COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In The Matter Of:

The Application Of Kentucky Power Company For:	**)**	
(1) A Certificate Of Public Convenience And Necessity	**)**	
Authorizing The Company To Close Big Sandy Plant	**)**	**Case No. 2015-00152**
Coal Ash Impoundment; And (2) For All Other Required	**)**	
Approvals And Relief	**)**	

DIRECT TESTIMONY

OF

JOSEPH G. DERUNTZ

ON BEHALF OF KENTUCKY POWER COMPANY

VERIFICATION

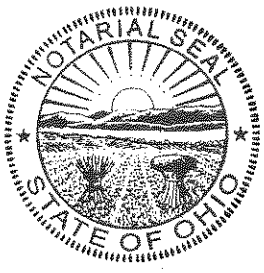
The undersigned, Joseph G. DeRuntz, being duly sworn, deposes and says he is a General Project Manager, for American Electric Power that he has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of his information, knowledge and belief

Joseph G. DeRuntz

STATE OF OHIO)
) 2015-00152
COUNTY OF FRANKLIN)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Joseph G. DeRuntz, this the 11th day of June, 2015.

Notary Public



Lisa M. Wade
Notary Public, State of Ohio
My Commission Expires 12-19-2017

My Commission Expires: 12-19-17

TABLE OF CONTENTS

DIRECT TESTIMONY OF
JOSEPH G. DERUNTZ, ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

I. INTRODUCTION

Q. WHAT IS YOUR NAME, BUSINESS ADDRESS AND POSITION?

A. My name is Joseph G. DeRuntz, and my business address is 1 Riverside Plaza, Columbus, Ohio 43215. I am employed by the American Electric Power Service Corporation ("AEPSC") as Project Manager - Staff. AEPSC supplies engineering, financing, accounting, project management and planning and advisory services to the ten electric operating companies of the American Electric Power ("AEP") System, one of which is Kentucky Power Company ("Kentucky Power" or "Company").

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a Bachelor of Science Degree in Civil Engineering from the University of Missouri-Rolla in 1984 and a Masters of Business Administration degree from the Fisher College of Business at The Ohio State University in 2001. My professional experience includes 30 years working for AEP companies on the design, construction, retrofit, and maintenance of coal, natural gas and nuclear power plants and their associated environmental controls. I have held various positions including design engineer, construction coordinator, project engineer, asset manager and project manager.

Q. WHAT ARE YOUR RESPONSIBILITIES AS PROJECT MANAGER – STAFF FOR AEPSC?

A. I am responsible for the safe and efficient initiation, planning, execution and monitoring and control of capital projects that serve the needs of the AEP generation fleet. Reporting to me and under my responsibility are Project Managers, each responsible for individual and multiple projects.

Q. HAVE YOU BEEN INVOLVED IN ANY OTHER PROJECTS WHERE COAL ASH IMPOUNDMENTS HAVE BEEN CLOSED?

A. Yes. AEPSC currently is conducting two other similar impoundment closure projects in the AEP system. These projects are located at AEP's John Amos Plant near Winfield, West Virginia and Gavin Plant near Cheshire, Ohio.

The Amos Project involves the closure of an approximately 165 acre fly ash reservoir. The project is currently in its second year of construction and is expected to be complete at the end of 2017. As the first large fly ash reservoir closure undertaken by AEPSC, this project has been treated as a first of a kind case where engineering approaches and construction techniques are tested to optimize future projects.

The Gavin Project involves the closure of an approximately 300 acre fly ash reservoir. The project is preparing to start pre-construction activities in order to support full construction starting in 2016 with an expected completion in 2020.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

The purpose of my testimony is to describe Kentucky Power's proposal to close the coal ash impoundment at the Big Sandy Plant ("Big Sandy Impoundment") following the planned retirement of Big Sandy Unit 2 and the conversion of Big Sandy Unit 1 to a natural gas-fired plant (the "Project"). Specifically, I will outline the work necessary to

complete the Project and describe the regulatory requirements driving the need for the Project. I will also describe the cost estimate, construction plan, schedule, and project management methodology that the Company will use for the Project.

