

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

**PETITION OF DUKE ENERGY INDIANA, LLC)
PURSUANT TO IND. CODE §§ 8-1-2-42.7 AND 8-1-2-61,)
FOR (1) AUTHORITY TO MODIFY ITS RATES AND)
CHARGES FOR ELECTRIC UTILITY SERVICE)
THROUGH A STEP-IN OF NEW RATES AND CHARGES)
USING A FORECASTED TEST PERIOD; (2) APPROVAL)
OF NEW SCHEDULES OF RATES AND CHARGES,)
GENERAL RULES AND REGULATIONS, AND RIDERS;)
(3) APPROVAL OF A FEDERAL MANDATE) CAUSE NO. 45253
CERTIFICATE UNDER IND. CODE § 8-1-8.4-1; (4))
APPROVAL OF REVISED ELECTRIC DEPRECIATION)
RATES APPLICABLE TO ITS ELECTRIC PLANT IN)
SERVICE; (5) APPROVAL OF NECESSARY AND)
APPROPRIATE ACCOUNTING DEFERRAL RELIEF;)
AND (6) APPROVAL OF A REVENUE DECOUPLING)
MECHANISM FOR CERTAIN CUSTOMER CLASSES)**

**DIRECT TESTIMONY OF DAVID A. SCHLISSEL
ON BEHALF OF
CITIZENS ACTION COALITION OF INDIANA, INC.,
INDIANA COMMUNITY ACTION ASSOCIATION,
AND
ENVIRONMENTAL WORKING GROUP**

Schlissel Technical Consulting, Inc.

OCTOBER 30, 2019

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is David A. Schlissel. I am the President of Schlissel Technical
3 Consulting, Inc., 45 Horace Road, Belmont, MA 02478.

4 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

5 A. I am testifying on behalf of the Citizens Action Coalition of Indiana (“CAC”),
6 Indiana Community Action Association (“INCAA”), and Environmental Working
7 Group (“EWG”) (collectively, “Joint Intervenors” or “JI”).

8 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
9 **RECENT WORK EXPERIENCE.**

10 A. I graduated from the Massachusetts Institute of Technology in 1968 with a
11 Bachelor of Science Degree in Engineering. In 1969, I received a Master of
12 Science Degree in Engineering from Stanford University. In 1973, I received a
13 Law Degree from Stanford Law School. In addition, I studied nuclear engineering
14 at the Massachusetts Institute of Technology during the years 1983-1986.

15 Since 1983 I have been retained by governmental bodies, publicly-owned utilities,
16 and private organizations in 38 states to prepare expert testimony and analyses on
17 engineering, economic and financial issues related to electric utilities. My clients
18 have included state utility commissions, attorneys general, consumer advocates,
19 publicly-owned utilities, and local, national and international environmental and
20 consumer organizations.

21 I have filed expert testimony before state regulatory commissions in Arizona,
22 Arkansas, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana,
23 Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota,
24 Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, North
25 Carolina, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, South
26 Dakota, Texas, Vermont, Virginia, West Virginia, and Wisconsin; before the U.S.
27 Federal Energy Regulatory Commission and Atomic Energy Commission; and in
28 state and federal court proceedings.

1 A copy of my current resume is included as Attachment DAS-1. Additional
 2 information about my work is available at www.schlissel-technical.com and
 3 www.IEEFA.org.

4 **Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN PROCEEDINGS**
 5 **BEFORE THE INDIANA UTILITY REGULATORY COMMISSION?**

6 A. Yes. I have filed testimony in Causes Nos. 38045, 43114, 43114 S1, and 43114
 7 IGCC-1, IGCC-4S1, IGCC-8, IGCC-10, IGCC-12 & 13, and IGCC-17, as well as
 8 Cause No. 44794. I also submitted testimony in Cause No. 38702-FAC-40-S1,
 9 which was settled prior to the scheduled hearings.

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

12 A. The purpose of my testimony of my testimony and exhibits was originally to
 13 evaluate the economics of continuing to operate Duke Energy Indiana, LLC's
 14 ("DEI" or "the Company") Edwardsport IGCC Plant during and beyond the 2020
 15 test year. I also raise concerns about DEI's request to recover the costs of CCR
 16 compliance activities in this proceeding.

17 **Q. HAVE YOU BEEN ABLE TO PREPARE THE TESTIMONY AND**
 18 **ATTACHMENTS DESCRIBED ABOVE WHICH YOU HAD PLANNED**
 19 **TO PREFILE ON BEHALF OF JOINT INTERVENORS ON OCTOBER**
 20 **30, 2019?**

21 A. No.

22 **Q. WHY NOT?**

23 A. There are three basic reasons. First and foremost, Duke's case-in-chief prefiled
 24 on July 2, 2019, was fundamentally flawed in the critical respects outlined in Joint
 25 Movants' Joint Motion to Amend Procedural Schedule, for Appropriate Relief,
 26 and for Expedited Briefing and subsequent Reply, which are incorporated here by
 27 reference. Second, Duke's case-in-chief is premised on Duke's 2018 Integrated
 28 Resource Plan ("IRP") for which the Company has requested administrative
 29 notice in this proceeding, an IRP which is significantly deficient in its own right.

1 And, third, the Company has simply not been able or willing to provide complete
2 or up-to-date responses to parties' Edwardsport-specific discovery on a timely
3 basis.

4 **Q. HOW DO THE FUNDAMENTAL FLAWS IN DUKE'S CASE-IN-CHIEF**
5 **AS A WHOLE WHICH ARE OUTLINED IN JOINT MOVANTS' JOINT**
6 **MOTION AFFECT YOUR ABILITY TO PREPARE YOUR TESTIMONY**
7 **AND ATTACHMENTS REGARDING EDWARDSPORT ON A**
8 **STANDALONE BASIS?**

9 A. The principal flaws in Duke's case-in-chief relate to the transparency of DEI's
10 cost of service study ("COSS") and its consistency with the Company's claimed
11 revenues at current and proposed rates are spelled out in in Paragraphs 9 and 10 of
12 Joint Movants' Joint Motion:

13 9. . . . On October 4, 2019, CAC sent an email to Duke outlining the
14 deficiencies, which included the following Joint Movants'
15 concerns:

- 16 a. That the Commission had not yet been provided a working
17 COSS model;
- 18 b. That Duke had not yet linked certain MSFR and workpaper
19 spreadsheets to the COSS replica, such as (1) the cost
20 allocators in Petitioner's Exhibit 7G workpaper and (2) the
21 MSFR spreadsheet labeled as "Schedule 1 of Exhibit 7-
22 H(MTD)" showing the Derivation of Annual Fixed
23 Revenue per Customer ("FRC") and Fixed Energy Charge
24 ("FEC") by Rate;
- 25 c. That we were still seeking clarity about how requests to
26 change certain inputs to the COSS would work;
- 27 d. That the proofs of revenue provided are based solely on a
28 4CP allocation and do not include a 12 CP allocation;
- 29 e. That we could not find summary sheets by rate
30 classification and rate structure category "showing" that the
31 sums of the "rate design" revenue requirements detail
32 reflected in the MSFRs referenced in Section 1-5-16(a)(2),
33 volume 2, part B, page142 equal the total "accounting"
34 revenue requirements as reflected in Douglas Exhibit 4-E,
35 Schedule OPIN 1 (i.e., \$2,912,522,000 for proposed rates
36 and \$2,517,952,000 for present rates as adjusted);

