

FILED
June 17, 2021
**INDIANA UTILITY
REGULATORY COMMISSION**

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

CAUSE NO. 45564

**DIRECT TESTIMONY
OF
ANGILA M. RETHERFORD
VICE PRESIDENT, ENVIRONMENTAL AND CORPORATE RESPONSIBILITY**

ON

**FEDERAL ENVIRONMENTAL REGULATIONS APPLICABLE TO PETITIONER'S ELECTRIC
GENERATION FLEET**

SPONSORING PETITIONER'S EXHIBIT NO. 4

DIRECT TESTIMONY OF ANGILA M. RETHERFORD

1 **I. INTRODUCTION**

2

3 **Q. Please state your name and business address.**

4 A. My name is Angila M. Retherford, and my business address is 211 NW Riverside Drive,
5 Evansville, Indiana 47708.

6

7 **Q. By whom are you employed and in what capacity?**

8 A. I am the Vice President, Environmental and Corporate Responsibility for CenterPoint
9 Energy, Inc. ("CenterPoint").

10

11 **Q. Please describe your educational and professional background.**

12 A. I am a graduate of Indiana University with a Bachelor of Arts degree in Biology and Political
13 Science. I attended law school at the University of Denver and graduated with a J.D.
14 degree in 1991. I am licensed to practice law in the State of Indiana. I was a Deputy
15 Attorney General for the Office of the Indiana Attorney General in the Environmental
16 Litigation Section from 1991 to 1993 and was Chief Bureau Counsel for the Bureau of
17 Mine Reclamation for the Indiana Department of Natural Resources from 1993 to 1998. I
18 entered private practice for a local Evansville law firm in 1998, focusing my practice on
19 environmental law. I started with Vectren in November of 2001. I held the positions of
20 Director of Environmental Affairs and Corporate Sustainability and Senior Environmental
21 Counsel. I was named to my current position in August of 2014 (for Vectren Corp) and
22 February 2019 (for CenterPoint).

23

24 **Q. Please describe your responsibilities as Vice President, Environmental and**
25 **Corporate Responsibility for CenterPoint.**

26 A. As Vice President, Environmental and Corporate Responsibility for CenterPoint, I am
27 responsible for ensuring compliance with all applicable federal, state, and local
28 environmental regulations for CenterPoint, including its Southern Indiana Gas and Electric
29 Company, Inc. d/b/a CenterPoint Energy Indiana South's ("Petitioner") facilities. I am
30 responsible for environmental permitting and reporting for Petitioner's facilities and advise
31 and support CenterPoint's senior management on environmental and sustainability

1 planning and environmental legal strategies.

2
3 **Q. Have you previously testified before this Commission (“Commission”)?**

4 A. Yes. I have testified multiple times in support of requests by Petitioner: in Cause 42861
5 in support of Petitioner's multi-pollutant compliance plan, Petitioner's electric rate case
6 filing in Cause 43839, Petitioner's dense pack filing in Cause 44067, Petitioner's Mercury
7 and Air Toxics Standards compliance filing in Cause 44446. Most recently I have testified
8 in support of Petitioner's Combined Cycle Gas Turbine (“CCGT”) certificate of public
9 convenience and necessity (“CPCN”) filing in Cause 45052 and Petitioner's A.B. Brown
10 Generating Station's ash pond closure and beneficial reuse project filing in Cause 45280.

11
12 **Q. What is the purpose of your direct testimony in this proceeding?**

13 A. The purpose of my testimony is to explain the federal environmental regulations applicable
14 to Petitioner's electric generation fleet in Indiana. My testimony is divided into two parts:
15 first, I will explain how these federal environmental regulations influenced Petitioner's
16 preferred portfolio and its decision to construct two new combustion turbine (“CT”)
17 generators. Specifically, I will explain how those regulations make it difficult and cost-
18 prohibitive for Petitioner to continue to burn coal as the fuel source at the A.B. Brown
19 Generating Station. I will also explain how Petitioner's preferred portfolio including the two
20 new CTs proposed here will allow Petitioner to achieve compliance with current
21 regulations and will provide flexibility to address future regulations. Second, I will explain
22 how these federal environmental regulations, specifically, the Coal Combustion Residuals
23 (CCR) rule, apply to the A.B. Brown Generating Station and F.B. Culley Generating
24 Station's ash ponds, and how the compliance projects Petitioner is proposing in this Cause
25 will allow Petitioner to remain in compliance with the CCR rule.

26
27
28 **II. OVERVIEW OF FEDERAL AND STATE REGULATORY REQUIREMENTS RELATED**
29 **TO VECTREN SOUTH'S ELECTRIC GENERATION**

30
31 **Q. Please briefly describe the regulatory environment that coal-fired electric**
32 **generating units are facing.**

33 A. Within the last 6 years, coal-fired electric generating units have faced multiple federal

1 regulatory initiatives requiring significant reductions in the discharge of pollutants into
2 water bodies through revisions to the applicable wastewater discharge limits, and requiring
3 the closure, and, if necessary, the remediation, of surface impoundments containing
4 CCRs. The Trump administration sought to reconsider certain of these new regulatory
5 requirements; however, the net effect of these rule reconsiderations was to bring forward
6 by two months the final ash pond disposal cessation deadline under the CCR rule ,
7 effectively requiring completion of all ash handling modifications at the A.B. Brown
8 Generating Station no later than October 2023.

