Fly Ash Silo Dust Suppression System**  
**Compliance Plan Project Reference: Project No. 34 – Spurlock 1, 2 & 4 Fly Ash Silo Dust Suppression System**

**Description:** The Spurlock Units 1 and 2 fly ash silo dust suppression system is a fogging system that captures the fugitive dust created from conveying the ash from the silo to the truck.

**Justification:** EKPC has a continuous effort to improve the dust emissions at Spurlock Station. In recent years, EKPC has become aware of Dust Solutions, Inc. (DSI) that provides dust suppression equipment using minimal water to control dust.

The heart of the DSI system is a unique Ultrasonic Fogging Nozzle that can produce a large quantity of 1-10 micron sized water droplets with very low water volume. The Fogging Nozzle is part of the Universal Fogger Assembly, which is fabricated from non-corrosive and heavy-duty components. The Universal Fogger Assembly slips into the Fogger Mounts. The design of the Fogger Mounts is of heavy-duty construction, which, when attached to the skirt board covers, chutes or head boxes, will give directional control of the fog pattern so as not to impinge the fog on surrounding equipment.

This fog captures dust as the ash flows from the paddle mixer discharge chute, down through the skirting, to load out on the dump trucks.

**Alternatives Considered:** EKPC was not aware of any other practical alternatives to control dust between the paddle mixer discharge chute and the truck. In 2016 EKPC had installed a DSI system on Spurlock Unit 3 as a pilot project. The DSI system proved effective at Spurlock Unit 3 and the decision was made to install a DSI system at Spurlock Units 1 and 2.

**Installed Date:** January 16, 2018

**Capital Cost:** \$127,547

**Operations & Maintenance Cost:** Annual cost of \$6,000.

## **Environmental Surcharge Fact Sheet**

### **Spurlock Unit 4 Fly Ash Silo Dust Suppression System**

#### **Compliance Plan Project Reference: Project No. 34 – Spurlock 1, 2 & 4 Fly Ash Silo Dust Suppression System**

**Description:** The Spurlock Unit 4 fly ash silo dust suppression system is a fogging system that captures the fugitive dust created from conveying the ash from the silo to the truck.

**Justification:** EKPC has a continuous effort to improve the dust emissions at Spurlock Station. In recent years, EKPC has become aware of Dust Solutions, Inc. (DSI) that provides dust suppression equipment using minimal water to control dust.

The heart of their system is a unique Ultrasonic Fogging Nozzle that can produce a large quantity of 1-10 micron sized water droplets with very low water volume. The Fogging Nozzle is part of the Universal Fogger Assembly, which is fabricated from non-corrosive and heavy-duty components. The Universal Fogger Assembly slips into the Fogger Mounts. The design of the Fogger Mounts is of heavy-duty construction, which, when attached to the skirt board covers, chutes or head boxes, will give directional control of the fog pattern so as not to impinge the fog on surrounding equipment.

This fog captures dust as the ash flows from the paddle mixer discharge chute, down through the skirting, to load out on the dump trucks.

**Alternatives Considered:** EKPC was not aware of any other practical alternatives to control dust between the paddle mixer discharge chute and the truck. In 2016 EKPC had installed a DSI system on Spurlock Unit 3 as a pilot project. The DSI system proved effective at Spurlock Unit 3 and the decision was made to install a DSI system at Spurlock Unit 4.

**Installed Date:** December 31, 2018

**Capital Cost:** \$99,165

**Operations & Maintenance Cost:** Annual cost of \$4,000.

**Environmental Surcharge Fact Sheet**  
**Spurlock Unit 2 Air Heater Deposition Measurement and Control System**  
**Compliance Plan Project Reference: Project No. 35 – Spurlock 2 Air Heater Deposition Measurement & Control**

**Description:** Purchase and install a new Air Heater Deposition Measurement and Control device. Engineering, Purchase & Install Equipment in 2017-2018.

**Justification:** The Unit 2 Air Heater has deposit build up which requires cleaning during a non-annually scheduled outage. This cleaning requires the unit to come off line. The Air Heater Deposition Measurement and Control device will allow monitoring of the amount of deposits on the air heater as well as the depth of deposits. This new device will help the operators control the proper amount of lime and ammonia needed in the system during normal, abnormal, and load changing operation. The continuous deposition-measuring device will help operations control the deposition at a depth that can be removed using the air heater soot blower system thus helping reduce the need for unscheduled air heater wash outage. Maintaining the air heaters at a better cleanliness factor will result in the unit operating more efficient and cost effective year around.

**Alternatives Considered:** Other than continuing with the status quo, there were no alternatives available to address this situation.

**Installed Date:** December 31, 2017

**Capital Cost:** \$397,833

**Operations & Maintenance Cost:** Annual cost of \$25,000.

**Environmental Surcharge Fact Sheet**  
**Spurlock WWT and Ash System Platforms**  
**Compliance Plan Project Reference: Project No. 36 – Spurlock WWT and Ash System Platforms**

**Description:** Install platforms in the new WWT and bottom ash areas of Units 1 and 2.

**Justification:** New valves and maintenance areas in the WWT and ash handling areas need platforms installed for safe and efficient access.

**Alternatives Considered:** Scaffold could provide access but would delay repairs and would be needed too frequently to be cost effective.