- f. That we could not find a summary sheet by major cost category and sub-category “showing” that the sums of the “accounting” revenue requirements detail reflected in the associated MSFRs (which are not in those referenced in the citation above) equal to the total “accounting” revenue requirements as reflected in Douglas Exhibit 4-E, Schedule OPIN 1 (i.e., \$2,912,522,000 for proposed rates and \$2,517,952,000 for present rates as adjusted); and
 - g. The overarching concern that there are no connections between data in the MSFRs and the workpapers used to generate the data shown in the MSFRs. Although Duke provided a key, the spreadsheets continue to not be linked to the next logical spreadsheet; rather, the results from one spreadsheet are simply copied to the next spreadsheet. For example:
 - i. The calculations required to derive the PRODKW allocator in the COSS model are spread over four separate, unlinked spreadsheets: (1) 1-5-15(b) Confidential WP – MSFR COSS178 to COSS203-MTD.xlsx; (2) 1-5-15(b) Confidential WP – MSFR COSS39 to COSS42-MTD.xlsx; (3) 45253-DEI Petitioner’s Workpaper 3-JRB.xlsx; and (4) 45253-DEI-Petitioner’s Workpaper 4-JRB.xlsm.
 - ii. Another example is Duke witness Douglas’ Exhibit 4_E, Schedule Rev1, which refers to WP REV1-DLD. We finally located this workpaper in the following file: MSFR folder “1-5-8(a)(2) Workpaper.XLS.” However, the revenue amounts are hard keyed in this workpaper, which does not show where these numbers come from and how they were determined. Even though the key Duke [later] produced is helping, it is difficult, if not impossible, to follow Duke’s chain of evidence.
 10. Working through the revenue proof issue led to additional concerns regarding the forecast of KWH sales used by Duke. This issue was raised with Duke and Mr. Bailey on a call held October 4, 2019. During that call, the OUCC expressed concerns with Mr. Bailey’s forecasted KWH sales and number of customers. During the call, Duke indicated forecasts are delineated into broad groups and directed OUCC to DEI Workpaper 6-JRB_071019, which contains the total forecasted Residential KWH sales for 2020. This allocation includes General Service Low Load Factor with no explanation of why it is considered residential. The forecasted amounts do not match the forecasted KWHs used in the revenue

proofs. Additionally, when reviewing Duke witness Douglas' revenue workpapers, the revenues for the Residential class (as an example) do not match Mr. Bailey's revenue proof workpapers. These deficiencies bring into question Duke's reporting of revenues under both current and proposed rates. During the call, Duke committed to provide documentation showing that the revenue proof equals cost of service at current rates and that the revenue proof at current rates matches Duke witness Douglas' revenue requirement. As of October 11, 2019, the OUCC had not yet received the information. Therefore, OUCC cannot verify, reconcile, or understand how Duke's revenues [and costs] were derived or even if they are consistent with the forecasts. See OUCC witness Watkins' attached affidavit.

These same transparency and consistency concerns regarding the Company's case-in-chief as a whole apply with even more force and effect when applied to Edwardsport on a standalone basis. Currently, Edwardsport's costs are not recovered through base rates but through riders, principally the IGCC and FAC trackers, both of which are "forecast and reconcile" rate adjustment mechanisms, with the IGCC being forecasted and reconciled annually and the FAC quarterly. Under the Company's case-in-chief proposals, the IGCC rider is being eliminated, the FAC is being "zeroed out," and the Edwardsport costs they now recover separately are being "rolled in" to base rates contemporaneous with the effective date of new base rates approved in this docket, with subsequent reconciliations contemplated for differences between forecasted and incurred costs and projected and realized revenues under both interim and permanent base rates. Thus, it becomes even more critical, albeit more complex and daunting, to appropriately "track" and "match" costs and revenues over time for Edwardsport on a standalone basis and even more critical to assure that the Company's evidentiary presentation of those costs and revenues is transparent and consistent. However, the Company's case-in-chief as filed and amended does NOT disaggregate Edwardsport costs and revenues on a stand-alone basis for 2018, 2019 and 2020.

Q. HOW DO THE SIGNIFICANT DEFICIENCIES IN THE DEI 2018 INTEGRATED RESOURCE PLAN WHICH UNDERLIES THE COMPANY’S CASE-IN-CHIEF AFFECT YOUR ABILITY TO PREPARE YOUR TESTIMONY AND ATTACHMENTS REGARDING EDWARDSPORT ON A STANDALONE BASIS?

A. CAC participated actively in the Stakeholder Engagement Process during the Company’s preparation of the DEI 2018 Integrated Resource Plan (“IRP”) which underlies the Company’s case-in-chief in this docket, including serving many informal discovery requests and having many discussions with the relevant Company individuals. CAC has followed up that active participation in this docket with multiple additional formal discovery requests regarding the IRP in the rate case to supplement the many informal requests which it served during the earlier Stakeholder Engagement Process. In addition, Energy Futures Group has prepared a preliminary report for CAC regarding significant deficiencies which it found in the DEI 2018 IRP as filed and the modeling process which the Company utilized in preparing the 2018 IRP.¹

As a result of my review of the Company’s IRP as filed, the numerous Company responses to CAC’s informal and formal discovery responses regarding the IRP in the IRP process and in this base rates case, and the preliminary Energy Futures Group report critiquing the IRP and the modeling process utilized by the Company in preparing it, I have concluded as follows:

1. The DEI 2018 IRP as filed and relied upon by the Company in preparing its case-in-chief in this docket is significantly deficient and, therefore, is not a reasonable basis on which the Commission should rely for the appropriate, economics-based retirement date for Edwardsports being 2045. For this reason, the Commission should not rely on a retirement date of 2045 in setting a depreciation schedule for Edwardsport for ratemaking purposes in this proceeding.

¹ See JI Exhibit 4, Attachment AS-2 and Attachment AS-2-Confidential. Joint Intervenor expressly reserve the right to supplement and revise JI Exhibit 4 and the related attachments.

2. In fact, because the Company's filing in this proceeding did not support 2045 as being the appropriate and economically-based retirement date for Edwardsport, substantial discovery has been required in order to understand and clarify the economic basis for Duke's assumed retirement date of 2045 for the plant.²

3. Thus, it is necessary for me to prepare an independent analysis to determine an optimal planned retirement date and related depreciation schedule for Edwardsport for use in this docket.

