Cause No. 45795

FILED
November 1, 2022
INDIANA UTILITY
REGULATORY COMMISSION

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY

d/b/a CENTERPOINT ENERGY INDIANA SOUTH

(CEI SOUTH)

IURC
PETITIONER'S
EXHIBIT NO. 2
3-14-23
DATE REPORTER

DIRECT TESTIMONY

OF

WAYNE D. GAMES

VICE PRESIDENT POWER GENERATION OPERATIONS

ON

CULLEY EAST ASH POND CCR COMPLIANCE PROJECT

OFFICIAL
EXHIBITS

SPONSORING PETITIONER'S EXHIBIT NO. 2 (PUBLIC),

ATTACHMENTS WDG-1 THROUGH WDG-2

DIRECT TESTIMONY OF WAYNE D. GAMES

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Wayne D. Games. My business address is 211 NW Riverside Drive, Evansville, Indiana, 47708.

Q. BY WHOM ARE YOU EMPLOYED?

A. I am employed by Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South ("Petitioner", "CEI South", or "Company), which is an indirect subsidiary of CenterPoint Energy, Inc.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS DIRECT TESTIMONY?

A. I am submitting testimony on behalf of CEI South.

Q. WHAT IS YOUR ROLE WITH RESPECT TO PETITIONER CEI SOUTH?

A. I am the Vice President Power Generation Operations.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I received a Bachelor of Arts in Industrial Technology from Ohio Northern University in 1980 and a Master of Arts in Management from Antioch University in 2002.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. I have over thirty years of varied experience in the utility industry. I started my career with The Dayton Power & Light Co. in 1991 where I held supervisory, manager, and regional manager titles on the energy delivery side of the business. Upon joining the Company in 2000, I served as Director of Construction and Service and Regional Manager in the Ohio service area. In 2003, I moved to Evansville, Indiana, and accepted responsibility as Director of Petitioner's A.B. Brown Generating Station. I was promoted to Vice President of Power Supply in April of 2011 and named to my present position in February 2019.

Q. WHAT ARE YOUR PRESENT DUTIES AND RESPONSIBILITIES AS VICE PRESIDENT POWER GENERATION OPERATIONS?

A. I am responsible for the overall budgeting, operation, maintenance, and personnel decisions for Petitioner's electric generation fleet. In addition, I have responsibility for

ensuring demand of our customers is met at the lowest reasonable cost through the production and purchase of electric energy (including fuel purchases) necessary to meet the needs of our jurisdictional customers. I am responsible for completing these functions while ensuring compliance with the environmental requirements of all applicable regulatory or governmental agencies.

Q. HAVE YOU EVER TESTIFIED BEFORE THE INDIANA UTILITY REGULATORY COMMISSION (THE "COMMISSION" OR "IURC")?

A. Yes. I regularly testify in the Company's fuel adjustment clause ("FAC") proceedings and in the related sub-dockets in Cause No. 38708. I testified in support of the Company's proposal to install pollution control equipment on its coal-fired generation facilities in Cause No. 44446 and in support of the Company's proposal to construct solar facilities in Cause Nos. 44909, 45086, 45501, and 45754. Most recently, I testified in Cause No. 45564 in support of CEI South's request to construct two natural gas combustion turbines ("CTs") on available property at the A.B. Brown Generating Station.

II. PURPOSE AND SCOPE

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

A. My testimony provides an overview of the proposed compliance project to close the Culley East ash pond as required by the CCR Rule. Closure by removal ("CBR") that removes material from the Culley East ash pond (the "CBR Project") rather than leaving it in place is the preferred compliance approach considering both cost and risk. CEI South has received a proposal from Waste Management to dispose of the CCR material from the Culley East ash pond and is currently negotiating an addendum to its Master Services Agreement with Waste Management, whereby as part of the CBR Project, CEI South would send all the ponded CCR material to the Blackfoot Landfill in Pike County Indiana. My testimony describes the Culley East ash pond, the evaluation that took place that led to the selection of the CBR Project, the estimated cost of the CBR Project, and how that estimate of compliance cost compares to other pond closure options. Finally, I sponsor the confidential agreement negotiated with AECOM as the Engineering, Procurement and Construction Management ("EPCM") that will oversee the project and ensure a certified CBR Project that meets regulatory requirements.