9
10 **Q. What current federal and state regulations are applicable to Petitioner's electric**
11 **generating units at issue in this proceeding?**

12 A. In 2015 the U.S. EPA finalized two major federal regulatory initiatives focusing on
13 wastewater discharges and ash handling—the Effluent Limitation Guidelines (“ELG”) and
14 CCR rules which established new wastewater discharge limitations, new ash handling
15 requirements and the forced closure of unlined ash ponds that could not meet the
16 requirements set out in the CCR rule. Most recently with respect to air emissions, on March
17 15, 2021, U.S. EPA finalized its Revised Cross-State Air Pollution Rule Update (CSAPR
18 Update), setting new more stringent NOx ozone season limitations for coal-fired
19 generating units in Indiana.

20
21 **Q. How do these regulations affect the continued use of Petitioner's coal-fired**
22 **generating units?**

23 A. Compliance with the CCR rule is forcing the closure of Petitioner's A.B. Brown Generating
24 Station because the current cease disposal date for bottom ash and fly ash has come and
25 gone (April 2021). Petitioner has proposed construction of a small lined CCR compliant
26 pond that is required in order for U.S. EPA to approve the pending extension request to
27 continue to use the existing unlined ash pond through October 12, 2023. However, the
28 construction of that pond will not affect the larger issue, which, as I describe later is that
29 compliance with the ELG and CCR rules would require additional further significant
30 investment at Petitioner's A.B. Brown Generating Station to continue operation beyond
31 October 15, 2023, because the deadline for prohibition of fly ash transport water under
32 ELG is a firm December 31, 2023, regardless of whether there is a CCR-compliant pond
33 of sufficient size available for further disposal. Petitioner would also be required to permit

1 and complete an expansion of the existing landfill because we are scheduled to run out of
2 landfill capacity in the 2022-2023 time period. Finally, the CSAPR Update significantly
3 reduces the number of allowances available and increases costs for compliance during
4 the NOx ozone season either through purchase of additional allowances or increased
5 emission control costs (e.g. ammonia and catalyst). In order to continue to operate Units
6 1 and 2 of the A.B. Brown Generating Station, Petitioner would be required to make the
7 following environmental compliance investments by October 2023:

- 8
- 9 • Dry bottom ash conversion
- 10 • Dry fly ash conversion
- 11 • New water treatment system for continued NPDES compliance (driven by closure of
12 the ash pond)
- 13 • Landfill expansion
- 14

15 **Q. Are these additional environmental compliance investments modeled in the**
16 **Petitioner's Integrated Resource Plan for the A.B. Brown Generating Station?**

17 A. Yes, these additional environmental compliance investments are modeled under the
18 business as usual scenario.

19

20 **Q. Are you familiar with Petitioner's preferred portfolio in its Integrated Resource**
21 **Plan?**

22 A. Yes.

23

24 **Q. How will Petitioner achieve compliance with the environmental regulations in place**
25 **with the preferred portfolio?**

26 A. Petitioner's preferred portfolio avoids the above-referenced additional incremental
27 compliance costs for CCR and ELG at Petitioner's A.B. Brown Generating Station by
28 retiring the two coal-fired units and replacing them with renewables and the two CTs at
29 issue in this CPCN proceeding. The A.B. Brown Generating Station is coming up against
30 a hard-stop CCR rule compliance deadline of October 15, 2023 and is rapidly running out
31 of permitted landfill space. The retirement of the two coal-fired units will cease further
32 production of CCRs and ELG wastewaters associated with the units, negating the need to
33 complete ash handling modifications, complete construction of a new wastewater

1 treatment system to ensure continued compliance with the current NPDES wastewater
2 discharge limits for copper, mercury and selenium, and the design, permitting and
3 construction of a CCR-compliant landfill extension. Moreover, the retirement of the coal-
4 fired units at the A.B. Brown Generating Station will eliminate future emissions of sulfur
5 dioxide, mercury, and particulate from the plant, and eliminate the future production and
6 need for disposal of fly ash, bottom ash and scrubber by-product. And finally, the
7 retirement of the two coal-fired units at the A.B. Brown Generating Station under the
8 preferred plan will result in a reduction of approximately 2 million tons annually of CO₂ and
9 position the Petitioner to provide sustainable and lower risk carbon-emitting energy to its
10 customers.

11 **A. Federal Regulations Impacting Petitioner's Ash Ponds**

12 **i. Coal Combustion Residual ("CCR") Rule**

13
14
15
16 **Q. Please describe the CCR rule.**

17 A. The process of burning coal to generate electricity creates coal combustion residuals (fly
18 ash, bottom ash, and flue gas desulfurization materials). These materials have consisted
19 of both wet ash (i.e. ash transport water) and dry ash. Historically, these ash materials
20 have been deposited in ash ponds. In April 2015 U.S. EPA finalized its CCR rule in which
21 the agency promulgated a self-implementing regulation under Subtitle D of the Resource
22 Conservation & Recovery Act ("RCRA"). The CCR rule allows for the continued beneficial
23 reuse of coal combustion residuals. The CCR rule contains specific requirements that are
24 to be met in order to continue operation of an existing ash pond. If those requirements
25 are not met, use of the ash pond for disposal must cease and closure of the ash pond
26 must begin within six months of ceasing disposal.