However, I cannot presently prepare such an independent analysis due to the fundamental flaws, explained above, in the transparency of the Company's COSS and its consistency with the Company's claimed revenues at current rates and projected revenue requirements at proposed rates, the failure of the Company's case-in-chief to disaggregate Edwardsport cost and revenue data on a stand-alone basis, and the Company's inadequate and untimely responses to CAC's Edwardsport-specific discovery requests as explained below.

Q. HOW DO DEI'S FAILURES TO PROVIDE CAC WITH COMPLETE AND UP-TO-DATE RESPONSES TO EDWARDSPORT-SPECIFIC DISCOVERY REQUESTS AFFECT YOUR ABILITY TO PREPARE YOUR TESTIMONY AND ATTACHMENTS REGARDING EDWARDSPORT ON A STANDALONE BASIS?

A. To prepare my testimony and attachments as planned, I need Edwardsport-specific cost and revenue requirements data, both historic and projected, and as complete and up to date as possible. I also need Edwardsport-specific operating performance data which is as complete and up-to-date as possible.

As filed and amended, the Company's case-in-chief does not disaggregate Edwardsport cost and revenue requirements data on a stand-alone basis, with limited exceptions for specific accounting adjustments relating to a capitalized parts and equipment inventory and capitalized and amortized outage costs

² CAC Data Requests Sets Nos. 4, 5, and 18 all contained questions relevant to this issue. The last responses were only provided on October 21, 2019 (responses but not attachments contained in Attachment DAS-2).

1 associated with the so-called “Major Outage” which DEI expects to occur every
2 seven years.

3 The Company’s case-in-chief does include some Edwardsport-specific operating
4 performance data in the testimony and attachments of witness Gurganus, but that
5 data is incomplete in both scope and timing. In particular, the monthly operating
6 performance data provided by witness Gurganus ends with June 2019 whereas I
7 needed comparable data through September 2019 for my testimony and
8 attachments planned for filing on October 30, 2019. Additionally, during the
9 IGCC proceedings, I had been routinely requesting and receiving from the
10 Company for Edwardsport up-to-date North American Electric Reliability
11 Corporation (“NERC”) monthly reports of outages and derates, Midcontinent
12 Independent System Operator (“MISO”) hourly reports of Day Ahead and Real
13 Time unit commitment and dispatch, internal bi-weekly operations reports,
14 internal monthly financial reports, and any root cause analyses performed for
15 significant equipment failures or other technical issues on an incident-by-incident
16 basis.

17 Thus, after reviewing the Company’s case-in-chief, especially but not exclusively
18 the testimony and attachments of witnesses Gurganus, Douglas, and Jacobi, it
19 became clear to me and Joint Intervenor’s legal team that a lengthy set of data
20 requests would be required to acquire the Edwardsport-specific data I needed that
21 had not been included in the Company’s case-in-chief as filed. This was CAC
22 Data Request Set No. 4, which was served on August 6 and initially responded to
23 on August 16, 2019. See appended Attachment DAS-2.

24 The Company’s initial responses to CAC Data Request Set No. 4 were seriously
25 deficient in multiple respects, including most notably:

- 26 1. The Edwardsport-specific cost and revenue requirements data, which was
27 disaggregated only at a very high level of generality, did not include major
28 cost categories such as income tax expenses and revenue requirements,
29 and was not at all consistent with the categories and details of data which
30 had been routinely provided previously in IGCC proceedings.

2. NERC monthly outage and derate data was grossly incomplete and not at all consistent with the categories and details of data which had routinely been provided previously in IGCC proceedings.
3. MISO hourly commitment and dispatch data was grossly incomplete and not at all consistent with the categories and details of data which had routinely been provided previously in IGCC proceedings.
4. The Company refused to supplement as it became available in due course any data of any type after June 2019.
5. There were multiple documents which were withheld or redacted on unsubstantiated grounds of relevance, confidentiality and/or privilege.

Duke provided incomplete responses to CAC Set 4 beginning on August 16, 2019, and delayed and still incomplete responses on August 20 and September 12, 2019. Thus, CAC served follow up CAC Data Request Set No. 9 on September 6, 2019 and CAC Data Request Set No. 18 on October 11, 2019, in an effort to obtain voluntarily from Duke without resort to a motion to compel the high-priority data enumerated above which had still not been provided in response to CAC Data Request Set No. 4. The Company's responses to CAC Data Request Set No. 9 were provided on September 16, 2019 and to CAC Data Request Set No. 18 on October 21, 2019 (including but not limited to separate multiple supplemental responses to CAC Data Request Set No. 4).

Joint Intervenors' legal team and I are still reviewing and evaluating the Company's October 21, 2019 responses to CAC Data Request Set No. 18 and the additional supplemental Responses to CAC Data Request No. 4. There was unquestionably more responsive information provided on October 21 than on August 16, and some of it will be quite useful to me in preparing my subsequent updated, supplemental testimony and attachments in this docket.

But, obviously, Joint Intervenors' legal team and I have over two months less time to review and evaluate that additional information on October 21 than we would have had on August 16. Moreover, the additional data provided does not include the disaggregated, much more detailed Edwardsport-specific cost and revenue requirements data provided in prior IGCC proceedings. It is also clear that other additional data provided on October 21 is still not in formats or at the

1 level of detail previously provided for effectively the same data in earlier IGCC
 2 proceedings. For example, the additional NERC reliability data provided on
 3 October 21 is expressly referenced as “summary” and does not include all of the
 4 same column headings or all of the events as internal DEI reports previously
 5 provided during discovery in earlier IGCC proceedings.

6 These previous and continuing deficiencies make it impossible for me to make the
 7 essential “apples-to-apples” comparisons of Edwardsport-specific data between
 8 past IGCC proceedings and the current rate case in order to appropriately “track”
 9 and “match” critical standalone Edwardsport costs, revenues and performance
 10 metrics over time from 2017 through 2020. So, Joint Intervenor’s legal team and
 11 I will undoubtedly need to prepare and serve even further discovery requests in
 12 our continuing efforts to resolve this most vexing dilemma created by the
 13 inscrutable manner in which Duke has chosen to present its case-in-chief,
 14 especially but not exclusively as it relates to Edwardsport.

15 **Q. DO YOU HAVE ANY CONCERNS ABOUT DUKE’S REQUEST TO**
 16 **RECOVER THE COSTS OF COAL COMBUSTION RESIDUALS (“CCR”)**
 17 **COMPLIANCE ACTIVITIES IN THIS PROCEEDING?**

18 A. Yes. As discussed in the testimony of Timothy J. Thiemann, Duke is requesting
 19 in this proceeding recovery of costs associated with compliance with the CCR
 20 Rule, and in particular costs related to closure of coal ash sites, that were incurred
 21 between 2015 and 2018.³ As Mr. Thiemann notes, Duke submitted proposed
 22 closure plans to the Indiana Department of Environmental Management
 23 (“IDEM”) for review and approval.⁴ Correspondence between Duke and IDEM
 24 concerning the closure plans for each of its coal ash sites is available on IDEM’s
 25 Virtual Filing Cabinet.