Q. ARE YOU SPONSORING ANY ATTACHMENTS IN THIS PROCEEDING?

A. Yes. I am sponsoring the following attachments:

- Petitioner's Exhibit No. 2, **Attachment WDG-1 (CONFIDENTIAL):** AECOM Agreement
- Petitioner's Exhibit No. 2, **Attachment WDG-2 (CONFIDENTIAL):** Summary of AECOM Agreement

Q. WERE THESE ATTACHMENTS PREPARED BY YOU OR UNDER YOUR SUPERVISION?

A. Yes, they were.

III. DESCRIPTION OF THE CULLEY EAST ASH POND

Q. PLEASE DESCRIBE THE CULLEY EAST ASH POND.

A. The Culley East ash pond, which was placed in service in 1971, sits directly east of the Culley plant and borders the Ohio River and Little Pigeon Creek. The total pond size is approximately 10 acres and is estimated to hold 349,000,000 cubic yards or 420,000 tons of CCR material, which consists of fly ash, bottom ash, and scrubber or Flue Gas Desulfurization ("FGD") by-product. In addition, there will be approximately 17,000 cubic yards or 20,000 tons of underlying soil that will need to be removed. The combination of fly ash, bottom ash, FGD by-product, and underlying soil make up the CCR material in the Culley East ash pond.

Q. IS THE CULLEY EAST ASH POND STILL IN USE?

A. Yes. The Culley East ash pond currently accepts FGD waste streams from the Culley plant as well as bottom ash from Culley Unit 2. The fly ash from Culley Units 2 and 3 as well as bottom ash from Culley Unit 3 are collected in a dry system.

Q. WHAT INFRASTRUCTURE HAS BEEN CONSTRUCTED AT THE CULLEY PLANT TO ENABLE DISPOSAL OF ASH?

A. CEI South constructed a dry fly ash system that collects dry fly ash from Culley Units 2 and 3 in a silo. The fly ash is then off-loaded into trucks and transported to a site where it is loaded on barges on the Ohio River to be transported to CEI South's ash off taker for use in the production of cement. When CEI South's ash off taker's plant is down for maintenance, the fly ash is transported to a coal mine. If the coal mine cannot accept the fly ash, it can be transported to a local lined landfill.

CEI South also installed a system to collect dry bottom ash from Culley Unit 3. CEI South has an agreement to collect the bottom ash and transport it to a cement plant. The dry bottom ash could also be transported to a mine or a local lined landfill if necessary.

With respect to preparing for the closure of the Culley East ash pond, CEI South has rerouted all storm water piping that previously entered Culley East ash pond to the contact storm water retention pond that was installed when the Culley West ash pond was closed.

IV. OVERVIEW OF CURRENT FEDERAL AND STATE REGULATORY REQUIREMENTS

Q. BRIEFLY DESCRIBE THE CCR REGULATIONS.

A. As described in more detail by Witness Retherford, the CCR Part A Rule, which became effective in September 2020, requires all unlined ash ponds to close no later than April 11, 2021, unless an extension is granted by the U.S. Environmental Protection Agency ("EPA").

Q. HAS CEI SOUTH APPLIED FOR AN EXTENSION TO CONTINUE TO USE THE UNLINED CULLEY EAST ASH POND?

A. Yes. As described by Witness Retherford, CEI South applied for an extension for F.B. Culley prior to the November 30, 2020 due date.

V. DESCRIPTION OF COMPLIANCE PROJECT

Q. PLEASE DESCRIBE THE INITIAL STEPS CEI SOUTH HAS TAKEN TO EVALUATE ITS OPTIONS TO COMPLY WITH THE CCR RULE.

A. Prior to any ash pond work beginning, CEI South[1] assembled an internal team to evaluate firms that had experience with ash pond closures and interpreting EPA regulations and requirements. The goal was to have a firm that could interpret the ash pond closure regulations; assist with evaluating closure options; and fulfill the EPCM role of engineering the best solution for each of CEI South's three ash ponds, to include competitively bidding and procuring any material and equipment needed; interviewing and competitively bidding

[1] For the sake of clarity, my testimony refers to CEI South even though in certain situations, I may be referring to predecessor companies.

work to subcontractors; and managing each closure project to ensure compliance with the applicable rules and regulations.

