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 ISSUANCE OF CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY AND OTHER RELIEF	))))))))	CASE NO. 2023-00177

O R D E R

On July 21, 2023,[1] East Kentucky Power Cooperative, Inc. (EKPC) filed an application pursuant to KRS 278.020, KRS 278.183, 807 KAR 5:001 and other applicable law, and requested an Order: (1) approving EKPC's proposed amendment of its Environmental Compliance Plan (ECP); (2) granting EKPC authority to recover the costs associated with said Compliance Plan amendment through its existing environmental surcharge; (3) issuing Certificates of Public Convenience and Necessity (CPCN) for the construction of certain facilities associated with said Compliance Plan amendment; and (4) granting all other required relief.

EKPC requested the Commission authorize amendments to its Compliance Plan to include 23 additional environmental projects necessary to comply with the Disposal of Coal Combustion Residuals (CCR) from Electric Utilities Rule (CCR Rule), the federal

[1] EKPC tendered its application on June 30, 2023. On July 10, 2023, the PSC issued a deficiency letter and then subsequently a deficiency cured letter. On July 21, 2023, the Commission issued an Order noting that the deficiency cured letter was issued in error. The Order found that the deficiency letter be stricken from the record and the application did not comply with 807 KAR 5:001, Section 8(4)(b). EKPC cured the deficiency on July 21, 2023, and the application is deemed filed on July 21, 2023.

Clean Water Act (CWA), and other environmental requirements and obligations that arise from the use of coal in the generation of electric energy.[2] EKPC included two projects in its ECP for which the company believes a CPCN is required: 1) a project to construct Peg's Hill (Area D) Phase 2 of the landfill at its Hugh L. Spurlock Station in Mason County, Kentucky (Spurlock Station) and 2) a project resulting in the Closure in Place of the Cooper former impoundment (CFI) at the John S. Cooper Station in Pulaski County, Kentucky (Cooper Station).[3] Finally, in conjunction with its request to amend its Compliance Plan and seek issuance of appropriate CPCNs, EKPC proposed to recover the costs associated with these activities through its environmental surcharge pursuant to KRS 278.183.[4]

Initially, any expenditures related to the Spurlock Station Phase 2 project will be funded by general corporate cash and borrowings on the Revolving Credit Facility.[5] EKPC will replace any temporary financing with long-term debt issued under the existing trust indenture from the Rural Utilities Service or other lenders.[6] The Cooper Station CFI project also will be funded by general corporate cash and borrowings on the Revolving Credit Facility.[7] EKPC stated that charges related to this project will be recovered promptly as incurred through the Environmental Surcharge.[8] EKPC estimated the total cost of the 25 projects making up the 2023 planned projects at

[2] Application (filed July 21, 2023) at 1-2.

[3] Application at 2.

[4] Application at 2.

[5] Direct Testimony of Thomas J. Stachnik (Stachnik Direct Testimony) (filed July 21, 2023) at 3.

[6] Stachnik Direct Testimony at 3.

[7] Stachnik Direct Testimony at 4.

[8] Stachnik Direct Testimony at 4.

$107.0 million.[9] Of this total, $15.7 million is associated with the Spurlock Station Phase 2 landfill, and $47.2 million is associated with the CFI project at Cooper Station.[10] EKPC stated that the remaining $44.1 million is associated with 23 additional projects located at Spurlock and Cooper Stations.[11]

The Commission issued an Order on July 31, 2023, establishing a procedural schedule for the processing of this case. There were no intervenors in the case. EKPC filed responses to three rounds of data requests propounded by Commission Staff. On October 6, 2023, and subsequently on November 10, 2023, EKPC filed requests that the matter be submitted for a decision based upon the existing record. Accordingly, this matter is now submitted for a decision based upon the existing record.

BACKGROUND

EKPC is a not-for-profit, rural electric cooperative corporation established under KRS Chapter 279. EKPC is an electric utility that generates, transmits, and sells wholesale electricity to its 16 owner-member distribution cooperatives.[12] Those distribution cooperatives, in turn, distribute and sell electricity at retail to approximately 560,000 customers in all or portions of 89 counties in Kentucky.[13] EKPC owns and operates a total of approximately 3,100 megawatts (MW) of net summer generating capability and 3,400 MW of net winter generating capability.[14] EKPC owns and

[9] Direct Testimony of Isaac Scott (Scott Direct Testimony) (filed July 21, 2023) at 5.

[10] Scott Direct Testimony at 5.

[11] Scott Direct Testimony at 5.

[12] Application at 3.

[13] Application at 3.

[14] Application at 3.

operates coal-fired generation at the Cooper Station (341 MW) and the Spurlock Station (1,346 MW).[15]

Cooper Station

Cooper Station is one of EKPC's coal-fired electric generation facilities and is located in the Burnside community of Pulaski County, Kentucky.[16] The Cooper Station is situated adjacent to Lake Cumberland and consists of two electric generation units, Cooper 1 and Cooper 2.[17] EKPC stated that the Cooper Station is currently in compliance with the disposal of Coal Combustion Residuals (CCR) Rule and the Effluent Limitation Guidelines Rule (ELG Rule).[18] Cooper Station has a dry ash handling system.[19] In addition, the Cooper Station has a common flue gas desulfurization system including a pulse jet fabric filter that services both Cooper 1 and Cooper 2, and a selective catalytic reduction system that services only Cooper 2.[20]

Spurlock Station

EKPC's largest coal-fired electric generation facility is the Spurlock Station located a few miles west of downtown Maysville, Kentucky.[21] The Spurlock Station is situated along the Ohio River and consists of four electric generation units, referred to

[15] Application at 3.

[16] Application at 6.

[17] Application at 6.

[18] Application at 7.

[19] Application at 6.

[20] Application at 6.

[21] Application at 4.

as Spurlock 1; Spurlock 2; Spurlock 3, which is also known as the Gilbert Unit; and Spurlock 4.[22]

EKPC has invested in environmental control equipment at the Spurlock Station.[23] Spurlock 1 is equipped with low nitrogen oxide burners (low NOx burners), selective catalytic reduction (SCR) technology, a cold-side electrostatic precipitator (ESP), a wet flue gas desulfurization (FGD) scrubber; and a wet ESP.[24] Spurlock 2 is equipped with low NOx burners, SCR technology, a hot-side ESP, wet FGD scrubber and a wet ESP.[25] Spurlock 3 and 4 utilize Circulating Fluidized Bed technology and are equipped with selective non-catalytic reduction technology, dry FGD scrubbers, and baghouses.[26]

Applicable Environmental Standards

EKPC stated it complies with nearly a dozen federal rules that have been promulgated under the authority of the Clean Air Act (CAA), including: New Source 8 Performance Standards; New Source Review; Title IV of the CAA, including rules governing pollutants that contribute to acid deposition; Title V operating permit requirements; Mercury and Air Toxics Standards; summer ozone trading program requirements promulgated after the United States Environmental Protection Agency (EPA) acted upon Section 126 Petitions and the Ozone State Implementation Plan Call; National Ambient Air Quality Standards for Sulfur Dioxide, Nitrogen Dioxide, Carbon

[22] Application at 4.