26 To our knowledge, IDEM to date has only approved the closure plans submitted
 27 by Duke for three coal ash impoundments at Duke’s Wabash River plant, namely

³ See Thiemann Direct at 6-17.

⁴ *Id.* at 7.

1 the “South Ash Pond,” “Ash Pond A,” and the “Secondary Settling Pond.”⁵
 2 Closure plans for coal ash sites at Duke’s Cayuga, Gibson, and Gallagher plants,
 3 as well as for other coal ash impoundments at the Wabash River plant, remain
 4 pending before IDEM and have not been approved.⁶ Yet, as Mr. Thiemann notes
 5 in his testimony, “[t]he Company has begun to execute on certain portions of its
 6 proposed closure plans.”⁷ Mr. Thiemann describes a number of activities that
 7 Duke engaged in at its coal ash sites between 2015 and 2018, apparently based in
 8 part on the assumption that the coal ash closure plans that it has submitted to
 9 IDEM will be approved.

10 This is not a safe assumption. IDEM has repeatedly noted to Duke that it has
 11 concerns about whether Duke’s proposed closure plans comply with the federal
 12 CCR Rule. Specifically, IDEM has expressed a concern to Duke that certain
 13 portions of its sites for which the Company has proposed to cap ash in place
 14 instead of removing have not demonstrated compliance with federal CCR Rule
 15 requirements that coal ash sites be closed in a manner that “controls, minimizes or
 16 eliminates, to the maximum extent feasible, post-closure infiltration of liquids into
 17 the waste and releases of CCR, leachate, or contaminated run-off to the ground or
 18 surface waters or to the atmosphere.”⁸ If IDEM ultimately does not approve any

⁵ See Letter from Rebecca Joniskan, Chief, Permits Branch, IDEM Office of Land Quality, to Owen R. Schwartz, Duke Energy Indiana, dated Aug. 16, 2019, available on the Indiana Department of Environmental Managements’ Virtual File Cabinet at: <https://vfc.idem.in.gov/DocumentSearch.aspx>.

⁶ See, e.g., Duke Energy Indiana, Proposed Modification to Existing Closure and Post-Closure Plan, Ash Disposal Area #1, Cayuga Generating Station (Dec. 21, 2016, IDEM Virtual Filing Cabinet No. 80399269; Duke Energy Indiana, Closure and Post-Closure Plan Application, Ash Pond System, Gallagher Generating Station (Dec. 21, 2016), IDEM Virtual Filing Cabinet No. 80398571; Duke Energy Indiana, Closure and Post-Closure Plan Application, Ash Pond System, Wabash River Generating Station, IDEM Virtual Filing Cabinet No. 80398553; Duke Energy Indiana, Closure and Post-Closure Plan Application, North Ash Basin System, Gibson Generating Station (Dec. 21, 2016), IDEM Virtual Filing Cabinet No. 80399262; Duke Energy Indiana, Closure and Post-Closure Plan Application, South Ash Basin System, Gibson Generating Station (Dec. 21, 2016), IDEM Virtual Filing Cabinet No. 80399262.

⁷ Thiemann Direct at 11.

⁸ Letter from Rebecca Joniskan, Chief, Permits Branch, IDEM Office of Land Quality, to Owen R. Schwartz, Duke Energy Indiana, dated Sept. 19, 2019 (regarding the closure plan for the ash pond system at Duke’s Cayuga Generating Station) (Attachment DAS-3); Letter from Rebecca Joniskan, Chief, Permits Branch, IDEM Office of Land Quality, to Owen R. Schwartz, Duke Energy Indiana, dated Sept. 19, 2019 (regarding the closure plan for the Primary Pond at Duke’s Gallagher Station) (Attachment DAS-4); Letter from Rebecca Joniskan, Chief, Permits Branch, IDEM Office of Land Quality, to Owen R. Schwartz, Duke

1 portions of Duke's closure plans as proposed, Duke may be required to modify its
2 proposed plans, including (*inter alia*) by proposing to excavate coal ash from
3 certain portions of its sites that it is currently proposing to cap in place.

4 Duke's case-in-chief does not provide sufficient information and explanation c
5 regarding the prudence of the CCR compliance expenditures for which it is now
6 seeking recovery. In the absence of such sufficient information and explanation,
7 it is my opinion that those expenditures could only be considered reasonable or
8 prudent by the Commission only *after* IDEM has approved the closure plans as
9 proposed by Duke, without any modifications. Magnifying this concern, Duke
10 recently wrote to IDEM that it is currently engaging in additional CCR activities
11 at its Cayuga and Gibson Stations "in anticipation of approval of the closure
12 plan[s] previously submitted to IDEM."⁹ The lack of sufficiently specific
13 information provided with Duke's case-in-chief, and Duke's apparent willingness
14 to move forward with coal ash closure activities without waiting for necessary
15 approvals from IDEM, raises serious concerns that it is asking the Commission
16 for recovery of CCR compliance costs in this proceeding that were not reasonably
17 or prudently incurred.

18 **Q. ARE YOU RESERVING THE RIGHT TO SUPPLEMENT AND REVISE**
19 **THIS TESTIMONY AFTER DUKE CORRECTS THE DEFICIENCIES IN**
20 **ITS FILINGS AND DATA RESPONSES YOU HAVE IDENTIFIED**
21 **ABOVE?**

22 A. Yes.

23 **Q. DOES THIS COMPLETE YOUR TESTIMONY AT THIS TIME?**

24 A. Yes.

Energy Indiana, dated Sept. 19, 2019 (regarding the closure plan for Ash Pond B at Duke's Wabash River Generating Station) (Attachment DAS-5).

⁹ Letter from Owen R. Schwartz, Duke Energy Indiana, to Anna Mishel, Environmental Manager, IDEM Office of Land Quality, dated Aug. 12, 2019 (concerning closure activities for the North Ash Basin System at Gibson Station) (Attachment DAS-6); Letter from Owen R. Schwartz, Duke Energy Indiana, to Anna Mishel, Environmental Manager, IDEM Office of Land Quality, dated Aug. 20, 2019 (concerning closure activities for the Lined Ash Disposal Area at Cayuga Generating Station) (Attachment DAS-7).

VERIFICATION

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



David Schlissel

October 30, 2019

Date

ATTACHMENT DAS-1

David A. Schlissel

Director of Resource Planning Analysis
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SUMMARY

I have worked since 1974 as a consultant and attorney on complex management, engineering, and economic issues, primarily in the field of energy. This work has involved conducting technical investigations, preparing economic analyses, presenting expert testimony, providing support during all phases of regulatory proceedings and litigation, and advising clients during settlement negotiations. I received undergraduate and advanced engineering degrees from the Massachusetts Institute of Technology and Stanford University, respectively, and a law degree from Stanford Law School.