Q. WHAT FIRM DID CEI SOUTH SELECT TO ASSIST IN ITS EVALUATION OF COMPLIANCE ALTERNATIVES?

A. Given their experience with interpreting EPA rules and regulations and in closing ash ponds, the team originally selected AECOM, a multi-national engineering firm that provides design, consulting, construction, and management services to a wide range of clients including the utility industry. AECOM's work on CEI South's Brown and Culley West ash pond projects, which demonstrated their ability to perform quality work in a safe and reliable manner, coupled with their initial evaluation of CCR regulations and requirements; and engineering and design work and development of cost estimates for the pond closure options all factored into CEI South's selection of AECOM for the Culley East ash pond project.

Q. PLEASE DESCRIBE THE INITIAL STEPS AECOM HAS TAKEN RELATED TO CLOSING THE CULLEY EAST ASH POND.

A. AECOM worked with CEI South to evaluate the options for closing the Culley East ash pond. This involved interpretation of the latest CCR and Effluent Limitation Guidelines ("ELG") regulations and developing plans and cost estimates for each closure option.

Q. DOES THE CCR RULE REQUIRE THAT THE CULLEY EAST ASH POND BE CLOSED?

A. Yes. As explained in detail by Witness Retherford, the Culley East ash pond has failed the CCR location restriction. In addition, recent groundwater sampling has demonstrated groundwater releases of molybdenum from the Culley East ash pond at statistically significant levels ("SSL"). As a result of the SSL and the submittal of a complete Part A Demonstration, CEI South must cease ash disposal on or about March 1, 2023 and commence closure of the Culley East ash pond within 30 days of ceasing disposal.

Q. PLEASE DESCRIBE THE OPTIONS CONSIDERED FOR CLOSING THE CULLEY EAST ASH POND.

A. While AECOM evaluated a number of subsets of alternatives, all alternatives come from two options, with the goal of each being to stop the continued exposure of ash to groundwater. The options are:

- **Cap (or Close) in Place ("CIP").** This option requires dewatering of the pond, leaving the CCR material in place, constructing a synthetic membrane cap, installing a system to drain all surface water away from the cap, adding topsoil and establishing a vegetative cover. Thereafter, long-term groundwater monitoring and cap maintenance is required. To CEI South's knowledge Indiana Department of Environmental Management ("IDEM") has not approved a CIP project where significant amounts of CCR material remain in contact with groundwater.
- **Closure by Removal ("CBR").** This option involves dewatering the pond and removing the CCR material for disposal or beneficial reuse.

Q. PLEASE EXPLAIN, GENERALLY, THE RELATIVE COST AND RISK OF THESE TWO COMPLIANCE OPTIONS.

A. Focusing solely on upfront costs (cost estimates to be discussed later in testimony), the CIP approach would appear at first to be less expensive. However, several factors suggest otherwise. First, as Witness Retherford discusses, IDEM has not approved use of a CIP approach where significant amounts of CCR material remain in contact with groundwater. This coupled with potential additional measures to prevent groundwater contact with CCR material due to the ash pond's location adjacent to the Ohio River suggests the CIP approach may not be a lower cost. For the Culley East ash pond, a CIP would require a means of preventing groundwater from contacting the CCR material, such as the installation of a slurry wall or impermeable barrier along the riverbank which could be challenging due to bedrock, or In-Situ Stabilization of the CCR material.

From a risk perspective, CIP (if it were available) poses risk for future groundwater contamination and associated remediation obligation due to CCR material being left in the closed pond whereas the CBR approach provides for a means of removing the more onerous requirement for 30 years of groundwater monitoring, mitigates groundwater issues, and eliminates the potential future requirement for CCR material to be excavated and placed in a lined landfill because of future regulations and/or more stringent groundwater standards and/or changes in interpretations of existing regulations or standards. In summary, the CBR solution removes the CCR material from close proximity to the Ohio River, reduces long term risk by eliminating a source of known and potential contamination, addresses current and future groundwater risk, and avoids potential future regulatory requirements of removing the CCR material.

Q. PLEASE SUMMARIZE THE OPTION CEI SOUTH SELECTED FOR CLOSING THE CULLEY EAST ASH POND.

A. CEI South is proposing a closure by removal, specifically, to dewater the Culley East ash pond, excavate the CCR material in the pond, and transport and dispose of the excavated material in an off-site licensed lined landfill operated by Waste Management.