27
28 **Q. What requirements must be met under the CCR rule to continue to use an existing
29 ash pond?**

30 A. The CCR rule contains three regulatory requirements that force the closure of an ash pond
31 if these requirements are not met. The safety factor assessment must have been
32 completed by October of 2016. If the safety factors cannot be met, the ash pond must
33 have ceased receipt of materials by April 2017 and closure initiated within 30 days. The

1 company must complete a groundwater assessment for each pond. If an ash pond
2 exceeds an applicable groundwater standard, the owner must commence the closure
3 process and initiate corrective action measures if necessary. Finally, the CCR rule sets
4 out various location restrictions that force commencement of closure activities if the
5 standards are not met.

6
7 **Q. Have Petitioner's ash ponds triggered closure requirements under the CCR rule?**

8 A. Yes, Vectren South has three ash ponds, two at the F.B. Culley Generating Station and
9 one at the A.B. Brown Generating Station, and all three of Petitioner's ash ponds triggered
10 closure requirements under the CCR rule. The closure of the west pond at the F.B. Culley
11 Generating Station was complete in December 2020. This closure was authorized in
12 Cause No. 45052. This leaves one 10-acre ash pond at the F.B. Culley Generating Station
13 and one 150-acre ash pond at the A.B. Brown Generating Station.

14
15 **Q. What is the current status of the CCR rule and final cessation deadline?**

16 A. In 2017 the Trump administration identified the CCR rule (as well as the ELG rule) for
17 reconsideration as part of a regulatory reform initiative focused in part on removing
18 regulatory burdens on the generation of electricity from coal. In July 2018, the U.S. EPA
19 finalized its Phase I Part I reconsideration. In that action, U.S. EPA revised the final
20 cessation deadline (i.e. the date by which an owner must cease disposal in an ash pond)
21 by two years, from October 2018 to October 2020, for those ponds, like Petitioner's, that
22 fail to meet a location restriction and/or demonstrate an exceedance of groundwater
23 protection standards.

24
25 In August 2020, the final cessation deadline was revised further to **April 11, 2021**, in EPA's
26 "Hazardous and Solid Waste Management System: Disposal of Coal Combustion
27 Residuals From Electric Utilities; A Holistic Approach to Closure Part A: Deadline To
28 Initiate Closure (hereinafter "Part A Reconsideration"). There are currently no pending
29 reconsideration proposals that would further revise the final cessation deadline beyond
30 April 11, 2021, and any further reconsideration effort that could push the final cessation
31 deadline beyond April 11, 2021, is highly unlikely given the recent change in
32 administrations.

33

1 **Q. Please explain the extension mechanism available under the CCR rule?**

2 A. The original CCR rule promulgated in 2015 provided a mechanism to take five one-year
3 self-implementing extensions of the final cessation deadline if there was no alternative
4 disposal capacity available. The Part A Reconsideration replaced the five one-year self-
5 implementing extensions in the original CCR rule with a new mechanism requiring the
6 owner to file a formal extension request with the U.S. EPA that would extend the cessation
7 deadline to no later than October 15, 2023, if a company can demonstrate no alternative
8 disposal capacity is available either on-site or off-site. In order to qualify for an extension
9 under the “no alternative capacity” mechanism a source owner must demonstrate that it
10 is actively pursuing alternative disposal capacity in the fastest technically feasible
11 timeframe, and neither cost nor convenience will be considered by U.S. EPA in
12 determining whether an ash pond qualifies for the extension.

13

14 **Q. Has Petitioner pursued all available extensions under the CCR rule?**

15 A. Yes, Petitioner filed a timely extension request for the A.B. Brown Generating Station
16 through October 15, 2023, under the Part A Reconsideration. As detailed in Cause 45280,
17 the ash pond at the A.B. Brown Generating Station does not meet the location restriction
18 requirements for aquifer separation, and groundwater monitoring data demonstrates
19 localized releases to groundwater sufficient to trigger cessation of disposal under the CCR
20 rule. As authorized in the Commission's Order in Cause 45280, Petitioner will begin
21 excavating the ponded ash for beneficial reuse. In order to continue to use the existing
22 ash pond after the final cease disposal date (April 11, 2021) and qualify for the *no*
23 *alternative disposal* extension Petitioner must demonstrate to U.S. EPA that it was
24 pursuing the “fastest technically feasible” option for acquiring alternative capacity, which
25 is construction of a small 10-acre CCR-compliant lined pond to handle coal-pile runoff,
26 FGD wastewater and non-CCR flows such as stormwater and landfill leachate. This new
27 lined pond will also serve as stormwater control for the new CTs. I will describe this small
28 pond later when I discuss Petitioner's compliance projects.