Q. ARE YOU SPONSORING ANY EXHIBITS IN THIS PROCEEDING?

A. Yes, I am sponsoring the following exhibits:

Exhibit JGD-1 – KDWM Permit Application (without attachments)[1]

Exhibit JGD-2 – Project Schedule

Exhibit JGD-3 – Project Cost Estimate

Q. WERE YOUR EXHIBITS USED TO SUPPORT YOUR TESTIMONY PREPARED BY YOU OR UNDER YOUR DIRECT SUPERVISION?

A. With the exception of the permit application and associated drawings, Yes.

III. CLOSURE OF THE BIG SANDY IMPOUNDMENT

Q. PLEASE DESCRIBE THE BIG SANDY IMPOUNDMENT.

A. The Big Sandy Impoundment is a 140 acre wet fly ash impoundment formed by the construction of the Horseford Creek Dam. As such, its area is slightly smaller than the Amos impoundment and approximately one-half the size of the area of the Gavin impoundment. The Big Sandy Impoundment was constructed and put into service in 1969 and has a total storage capacity of 8,302 acre-feet (13.4 million yd^3) when the level of the fly ash in the impoundment reaches an elevation of 705 ft. msl (mean sea level). The current elevation of fly ash in the impoundment varies from 624 to 695 ft. msl.

Q. WHERE IS THE BIG SANDY IMPOUNDMENT LOCATED?

A. The Big Sandy Impoundment is located approximately 0.75 miles northwest of and

[1] Due to their size, the attachments to Exhibit JGD-1 are not included. These attachments are included with Exhibit 2 to the Application in this case.

across US Highway 23 from the Company's Big Sandy Plant near Louisa in Lawrence County, Kentucky.

Q. PLEASE DESCRIBE HOW COAL COMBUSTION BYPRODUCTS ARE HANDLED AT THE BIG SANDY PLANT.

A. Coal combustion byproducts ("CCBs") are the residual material that remains after burning coal to generate electricity. One of the CCBs produced at Big Sandy Plant is fly ash, a fine powdery ash captured in the plant's electrostatic precipitators. To facilitate transportation and disposal, water is combined with the fly ash to create a slurry. The Company pumps the slurry mixture to the Big Sandy Impoundment via piping. Once placed in the Big Sandy Impoundment, the fly ash settles out of the mixture and the water is discharged to Blaine Creek in accordance with the Company's Kentucky Pollution Discharge Elimination System ("KPDES") permit. The Big Sandy Impoundment is sized to accommodate the volume of fly ash produced with no need for further handling of the fly ash.

Q. HOW IS THE BIG SANDY IMPOUNDMENT CURRENTLY REGULATED?

A. The Big Sandy Impoundment is regulated under Kentucky's solid waste management rules and the Clean Water Act. Under Kentucky's solid waste management rules CCBs such as those stored at the Big Sandy Impoundment are considered a special waste. The Big Sandy Impoundment is authorized under a permit by rule in accordance with 401 KAR 45:060, Section 1(4). This regulation grants permits by rule to "special waste surface impoundments in substantial compliance with KPDES permits." Kentucky Power also operates the Big Sandy Impoundment in accordance with KPDES Permit

number KY0000221. In addition, the Horseford Creek Dam is authorized by Dam Permit 186 issued by the Kentucky Division of Water ("KDOW").

Q. WILL THE RETIREMENT OF THE BIG SANDY COAL ASSETS AFFECT THE BIG SANDY ASH IMPOUNDMENT'S REGULATORY STATUS?

A. Yes. With the cessation of coal-fired generation at the Big Sandy Plant, the Big Sandy Impoundment will no longer be required and must be closed. In the absence of a specific pond closure permitting protocol, and under the direction of the Kentucky Division of Waste Management ("KDWM"), the closure of the Big Sandy Impoundment is being pursued utilizing KDWM's Special Waste Landfill permitting process.