Q. PLEASE DESCRIBE THE CHALLENGES, IF ANY, ASSOCIATED WITH CBR OF THE CULLEY EAST ASH POND.

A. The biggest challenge is establishing an accurate cost estimate due to unknowns. Not having an effective way to determine the exact amount of CCR material in the pond creates a challenge with establishing a good cost estimate. In addition, since the Culley East ash pond sits adjacent to the Ohio River and the depth is well below the Ohio River level, it may be a challenge to keep water from infiltrating the pond during the dewatering and excavation process.

Q. PLEASE EXPLAIN HOW CEI SOUTH IS ADDRESSING THE UNCERTAINTY REGARDING THE VOLUME OF CCR MATERIAL IN THE CULLEY EAST ASH POND AND THE EFFORTS TO CONTROL WATER INFILTRATION DURING DEWATERING AND EXCAVATION.

A. Rather than a fixed price that would involve a large contingency, CEI South and AECOM negotiated a Target Price with cost sharing opportunities that gives AECOM an incentive to complete the project under the Target Price and not exceed a cost sharing cap. This mechanism or Compensation Model is included as Exhibit D2 in the AECOM Agreement, which is provided as Attachment WDG-1 (CONFIDENTIAL). A confidential summary of the Compensation Model is included as Attachment WDG-2 (CONFIDENTIAL).

Q. WATER INFILTRATION DURING EXCAVATION WAS IDENTIFIED AS A RISK. IS THERE A PLAN ON HOW TO DEAL WITH WATER INFILTRATION IF IT OCCURS?

A. Yes. AECOM required each dewatering and excavation contractor who bid on this work to submit a plan to deal with this challenge during the competitive bidding process. It was determined that the most efficient way to address the potential for water infiltration is to install a series of wells during the excavation process to intercept water prior to reaching the area being excavated. Predetermining the extent of this effort with accuracy is a challenge, thus one of the reasons for inclusion of a contingency in the Target Price.

Q. PLEASE EXPLAIN THE COSTS THAT COMPRISE THE AECOM TARGET PRICE IN THE COMPENSATION MODEL AND HOW THE TARGET PRICE WAS DEVELOPED.

A. The components of the AECOM Compensation Model are shown below in Table WDG-1 (AECOM Target Price); these costs can also be found on page 3 of Exhibit D2 of Petitioner's Exhibit No. 2, Attachment WDG-1 (CONFIDENTIAL). Cost of Work consists of the engineering and procurement along with construction and construction management. The estimate for engineering and procurement is based on AECOM's experience and cost estimate for completing this work in a manner that accomplishes a certified CBR Project that meets IDEM requirements. The construction estimate, which includes dewatering and excavation, is based on a competitive bidding process among subcontractors; and the estimate for construction management is based on the number of AECOM personnel and amount of hours necessary for AECOM to oversee the project. CEI South and AECOM negotiated the EPCM Fee and the contingency to account for the uncertainties of the project.

Table WDG-1: AECOM Target Price

Cost of Work	**Engineering & Procurement**	Engineering & Procurement Services	[redacted]
		Drawings & Closure Report	[redacted]
		Engineering Travel Expenses	[redacted]
		E&P Subtotal	[redacted]
	Construction & Construction Management	Construction	[redacted]
		Construction Management	[redacted]
		C&CM Subtotal	[redacted]
		Cost of Work Subtotal	[redacted]
Target Cost		EPCM Fee ([redacted] of Cost of Work Estimate)	[redacted]
		Subtotal (EPCM Fee + Cost of Work Subtotal)	[redacted]
Target Price		Contingency ([redacted] of Cost of Work Estimate)	[redacted]
		Total Target Price	[redacted]

Q. PLEASE DISCUSS THE COMPETITIVE BIDDING FOR THE CONSTRUCTION PORTION OF THE PROJECT.

A. AECOM developed, and distributed, a bid package that included a scope of work for closure of the Culley East ash pond to eight contractors. AECOM then reviewed the bids received, which were from [redacted] and Charah; and prepared a technical scorecard evaluating each bidder's excavation plan, schedule, work experience, construction means and methods, safety, and quality.