PROFESSIONAL EXPERIENCE

Electric Resource Planning - Analyzed the financial and economic costs and benefits of energy supply options. Examined whether there are lower cost, lower risk alternatives than proposed fossil and nuclear power plants. Evaluated the financial, economic and system reliability consequences of retiring existing electric generating facilities. Investigated whether new electric generating facilities are used and useful. Investigated whether new generating facilities that were built for a deregulated subsidiary should be included in the rate base of a regulated utility. Assessed the reasonableness of proposed utility power purchase agreements with deregulated affiliates. Investigated the prudence of utility power purchases in deregulated markets.

Coal-fired Generation – Evaluated the economic and financial risks of investing in, constructing and operating new coal-fired power plants. Analyzed the economic and financial risks of making expensive environmental and other upgrades to existing plants. Investigated whether plant owners had adequately considered the risks associated with building new fossil-fired power plants, the most significant of which are the likelihood of federal regulation of greenhouse gas emissions and construction cost increases.

Power Plant Air Emissions – Investigated whether proposed generating facilities would provide environmental benefits in terms of reduced emissions of NO_x, SO₂ and CO₂. Examined whether new state and federal emission standards would lead to the retirement of existing power plants or otherwise have an adverse impact on electric system reliability.

Power Plant Water Use – Examined power plant repowering as a strategy for reducing water consumption at existing electric generating facilities. Analyzed the impact of converting power plants from once-through to closed-loop systems with cooling towers on plant revenues and electric system reliability. Evaluated the potential impact of the EPA's Proposed Clean Water Act Section 316(b) Rule for Cooling Water Intake Structures at existing power plants.

Electric System Reliability - Evaluated whether existing or new generation facilities and transmission lines are needed to ensure adequate levels of system reliability. Investigated the causes of distribution system outages and inadequate service reliability. Examined the reasonableness of utility system reliability expenditures.

Power Plant Repowering - Evaluated the environmental, economic and reliability impacts of rebuilding older, inefficient generating facilities with new combined cycle technology.

Power Plant Operations and Economics - Investigated the causes of more than one hundred power plant and system outages, equipment failures, and component degradation, determined whether these problems could have been anticipated and avoided, and assessed liability for repair and replacement costs. Examined power plant operating, maintenance, and capital costs. Evaluated utility plans for and management of the replacement of major power plant components. Assessed the adequacy of power plant quality assurance and maintenance programs. Examined the selection and supervision of contractors and subcontractors.

Nuclear Power – Reviewed recent cost estimates for proposed nuclear power plants. Examined the impact of the nuclear power plant life extensions and power uprates on decommissioning costs and collections policies. Examined the reasonableness of utility decisions to sell nuclear power assets and evaluated the value received as a result of the auctioning of those plants. Investigated the significance of the increasing ownership of nuclear power plants by multiple tiered holding companies with limited liability company subsidiaries. Investigated the potential safety consequences of nuclear power plant structure, system, and component failures.

Transmission Line Siting – Examined the need for proposed transmission lines. Analyzed whether proposed transmission lines could be installed underground. Worked with clients to develop alternate routings for proposed lines that would have reduced impacts on the environment and communities.

Electric Industry Regulation and Markets - Examined whether generating facilities experienced more outages following the transition to a deregulated wholesale market in New England. Evaluated the reasonableness of nuclear and fossil plant sales, auctions, and power purchase agreements. Analyzed the impact of proposed utility mergers on market power. Assessed the reasonableness of contract provisions and terms in proposed power supply agreements.

Expert Testimony - Presented the results of management, technical and economic analyses as testimony in more than 100 proceedings before regulatory boards and commissions in 35 states, before two federal regulatory agencies, and in state and federal court proceedings.

Litigation and Regulatory Support - Participated in all aspects of the development and preparation of case presentations on complex management, technical, and economic issues. Assisted in the preparation and conduct of pre-trial discovery and depositions. Helped identify and prepare expert witnesses. Aided the preparation of pre-hearing petitions and motions and post-hearing briefs and appeals. Assisted counsel in preparing for hearings and oral arguments. Advised counsel during settlement negotiations.

TESTIMONY, AFFIDAVITS, DEPOSITIONS AND COMMENTS

Montana Public Service Commission (Docket No. D.2018.2.12) – February 2019

Whether \$303 million represents the current fair market value of Northwestern Energy's 30 percent ownership share of Colstrip Unit 4.

Indiana Utility Regulatory Commission (Cause Nos. 43114 IGCC 17) – July and October 2018

The operating performance of the Edwardsport Integrated Gasification Combined Cycle Plant, and the economic impact that the plant has had, and will continue to have, on Duke Energy Indiana's ratepayers.

West Virginia Public Service Commission (Case No. 17-0296-E-PC) – August 2017

The reasonableness of Monongahela Power's proposed acquisition of the 1,300 MW Pleasants Power Plant.

Indiana Utility Regulatory Commission (Cause No. 44794) – October & December 2016

The economic viability of proposed environmental upgrades at the Petersburg Power Station.

Montana Public Service Commission (Docket Nos. D2013.5.33 and D2014.5.46) – May 2015

The circumstances surrounding the extended outage of Colstrip Unit 4 from July 1, 2013 through January 23, 2014.

Indiana Utility Regulatory Commission (Cause Nos. 43114 IGCC 12 & 13) – December 2014

Whether Duke Energy Indiana's Edwardsport IGCC Project was in service between June 7, 2013 and March 31, 2014 and the Project's current operational performance and cost status and future prospects.

Public Service Commission of West Virginia (Case No. 14-0546-E-PC) – August 2014

The reasonableness of American Electric Power's proposed transfer of 50 percent of the Mitchell Coal Plant to its regulated affiliates in West Virginia.

Mississippi Public Service Commission (Docket No. 2013-UN-189) – March and June 2014

The prudence of Mississippi Power Company's management of the planning for the Kemper County IGCC Plant.

Indiana Utility Regulatory Commission (Cause Nos. 43114 IGCC 8, 10, and 12) – June 2012, April 2013 and April 2014

Startup and pre-operational testing delays at Duke Energy Indiana's Edwardsport IGCC Project.

Public Service Commission of West Virginia (Case No. 12-1655-E-PC) – June 2013 and July 2013

The reasonableness of Appalachian Power Company's proposed acquisition of 2/3 of Unit 3 of the John E. Amos power plant and 1/2 of the two unit Mitchell power plant.

Public Service Commission of West Virginia (Case No. 12-1571-E-PC) – April 2013

The reasonableness of Monogahela Power Company's proposed acquisition of 80 percent of the Harrison Power Station.

Virginia State Corporation Commission (Case No. PUE-2012-00128) – March 2013

Whether Dominion Virginia Power's proposed Brunswick Project natural gas-fired combined cycle power plant is needed and in the public interest.

Arizona Corporation Commission (Docket No. E-01922A-12-0291 – December 2012

Reasonableness of Tucson Electric Power's proposed Environmental Compliance Adjustor mechanism.