Q. HAS THE COMPANY RECEIVED THE NECESSARY PERMIT TO CLOSE THE BIG SANDY ASH IMPOUNDMENT?

A. Not yet. Kentucky Power submitted its Application for a Special Waste Landfill Permit (Application Number APE20130002) to the KDWM on July 9, 2013. Currently, the permit application is under technical review where the Company and AEPSC are working with KDWM to resolve and respond to technical questions raised by the agency. After all technical issues are resolved, KDWM will issue a draft permit for public comment. Following closure of the public comment period, KDWM will address any comments received and issue the permit. The Company expects the permit to be issued by the end of 2015. A copy of the application for the KDWM permit is included as **EXHIBIT JGD-1.**

Q. BEYOND THE KDWM LANDFILL PERMIT, WILL THE COMPANY NEED ANY ADDITIONAL PERMITS TO CLOSE THE BIG SANDY IMPOUNDMENT?

A. Yes. In March 2014, KDOW's Dam Safety Section issued a permit to Kentucky Power to modify the Horseford Creek Dam. This new permit, Number 20872, allows the Company to lower the dam and construct a new spillway. Kentucky Power is also in the process of securing a permit from the US Army Corps of Engineers under Section 404 of the Clean Water Act. The Section 404 Permit will require Kentucky Power to mitigate the impacts on wetlands and streams associated with closure of the fly ash impoundment. Along with the Section 404 permit from the Corps of Engineering, the Company will require a water quality certification under Section 401 of the Clean Water Act from KDOW. While not a requirement to close the Big Sandy Impoundment, the existing KPDES permit must also be modified to account for the change in discharges from the Big Sandy Plant. The application to modify the KPDES permit will be submitted at the end of 2015.

Q. WILL THE PROPOSED CLOSURE COMPLY WITH THE RECENTLY ANNOUNCED COAL COMBUSTION RESIDUAL RULE?

A. Yes. On December 19, 2014, the United States Environmental Protection Agency ("EPA") issued the pre-publication version of the final coal combustion residual rule ("CCR Rule"). The CCR Rule was published in the Federal Register on April 17, 2015 (80 Fed. Reg. 21302); it will be effective October 14, 2015 and will impose specific certifications, ground water monitoring, and post closure care and monitoring requirements for the closed Big Sandy Impoundment.

Q. ARE THERE ANY FINANCIALLY PRACTICABLE ALTERNATIVES TO CLOSING THE BIG SANDY IMPOUNDMENT IN PLACE?

A. No. Although it is sometimes possible to dispose of the fly-ash off-site by transporting it to an off-site landfill, the estimated cost of doing so in connection with the Big Sandy impoundment is anticipated to be several times greater than closing the impoundment in place. As a result, the Company did not further evaluate off-site disposal of the fly ash in the Big Sandy Impoundment.

Q. WHY IS OFF-SITE DISPOSAL NOT A FINANCIALLY PRACTICABLE METHOD OF CLOSING THE BIG SANDY IMPOUNDMENT?

A. As an initial matter, there is no existing permitted landfill, owned by the Company, in the vicinity of the Big Sandy Impoundment that could receive the fly ash. More importantly, the volume of fly ash stored in the Big Sandy Impoundment makes transfer for off-site disposal cost prohibitive.

Q. ARE YOU FAMILIAR WITH EAST KENTUCKY POWER COOPERATIVE'S ("EKPC") PLAN FOR CLOSING THE ASH IMPOUNDMENT AT ITS DALE STATION?

A. My team and I reviewed the publicly available application and testimony submitted by EKPC in Case No. 2014-00252 as well as the Commission's order in that case.

Q. EKPC IDENTIFIED THE OFF-SITE DISPOSAL OF THE COAL ASH FROM THE DALE STATION AS THE LEAST COST ALTERNATIVE. WHAT ARE THE KEY DIFFERENCES BETWEEN EKPC'S SITUATION AT THE DALE STATION AND THE COMPANY'S SITUATION AT BIG SANDY?

A. Based on our review of the materials in Case No. 2014-00252, there are several fundamental differences between EKPC's situation at the Dale Station and the Company's situation at Big Sandy. First, it appears that due to the Dale ash pond's

location relative to the Kentucky River, there would be more regulatory challenges associated with obtaining a permit from KDWM for the closure. Second, EKPC already held a permit for a special waste landfill at its Smith Station located 27.3 miles from Dale.

Most importantly, however, the fundamental difference between the EKPC plan and the Project proposed by Kentucky Power is the volume of ash involved. EKPC estimated that approximately 560,000 cubic yards of fly ash would be transported from Dale to the new landfill at Smith. EKPC estimated that the cost of ash dewatering, staging, loading, and hauling to the Smith landfill would be $9,857,000. This represents a cost per cubic yard amount of $17.60/yd^3, which is comparable to AEPSC estimates.