Q. PLEASE EXPLAIN WHO WAS CHOSEN TO PERFORM THE DEWATERING AND EXCAVATION WORK AND WHY.

A. Charah was selected as they received the highest score when considering their overall strength in executing work, including a significantly higher safety record, demonstrated commitment to safety with detailed ash pond excavating planning and a full-time safety manager, comprehensive execution plan, national level of experience working in wet CCR ponds, inclusion of measures to identify and avoid utilities, and a nine-month shorter project schedule. In addition, Charah was willing to accept the risk associated with dewatering the Culley East ash pond, including ensuring the CCR material would be mixed with enough lime to dry to a level that it could be safely transported if necessary. The dewatering process as well as control of water infiltration is critical to allow the CCR material to dry enough within the pond area to safely access with large excavation equipment. If the CCR material is not adequately dewatered it becomes a safety hazard for people as well as large equipment that is at risk of sinking into the CCR material.

Q. WAS THE LOWEST BIDDER SELECTED?

A. [redacted]

Q. WHERE WILL CEI SOUTH DISPOSE OF THE CULLEY EAST ASH POND CCR MATERIAL?

A. The East Culley ash pond CCR material will be transported to the Blackfoot lined landfill in Pike County Indiana. The Blackfoot Landfill was started in 1988; is owned and operated by Waste Management; and is permitted by IDEM to accept CCR material. The facility accepts up to 2,100 tons of municipal, solid waste, construction and demolition debris, municipal and industrial sewage sludges, asbestos and residual waste each day. At current volumes, the facility has air space to 2039. Waste Management has provided a tipping fee proposal of [redacted] of CCR material delivered to the landfill; this proposal is being used to establish the overall cost estimate for the project.

Q. PLEASE EXPLAIN WHY BLACKFOOT LANDFILL WAS CHOSEN FOR THE COMPLIANCE PROJECT?

A. Although a higher upfront cost option than disposal in a mine, the Blackfoot Landfill is located within a reasonable distance from the Culley Generating Station and is a licensed

lined landfill thereby protecting against potential future exposure to risk or costs related to changes in environmental protection standards or ash remediation.

Q. PLEASE EXPLAIN HOW CEI SOUTH PLANS TO MANAGE THE COSTS TO TRANSPORT THE CCR MATERIAL.

A. Although all three bidders for the dewatering and excavation work offered a transportation rate, CEI South obtained a more competitive proposal from Buchta Trucking – a company with which CEI South currently has a Master Services Agreement for transportation and delivery of coal to CEI South's Culley Generating Station. Buchta Trucking's proposal leverages the existing transportation relationship by offering to use some of the coal delivery trucks to load and then backhaul (transport and deliver) the CCR Material to the Blackfoot Landfill. They would essentially deliver the CCR material to Blackfoot Landfill on the way back to the mine to pick up more coal for Culley. CEI South and Buchta Trucking are finalizing terms but CEI South has used Buchta's Trucking proposed [redacted] price along with a formula for fuel surcharge based on [redacted] to develop a cost estimate to include in the best estimate for the CBR Project. There may be potential savings (over the life of the project) associated with CEI South's managing the transportation by leveraging Buchta Trucking's backhaul rates.

Q. PLEASE SHARE THE TOTAL COST ESTIMATE FOR THE PROPOSED PROJECT

A. Table WDG-2, below, provides details for the Total Estimated Cost of the CBR Project. The AECOM Target Price plus CEI South's "Owner Expenses", which includes the proposed Waste Management tipping fee, the proposed Buchta transportation (trucking) rate, internal labor, project overheads, and other as well as a 15% contingency is being used to establish the total estimated cost for the CBR Project.

Table WDG-2: Total Cost Estimate for CBR Project

Cost of Work	Engineering & Procurement	Engineering & Procurement Services	[redacted]
		Drawings & Closure Report	[redacted]
		Engineering Travel Expenses	[redacted]
		E&P Subtotal	[redacted]
	Construction & Construction Management	Construction	[redacted]
		Construction Management	[redacted]
		C&CM Subtotal	[redacted]
		Cost of Work Subtotal	[redacted]
Target Cost / Target Price		EPCM Fee ([redacted] of Cost of Work Estimate)	[redacted]
		Subtotal (EPCM Fee + Cost of Work)	[redacted]
		Contingency ([redacted] of Cost of Work Estimate)	[redacted]
		AECOM Target Price Subtotal	[redacted]
Owner's Expense		Transportation [redacted]	[redacted]
		Landfill (Tipping Fee) ([redacted]	[redacted]
		Internal Labor, Project Overheads, & Other	[redacted]
		Contingency (15%)	[redacted]
		Owner's Costs Subtotal	[redacted]
Total Cost	**Total Estimated Project Costs**		**$49,702,000**

Q. PLEASE EXPLAIN WHETHER ANY ESCALATION IS ASSUMED IN THE COST ESTIMATE.

A. [redacted]. As explained earlier, the Waste Management and the Buchta Trucking agreements are not yet final; therefore, the estimates associated with Transportation and Tipping Fees are based on initial proposals, and do not include escalation but rather are in 2022 dollars. There is, however, the possibility of escalation within these agreements once signed, particularly if inflation is high over the next few years.