29

30 Similarly, Petitioner filed a timely extension request for the east ash pond at the F.B. Culley
31 Generating Station while Petitioner completes the necessary ELG upgrades for Unit 3.
32 The west ash pond was taken out of service and closure was completed in December
33 2020. And while the ash handling modifications have already been completed at Unit 3,

1 the east ash pond is still being utilized for remaining CCR wastewaters, including bottom
2 ash transport water from Unit 2 through to its retirement and completion of the ELG
3 wastewater treatment upgrades for Unit 3. As noted previously the Part A Reconsideration
4 restricted the *no alternative disposal* extension to a maximum of no later than October 15,
5 2023 and set up a formal demonstration mechanism that must be approved by U.S. EPA.
6 In the Part A Reconsideration, U.S. EPA required that in order to demonstrate *no*
7 *alternative disposal* and qualify for an extension the source owner must be actively taking
8 measures to acquire alternative disposal capacity as fast as technically feasible. In direct
9 discussions with the agency, U.S. EPA made it clear that it did not intend to automatically
10 grant each source a full extension through October 15, 2023, but only as is necessary to
11 arrange / construct alternative capacity as fast as technically feasible. As a result of these
12 discussions with U.S. EPA, Petitioner based its extension request for the final cessation
13 of disposal at F.B. Culley Generating Station's east ash pond through March 1, 2023 –
14 that date being the fastest Petitioner can construct a 2-acre lined CCR-compliant pond for
15 bottom ash transport water from Culley Unit 2 and complete the planned wastewater
16 treatment upgrades at Culley Unit 3.

17
18 **Q. What is the status of the Petitioner's CCR extension requests?**

19 A. As previously noted, Petitioner filed timely extension requests with U.S. EPA under the
20 Part A Reconsideration for both the F.B. Culley Generating Station and A.B. Brown
21 Generating Station's ash ponds. The extension requests, along with others filed by utility
22 peers, are still pending before the agency. In industry discussions directly with U.S. EPA
23 the agency has indicated that it expects utilities with pending extension requests to
24 continue to take actions to meet the measures listed in the extension requests (and not
25 wait for approval from EPA) and that if it denies an extension request the agency will then
26 enter into an agreed order with the affected facility that would include a closure schedule,
27 but in no event would the cessation deadline be extended beyond the date firmly set in
28 the regulation – October 15, 2023.

29
30 **Q. Are there any other ways to extend the use of the Brown pond?**

31 A. No. The Part A Reconsideration includes a new boiler cessation provision that would
32 allow the continued use of a pond past the final cessation deadline; however the boiler
33 cessation provision would not be available to extend the use of the pond at the A.B. Brown

1 Generating Station. Recall that in Cause No. 45280, the Commission approved
2 Petitioner's proposed Brown ash pond closure plan, which plan includes the beneficial
3 reuse of the ash. In order to take advantage of the boiler cessation provisions of the Part
4 A Reconsideration, Petitioner would be required to complete the closure of the A.B. Brown
5 Generating Station ash pond by 2028. Given the size of the ash pond (150 acres) and
6 the already approved plan to fully excavate and beneficially reuse the ponded ash,
7 Petitioner would be required to retire the coal-fired units and commence dewatering and
8 excavation immediately in order to have the pond fully closed by December 31, 2028.
9 Current plans show closure will require thirteen years to complete, so it is highly unlikely
10 Petitioner could get the existing pond closed by the end of 2028 even if Petitioner
11 immediately retired the units.

12
13 **ii. Effluent Limitation Guidelines ("ELG")**

14
15 **Q. Please describe the ELG rule.**

16 A. On September 30, 2015, U.S. EPA released its final ELG rule under Section 201 of the
17 Clean Water Act. The ELG rule sets strict technology-based limits through a determination
18 of "best available technology" for wastewaters generated from fossil fuel-fired generating
19 units. Specifically, the ELG rule: (1) prohibits the discharge of fly ash transport water at
20 existing facilities, (2) prohibits the discharge of bottom ash transport water at existing
21 facilities, and (3) sets stringent new arsenic, mercury, selenium and nitrate/nitrite
22 discharge limits for scrubber wastewater. While the A.B. Brown scrubbers were exempted
23 from the new more stringent ELG limits for scrubber wastewater due to the fact that the
24 scrubber water recirculates, it is important to note that Units 1 and 2 still have current
25 wastewater discharge limits that it must continue to meet under its existing NPDES permit.

26
27 **Q. What are the compliance deadlines for the ELG rule?**

28 A. As finalized in the 2015 rule, the ELG requirements applied "as soon as possible"
29 beginning November 1, 2018, but no later than December 31, 2023. As part of the Trump
30 administration's first round of reconsiderations of the ELG rule the EPA adopted a two-
31 year extension of the November 2018 compliance deadline (to November 2020) for the
32 prohibition of the discharge of bottom ash transport water - but not for the prohibition of
33 the discharge of fly ash transport water. On October 13, 2020, U.S. EPA finalized its

1 reconsideration process for the ELG rule (hereinafter ELG Reconsideration). The ELG
2 Reconsideration revised requirements for two specific waste streams: flue gas
3 desulfurization (FGD) wastewater (which, as referenced above does not apply to the A.B.
4 Brown units) and bottom ash transport water. Specifically, the ELG Reconsideration
5 revised certain FGD wastewater discharge limits and extended the compliance deadline
6 for the prohibition of the discharge of bottom ash transport water to “as soon as possible”
7 but no later than December 31, 2025.