In contrast, the Big Sandy Impoundment is estimated to hold between 8.5 million and 10 million cubic yards of fly ash. That is more than 15 times the volume of the ash to be disposed of from the Dale landfill. Using the $17.60/yd^3 cost of ash handling utilized by EKPC, the cost of transporting fly ash from the Big Sandy Impoundment to a permitted landfill a similar distance away would range between $149,600,000 and $176,000,000. These are fly ash handling and transportation costs alone and do not include disposal or landfill development cost or the cost to restore the impoundment property itself.

Q. HOW DID THE COMPANY ENSURE THAT THE PROJECT DESIGN WOULD BE THE LEAST COST OPTION?

A. AEPSC, on behalf of the Company, hired URS (recently acquired by AECOM), a national consulting firm, to engineer and design the cap and associated site drainage for the Project. During the course of this engineering effort, periodic evaluations were

conducted to review and refine the Project design to minimize, to the greatest extent possible, the amount of fly ash handling when establishing the subgrade and placing borrow material when constructing the cap itself. Because of these evaluations and the design refinements that resulted, the final Project design provides the lowest cost alternative for closing the Big Sandy Impoundment.

Q. PLEASE DESCRIBE GENERALLY THE STEPS NECESSARY TO CLOSE THE BIG SANDY IMPOUNDMENT.

A. First, the Big Sandy Impoundment will be drained of surface water by digging temporary drainage channels in the deposited ash. The surface water will be discharged in accordance with the Company's current KPDES permit for the Big Sandy Impoundment. Concurrent with removal of surface water, the Company will begin grading of exposed ash. The grading process will establish the subgrade that sets the elevations needed to channel the storm water flow across the closed impoundment. Once the subgrade is established, the impoundment will be capped with a flexible membrane liner (FML), protective cover soil layer, and, finally, a topsoil layer that will be seeded to establish a vegetative cover. Work will be progress from the highest to lowest elevations across the impoundment in sections so that construction storm water impacts are minimized. As work progresses toward the lowest area of the impoundment the dam will be modified to allow water to flow freely across the closed site. A ground water monitoring network of wells will be installed to support the post closure care and monitoring requirements in the permit.

Q. WHEN DOES THE COMPANY ANTICIPATE THE BIG SANDY ASH IMPOUNDMENT PROJECT WILL BE COMPLETE?

A. Once the KDWM permit is received, the Company anticipates being able to begin construction in early 2016. The anticipated completion date for the Project is the end of 2020. A detailed project schedule is included as **EXHIBIT JGD-2**.

IV. PROJECT EXECUTION

Q. PLEASE PROVIDE AN OVERVIEW OF THE CURRENT EXECUTION PLAN FOR THE BIG SANDY ASH IMPOUNDMENT PROJECT.

A. The Project will be completed in two phases using an approach successfully used in executing many AEP system projects.

The major activities to be conducted in Phase I include engineering studies to determine the technical options for impoundment closure followed by a cost analysis to determine the most cost effective solution. Once a solution is determined the project scope, cost estimate and Level 1 schedule are developed. Engineering and design is undertaken to produce the documents and calculations needed to prepare and submit the various permit applications. Finally, a construction execution plan is developed to establish the parameters that will be used when bidding the impoundment closure work with contractors, and any pre-construction activities are started.

The major activities to be conducted during Phase II of the Project include bidding and award of the construction contract for closing the impoundment and development of the post closure care and monitoring plan.

A review and update of the schedule and estimate will be conducted between Phase I and II to confirm the project is meeting expectations and to obtain financial authorization to proceed.

Q. IN WHAT PHASE IS THE BIG SANDY ASH IMPOUNDMENT PROJECT CURRENTLY?

A. The Project Team is currently performing Phase I activities as the Company awaits receipt of permits, along with the certificate requested in this case, to start Phase II activities.