Q. PLEASE DESCRIBE THE CONTINGENCY AMOUNTS INCLUDED IN THE COST ESTIMATE.

A. The AECOM estimate contains [redacted] for general contingency, which was calculated by taking [redacted] of the Cost of Work estimate, to cover unplanned expenses such as additional CCR material and/or underlying soil volumes, unexpected dewatering activity, or the need to add lime to the CCR material to help with handling characteristics.

As discussed earlier in my testimony, CEI South is using the pricing from Waste Management's and Buchta Trucking's proposals to develop the overall cost estimate for the compliance project. Since the agreements are not yet finalized, CEI South included a 15% contingency in its overall owner's estimate to account for any cost changes that may occur to the individual proposals while CEI South finalizes the pricing and terms of each agreement. In addition, as previously explained, given the uncertainty surrounding the volume of CCR material to be excavated and transported, a certain level of contingency is necessary to account for any increase in transportation or tipping fees that results from a larger volume of CCR material than anticipated. There is also the possibility that fuel surcharge could exceed the [redacted] assumed in the CEI South cost estimate.

Q. PLEASE DISCUSS ANY REASONS THE COST ESTIMATE COULD BE HIGHER THAN THE ESTIMATED $49,702,000 COST PROVIDED EARLIER.

A. As mentioned earlier in my testimony, uncertainties exist regarding the volume of CCR material, and the efforts required to control water infiltration during excavation. In addition, the volume of impacted underlying soils that will need to be excavated for completion of closure; and any blending of lime to stiffen the CCR material and enable it to be safely transported without spilling from trucks could cause cost increases. Due to these uncertainties, if CEI South would have limited bids to fixed price, there would have been a higher amount of contingency dollars included to cover any additional unknowns. The arrangement with AECOM provides an incentive for the EPCM contractor to complete the project under the Target Price.

Q. PLEASE DISCUSS THE CONTINGENCY PLAN FOR ASH DISPOSAL IF BUCHTA TRUCKING TRUCKS ARE NOT AVAILABLE TO HAUL IT OR THE LANDFILL CANNOT ACCEPT THE ASH.

A. For a short-term transportation or landfill issue, approximately [redacted]' worth of excavated material could be stored on site. In the event a transportation issue caused CEI South to reach its on-site storage limit, the project could be paused until other trucking companies could be brought on site to transport the CCR material. CEI South could also evaluate a temporary change in the dewatering and excavation sequence of work, and although it would take longer to dry the CCR material in preparation of handling once an area was dewatered, the material could be segregated in this area to dry. In the event Waste Management could not continue to accept CCR material, CEI South would search for another lined landfill option. A last, but undesirable option, would be to send to a mine.

Q. PLEASE EXPLAIN WHETHER A LINED LANDFILL COULD BE INSTALLED AT F.B. CULLEY.

A. Aside from inadequate space at the Culley site to construct a lined landfill, the time necessary to explore other location options for the landfill coupled with the time needed to complete the required environmental studies, obtain local government approvals for the landfill site, and complete the IDEM permitting process, could take up to 3 – 5 years. Construction of a lined landfill would need to be completed prior to the placement of CCR waste material such that a new lined landfill would not be available to receive the CCR waste material by date when CEI South is required to begin closure.

Q. PLEASE DESCRIBE THE ESTIMATED ANNUAL O&M EXPENSE ANTICIPATED AFTER THE CULLEY EAST ASH POND HAS BEEN CLOSED AND ASH DISPOSED OF.

A. As part of CEI South's closure plan to IDEM, CEI South included an estimate for annual post-closure spend of $133,000 for groundwater monitoring, system and road maintenance, well replacement, and post-closure inspections and reporting.