U.S. Nuclear Regulatory Commission (Docket Nos. 50-247-LR and 50-286-LR) – June 2012

Reply to testimony filed by Entergy Nuclear and NRC Staff concerning the relicensing of Indian Point Units 2 and 3.

Mississippi Public Service Commission (Docket No. 2009-UA-014) – March 2012

Petition to Reopen the docket for the Kemper County IGCC Plant based on changed circumstances.

Mississippi Public Service Commission (Docket No. 2009-UA-279) – February 2012

The financial and economic risks of retrofitting Mississippi Power Company's Plant Daniel Coal Plant.

Georgia Public Service Commission (Docket No. 34218) – November 2011

The reasonableness of Georgia Power Company's proposed fossil plant decertification/retirement plan.

Missouri Public Service Commission (Case No. EO-2011-0271) – October 2011

Reasonableness of Ameren Missouri's 2011 Integrated Resource Plan filing.

Maryland Public Service Commission (Case No. 9271) – October 2011

The reasonableness of Constellation Energy Group's proposed divestiture of three coal-fired power plants as mitigation for market power concerns arising from its proposed merger with Exelon Corporation.

Minnesota Public Utilities Commission (Docket No. E017/M-10-1082) – August and September 2011

Whether the proposed addition of the Big Stone Plant Air Quality Control System is a lower cost alternative for the ratepayers of Otter Tail Power Company than retirement of the Plant and replacement by a natural gas-fired combined cycle unit possibly combined with new wind capacity.

Indiana Utility Regulatory Commission (Cause No. 43114 IGCC 4S1) – June, July, and October 2011 and June 2012

Duke Energy Indiana's imprudence and gross mismanagement of Edwardsport IGCC Project.

Kansas State Corporation Commission (Docket No. 11-KCPE-581-PRE) – June 2011

The reasonableness of the proposed environmental upgrades at the La Cygne Generating Station Units 1 and 2.

Arizona Corporation Commission (Docket No. E-01345A-10-0474) – May 2011

The reasonableness of Arizona Public Service Company's proposed acquisition of Southern California Edison's share of Four Corners Units 4 and 5.

Public Utility Commission of Colorado (Docket No. 10M-245E) – September, October and November 2010

The reasonableness of Public Service of Colorado's proposed Emissions Reduction Plan.

Indiana Utility Regulatory Commission (Cause No. 43114 IGCC 4S1) – July, November and December 2010

The reasonableness of Duke Energy Indiana's new analyses of the economics of completing the Edwardsport Project as an IGCC plant.

Oregon Public Utility Commission (Docket LC 48) – May and August 2010

Comments and Reply Comments on Portland General Electric Company's 2009 Integrated Resource Plan.

South Dakota Public Service Commission (Docket No. EL-09-018) – April 2010

The reasonableness of Black Hills Power Company's 2007 Integrated Resource Plan and the Company's decision to build the Wygen III coal-fired power plant.

Michigan Public Service Commission (Docket No. U-16077) – April 2010

Comments on the City of Holland Board of Public Works' 2010 Power Supply Study.

Illinois Commerce Commission (Tenaska Clean Coal Facility Analysis) – April 2010

Comments on the Facility Cost Report for the proposed Taylorville IGCC power plant.

North Carolina Utilities Commission (Docket No. E-100, Sub 124) – February 2010

The reasonableness of the 2009 Integrated Resource Plans of Duke Energy Carolinas and Progress Energy Carolinas.

Mississippi Public Service Commission (Docket No. 2009-UA-014) – December 2009

The costs and risks associated with the proposed Kemper County IGCC power plant.

Public Service Commission of Wisconsin (Docket No. 05-CE-137) –December 2009 and January 2010

The costs and risks associated with the proposed installation of emissions control equipment at the Edgewater Unit 5 coal-fired power plant.

Public Service Commission of Wisconsin (Docket No. 05-CE-138) –September and October 2009

The costs and risks associated with the proposed installation of emissions control equipment at the Columbia 1 and 2 coal-fired power plants.

Public Service Commission of Michigan (Docket No. U-15996) – July 2009

Comments on Consumer Energy's Electric Generation Alternatives Analysis for the Balanced Energy Initiative including the Proposed Karn-Weadock Coal Plant.

Public Service Commission of Michigan (Docket No. U-16000) – July 2009

Comments on Wolverine Power Cooperative's Electric Generation Alternatives Analysis for the Proposed Rogers City Coal Plant.

Georgia Public Service Commission (Docket No. 27800-U) – December 2008

The possible costs and risks of proceeding with the proposed Plant Vogtle Units 3 and 4 nuclear power plants.

Public Service Commission of Wisconsin (Docket No. 6680-CE-170) – August and September 2008

The risks associated with the proposed Nelson Dewey 3 baseload coal-fired power plant.

Indiana Utility Regulatory Commission (Cause No. 43114 IGCC 1) – July 2008

The estimated cost of Duke Energy Indiana's Edwardsport Project.

Public Service Commission of Maryland (Case 9127) – July 2008

The estimated cost of the proposed Calvert Cliffs Unit 3 nuclear power plant.

Ohio Power Siting Board (Case No. 06-1358-EL-BGN) – December 2007

AMP-Ohio's application for a Certificate of Environmental Compatibility and Public Need for a 960 MW pulverized coal generating facility.

U.S. Nuclear Regulatory Commission (Docket Nos. 50-247-LR, 50-286-LR) – November 2007 and February 2009

The available options for replacing the power generated at Indian Point Unit 2 and/or Unit 3.

West Virginia Public Service Commission (Case No. 06-0033-E-CN) – November 2007

Appalachian Power Company's application for a Certificate of Public Convenience and Necessity for a 600 MW integrated gasification combined cycle generating facility.

Iowa Utility Board (Docket No. GCU-07-01) – October 2007

Whether Interstate Power & Light Company's adequately considered the risks associated with building a new coal-fired power plant and whether that Company's participation in the proposed Marshalltown plant is prudent.

Virginia State Corporation Commission (Case No. PUE-2007-00066) – November 2007

Whether Dominion Virginia Power's adequately considered the risks associated with building the proposed Wise County coal-fired power plant and whether that Commission should grant a certificate of public convenience and necessity for the plant.

Louisiana Public Service Commission (Docket No. U-30192) – September 2007

The reasonableness of Entergy Louisiana's proposal to repower the Little Gypsy Unit 3 generating facility as a coal-fired power plant.

Arkansas Public Service Commission (Docket No. 06-154-U) – July 2007

The probable economic impact of the Southwestern Electric Power Company's proposed Hempstead coal-fired power plant project.

North Dakota Public Service Commission (Case Nos. PU-06-481 and 482) – May 2007 and April 2008

Whether the participation of Otter Tail Power Company and Montana-Dakota Utilities in the Big Stone II Generating Project is prudent.