[23] Application at 5.

[24] Application at 5.

[25] Application at 5.

[26] Application at 5.

Monoxide, Ozone, Particulate Matter, Particulate Matter of 2.5 microns or less and Lead; the Cross State Air Pollution Rule; and the Regional Haze Rule.[27]

The EPA also promulgated the ELG Rule and Standards for the Steam Electric Power Generating Point Source Category 2016.[28] The standards set forth in the ELG Rule are incorporated into the Kentucky Pollutant Discharge Elimination System (KPDES) requirements imposed upon EKPC by the Kentucky Energy and Environment Cabinet's (EEC) Division of Water (DOW).[29]

The CCR Rule governs the classification, collection, and disposal of certain by-products of the combustion of coal (fly ash, bottom ash, boiler slag and flue gas desulfurization materials).[30] According to EKPC, the final CCR Rule, which became effective October 19, 2015, applies to owners and operators of new and existing landfills and new and existing surface impoundments (including all lateral expansions of such landfills and surface impoundments) where CCR material is disposed.[31] According to EKPC, the principal objectives of the CCR Rule are as follows:

1) Impose structural integrity requirements to reduce the risk of catastrophic failure of CCR landfills and impoundments.

2) Protect groundwater through monitoring and corrective actions, location restrictions and landfill and impoundment liner design criteria.

3) Adopt operating criteria for CCR landfills and impoundments.

[27] Application at 7-8.

[28] Application at 9.

[29] Application at 9.

[30] Application at 8.

[31] Application at 8.

4) Impose record-keeping, notification, and publicly available internet website posting obligations.

5) Establish obligations for inactive CCR landfills and impoundments.

6) Administer state programs to implement the CCR Rule.

7) Establish CCR landfill and impoundment closure obligations.

8) Establish guidelines for beneficial reuse of CCR materials.[32]

EKPC stated the Compliance Plans that have been submitted are a result of the CCR Rule.[33]

THE PROPOSED COMPLIANCE PLAN

EKPC initially submitted an ECP in 2005 and it has been amended on six occasions.[34] The proposed ECP includes two proposed projects for which EKPC requested a CPCN. The first project is associated with the Closure in Place of the CFI

[32] Application at 8-9.

[33] Application at 9.

[34] *See* Case No. 2004-00321, *Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement an Environmental Surcharge* (Ky. PSC Mar. 17, 2005); Case No. 2008-00115, *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge* (Ky. PSC Sept. 29, 2008); Case No. 2010-00083, *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge* (Ky. PSC Sept. 24, 2010); Case No. 2013-00259, *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Alteration of Certain Equipment at the Cooper Station and Approval of a Compliance Plan Amendment for Environmental Surcharge Cost Recovery* (Ky. PSC Feb. 20, 2014); Case No. 2014-00252, *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for construction of an Ash Landfill at J.K. Smith Station, the Removal of Impounded Ash from William C. Dale Station for Transport to J.K. Smith and Approval of a Compliance Plan Amendment for Environmental Surcharge Recovery* (Ky. PSC Mar. 6, 2015); Case No. 2017-00376, *In the Matter of the Application of East Kentucky Power Cooperative, Inc. for Approval to Amend its Environmental Compliance Plan and Recover Costs pursuant to its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief* (Ky. PSC May 18, 2018); Case No. 2018-00270, *In the Matter of the 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 Certificate and Public Convenience and Necessity* (Ky. PSC Apr. 1, 2019).

at the Cooper Station. The second project is to construct the Peg's Hill (Area D) Phase 2 of the Spurlock Station. Also included in the ECP is the recovery of costs associated with 23 additional environmental projects which have already been completed or soon will be completed in the ordinary course of business, but not previously included in a Commission approved ECP. Details of each project are provided below:

Request for a CPCN for Cooper Station CFI Project

In 1977, a dam was constructed to contain approximately 65 acres of ponded area for the sluicing of coal combustion residue.[35] The ash pond received sluiced coal combustion residue, including fly ash and bottom ash, from the Cooper Station until 1992 when the two generating units were converted to a dry ash system.[36] The ash pond is now referred to as the CFI. The proposed CFI project includes the closure in place of the CFI and consolidating the 65 acres into 40 acres.[37] According to the application, the reduction of the footprint of the CFI would be accomplished by excavation of the Coal Combustion Byproduct (CCB) from the perimeter margins of the CFI and the consolidation of the CCB within the smaller footprint.[38]

Prior to beginning excavation, EKPC stated dewatering will commence to allow for safe execution of the CCB consolidation and associated excavation and will continue as necessary through the CCB grading activities.[39] EKPC stated that the dewatered

[35] Application Volume 2, Direct Testimony of Laura Lemaster (Lemaster Direct Testimony) (filed July 21, 2023) at unnumbered page 5.

[36] Lemaster Direct Testimony at unnumbered page 5.

[37] Lemaster Direct Testimony at unnumbered page 5.

[38] Lemaster Direct Testimony at unnumbered page 5.

[39] Lemaster Direct Testimony at unnumbered page 7.

flow will be treated as necessary to meet the KPDES outfall requirements.[40] The proposed plan includes perimeter stormwater ditches and stormwater basins for long-term stormwater control to be constructed.[41] After the CCB footprint is reduced, EKPC plans to grade the site of the consolidated CCB to allow for surface water to drain from the final cover system to the new ditches and stormwater basins.[42]

During construction activities, EKPC stated that a temporary perimeter stormwater system would be installed to reduce the amount of run on to the CFI area.[43] This temporary stormwater collection system includes the construction of temporary containment berms and pumping systems to the northern stormwater basin for discharge through a KPDES outfall location.[44] The southern stormwater control basin would be utilized during construction as a sedimentation basin for construction site runoff during the project.

EKPC stated that it intended to apply for a KPDES permit from the DOW for all stormwater discharge associated with the CFI project.[45] Once the cap system is complete, the temporary stormwater system will be removed.[46] Upon completion of the CCB site grading, the final cap system will be installed.[47] According to EKPC, the final cap system will consist of a 40-mil geomembrane, with a geotextile cushion overlain by

[40] Lemaster Direct Testimony at unnumbered page 7.

[41] Lemaster Direct Testimony at unnumbered page 7.

[42] Application at 15.

[43] Application at 15.

[44] Application at 16.

[45] Application at 16.

[46] Lemaster Direct Testimony at unnumbered page 7.