Q. PLEASE EXPLAIN HOW LONG IT WILL TAKE TO CLOSE THE CULLEY EAST ASH POND.

A. As Witness Retherford explains, CEI South must start closure activities within 30 days from the time the East ash pond stops accepting all CCR material, which is anticipated to be on or about March 1, 2023 when the Spray Dry Evaporator system on the FGD system, previously approved in Cause 45052, and the Lined Pond, previously approved in Cause 45564, are expected to be in service. Accordingly, the dewatering and excavation work is anticipated to begin in March of 2023 and be completed in fourth quarter of 2024. The final completion date, however, is dependent on the volume of ash and any dewatering issues encountered during the process. Exhibit C of Petitioner's Exhibit No. 1, Attachment WDG-1 (CONFIDENTIAL) – the AECOM Agreement contains an estimated project schedule.

Q. HOW DOES THE CBR PRICE (DESCRIBED EARLIER) COMPARE WITH THE CIP OPTION?

A. Even though the CIP is not a viable option for reasons discussed earlier in my testimony as well as in Witness Retherford's testimony, AECOM prepared a Class 5 estimate, shown in Table WDG-3 (below), which includes the cost of future removal and disposal in a lined landfill but does not include ongoing O&M costs or future price escalation for excavation

or transportation and tipping fees given uncertainty around the timing of when such removal/disposal in a lined facility may be required.

Table WDG-3: Estimated CIP Costs

Class 5 EPCM Estimate	EPCM Cost of Work	[redacted]
	EPCM Fee	[redacted]
	Subtotal	[redacted]
	EPCM Contingency	[redacted]
	Subtotal (Class 5 AECOM Target Price)	[redacted]
Owner's Expense	Internal Labor, Project Overheads, & Other	[redacted]
Class 5 Estimate		[redacted]
Future Costs related to Future Regulations	Excavation	[redacted]
	Transportation [redacted]	[redacted]
	Landfill (Tipping Fee) [redacted]	[redacted]
	Contingency (15%)	[redacted]
Future Costs Subtotal (No Escalation)		[redacted]
Total Cost	**Total Estimated Project Costs**	**$49,628,589**

Q. PLEASE DESCRIBE ANY OTHER OPTIONS CONSIDERED FOR DISPOSING OF THE CCR MATERIAL OTHER THAN A LINED LANDFILL.

A. In addition to transporting the CCR material to a lined landfill, CEI South considered whether CCR material could be taken to a mine. Witness Retherford discusses the future risk associated with this option, which have similarities to some of the risks associated with the CIP option. Specifically, if CCR material from the Culley East ash pond were disposed of in a mine, CEI South could still be liable for any future environmental issues, namely, future regulations could require CEI South to remove the CCR material and relocate it to a lined landfill; or regulations could prevent mines from accepting CCR material in the middle of the project. Lastly, there are limitations on volumes and the time of year some mines will accept CCR material. Table WDG-4, below, shows the current and future potential cost estimate for taking CCR material to a mine for disposal. As with the CIP estimate above, this estimate does not include future price escalation for excavation and transportation and tipping fees given uncertainty around the timing of such requirement.

Table WDG-4: CBR With CCR Material to a Mine

EPCM Costs	Engineering & Procurement	[redacted]
	Construction & Management Services	[redacted]
	EPCM Fee	[redacted]
	EPCM Contingency	[redacted]
AECOM Target Price Subtotal		[redacted]
Owner's Expense	Transportation [redacted]	[redacted]
	Tipping Fee [redacted]	[redacted]
	Internal Labor, Project Overheads, & Other	[redacted]
	Contingency (15%)	[redacted]
Owner's Expense Subtotal		[redacted]
Estimate Subtotal		[redacted]
Future Costs related to Future Regulations	Excavation	[redacted]
	Transportation [redacted]	[redacted]
	Landfill (Tipping Fee) [redacted]	[redacted]
	Contingency (15%)	[redacted]
Future Costs Subtotal (No Escalation)		[redacted]
Total Cost	**Total Estimated Project Costs**	**$62,433,000**

Q. IN CAUSE NO. 45280, CEI SOUTH REQUESTED, AND RECEIVED, APPROVAL TO BENEFICIALLY REUSE THE CCR MATERIAL FROM THE BROWN POND INSTEAD OF PLACING IT IN A LANDFILL. DID CEI SOUTH CONSIDER THAT OPTION FOR THE CULLEY EAST ASH POND ASH?