8
9 **Q. How is the ELG rule implemented at the F.B. Culley Generating Station?**

10 A. The ELG requirements are implemented through the renewal process for a power plant's
11 existing wastewater discharge permit, specifically the National Pollutant Discharge
12 Elimination System or NPDES permit. The most recent renewal for the F.B. Culley
13 Generating Station was finalized in March 2017 and is set for renewal again in 2022.
14 Currently the NPDES permit for the F.B. Culley Generating Station assumes that
15 Petitioner either completes the bottom ash conversion at Unit 2 or Unit 2 retires no later
16 than December 31, 2023. However, as noted above, ELG Reconsideration extended the
17 deadline for the prohibition of the discharge of bottom ash transport water to December
18 31, 2025. Since Petitioner is required to construct the new lined 2-acre pond pursuant to
19 the CCR extension request (which I will discuss momentarily), Petitioner will have a CCR
20 compliant pond which can accept bottom ash from Unit 2 through December 31, 2025.
21 Petitioner is reviewing this option – continuing to operate Unit 2 through December 2025
22 – as allowed in the ELG Reconsideration rule. Extending the operation of Unit 2 through
23 December 2025 would provide interim capacity during construction of the CTs.

24
25 **Q. Are there any other provisions of the ELG Reconsideration that Petitioner is**
26 **considering for the F.B. Culley Generating Station?**

27 A. Yes, the ELG Reconsideration rule provides a new boiler cessation provision that was not
28 available when the wastewater treatment upgrades were previously approved in Cause
29 45052. The new boiler cessation provision of the ELG Reconsideration rule would allow
30 Petitioner to forego the wastewater treatment upgrades required to meet the more
31 stringent water discharge limitations for FGD scrubbers if the owner commits to retiring
32 the coal-fired unit by December 31, 2028. Petitioner is similarly reviewing this option –
33 retiring Unit 3 by December 31, 2028 in lieu of completing the wastewater treatment

1 upgrades previously approved in Cause 45052. The ELG Reconsideration rule requires
2 that Petitioner commit to taking the boiler cessation option no later than October 12, 2021.
3

4 **Q. How is the ELG rule implemented at the A.B. Brown Generating Station?**

5 A. The most recent renewal of the NPDES permit for the A.B. Brown Generating Station was
6 finalized in March 2017 and is set for renewal again in 2022. Currently the NPDES permit
7 for the A.B. Brown Generating Station requires completion of the ash handling
8 modifications (for both fly ash and bottom ash) on a timeline slated for completion by
9 October 2023, along with existing wastewater discharge requirements for mercury,
10 copper, and selenium.
11

12 **Q. Does the ELG Reconsideration help extend the life of the A.B. Brown Generating
13 Station?**

14 A. No. The hard stop in the CCR Rule – October 15, 2023 – for the final cessation of ash
15 disposal in the existing ash pond (assuming all available extensions are utilized and
16 approved by U.S. EPA) is driving the compliance timeline at the A.B. Brown Generating
17 Station, effectively setting the deadline for compliance with the ELG prohibition against
18 the discharge of fly ash and bottom ash transport water to the existing ash pond to also
19 be no later than October 15, 2023. Moreover, the closure of the existing ash pond, which
20 currently serves as a compliance structure for Petitioner's wastewater discharges, would
21 require the construction of a new wastewater treatment system as modeled in the IRP to
22 ensure that Petitioner can **continue** to comply with its current NPDES permit.
23

24 **Q. Why wouldn't the ELG Reconsideration provision that extends of the discharge of
25 bottom ash transport water similarly keep Brown running through December 2025?**

26 A. The ELG Reconsideration only extended the discharge of bottom ash transport water
27 through December 2025, not fly ash transport water. So modifications to the Brown fly
28 ash handling system would still need to be completed no later than October 2023 (i.e. the
29 last day to dispose of ash in the ash pond under the CCR rule). Moreover, operating the
30 Brown plant past October 2023 would require the design, permitting and construction of a
31 CCR-compliant extension to the existing landfill, as the plant is expected to be running out
32 of landfill space in the 2022-2023 timeframe. And finally, the 10-acre CCR-compliant pond
33 that will be constructed in accordance with the CCR Part A Reconsideration extension

1 request does not have sufficient capacity to handle bottom ash from Units 1 and 2 through
2 December 2025 (i.e. the ELG extension date for bottom ash). As I mentioned previously,
3 it is not feasible to get a larger pond built within the short CCR Part A Reconsideration
4 time frame given existing space constraints and permitting requirements. And even if it
5 was feasible to build a larger CCR compliant pond within the time frame required in the
6 CCR Part A Reconsideration rule of sufficient size to continue to receive ash, it simply
7 would not negate the need to complete the dry fly ash conversions by December 2023 (an
8 ELG requirement) and permit and complete construction of new landfill capacity to
9 continue to dispose of scrubber by-product (no later than the end of 2023). Effectively,
10 the question of the potential capability of continuing to dispose of bottom ash in a lined
11 pond through 2025 under the ELG Reconsideration becomes moot. The only reason it
12 works at Culley Unit 2 is because Petitioner previously completed the dry fly ash handling
13 conversions and there are no other significant additional environmental projects that would
14 need to be completed to continue to operate Culley Unit 2 through 2025.