[47] Application at 16.

two feet of a soil protection layer.[48] The soil protection layer will include topsoil to allow for native grasses.[49] The cover system will allow for surface water drainage from the cap system into the perimeter stormwater ditches.[50] According to EKPC, the proposed final cap system will meet the substantive design requirements of the 2015 CCR Rule, which were not changed in the EPA's recently proposed amendments to the 2015 CCR Rule 33.[51]

EKPC evaluated four alternatives for the CFI closure project:

- Alternative 1 – Monitor and Mitigate: Under this alternative, woody vegetation would be cleared and there would have been a revegetation of the CFI. A monitoring program would be established which would include inspections of the CFI. Any items noted during the inspections would be mitigated or remediated as required on a case-by-case basis. [52]
- Alternative 2 – Closure in Place: The footprint of the CFI would be reduced from 65 acres to approximately 40 acres and the stored CCB would be dewatered. Perimeter stormwater ditches and stormwater basins would be constructed. A final cap system would be installed at the CFI.[53]
- Alternative 3 – Closure by Removal: The CCB material in the CFI would be excavated, hauled, compacted, and placed in the Cooper Station CCR

[48] Application at 16.

[49] Application at 16.

[50] Application at 16.

[51] Application at 16.

[52] Application at 16.

[53] Application at 17.

landfill. This would require a horizontal expansion of the Cooper Station CCR landfill. This alternative would also include the restoration of the CFI area to as close to preconstruction conditions as practicable.[54]

- Alternative 4 – Closure in Place with in situ Stabilization: The alternative includes the Closure in Place provided in Alternative 2 with the addition of in situ Stabilization. This alternative calls for the construction of overlapping grout columns at the base of the CFI above any karst locations. A cementitious mix is combined with the CCB to increase strength and reduce hydraulic conductivity. The intent of the process is the creation of a CCB-cement monolith at the base of the area. [55]

Based on the evaluation, EKPC determined that Alternative 2, the Closure in Place, was the alternative that was the most environmentally responsible, least cost, and reasonable alternative.[56] Alternative 1 was the lowest cost alternative but did not provide adequate environmental protection.[57] Alternatives 2, 3, and 4 all provided adequate long term environmental protection with Alternative 2 being the least cost.[58] The anticipated cost for the CFI Closure in Place alternative is $47.2 million, with an estimated annual operation and maintenance expense of $65,000.[59]

[54] Application at 17.

[55] Application at 17.

[56] Application at 17, Lemaster Direct Testimony at unnumbered page 8.

[57] Application at 17, Lemaster Direct Testimony at unnumbered page 8.

[58] Application at 17, Lemaster Direct Testimony at unnumbered page 8.

[59] Application at 16.

Request for a CPCN for Spurlock Station Landfill Phase 2

The Spurlock Station is a coal fired generating facility. As a result of combusting coal to generate steam electricity, the coal-fired boilers produce large volumes of CCR, which requires disposal.[60] In addition, EKPC is completing the clean closure by removal of CCR from its on-site surface impoundment at Spurlock Station, which ceased receiving CCR in October 2022, as required by the federal CCR Rule.[61] The remaining CCR is being removed as weather permits and placed in the existing permitted Spurlock CCR landfill.[62] This removal and disposal of CCR from the surface impoundment has created the need to increase on-site CCR landfill disposal capacity.[63] The additional landfill capacity will be provided by a new landfill phase, and has been permitted through an Agreed Order[64] with the EEC Division of Waste Management.[65]

EKPC stated that to ensure the uninterrupted operation of Spurlock Station, sufficient capacity to dispose of CCR must be maintained at all times.[66] According to EKPC, the risk of running out of capacity at the Spurlock Landfill has significant financial implications for the operational costs for Spurlock Station.[67] To manage this risk, EKPC developed its Landfill Management Plan.[68] The Landfill Management Plan provides

[60] Direct Testimony of Jerry B. Purvis (Purvis Direct Testimony) (filed July 21, 2023) at 6.

[61] Purvis Direct Testimony at 6.

[62] Purvis Direct Testimony at 6.

[63] Purvis Direct Testimony at 6.

[64] Purvis Direct Testimony at 6.

[65] Purvis Direct Testimony at 6.

[66] Application at 12.

[67] Application at 12.

[68] Application at 12.

operational limits on the minimum amount of constructed and permitted landfill capacity at all times, as well as outlines risk mitigation components related to environmental and regulatory compliance at EKPC's landfill facilities.[69] Consistent with its Landfill Management Plan, EKPC has designed the Peg's Hill (Area D) Phase 2 landfill cell.[70] This landfill cell will be 17.33 acres and will provide approximately 2,000,000 cubic yards of ash disposal capacity for the Spurlock Station.[71] Landfill cells are designed to target two to three years of CCR disposal capacity, and the landfill cells are expected to be constructed in one calendar year.[72]

EKPC stated that the Peg's Hill (Area D) Phase 2 construction is projected to provide capacity through 2026. According to the application, the design and construction will comply with all state and federal regulations and will include a composite liner system[73] and a continuous leachate collection system.[74] Additionally the landfill cell construction include perimeter ditches and drainage features, subgrade preparation, and access roads.[75] The anticipated cost of the Peg's Hill (Area D) Phase 2 landfill cell is $15.7 million.[76] The annual on-going operation and maintenance expense is estimated to be $242,000. When considering whether to develop the Area D Landfill, Phase 2 EKPC evaluated several onsite and offsite CCR disposal alternatives.

[69] Application at 12.

[70] Application at 12.

[71] Application at 12.

[72] Application at 12.

[73] The composite liner system utilizes geosynthetic clay and 60-mil HDPE.

[74] Application at 12.

[75] Application at 12.

[76] Application at 13.

Among the alternatives EKPC considered was disposal of CCR material in an existing permitted municipal solid waste landfill, a new landfill constructed by EKPC at a site located less than ten miles from the Spurlock Station, and the various means of CCR transportation to each disposal option. Of the alternatives evaluated, the Area D Landfill site at Spurlock Station was identified as the preferred alternative due to the ability to minimize impacts to natural features, provide a large buffer from adjacent property owners, utilize existing infrastructure, and reduce transportation and disposal costs.[77] EKPC concluded that the Peg's Hill (Area D) Phase 2 landfill cell is the reasonable, least-cost option to address the Spurlock Station CCR disposal needs.[78]

Proposed Amendments to the Environmental Compliance Plan

EKPC sought authority to amend its Compliance Plan to include 22 additional environmental projects (Project) and one additional project approved in Case No. 2017-00376.[79] Of the total 25 proposed projects, 23 are completed and in service or were expected to be completed by the end of 2023.[80] As discussed above, EKPC requested a CPCN for two projects.