A. Yes. Although CEI South has attempted to find beneficial reuse opportunities for the CCR material in the Culley East ash pond, as explained later in my testimony, the CCR material does not meet the required specifications for beneficial reuse.

Q. WHAT MAKES THE CHARACTERISTICS OF THE CULLEY EAST ASH POND DIFFERENT FROM PETITIONER'S DRY ASH FROM THE CULLEY AND BROWN UNITS OR PONDED ASH IN THE BROWN ASH POND?

A. Primarily, the concentration, or high volume, of FGD by-product (sulfites) and the high mercury (Hg) content in the CCR material in the Culley East ash pond are problematic for beneficial reuse. Beneficial reuse users have environmental regulations that they must meet which require strict specifications for any material used in their process. One example is Hg levels in the CCR material. A high Hg content, for example, makes it difficult for the cement industry to meet their environmental requirements.

Q. WHAT WORK WAS PERFORMED TO DETERMINE WHETHER BENEFICIAL REUSE WAS A VIABLE OPTION?

A. CEI South worked with AECOM to locate and discuss options for beneficial reuse of the CCR material in the Culley East ash Pond. Core samples were taken from throughout the pond for testing and samples were delivered to CEI South's ash off taker to determine if it could be used in cement production. Ultimately, CEI South was not able to find anyone who could use the CCR material due to its characteristics.

VI. EPCM AGREEMENT FOR COMPLIANCE PROJECT

Q. PLEASE SUMMARIZE AECOM'S SCOPE OF WORK UNDER THE EPCM AGREEMENT.

A. The scope of work is included in Exhibit B of the AECOM Agreement, provided as Attachment WDG-1 (CONFIDENTIAL). There are four major components of the CBR Project:

1. Pre-Excavation and Dewatering – stabilization of CCR material prior to excavation by removal of free water;
2. Excavation and Closure of Pond – removal of surface debris, remove existing structures, piping and discharge lines within the boundary of the pond, excavate and remove CCR material, load CCR material onto trucks, implement a storm water pollution prevention plan, breach existing southern embankment and stockpile material for reuse as structural fill material, install guard rails and pond access ramp, and stabilize disturbed areas with topsoil and seed;
3. Surveys – verify progress and determine excavated material progress; and
4. Regulatory Documentation of Culley East Ash Pond Closure – prepare closure certificate in accordance with IDEM requirements and make any revisions to the post closure plan in accordance with the final rule.

Q. PLEASE DISCUSS ANY INFRASTRUCTURE REQUIREMENTS TO EXCAVATE AND DISPOSE OF THE CCR MATERIAL IN THE CULLEY EAST ASH POND.

A. There are no major infrastructure requirements other than what is needed to properly dewater and safely excavate the CCR material.

Q. WILL DEWATERING OR BLENDING BE REQUIRED BEFORE THE CCR MATERIAL CAN BE TRANSPORTED?

A. Dewatering or blending of lime with the CCR material may be required to meet transportation requirements (specific water volume requirements to prevent CCR material from leaking or spilling out of the trucks during transport).

Q. PLEASE DISCUSS ANY CONCERNS WITH SUPPLIES, LABOR, OR INFLATION.

A. AECOM did not identify any concerns with long lead items as there is little material required. Given the dewatering, excavation and blending subcontractor supplied a cost based on an estimated excavation volume of material, there is little concern with labor and inflation.

Q. DOES CEI SOUTH EXPECT ANY CHANGE ORDERS ASSOCIATED WITH THE COMPLIANCE PROJECT?

A. No. Change orders are not expected unless the IDEM closure requirement changes resulting in additional unplanned cost. As explained earlier, there is risk of the project coming in at higher than the current cost estimate due to more CCR material than anticipated in the Culley East Ash Pond and excess water infiltration during excavation.

VII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?

A. Yes, it does.

Cause No. 45795

VERIFICATION

I affirm under penalties for perjury that the foregoing representations are true to the best of my knowledge, information, and belief.

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
D/B/A CENTERPOINT ENERGY INDIANA SOUTH

Wayne D. Games
Vice President, Power Generation Operations

10/31/2022
Date

Attachment WDG-1 (CONFIDENTIAL) Provided Separately

Attachment WDG-2 (CONFIDENTIAL) Provided Separately