15
16 **Q. In summary, what environmental projects would need to be completed prior to**
17 **October 15, 2023, (when the existing ash pond ceases) in order to keep the Brown**
18 **units in operation?**

19 A. In summary, it cannot be done. In order to keep Brown Units 1 and 2 in operation beyond
20 October 15, 2023 Petitioner would be required to cease disposal at the existing ash pond,
21 construct a new lined pond of sufficient size to recirculate the scrubber process water for
22 both units and provide sufficient hydraulic capacity for solids to settle (to comply with
23 current NPDES wastewater discharge limits for Total Suspended Solids), construct a new
24 wastewater treatment system to ensure continued compliance with the current NPDES
25 wastewater discharge limits for copper, mercury and selenium, complete the ash handling
26 modifications necessary to cease discharge of both fly ash and bottom ash transport water
27 (since there will no longer be an available CCR-compliant ash pond), and design, permit
28 and construct a new CCR-compliant extension of the existing landfill.

29
30 **Q. Are these CCR and ELG compliance requirements modeled in the Petitioner's**
31 **Integrated Resource Plan for the A.B. Brown Generating Station?**

32 A. Yes, the compliance requirements detailed above are modeled under the business as
33 usual scenario.

1 iii. **Air Emission Considerations**

2
3 **Q. Are there environmental regulations that have been finalized recently that will**
4 **impact environmental compliance costs at Petitioner's coal-fired power plants?**

5 A. Yes, as mentioned previously the CSAPR Update rule was finalized in March and sets
6 new more stringent NOx ozone season limitations for coal-fired generating units in
7 Indiana. Specifically, the CSAPR Update establishes a new ozone season trading
8 program effective June 29, 2021, by converting banked allowances currently held in a
9 source's compliance account using an 8:1 surrender ratio (i.e. surrender by an 8:1 ratio of
10 a unit's existing compliance bank) and significantly reducing future NOx season allowance
11 allocations. The NOx season allowance allocations to the A.B. Brown Generating Station
12 have been reduced from 675 allowances allocated in 2020 to 383 allowances to be
13 allocated in 2024 and beyond.

14
15 **Q. Were the increased compliance costs associated with the CSAPR Update modeled**
16 **in the most recent Integrated Resource Plan?**

17 A. No, the CSAPR Update was not finalized until March 2021, so the effects of surrendering
18 banked allowances and virtually halving the NOx season compliance allowances going
19 forward for the A.B. Brown Generating Station would be additional to the compliance costs
20 for CCR and ELG modeled in the business as usual scenario.

21
22 **Q. Are there any other air emission rules that were not modeled in the most recent**
23 **Integrated Resource Plan that are likely to impact the A.B. Brown Generating**
24 **Station during the planning period?**

25 A. Yes. In December 2020 the EPA at the end of the Trump Administration finalized its
26 decision to leave in place the 2012 National Ambient Air Quality Standard (NAAQS) for
27 fine particulate (PM2.5). This decision was highly controversial and was immediately
28 challenged by a group of states led by California. A separate lawsuit was filed by the
29 American Lung Association. Petitions to fast track a reconsideration were also filed with
30 the agency. Given the multiple challenges filed and the change in administration it is likely
31 that the U.S. EPA will revisit whether to defend the litigation challenging the rule and likely
32 agree to "fast track" the reconsideration.

33

1 **Q. Why is the reconsideration of the fine particulate NAAQS relevant to the A.B. Brown**
2 **Generating Station?**

3 A. Fine particulate, in the form of condensibles, are an increasing compliance challenge at
4 the A.B. Brown Generating Station. The stringent permit limits for particulate currently in
5 the source's air permit are based upon the 2012 NAAQS for fine particulate. A more
6 stringent NAAQS will lead to even more stringent fine particulate emission limits during
7 the planning period.

8
9 Moreover, and perhaps even more importantly, the multiple injection systems that
10 Petitioner currently uses for compliance with the Mercury and Air Toxics Standards
11 (MACT) and the H₂SO₄ limit in the air permit for A.B. Brown Generating Station increase
12 the emission of condensibles, as does enhanced scrubbing to ensure compliance with the
13 relatively new one hour SO₂ emission limit applicable to the coal-fired units. Thus any
14 requirement for additional sorbent injection or enhanced scrubbing for compliance
15 increases condensibles (i.e. fine particulate) and would exacerbate the existing fine
16 particulate compliance challenges necessitating the retrofit of the wet ESP discussed in
17 the direct testimony of Witness Games.

18

19 **iv. Carbon Regulations**

20

21 **Q. What is the current status of carbon regulations that would be applicable to**
22 **Petitioner's coal-fired power plants?**

23 A. Since 2015 U.S. EPA has promulgated a series of regulations under the Clean Air Act that
24 would seek to limit emissions of carbon dioxide (CO₂) from coal-fired power plants. In
25 August of 2015 U.S. EPA released its Clean Power Plan (CPP) rule which would have set
26 stringent emission rate target goals for implementation in each state. Specifically, the
27 CPP would have required that Indiana achieve a final emission target rate of 1,242 lb CO₂
28 / MWh by 2030. The CPP rule was immediately challenged by a coalition of states and in
29 February 2016, before taking effect, the U.S. Supreme Court granted a stay of the rule
30 pending completion of judicial review.