EKPC stated that the projects are necessary in order to maintain compliance with federal or state environmental regulations impacting coal-fired generation facilities and, with the exception of the two projects for which it requested a CPCN, were completed in

[77] Application at 13.

[78] Application at 13.

[79] 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* (Ky. PSC May 18, 2018).

[80] Purvis Direct Testimony at 14-15.

the ordinary course of business[81] or have previously been granted a CPCN. EKPC further requested authority to recover the costs associated with the Compliance Plan through its existing environmental surcharge.[82]

In developing its compliance strategy, EKPC stated that it took into account whether the measures, consistent with EKPC's strategic plan, will maximize returns on capital investments while also mitigating exposure to stranded costs in order to limit the impact on system reliability and exposure to future regulatory changes.[83]

Additionally, EKPC's amendment to its Compliance Plan consists of the following projects:

1. Amendment to Project No. 1 – Gilbert - Spurlock 3 Baghouse (Liner): EKPC stated that the utility engineered, purchased, and installed new damper housing assemblies, including new turning vanes, inlet isolation dampers, and hopper inlets.[84] EKPC also stated that all surfaces were to be Densit lined, which is a high wear resistance refractory material.[85] According to EKPC, the maintenance on the baghouse had increased over the last couple of years and repairs were becoming difficult due to the base metal being too thin for repair, and in an effort to reduce outages and maintenance cost, EKPC replaced the base metal surfaces and lined the turning vanes, damper housing, and the rest of the casing with Densit.[86] The capital cost of the project

[81] Application at 2.

[82] Purvis Direct Testimony at 14.

[83] Application at 2.

[84] Joseph T. VonDerHaar Direct Testimony, Attachment JV-1, PDF (VonDerHaar Direct Testimony) (filed Oct. 19, 2023) at 6.

[85] VonDerHaar Direct Testimony, Attachment JV-1 at 6.

[86] VonDerHaar Direct Testimony Attachment JV-1, PDF at 6.

was $5,465,071 with an ongoing operating and maintenance (O&M) cost of $20,000.00.[87]

2. Amendment to Project No. 3 – Spurlock 1 Selective Catalytic Reduction (SCR) - Spurlock 1 Sonic Horns: EKPC purchased sonic air horns from Acoustic Cleaning System, Inc., and then installed them on each layer of the Spurlock 1 SCR Reactor.[88] There are six horns per SCR catalyst layer, with 18 horns in the SCR Reactor.[89] According to EKPC, devices like SCR sonic horns help to remove ash buildup on SCR catalyst layer by using sonic waves to remove nested fly ash.[90] Without devices like these, EKPC stated that flue gas flow restrictions will occur causing a decrease in unit generation capacity.[91] The sonic air horns were installed on May 18, 2020, with a capital cost of $162,151 and an ongoing O&M cost $18,000 a year.[92]

3. Amendment to Project No. 4 – Spurlock 2 SCR - Spurlock Unit 2 Sonic Horns: EKPC purchased sonic air horns from Acoustic Cleaning System, Inc., and then installed them on each layer of the Unit 2 SCR.[93] There are eight horns per SCR catalyst layer, with a total of 24 horns in the SCR Reactor.[94] Sonic air horns are used to shake ash particles loose in the SCR catalyst beds.[95] EKPC stated the need for the

[87] VonDerHaar Direct Testimony Attachment JV-1, PDF at 6.

[88] VonDerHaar Direct Testimony Attachment JV-1, PDF at 7.

[89] VonDerHaar Direct Testimony Attachment JV-1, PDF at 7.

[90] VonDerHaar Direct Testimony Attachment JV-1, PDF at 7.

[91] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 7.

[92] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 7.

[93] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

[94] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

[95] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

project arose in 2018 when the reboiler steam line was out of commission due to the 8-week International Paper outage which left the soot blowers on the Unit 2 SCR without steam.[96] No steam to clean the ash off the catalyst would have caused the ash to build up and plug the catalyst.[97] This project was completed in December 2017 and the capital cost was $224,529, with ongoing O&M expense of $25,000 a year.[98]

4. Amendment to Project No. 9 – Spurlock 4 - Spurlock 4 Baghouse (Liner): EKPC engineered, purchased, and installed new damper housing assemblies, including new turning vanes, inlet isolation dampers, and hopper inlets.[99] According to EKPC, the maintenance on the baghouse had increased over the last couple of years and repairs were becoming difficult due to the base metal being too thin for repair.[100] In an effort to reduce outages and maintenance cost, EKPC replaced the base metal surfaces and lined the turning vanes, damper housing, and the rest of the casing with Densit.[101] The project was completed in November 2020, and the capital cost was $4,827,367, with annual O&M expense of approximately $20,000.[102]

5. Amendment to Project No. 11 – Cooper 2 Air Quality Control System Cooper Inlet Hopper Discharge Modification with New System: According to the testimony, EKPC installed a hopper ash inventory control retrofit system for a reconstruction of an existing ash inventory control at the hoppers “A” and “D” on the

[96] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

[97] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

[98] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 8.

[99] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 9.

[100] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 9.

[101] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 9.

[102] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 9.

west side of the baghouse.[103] The retrofit was designed to allow ash to be discharged automatically 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.[104] EKPC stated that the old design created operational problems on scrubber startup and wasted a significant amount of lime.[105] EKPC averred that these valves will assure plant reliability, increase efficiency, lower lime usage, and lower O&M costs.[106] The project was installed in June 2018 and had capital cost of $359,709, with no expected ongoing O&M expenses.[107]

6. Amendment to Project No. 12 – Spurlock Landfill Area C Expansion Spurlock Landfill-Area C, Phase 5: In compliance with 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.[108] The program provides a one-year buffer at all times to ensure that capacity will be available for Spurlock Station.[109] The Spurlock Station generates approximately 1,265,000 cubic yards of CCRs annually based on a five-year average, and Spurlock Station has the ability to produce up to 2,200,000 cubic yards.[110] In this case, EKPC stated that It was

[103] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 10.

[104] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 10.

[105] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 10.

[106] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 10.

[107] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 10.

[108] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[109] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[110] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

quoted a cost for tipping fees and haul for the ash at $50 per ton.[111] The cost to landfill material in Spurlock Landfill Area C is $13.41 per ton, including permitting, construction, maintenance, and operations.[112] The project was installed on January 10, 2022, and the capital cost was $5,083,982 with ongoing O&M expenses of $125,000 in maintenance and $92,000 in environmental.[113] EKPC stated that the utility has a Landfill Operation Contract for Spurlock Station, which pays for all ash hauling and placement, temporary cover, pond cleaning, mowing and other services.[114]

7. Amendment to Project No. 15 – Smith Special Waste Landfill - Smith CCR Groundwater Well-Purchase and Installation: To comply with KDWM and CCR Rule requirements, EKPC installed five groundwater monitoring wells.[115] According to EKPC, 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 and this project enabled the utility to comply with that requirement.[116] The wells were installed in June 2017 and the capital cost was $325,446, along with ongoing O&M expense of $34,500 including engineering consulting, groundwater sampling, analysis, and reporting.[117]

8. Amendment to Project No. 16 – Spurlock CCR/ELG - Spurlock Lagoon Re-circulation Pumps: EKPC provided a new pumping system to circulate the lagoons

[111] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[112] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[113] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[114] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 11.