Indiana Utility Regulatory Commission (Cause No. 43114) – May 2007

The appropriate carbon dioxide ("CO₂") emissions prices that should be used to analyze the relative economic costs and benefits of Duke Energy Indiana and Vectren Energy Delivery of Indiana's proposed Integrated Gasification Combined Cycle Facility and whether Duke and Vectren have appropriately reflected the capital cost of the proposed facility in their modeling analyses.

Public Service Commission of Wisconsin (Docket No. 6630-EI-113) – May and June 2007

Whether the proposed sale of the Point Beach Nuclear Plant to FPL Energy Point Beach, LLC, is in the interest of the ratepayers of Wisconsin Electric Power Company.

Florida Public Service Commission (Docket No. 070098-EI) – March 2007

Florida Light & Power Company's need for and the economics of the proposed Glades Power Park.

Michigan Public Service Commission (Case No. 14992-U) – December 2006

The reasonableness of the proposed sale of the Palisades Nuclear Power Plant.

Minnesota Public Utilities Commission (Docket No. CN-05-619) – November 2006, December 2007, January 2008 and November 2008

Whether the co-owners of the proposed Big Stone II coal-fired generating plant have appropriately reflected the potential for the regulation of greenhouse gases in their analyses of the facility; and whether the proposed project is a lower cost alternative than renewable options, conservation and load management.

North Carolina Utilities Commission (Docket No. E-7, Sub 790) – September 2006 and January 2007

Duke's need for two new 800 MW coal-fired generating units and the relative economics of adding these facilities as compared to other available options including energy efficiency and renewable technologies.

New Mexico Public Regulatory Commission (Case No. 05-00275-UT) – September 2006

Report to the New Mexico Commission on whether the settlement value of the adjustment for moving the 141 MW Afton combustion turbine merchant plant into rate base is reasonable.

Arizona Corporation Commission (Docket No. E-01345A-0816) – August and September 2006

Whether APS's acquisition of the Sundance Generating Station was prudent and the reasonableness of the amounts that APS requested for fossil plant O&M.

U.S. District Court for the District of Montana (Billings Generation, Inc. vs. Electrical Controls, Inc, et al., CV-04-123-BLG-RFC) – August 2006

Quantification of plaintiff's business losses during an extended power plant outage and plaintiff's business earnings due to the shortening and delay of future plant outages.
[Confidential Expert Report]

Deposition in South Dakota Public Utility Commission Case No. EL05-022 – June 14, 2006

South Dakota Public Utility Commission (Case No. EL05-022) – May and June 2006

Whether the co-owners of the proposed Big Stone II coal-fired generating plant have appropriately reflected the potential for the regulation of greenhouse gases in their analyses of the alternatives to the proposed facility; the need and timing for new supply options in the co-owners' service territories; and whether there are alternatives to the proposed facility that are technically feasible and economically cost-effective.

Georgia Public Service Commission (Docket No. 22449-U) – May 2006

Georgia Power Company's request for an accounting order to record early site permitting and construction operating license costs for new nuclear power plants.

California Public Utilities Commission (Dockets Nos. A.05-11-008 and A.05-11-009) – April 2006

The estimated costs for decommissioning the Diablo Canyon, SONGS 2&3 and Palo Verde nuclear power plants and the annual contributions that are needed from ratepayers to assure that adequate funds will be available to decommission these plants at the projected ends of their service lives.

New Jersey Board of Public Utilities (Docket No. EM05020106) – November and December 2005 and March 2006

Joint Testimony with Bob Fagan and Bruce Biewald on the market power implications of the proposed merger between Exelon Corp. and Public Service Enterprise Group.

Virginia State Corporation Commission (Case No. PUE-2005-00018)– November 2005

The siting of a proposed 230 kV transmission line.

Iowa Utility Board (Docket No. SPU-05-15) – September and October 2005

The reasonableness of IPL's proposed sale of the Duane Arnold Energy Center nuclear plant.

New York State Department of Environmental Conservation (DEC #3-3346-00011/00002) – October 2005

The likely profits that Dynegy will earn from the sale of the energy and capacity of the Danskammer Generating Facility if the plant is converted from once-through to closed-cycle cooling with wet towers or to dry cooling.

Arkansas Public Service Commission (Docket 05-042-U) – July and August 2005

Arkansas Electric Cooperative Corporation's proposed purchase of the Wrightsville Power Facility.

Maine Public Utilities Commission (Docket No. 2005-17) – July 2005

Joint testimony with Peter Lanzalotta and Bob Fagan evaluating Eastern Maine Electric Cooperative's request for a CPCN to purchase 15 MW of transmission capacity from New Brunswick Power.

Federal Energy Regulatory Commission (Docket No. EC05-43-0000) – April and May 2005

Joint Affidavit and Supplemental Affidavit with Bruce Biewald on the market power aspects of the proposed merger of Exelon Corporation and Public Service Enterprise Group, Inc.

Maine Public Utilities Commission (Docket No. 2004-538 Phase II) – April 2005

Joint testimony with Peter Lanzalotta and Bob Fagan evaluating Maine Public Service Company's request for a CPCN to purchase 35 MW of transmission capacity from New Brunswick Power.

Maine Public Utilities Commission (Docket No. 2004-771) – March 2005

Analysis of Bangor Hydro-Electric's Petition for a Certificate of Public Convenience and Necessity to construct a 345 kV transmission line

United States District Court for the Southern District of Ohio, Eastern Division (Consolidated Civil Actions Nos. C2-99-1182 and C2-99-1250)

Whether the public release of company documents more than three years old would cause competitive harm to the American Electric Power Company. [Confidential Expert Report]

New Jersey Board of Public Utilities (Docket No. EO03121014) – February 2005

Whether the Board of Public Utilities can halt further collections from Jersey Central Power & Light Company's ratepayers because there already are adequate funds in the company's decommissioning trusts for the Three Mile Island Unit No. 2 Nuclear Plant to allow for the decommissioning of that unit without endangered the public health and safety.

Maine Public Utilities Commission (Docket No. 2004-538) – January and March 2005

Analysis of Maine Public Service Company's request to construct a 138 kV transmission line from Limestone, Maine to the Canadian Border.

California Public Utilities Commission (Application No. AO4-02-026) – December 2004 and January 2005

Southern California Edison's proposed replacement of the steam generators at the San Onofre Unit 2 and Unit 3 nuclear power plants and whether the utility was imprudent for failing to initiate litigation against Combustion Engineering due to defects in the design of and materials used in those steam generators.

United States District Court for the Southern District of Indiana, Indianapolis Division (Civil Action No. IP99-1693) – December 2004

Whether the public release of company documents more than three years old would cause competitive harm to the Cinergy Corporation. [Confidential Expert Report]

California Public Utilities Commission (Application No. AO4-01-009) – August 2004

Pacific Gas & Electric's proposed replacement of the steam generators at the Diablo Canyon nuclear power plant and whether the utility was imprudent for failing to initiate litigation against Westinghouse due to defects in the design of and materials used in those steam generators.