31

32 In June 2019 the U.S. EPA repealed the CPP and finalized the Affordable Clean Energy
33 (ACE) rule as its replacement. In finalizing the ACE rule, U.S. EPA explained that it

1 interpreted the Clean Air Act to unambiguously constrain emissions reduction methods to
2 those measures that can be put into place within the fence-line of the source itself. The
3 ACE rule established that heat rate improvement, or efficiency improvement, as the “best
4 system of emission reduction” for CO₂ from coal-fired electric generating units, thus
5 establishing heat rate improvement targets for the nation’s coal-fired electric generating
6 fleet. As the ACE rule was effective at the time, Petitioner modeled compliance with the
7 ACE rule in the low regulatory and reference case scenarios for each of its coal-fired
8 generating units.

9
10 **Q. Has the U.S. EPA spoken as to how it intends to replace the CPP/ ACE rules?**

11 A. Not in any detail. However, the Biden administration identified climate as a “Day One”
12 priority for its administration, taking an “all of government” approach to meet the carbon
13 emission reduction targets set forth in the international Paris Climate Agreement (after
14 immediately rejoining the Paris Agreement). One of the planks set out in President Biden’s
15 climate agenda is to achieve a “zero carbon polluting” electric generating fleet in the U.S.
16 by 2035. Moreover, in April the Biden administration announced its intention to take an
17 international leadership position going into the next meeting of the United Nations
18 Framework Convention on Climate Change in Glasgow in November with a new U.S.
19 pledge to achieve a 50-52 percent reduction from 2005 levels in economy-wide carbon
20 emissions by 2030, and achieve net-zero carbon emissions economy-wide by no later
21 than 2050. So, while we do not yet know the exact form of carbon regulations, whether
22 they will be adopted under the Clean Air Act similar to the CPP, or a national clean energy
23 standard, it is certainly prudent to continue to model a range of carbon pricing / compliance
24 costs in the integrated resource planning process.

25
26
27 **III. PETITIONER’S PROPOSED CT PROJECT**

28
29 **Q. Are you familiar with the CT Project Petitioner is proposing in this Cause?**

30 A. Yes. The CT Project is described by Witness Games as well as other technical witnesses.

31
32 **Q. How do CCR and ELG rules discussed above apply to Petitioner’s CT Project?**

33 A. The CCR and ELG rules apply to ash and wastewater generated from coal-fired power

1 plants. Combustion turbines do not generate ash, or wastewaters of any significance.
2 The retirement of Units 1 and 2 of the A.B. Brown Generating Station will also alleviate
3 the need to expand the existing landfill. Specifically, the projects identified in the beginning
4 of my direct testimony:

- 5 • Dry bottom ash conversion
- 6 • Dry fly ash conversion
- 7 • New water treatment system for continued NPDES compliance (driven by closure of
8 the ash pond)
- 9 • Landfill expansion

10 will not be required to operate the CTs.

11
12 **Q. How does the Biden climate agenda impact the CTs?**

13 A. President Biden has announced a policy goal of achieving a “zero carbon polluting” electric
14 generating fleet in the U.S. by 2035. Absent a comprehensive legislative solution, which
15 seems unlikely given the current rancorous partisan political divide in Congress, it will be
16 extremely challenging to meet that goal strictly through a new regulatory approach that
17 will almost certainly be challenged in court immediately upon promulgation. However,
18 modeling indicates that annual carbon emissions from the CTs are expected to be very
19 low by the end of the modeling period (< 20,000 tons). Such a low number of emissions
20 can be offset in a flexible regulatory or legislative approach. Moreover, the CTs selected
21 are designed to be able to accommodate 30% hydrogen and would be able to combust
22 higher percentages of hydrogen with future modification.

23
24
25 **IV. FEDERAL MANDATED COMPLIANCE PROJECTS**

26
27 **Q. Please briefly describe the compliance projects Petitioner is proposing in this
28 Cause.**

29 A. Petitioner is proposing two compliance projects in this Cause: (1) constructing new ponds
30 at the F.B. Culley Generating Station and A.B. Brown Generating Station as required by
31 the CCR extension requests; and (2) constructing a new dry fly ash handling system at
32 the A.B. Brown Generating Station. I will discuss the new ponds first, and then turn to the
33 Dry Fly Ash Project.

1 **A. CCR Compliant Ponds Compliance Project**

2
3 **Q. Please summarize the two environmental projects as required by the CCR extension**
4 **requests pending for the A.B. Brown and F.B. Culley Generating stations for which**
5 **Petitioner is seeking approval in this filing.**

6 A. One is a 2- to 3-acre lined CCR-compliant pond at the F.B. Culley Generating Station and
7 the other is a 10-acre lined CCR pond at the A.B. Brown Generating Station. These new
8 ponds are necessary to demonstrate to U.S. EPA that Petitioner is pursuing alternative
9 ash capacity in the fastest technically feasible timeframe as required under the Part A
10 Reconsideration.