[115] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 12.

[116] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 12.

[117] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 12.

to the current Ash Pond and future Water Mass Balance Pond at Spurlock Station.[118] The existing Ash Water Pumps were retired as part of the Spurlock CCR/ELG project.[119] The project also included modifications to the existing piping header and removal of the existing 1250 hp ash water pumps.[120] EKPC alleged that the new system saved the utility money and additionally, replacing the old pumps would provide the plant with a more reliable system.[121] The new system was installed in June 2023 and the capital cost was $1,285,901 with annual ongoing O&M cost estimated to be approximately $102,030.[122]

9. Project No. 27 – Cooper Station Treatment Plant pH Adjustment: According to EKPC, Cooper Station has experienced long periods of offline status for its units since 2016.[123] With the boiler and heaters full of condensate, the boiler systems are susceptible to degradation while not running and exposed to oxygen.[124] EKPC stated that filming amines forms a thin layer of protection on the ID of tubes and heaters to protect against oxidation.[125] After EKPC conducted analysis, it chose filming amines due to experience reported at other locations and a comparison of the cost versus achieved protection of equipment.[126] EKPC installed filming amines in December 2019

[118] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 13.

[119] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 13.

[120] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 13.

[121] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 13.

[122] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 13.

[123] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 14.

[124] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 14.

[125] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 14.

[126] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 14.

and the capital cost was $23,276 with ongoing O&M expense, based on expected run times for Cooper Station, estimated at $23,550.[127]

10. Project No. 28 – Spurlock CCR Groundwater Well Monitoring - Spurlock CCR Groundwater Well-Purchase and Installation: EKPC stated it installed 13 groundwater monitoring wells that met the CCR Rule requirements at Spurlock Station's ash pond and landfill.[128] According to EKPC, 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.[129] The installation of the wells allowed for EKPC to meet this requirement.[130] The wells were installed April 2017, and the capital cost was $249,045 with ongoing O&M cost of $125,150, including engineering consulting, groundwater sampling, analysis, and reporting.[131]

11. Project No. 29 – Spurlock Air Heater Wash Water/Pumping System 2021-2022: Employees at Spurlock Station wash the Unit 1 and Unit 2 air heaters twice a year.[132] Prior to the installation of the new system, the employees had to assemble a long run of temporary piping to pump the wash water to the coal pile lagoon.[133] The new system has catch basins with forward pumps, operating off level floats, to pump through permanent piping to the lagoon.[134] EKPC chose a scaled down design from the

[127] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 14.

[128] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 15.

[129] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 15.

[130] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 15.

[131] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 15.

[132] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

[133] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

[134] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

original design which had included Units 3 and 4.[135] However, EKPC stated it would still be effective in saving labor and time.[136] The new system was installed in September 2022, and the capital cost was $2,002,438 with no additional ongoing increase in O&M expense in comparison to the previous temporary system.[137]

12. Project No. 30 – Spurlock Station Ash Haul Bridge Expansion Joint Plate Protectors: EKPC stated that it installed new plate covers to protect the (14) expansion joints located on the Spurlock Ash Haul Bridge.[138] Each plate is rated for the current bridge load capacity of 200 kips. Replacing the existing EMSEAL expansion joints with upgraded BASF product is expected to increase the expected life of the cover plates to 20 years.[139] EKPC considered several alternatives 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 approximately 7-8 years with a cost to replace of approximately $125,000.[140] In addition, to maintain the expansion joints without covering, EKPC estimated an annual $10,000 expense associated with the necessary cleaning and inspections (at the surface and underside of

[135] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

[136] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

[137] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 16.

[138] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[139] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[140] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

the concrete deck).[141] The modifications were installed in November 2020, with a capital cost of $342,996 with an annual operations and maintenance cost of $5,000.[142]

13. Project No. 31 – Spurlock Backup Limestone Conveyor: EKPC reported that there is no backup to the limestone conveyance for Units 3 and 4, presenting a single point of failure common to both units.[143] This project included the installation of a backup limestone conveyor that can alternatively be used to convey tire derived fuel (TDF) or other fuel.[144] The previous transference of TDF used the limestone conveying system.[145] The process required the logic to be bypassed, which allowed the limestone conveyor to operate only when the tripped conveyor was aligned with the limestone bunkers.[146] This function created a potential for tires to be conveyed to the limestone bunkers rather than the coalbunkers.[147] 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.[148] EKPC did consider the alternative to use a temporary portable conveyor. However, this approach was not considered to be cost effective.[149] The

[141] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[142] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[143] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[144] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17.

[145] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17

[146] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17

[147] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 17

[148] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 18.

[149] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 18.

project was installed in March 2020, with a capital cost of $2,646,723 with an annual operations and maintenance cost of $15,039.[150]

14. Project No. 32 – Spurlock Fly Ash Silo Exhausters: Spurlock operators have reported that the existing Units 1 and 2 fly ash silo exhausters have degraded and have a reduced capacity.[151] 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.[152] The silo exhauster must be able to remove gas at its fully rated capacity, which it cannot currently do in its current degraded state of the exhausters.[153] EKPC stated that there were no reasonable alternatives to consider.[154] Doing nothing likely would 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.[155] Therefore, in May 2020, EKPC replaced the common Spurlock Units 1 and 2 fly ash exhausters at a capital cost of $953,827 with no additional operations and maintenances costs.[156]

15. Project No. 33 – Spurlock Site Wide Service Water Project: EKPC noted that the facility's service water system is an essential system at a power station.[157] It is used for many environmental controls such as bottom ash silo mixer, fly ash silo mixers,

[150] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 18.

[151] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 18.

[152] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 18.

[153] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 19.

[154] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 19.

[155] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 19.

[156] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 19.