Q. PLEASE DESCRIBE THE ACTIVITIES THAT HAVE BEEN COMPLETED AND ARE IN PROGRESS DURING PHASE I.

A. The formal project initiation process began with the preparation and approval of the Project Charter by Kentucky Power and AEPSC. The Project Charter, a document typically generated by the Project Manager, was utilized to formally request and obtain internal authorization of initial Project funding. In addition, the Project Charter defines a high level scope of work, goals and objectives, risk factors, success criteria and presents a preliminary high level cost estimate and initial Project milestone schedule. Following approval of the Project Charter, Kentucky Power, acting through AEPSC, engaged URS to perform the initial engineering, design, and technical evaluations to define the impoundment closure options. Defining and evaluating the impoundment closure options provided clarification to the parameters that drive the Project objectives. Besides the safety issues associated with excavating and placing wet fly ash, the primary driver for the Project was to design the cap to meet permeability requirements and to shed storm water across the site. Secondarily, the major cost drivers are related to minimizing fly ash subgrade material handling and identifying borrow areas for topsoil and protective layer material. After the cap design and water flow approach were finalized, detailed engineering and design were undertaken by URS on behalf of Kentucky Power. In

particular, URS performed the engineering calculations, produced drawings and prepared the documents to support the environmental permit applications, as well as this application. AEPSC continues to work with the KDWM and Corps of Engineers to address any technical issues with the permit applications.

Finally, the Project team is developing a construction execution plan to guide the contractors selected to bid the construction work to close the impoundment.

Q. PLEASE DESCRIBE THE ACTIVITIES THAT WILL TAKE PLACE IN PHASE II.

A. Phase II work consists of finalizing all drawings and specifications to conform to the final permit requirements and to bring them to an Issue for Construction status so they can be incorporated into a bid package. The bid packages will be prepared and requests for proposals issued to contractors. The contractors to whom the bid packages are sent will be selected based on safety record, financial strength, technical capability and experience. The bidding and final contractor selection will follow established standard procurement processes for this type of work.

Prior to contract award, a final reconciliation of the scope, budget, cash flows and Project schedule will be made to reflect the information and details contained in the contract. Once a contractor is selected, construction will commence in accordance with the terms of the contract.

Finally, during Phase II and prior to completion of construction activities, the post closure care and monitoring plan will be reviewed and modified as needed to address the as-built site conditions. Post closure care and monitoring will be required to ensure the integrity of the impoundment cap and will be required for 30 years following completion

of closure construction. Post closure care and monitoring will include semi-annual mowing of vegetation across the site, maintenance of erosion areas, if any, and monitoring of groundwater.

Q. WHAT ARE THE MAJOR BENEFITS DERIVED FROM THIS PHASED APPROACH?

A. The phased approach to project management is used commonly by AEPSC and is considered a best practice in managing large projects. It incorporates progressive elaboration to check and adjust the Project plan as new and more refined information becomes available. The utilization of "phase gates" at the end of each phase provides a logical break point for the project team to evaluate its progress against the project objectives. It also allows the AEPSC project team to report progress to Kentucky Power management with respect to the project success criteria and any critical risks or opportunities that may have been identified.

V. BIG SANDY ASH IMPOUNDMENT PROJECT COST ESTIMATE

Q. WHAT IS THE ESTIMATED COST FOR THE BIG SANDY IMPOUNDMENT PROJECT?

A. The total estimated capital cost of the Project is $62.3 million. The cost estimate includes $59.1 million for closure construction and $3.2 million for post closure care and monitoring; detail can be found in **Exhibit JGD-3**.

Q. HOW WAS THE COST ESTIMATE FOR THE PROJECT DEVELOPED?

A. The cost estimate was developed by an independent engineering firm with inputs and oversight from AEPSC. AEPSC reviewed the independent consultant's estimate for completeness; added scope based on subsequent design modifications and additional

permitting requirements; and included Owner's costs to arrive at the total Project cost estimate.

Q. WHAT OTHER ACTIVITIES MUST BE COMPLETED PRIOR TO THE DEVELOPMENT OF A MORE DETAILED COST ESTIMATE?

A. The Project is nearing completion of Phase I with the engineering and design essentially complete. During Phase II, the cost estimate will be reconciled during the RFP process when bids are received from the contractors.

Q. IS IT YOUR PROFESSIONAL OPINION THAT KENTUCKY POWER HAS DEVELOPED A REASONABLE COST ESTIMATE FOR CONSTRUCTION OF THE PROJECT?

A. Yes. The cost estimate for the Project is reasonable considering the development basis and the amount of site-specific engineering and design work completed to date. The current $62.3 million estimate reflects sufficient risk dollars to ensure that the final job cost will not exceed the estimate. AEPSC has successfully used this cost estimation procedure for numerous other construction projects throughout the AEP system.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY IN THIS CASE?

A. Yes.