11
12 **Q. Aside from being necessary to meet the demonstration requirements to be granted**
13 **a CCR extension for the east ash pond, what will the new lined CCR-compliant pond**
14 **at the F.B. Culley Generating Station be used for?**

15 A. Construction of the lined CCR-compliant pond will serve to provide CCR-compliant
16 wastewater containment between closure of the east ash pond and completion of the ELG
17 wastewater treatment upgrades approved in Cause 45052. Moreover, given the small
18 quantity of bottom ash generated by Unit 2, this new lined CCR-compliant pond provides
19 Petitioner with the opportunity to use the new lined pond for short term bottom ash disposal
20 if Petitioner chooses to continue to operate Unit 2 through December 2025 under the ELG
21 Reconsideration rule. This is presently under consideration by the Company and would
22 provide additional capacity as the Company is in the near-term phase of its generation
23 transition plan.

24
25 **Q. Aside from being necessary to meet the demonstration requirements to be granted**
26 **a CCR extension for the ash pond, what will the new lined CCR-compliant pond at**
27 **the A.B. Generating Station be used for?**

28 A. Construction of the lined CCR-compliant pond will serve to provide CCR-compliant
29 wastewater containment for landfill runoff leachate, storm water, coal pile runoff until
30 decommissioning is complete, wastewater treatment and continued mercury treatment of
31 ash pond water during dewatering and ash pond closure activities. However, as
32 discussed more fully above, the new CCR-compliant pond will not have sufficient size to
33 permit effective hydraulic capacity and settling capacity for the additional ash flows

1 currently entering the ash pond. And finally, the new lined CCR pond will serve as the
2 stormwater pond for the new CTs.

3
4 **Q. Are there other alternative plans that were considered to the CCR-compliant ponds?**

5 A. There are no other alternatives because, as I indicated previously, we are required to
6 implement the alternative disposal capacity as fast as technically feasible. These two
7 CCR-compliant ponds are as fast as technically feasible, and so no other option would
8 achieve compliance. We did study 5 other options, none of which would achieve
9 compliance. Reports on these other options studied are available at the following
10 websites: https://midwest.centerpointenergy.com/assets/downloads/planning/ccr/Brown-Ash-Pond-Site-Specific-Alternative-to-Initiate-Closure_FINAL.pdf;
11 and
12 https://midwest.centerpointenergy.com/assets/downloads/planning/ccr/Culley-East-Site-Specific-Alternative-to-Initiate-Closure_FINAL.pdf.
13

14
15 **B. Dry Fly Ash Compliance Project**

16
17 **Q. Are you familiar with the Dry Fly Ash Project detailed in the direct testimony of**
18 **Witness Games?**

19 A. Yes. Both the ELG and CCR rules work together effectively to prohibit the continued wet
20 sluicing of fly ash into an ash pond for disposal. Petitioner previously modified the fly ash
21 handling systems at its coal-fired generating units to be able to load and transport dry fly
22 ash for beneficial reuse as a cement feedstock, and in Cause 45280 this Commission
23 approved a closure plan at the A.B. Brown Generating Station which provides for the
24 excavation of approximately 6 million tons of ponded ash for beneficial reuse and clean
25 closure under the CCR rule.

26
27 As discussed previously, the CCR and ELG rule work together to prohibit the continued
28 wet sluicing of fly ash transport water for disposal in an unlined ash pond. The Dry Fly
29 Ash project as discussed in more detail in the direct testimony of Witness Games is a
30 project that will allow Petitioner to remain in compliance with the CCR and ELG rules and
31 continue to load dry fly ash for transport and shipment for beneficial reuse, as dry fly ash
32 can no longer be disposed of in the ash ponds.

33

1 **Q. How does the Dry Fly Ash project allow Petitioner to stay in compliance with the**
2 **ELG and CCR rules?**

3 A. Dry fly ash can no longer be loaded at the Ohio River loading facility located at the A.B.
4 Brown Generating Station as that system has been converted to load ponded ash under
5 the CCR closure plan. With the conversion of the loading facility at the A.B. Brown
6 Generating Station, Petitioner was required to find an alternative loading facility for dry fly
7 ash in order to remain in compliance with the CCR and ELG rules' prohibition against
8 disposal of dry fly ash in an unlined ash pond. The Dry Fly Ash project will ensure that
9 Petitioner can continue to burn coal and beneficially reuse fly ash through the retirement
10 of the coal-fired units at A.B. Brown Generating Station in October 2023 and the continued
11 operation of F.B. Culley Generating Station's Units 2 and 3 through their retirement dates.
12

13 The Dry Fly Ash project also supports the Part A Reconsideration extension requests
14 under the CCR rule for both the A.B. Brown and F.B. Culley Generating Stations. The no
15 alternative capacity demonstration required to support the extension requests include an
16 analysis of all measures taken to arrange / construct alternative capacity for dry fly ash
17 disposal. The Dry Fly Ash project is a project that directly provides alternative disposal
18 capacity for dry fly ash and supports the extension request for the remainder of the CCR
19 waste streams.
20

21

22 **V. CONCLUSION**

23

24 **Q. Does this conclude your direct testimony?**

25 A. Yes, it does.

VERIFICATION

I, Angila M. Retherford, Vice President Environmental & Corporate Responsibility for Southern Indiana Gas and Electric Company d/b/a CenterPoint Energy Indiana South, under the penalty of perjury, affirm that the answers in the foregoing Direct Testimony are true to the best of my knowledge, information and belief.



Angila M. Retherford
Vice President Environmental & Corporate
Responsibility