[157] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

plant wide fugitive dust control, ELG wastewater treatment plant (WWT) flush water and chemical mixing water, and Unit 1 & 2 FGD (air pollution control).[158] Due to the number of environmental controls added over the last twenty years and amount of water being used, EKPC stated that the system has become taxed and at times has issues providing enough flow and pressure to the ash silos.[159] EKPC tested the system and determined it would not have enough flow and pressure for the ELG WWT Plant.[160] Instead of installing a separate system for only the WWT Plant, EKPC 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.[161]

EKPC 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.[162] 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.[163] These uncertainties led to looking at these issues holistically since each user and supplier affects one another.[164] To ensure the integrity of the service water system, EKPC elected to upgrade the Spurlock service water system to include a new storage tank and pumping system at a capital cost of $342,448

[158] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[159] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[160] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[161] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[162] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[163] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[164] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

and an annual operations and maintenance cost of $26,000.[165] The project was scheduled to be completed in December 2023.[166]

16. Project No. 34 – Spurlock Unit 1 and 2 Fly Ash Silo Dust Suppression System: EKPC has made a continuous effort to improve the dust emissions at Spurlock Station.[167] In recent years, EKPC became aware of Dust Solutions, Inc. (DSI), a company that provides dust suppression equipment using minimal water to control dust.[168] This system was successfully installed on Spurlock Unit 3 in 2016.[169] Based on the success of the Unit 3 project, in January 2018 EKPC installed the new DSI dust suppression system on Spurlock Units 1 and 2 fly ash silos at a capital cost of $127,547 and an annual operations and maintenance cost of $6,000.[170]

17. Project No. 34 – Spurlock Unit 4 Fly Ash Silo Dust Suppression System: EKPC has made a continuous effort to improve the dust emissions at Spurlock Station.[171] DSI's dust suppression was successfully installed on Spurlock Unit 3 in 2016.[172] Based on the success of the Unit 3 project, in January 2018 EKPC installed the new DSI dust suppression system on Spurlock Units 4 fly ash silos at a capital cost of $99,165 and an annual operations and maintenance cost of $4,000.[173]

[165] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[166] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 20.

[167] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 21.

[168] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 21.

[169] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 21.

[170] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 21.

[171] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 22.

[172] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 22.

[173] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 22.

18. Project No. 35 – Spurlock 2 Air Heater Deposition Measurement & Control: The Spurlock Station operators have indicated that the Unit 2 Air Heater has experienced excessive deposit build up on the air heater elements, which required the unit to be removed from service to clean the air heater during a non-annually scheduled outage.[174] A new Air Heater Deposition Measurement and Control device was installed to allow monitoring of the amount of deposits on the air heater, as well as the depth of deposits.[175] Additionally, 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.[176] In December 2017, EKPC installed a new air heater deposition measurement and control system at a capital cost of $397,833 and an annual operations and maintenance cost of $25,000.[177]

19. Project No. 36 – Spurlock WWT and Ash System Platforms: To safely and efficiently access the Unit 1 and 2 newly installed WWT valves and bottom ash maintenance areas, the Spurlock Station operators installed new access platforms in August 2023 at a capital cost of $700,000.[178] There is no additional ongoing maintenance expense associated with this project.[179]

20. Project No. 37 – Spurlock Station New Fly Ash Silo Foggers: EKPC installed foggers at the fly ash silo to reduce dusting risk during the truck loading

[174] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 23.

[175] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 23.

[176] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 23.

[177] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 23.

[178] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 24.

[179] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 24.

process.[180] The foggers were installed in March 2023 at a capital cost of $269,289 and an annual operations and maintenance cost of $26,088.[181]

21. Project No. 38 – Spurlock Landfill Haul Road Paving: To reduce the fugitive dust associated with the transfer of bottom and fly ash over the existing gravel landfill haul road, EKPC installed a new 4,800 linear feet, heavy duty asphalt road over the existing gravel haul road.[182] EKPC stated concrete was considered but it was the more expensive alternative.[183] The installation was completed in November 2020 at a capital cost of $2,097,196 with an annual operations and maintenance cost of $35,000.[184]

22. Project No. 39 – Spurlock Landfill, Area D, Ponds & Stream Mitigation: Pursuant to 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[185] providing 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.[186] The initial phase included design, construction plans and specifications, and construction of two sedimentation ponds for future landfill operations and stream restoration in an adjacent watershed.[187] Scope of

[180] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 25.

[181] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 25.

[182] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 25.

[183] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 25.

[184] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 26.

[185] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 27-28.

[186] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 27-28.

[187] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 27-28.

design and construction for these two activities included site clearing, site preparation, stormwater conveyance, pond access road, pond liner system, outlet structures and emergency overflows, and stream improvements.[188] The associated ponds and stream mitigation work was completed in November 2022 at a capital cost of $11,132,000 with an annual operation and maintenance cost of $181,000.[189]

23. Project 40 - Spurlock Landfill, Area D, Phase 1: The final additional environmental project is associated with the Spurlock Landfill, Area D, Phase 1 project, Case No. Case No. 2017-00376.[190] With this project, EKPC intended to expand the existing landfill at the Spurlock Station to accommodate the transfer and disposal of CCR materials from the Spurlock Station ash pond, which EKPC proposed to close as part of its compliance with the CCR Rule.[191] The Commission granted a CPCN for the Spurlock Station Landfill, Area D, Phase 1 in the May 18, 2018 Order; however, the project was not incorporated into the 2018 compliance plan amendment approved by the Commission.

Because it was not part of the amended environmental compliance plan, EKPC had not included the costs associated with the Spurlock Station Landfill, Area D, Phase 1 in its surcharge recovery.[192] EKPC proposed that this additional environmental project should appropriately be included as part of its currently proposed amendment to

[188] VonDerHaar Direct Testimony, Attachment JV-1, PDF at 27-28.

[189] VonDerHaar Direct Testimony at 28.

[190] 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* (Ky. PSC May 18, 2018).

[191] VonDerHaar Direct Testimony at 7.

[192] VonDerHaar Direct Testimony at 7.

its Environmental Compliance Plan.[193] The Spurlock Landfill Area D, Phase 1 project was scheduled to be completed in September 2023 with a capital cost of $4,979,252.[194]

EKPC stated that the anticipated cost of the additional environmental projects listed above is $44.1 million and that the associated annual estimated incremental operating and maintenance expenses will be $816,357.[195] EKPC will finance the proposed projects through funds available to it from normal operations or its unsecured Credit Facility; once a project is completed; any short-term debt associated with the project has or will be refinanced using long-term debt available under EKPC's Trust Indenture.[196]

DISCUSSION AND FINDINGS

CPCN

The Commission's standard of review of a request for a CPCN is well settled. No utility may construct or acquire any facility to be used in providing utility service to the public until it has obtained a CPCN from this Commission. To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.[197]

Need requires:

> [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new

[193] VonDerHaar Direct Testimony at 8.

[194] Application at 21.

[195] VonDerHaar Direct Testimony, Attachment, JV-1 PDF at 1-28.

[196] Application at 13.

[197] *Kentucky Utilities Co. v. Pub. Serv. Comm'n*., 252 S.W.2d 885 (Ky. 1952).