**Installed Date:** August 31, 2023

**Capital Cost:** Expected \$700,000.

**Operations & Maintenance Cost:** None.



**Environmental Surcharge Fact Sheet**  
**Spurlock Fly Ash Silo Foggers**  
**Compliance Plan Project Reference: Project No. 37 – Spurlock Fly Ash Silo Foggers**

**Description:** Install foggers on the new fly ash silo to reduce dusting.

**Justification:** The fly ash silo needs foggers added to reduce dusting risk during loading trucks.

**Alternatives Considered:** No other known option for dust suppression.

**Installed Date:** March 1, 2023

**Capital Cost:** Expected \$269,289.

**Operations & Maintenance Cost:** Annual cost of \$26,088.

**Environmental Surcharge Fact Sheet**  
**Spurlock Landfill-Haul Road Paving Phase 1**  
**Compliance Plan Project Reference: Project No. 38 – Spurlock Landfill Haul Road Paving**

**Description:** Design and construct 4,800 linear feet of heavy duty asphalt on the Landfill Haul road at Spurlock.

**Justification:** In spite of best efforts by EKPC, some bottom and fly ash will escape from trucks using the haul road to the landfill. This bottom and fly ash will mix with the fugitive dust from the gravel on the haul road, resulting in a more significant fugitive dust problem. Source water runoff from this 4,800 linear feet section of haul road currently discharges to property not owned by EKPC and does not pass through permitted KPDES outfalls. This project would nearly eliminate the risk of water quality surface water runoff issues for this section of 4,800 linear feet of road. This project will also contribute to the mitigation of fugitive dust by replacing the current gravel surface with an asphalt pavement.

**Alternatives Considered:** Maintaining a gravel surface on the haul road section would be the highest risk option. The options for paving were heavy duty asphalt and concrete, with concrete being the more expensive option.

**Installed Date:** November 24, 2020

**Capital Cost:** \$2,097,196

**Operations & Maintenance Cost:** Annual cost of \$35,000.

## **Environmental Surcharge Fact Sheet**

### **Spurlock Landfill Area D/Peg's Hill Construction – Phase 1 Ponds and Stream Mitigation**

#### **Compliance Plan Project Reference: Project No. 39 – Spurlock Landfill, Area D, Ponds & Stream Mitigation**

**Description:** Per EKPC's landfill management program, new construction at ash landfills is sequenced such that two years of capacity is remaining in the existing constructed landfill when the new cell is completed. This provides a two year buffer at all times to ensure that capacity will be available for Spurlock Station. The construction of the Area D/Peg's Hill Landfill will be performed in phases. The initial phase includes design, construction plans and specifications, and construction of two sedimentation ponds for future landfill operations and stream restoration in an adjacent watershed. Scope of design and construction for these two activities includes site clearing, site preparation, stormwater conveyance, pond access road, pond liner system, outlet structures and emergency overflows, and stream improvements.

**Justification:** Ash Landfills are essential for coal fired power generation. On-site silos usually have around 24 hours of storage before reaching capacity and forcing the power station to shut down. Therefore, at all times the ash from the silos are being emptied and disposed of at the landfill. Spurlock Power Station generates approximately 1,800,000 Cubic Yards (CY) of Coal Combustion Residuals annually (has the ability to produce up to 2,200,000 CY). Per EKPC's landfill management plan new construction is sequenced so two years of capacity is remaining in the existing constructed landfill when the new cell is completed. This provides a two year buffer at all times to ensure that capacity will be available for Spurlock Station.

As part of the permitting package for the development of this landfill, EKPC has applied for a Section 404 Individual Permit and a Section 401 Water Quality Certification. A condition of these permits is the requirement to mitigate for unavoidable permanent impacts to jurisdictional waters. The on-site stream mitigation, which will be conducted in a watershed north of the landfill development area, will be for the impacts associated with the landfill development (ponds and cells).

**Alternatives Considered:** Three alternatives were considered for mitigation of impacts to jurisdictional streams and wetlands. EKPC evaluated the use of a mitigation bank, in-lieu fee programs, and permittee-responsible mitigation.

There is currently only one approved mitigation bank in the service area encompassing Spurlock Station, the Northern Kentucky Wetland Mitigation Bank. The amount of stream credits in the bank is currently insufficient to meet the project stream mitigation needs. Therefore, the use of the approved mitigation bank is not a viable option.

The Northern Kentucky Stream Restoration Program (NKSRRP) is the sponsor for the "Fee In-Lieu Of" (FILO) program in the Spurlock area. The cost per Adjusted Mitigation Unit (AMU) for the FILO program is established by the NKRSP to address the full cost of establishing mitigation credits; including land acquisition, planning, design, construction, planting, monitoring, adaptive management, long-term management, and administrative costs. The estimated cost is \$500 per AMU within the NKSRRP service area. Through the permitting process, the United States Corps

of Engineers requires an additional 20% credit purchase to address temporal losses associated with postponed development of mitigation credits. The FILO cost required for this project would be \$7,553,750.

EKPC evaluated a mitigation site north of the landfill development area. The area allows for full mitigation of impacts within the development area. The area also contains the federally endangered running buffalo clover and is located within potential summer habitat for the federally listed Indiana bat and northern long-eared bat. The mitigation area is of sufficient size and appropriately located to provide watershed-scale ecological benefits, including beneficial effects to federally-listed species, with a project cost estimated at \$3,580,000.

There are no alternatives to the construction of sedimentation basins for the development of the landfill.

**Installed Date:** Originally planned for Fall 2020, with construction of ponds and stream mitigation commencing in the spring of 2019. The Ponds were expected to be completed in the fall of 2019, and the stream mitigation was expected to be completed in the fall of 2020. However, due to changes in the plan and delays due to COVID-19, the project was completed in November 2022.

**Capital Cost:** Original estimated cost of \$6,200,000. Due to delays and market price inflation, the estimated cost was revised to \$11,132,000.

**Operations & Maintenance Cost:** Total - \$181,000  
\$73,000 – Year 1 of 5 post construction monitoring, reporting, and annual maintenance/invasive species control; this includes survey and documentation of as-built conditions.  
\$27,000 – Years 2 through 5 of post construction monitoring, reporting, and annual maintenance/invasive species control.