> system or facility to be constructed or operated.
>
> [T]he inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.[198]

Wasteful duplication is defined as an excess of capacity over need and an excessive investment in relation to productivity or efficiency, and an unnecessary multiplicity of physical properties.[199] To demonstrate that a proposed facility does not result in wasteful duplication, we have held that the applicant must demonstrate that a thorough review of all reasonable alternatives has been performed.[200] Here, EKPC proposes a plan that would allow it to comply with federal and state environmental requirements applicable to coal combustion wastes, byproducts, and effluents from facilities utilized for production of energy from coal.

Cooper Station CFI closure CPCN

EKPC has proposed a CFI closure at the Cooper Station. As mentioned above, EKPC evaluated four alternatives for the CFI closure project at Cooper Station.[201]

1. The first alternative was referred to as the Monitor and Mitigate alternative. A monitoring program would be established which would include inspections of the CFI

[198] Kentucky Utilities Co. v. Pub. Serv. Comm'n., 252 S.W.2d at 890.

[199] Kentucky Utilities Co. v. Pub. Serv. Comm'n., 252 S.W.2d at 890.

[200] Case No. 2005-00142, *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky* (Ky. PSC Sept. 8, 2005).

[201] Application at 16-17.

or ash pond. Any items noted during the inspections would be mitigated or remediated as required on a case-by-case basis.

2. The second alternative is referred to as Closure in Place. The footprint of the CFI would be reduced from 65 acres to approximately 40 acres and the stored CCB would be dewatered. Perimeter stormwater ditches and stormwater basins would be constructed. A final cap system would be installed at the CFI.

3. A third alternative was also considered and was referred to as Closure by Removal. The CCB material in the CFI would be excavated, hauled, compacted, and placed in the Cooper Station CCR landfill. This would require a horizontal expansion of the Cooper Station CCR landfill. This alternative would also include the restoration of the CFI area to as close to preconstruction conditions as practicable.

4. The fourth alternative analyzed was referred to as Closure in Place with in Situ Stabilization. This alternative includes the Closure in Place provided in Alternative 2 with the addition of in Situ Stabilization. This alternative calls for the construction of overlapping grout columns at the base of the CFI above any karst locations.

EKPC and its contractor evaluated the cost and risks associated with each of the alternatives. Based on the evaluation, the first alternative, Monitor and Mitigate, was determined to be the least cost option.[202] However, this option included an inherent risk of the possibility of a significant spillover into Lake Cumberland. Although the risk of a potential spill may be improbable, the environmental impact as well as real cost

[202] LeMaster Direct Testimony at 6.

associated with a spill would be considerable.[203] Although it was not the least cost option, EKPC determined that Alternative 2, the Closure in Place, was the alternative that was the most environmentally responsible and least cost, reasonable alternative. The costs for alternatives 3 and 4 were estimated to be significantly greater than the Closure in Place alternative. The CFI is needed to comply with environmental regulatory requirements, and it does not result in any wasteful duplication.

Based on a detailed review of EKPC's analysis of these alternatives, the Commission finds that the CPCN for the CFI at the Cooper Station should be granted and should be included in EKPC's Compliance Plan.

The Commission recommends EKPC investigate a new beneficial reuse market for the fly ash, gypsum, and bottom ash and consider new proposals for CCR disposal in the next ESM filing.[204]

Spurlock Station Landfill Expansion CPCN

At the Spurlock Station, EKPC evaluated several onsite and offsite CCR disposal alternatives that would allow it to comply with environmental regulatory requirements. Included among the alternatives EKPC considered was the disposal of CCR material in an existing permitted municipal solid waste landfill, a new landfill constructed by EKPC at a site located less than ten miles from the Spurlock Station, and the various means of CCR transportation to each disposal option.[205]

[203] LeMaster Direct Testimony at 8.

[204] EKPC's Response to Staff's Second Request, Item 2.

[205] Direct Testimony of Patrick Bischoff (Bischoff Direct Testimony) at 6.

Based on a careful review of assumptions and the alternatives considered,[206] the Commission finds that EKPC produced a reasonable plan to assure its compliance with current environmental regulations. Of the alternatives evaluated, the Area D (Phase 2) Landfill site at Spurlock Station was identified as the preferred alternative.[207] EKPC found the Peg's Hill (Area D) Phase 2 landfill cell is the reasonable, least-cost option to address the Spurlock Station CCR disposal needs. The Area D Landfill will not result in any wasteful duplication.

Based on a detailed review of EKPC's analysis of these alternatives, the Commission finds that the requested CPCN for the project at the Spurlock Station be granted and be included in its Compliance Plan.

Additional Environmental Projects

EKPC proposed to include 23 additional environmental projects that were in place at the time of EKPC's application or were scheduled to be placed in service in 2023 in its environmental compliance plan. EKPC appears to have invested considerable time and attention to ensuring continued compliance with the myriad of environmental requirements applicable to its coal-fired facilities. Twenty-two of these additional environmental projects are relatively minor in nature, are undertaken in the usual course of EKPC's business, and involve the expenditure of limited funds. EKPC's estimated cost of these 22 additional environmental projects is $39,117,885 with an annual operating and maintenance cost of $816,357. The Commission notes that no CPCN is required or requested for these projects.[208]

[206] EKPC's Response to Staff's First Request, Items 6-9.

[207] Bischoff Direct Testimony at 6.

[208] Scott Direct Testimony, at 5.

The last additional environmental project is associated with the Spurlock Landfill, Area D, Phase 1 project, Case No. 2017-00376.[209] With this project, EKPC intended to expand the existing landfill at the Spurlock Station to accommodate the transfer and disposal of CCR materials from the Spurlock Station ash pond, which EKPC proposed to close as part of its compliance with the CCR Rule.[210] The Commission granted a CPCN for the Spurlock Station Landfill, Area D, Phase 1 in the May 18, 2018 Order; however, the project was not incorporated into the 2018 compliance plan amendment approved by the Commission.[211] As noted previously, because it was not part of the amended environmental compliance plan, EKPC has not included the costs associated with the Spurlock Station Landfill, Area D, Phase 1 in its surcharge recovery.[212] EKPC has proposed that this additional environmental project should appropriately be included as part of its currently proposed amendment to its Environmental Compliance Plan.[213] The Spurlock Landfill Area D, Phase 1 project was scheduled to be completed in September 2023 with a capital cost of $4,979,252.[214]

Based on a detailed review of the EKPC provided summary of the additional environmental projects, the Commission finds that the 23 additional environmental projects should be included in EKPC's Environmental Compliance Plan.

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[209] 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* (Ky PSC May 18, 2018).

[210] VonDerHaar Direct Testimony at 7.

[211] VonDerHaar Direct Testimony at 7.

[212] VonDerHaar Direct Testimony at 8.

[213] VonDerHaar Direct Testimony at 8.

[214] Application at 21.

Environmental Surcharge Calculation

EKPC sought approval to amend its Environmental Compliance Plan to include the 25 environmental projects discussed throughout this Order, including the projects for which EKPC sought a CPCN, as well as recovery through its environmental surcharge the approximate $107 million in costs associated with those projects.[215] Further, EKPC proposed to expense, rather than capitalize, the costs as incurred associated with the CFI closure project of approximately $47.2 million.[216] EKPC explained that this rate-making treatment corresponds with past Commission decisions concerning ash hauling costs in Case No. 2014-00252[217] and Case No. 2017-00376,[218] given that the costs incurred were not going to extend the useful life of the ash ponds in question.[219] EKPC estimated that the incremental annual operations and maintenance expense associated with the projects in its Compliance Plan will be approximately $1.1 million.[220] Finally, EKPC proposed to earn a return on its monthly Construction Work in Progress (CWIP) balance, consistent with the treatment approved in Case No. 2008-00115.[221] EKPC

[215] Application at 30.

[216] Scott Direct Testimony at 12.

[217] Case No. 2014-00252, *Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for Construction of an Ash Landfill at J.K. Smith Station, the Removal of Impounded Ash from William C. Dale Station for Transport to J.K. Smith and Approval of a Compliance Plan Amendment for Environmental Surcharge Recovery* (Ky. PSC Mar. 6, 2015), Order.

[218] Case No. 2017-00376 *Application of East Kentucky Power Cooperative, Inc. for Approval to Amend Its Environmental Compliance Plan and Recovery Costs Pursuant to Its Environmental Surcharge, Settlement of Certain Asset Retirement Obligations and Issuance of a Certificate of Public Convenience and Necessity and Other Relief* (Ky. PSC May 18, 2018), Order.

[219] EKPC's Response to Staff's First Request, Item 3 and Item 14.

[220] Application at 31.

[221] Scott Direct Testimony at 12; Case No. 2008-00115, *The Application of East Kentucky Power Cooperative, Inc. for Approval of an Amendment to Its Environmental Compliance Plan and Environmental Surcharge* (Ky. PSC Sept. 29, 2008).

contended that, while it accrued Allowance for Funds Used During Construction (AFUDC) on its construction projects, the balance of CWIP included in the Environmental Compliance Plan would be net of AFUDC.

The Commission has reviewed and finds reasonable EKPC's calculation of the approximate $107 million in costs associated with the 25 environmental projects. Further, the Commission agrees with EKPC and finds that its proposal to expense rather than capitalize its approximately $47.2 million in costs associated with the CFI closure project as consistent with the Commission's rate-making precedents. As well, the Commission finds that EKPC always has been allowed to earn a cash return on its CWIP balance and its accounting treatment avoids double recovery on the CWIP.

Rate of Return and Rate Impact

The Settlement Agreement approved in Case No. 2004-00321[222] provided that the rate of return would be the weighted average debt cost of the debt issuances directly related to the projects in EKPC's Compliance Plan, multiplied by a Times Interest Earned Ratio (TIER) factor. The Settlement Agreement further provided that EKPC update the return and request Commission approval of the updated average cost of debt.[223]

EKPC calculated a weighted cost of debt as of March 31, 2023, of 4.398 percent. EKPC calculated an updated rate of return as of March 31, 2023, of 6.487 percent,[224]

[222] Case No. 2004-00321, *Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement Environmental Surcharge* (Ky. PSC Mar. 17, 2005).

[223] Case No. 2004-00321, Mar. 17, 2005 Order, Appendix A at 3.

[224] Application at 31.

utilizing the TIER factor of 1.475 authorized in Case No. 2021-00103.[225] EKPC contended that it is reasonable to continue use of its 1.475 TIER remain fair, just and reasonable because its Fitch credit rating of "BBB+" and its S&P Global credit rating of "A" are the same in May 2023 as they were in May 2021.[226] EKPC explained that the approach of determining the rate of return using the TIER level authorized in the most recent base rate case multiplied by the weighted average cost of debt is consistent with the methodology utilized in every environmental surcharge review since the surcharge mechanism was authorized in Case No. 2004-00321.[227] Finally, EKPC estimated that the annual environmental surcharge impact to its Compliance Plan on a residential customer using 1,125 kWh of electricity each month would be $0.31, $1.36, $2.00, and $0.32 for each calendar year from 2024 to 2027.[228]

The Commission has reviewed and finds reasonable EKPC's determination of the update rate of return of 6.487 percent, reflecting the updated weighted average cost of debt of 4.398 percent and a 1.475 TIER factor. The Commission finds that EKPC should use a rate of return of 6.487 percent for all environmental surcharge monthly filings after the date of this Order. Finally, the Commission has reviewed the annual rate impact of the updated environmental surcharge and finds it to be reasonable.

[225] Stachnik Direct Testimony at 4.

[226] EKPC's Response to Staff's First Request, Item-12 at 1-3.

[227] EKPC's Response to Staff's First Request, Item 12 at 4-5; Case No. 2004-00321, *Application of East Kentucky Power Cooperative, Inc. for Approval of an Environmental Compliance Plan and Authority to Implement Environmental Surcharge* (Ky. PSC Mar. 17, 2005).

[228] Application at 32. From 2024 to 2027, the Estimated Annual Revenue Requirement would be $4,847,602; $21,626,957; $31,725,881, and $5,194,265. The respective percentage increase Wholesale and Retail would be 0.43% and 0.31% in 2024; 1.90% and 1.37% in 2025; 2.79% and 2.01% in 2026; and 0.46% and 0.33% in 2027.

IT IS HEREBY ORDERED that:

1. EKPC is granted a CPCN to construct the Cooper Station CFI Closure in Place.

2. EKPC is granted a CPCN to construct the Spurlock Station Phase 2 Peg's Hill Landfill.

3. EKPC's request to amend its Compliance Plan, as reflected in its application, for purposes of recovering the costs of the additional environmental projects through its environmental surcharge is granted.

4. EKPC's request to revise its monthly environmental surcharge reporting formats to reflect the inclusion of the proposed projects as set forth in its application is granted.

5. EKPC shall provide a status update to the Commission on a semi-annual basis beginning six months from service of this Order, as associated with the beneficial use of the Cooper Station's fly ash, bottom ash and gypsum until EKPC files for its next Environmental Compliance Plan Amendment.

6. EKPC will provide a status update to the Commission on a semi-annual basis, as associated with the beneficial use of the Spurlock Station's fly ash, bottom ash and gypsum.

7. This case is closed and removed from the Commission's docket.

PUBLIC SERVICE COMMISSION

Chairman

Vice Chairman

Commissioner

ENTERED

JAN 11 2024

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KENTUCKY PUBLIC SERVICE COMMISSION

ATTEST:

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