Public Service Commission of Wisconsin (Docket No. 6690-CE-187) – June, July and August 2004

Whether Wisconsin Public Service Corporation's request for approval to build a proposed 515 MW coal-burning generating facility should be granted.

Public Service Commission of Wisconsin (Docket No. 05-EI-136) – May and June 2004

Whether the proposed sale of the Kewaunee Nuclear Power Plant to a subsidiary of an out-of-state holding company is in the public interest.

Connecticut Siting Council (Docket No. 272) – May 2004

Whether there are technically viable alternatives to the proposed 345-kV transmission line between Middletown and Norwalk Connecticut and the length of the line that can be installed underground.

Arizona Corporation Commission (Docket No. E-01345A-03-0437 – February 2004

Whether Arizona Public Service Company should be allowed to acquire and include in rate base five generating units that were built by a deregulated affiliate.

State of Rhode Island Energy Facilities Siting Board (Docket No. SB-2003-1) – February 2004

Whether the cost of undergrounding a relocated 115kV transmission line would be eligible for regional cost socialization.

State of Maine Department of Environmental Protection (Docket No. A-82-75-0-X) – December 2003

The storage of irradiated nuclear fuel in an Independent Spent Fuel Storage Installation (ISFSI) and whether such an installation represents an air pollution control facility.

Rhode Island Public Utility Commission (Docket No. 3564) – December 2003 and January 2004

Whether Narragansett Electric Company should be required to install a relocated 115kV transmission line underground.

New York State Board on Electric Generation Siting and the Environment (Case No. 01-F-1276) – September, October and November 2003

The environmental, economic and system reliability benefits that can reasonably be expected from the proposed 1,100 MW TransGas Energy generating facility in Brooklyn, New York.

Wisconsin Public Service Commission (Case 6690-UR-115) - September and October 2003

The reasonableness of Wisconsin Public Service Corporation's decommissioning cost collections for the Kewaunee Nuclear Plant.

Oklahoma Corporation Commission (Cause No. 2003-121) – July 2003

Whether Empire District Electric Company properly reduced its capital costs to reflect the write-off of a portion of the cost of building a new electric generating facility.

Arkansas Public Service Commission (Docket 02-248-U) – May 2003

Entergy's proposed replacement of the steam generators and the reactor vessel head at the ANO Unit 1 Steam Generating Station.

Appellate Tax Board, State of Massachusetts (Docket No C258405-406) – May 2003

The physical nature of electricity and whether electricity is a tangible product or a service.

Maine Public Utilities Commission (Docket 2002-665-U) – April 2003

Analysis of Central Maine Power Company's proposed transmission line for Southern York County and recommendation of alternatives.

Massachusetts Legislature, Joint Committees on Government Regulations and Energy – March 2003

Whether PG&E can decide to permanently retire one or more of the generating units at its Salem Harbor Station if it is not granted an extension beyond October 2004 to reduce the emissions from the Station's three coal-fired units and one oil-fired unit.

New Jersey Board of Public Utilities (Docket No. ER02080614) – January 2003

The prudence of Rockland Electric Company's power purchases during the period August 1, 1999 through July 31, 2002.

New York State Board on Electric Generation Siting and the Environment (Case No. 00-F-1356) – September and October 2002 and January 2003

The need for and the environmental benefits from the proposed 300 MW Kings Park Energy generating facility.

Arizona Corporation Commission (Docket No. E-01345A-01-0822) – May 2002

The reasonableness of Arizona Public Service Company's proposed long-term power purchase agreement with an affiliated company.

New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1627) – March 2002

Repowering NYPA's existing Poletti Station in Queens, New York.

Connecticut Siting Council (Docket No. 217) – March 2002, November 2002, and January 2003

Whether the proposed 345-kV transmission line between Plumtree and Norwalk substations in Southwestern Connecticut is needed and will produce public benefits.

Vermont Public Service Board (Case No. 6545) – January 2002

Whether the proposed sale of the Vermont Yankee Nuclear Plant to Entergy is in the public interest of the State of Vermont and Vermont ratepayers.

Connecticut Department of Public Utility Control (Docket 99-09-12RE02) – December 2001

The reasonableness of adjustments that Connecticut Light and Power Company seeks to make to the proceeds that it received from the sale of Millstone Nuclear Power Station.

Connecticut Siting Council (Docket No. 208) – October 2001

Whether the proposed cross-sound cable between Connecticut and Long Island is needed and will produce public benefits for Connecticut consumers.

New Jersey Board of Public Utilities (Docket No. EM01050308) - September 2001

The market power implications of the proposed merger between Conectiv and Pepco.

Illinois Commerce Commission Docket No. 01-0423 – August, September, and October 2001

Commonwealth Edison Company's management of its distribution and transmission systems.

New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1627) - August and September 2001

The environmental benefits from the proposed 500 MW NYPA Astoria generating facility.

New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1191) - June 2001

The environmental benefits from the proposed 1,000 MW Astoria Energy generating facility.

New Jersey Board of Public Utilities (Docket No. EM00110870) - May 2001

The market power implications of the proposed merger between FirstEnergy and GPU Energy.

Connecticut Department of Public Utility Control (Docket 99-09-12RE01) - November 2000

The proposed sale of Millstone Nuclear Station to Dominion Nuclear, Inc.

Illinois Commerce Commission (Docket 00-0361) - August 2000

The impact of nuclear power plant life extensions on Commonwealth Edison Company's decommissioning costs and collections from ratepayers.

Vermont Public Service Board (Docket 6300) - April 2000

Whether the proposed sale of the Vermont Yankee nuclear plant to AmerGen Vermont is in the public interest.

Massachusetts Department of Telecommunications and Energy (Docket 99-107, Phase II) - April and June 2000

The causes of the May 18, 1999, main transformer fire at the Pilgrim generating station.

Connecticut Department of Public Utility Control (Docket 00-01-11) - March and April 2000

The impact of the proposed merger between Northeast Utilities and Con Edison, Inc. on the reliability of the electric service being provided to Connecticut ratepayers.

Connecticut Department of Public Utility Control (Docket 99-09-12) - January 2000

The reasonableness of Northeast Utilities plan for auctioning the Millstone Nuclear Station.

Connecticut Department of Public Utility Control (Docket 99-08-01) - November 1999

Generation, Transmission, and Distribution system reliability.

Illinois Commerce Commission (Docket 99-0115) - September 1999

Commonwealth Edison Company's decommissioning cost estimate for the Zion Nuclear Station.

Connecticut Department of Public Utility Control (Docket 99-03-36) - July 1999

Standard offer rates for Connecticut Light & Power Company.

Connecticut Department of Public Utility Control (Docket 99-03-35) - July 1999

Standard offer rates for United Illuminating Company.

Connecticut Department of Public Utility Control (Docket 99-02-05) - April 1999

Connecticut Light & Power Company stranded costs.

Connecticut Department of Public Utility Control (Docket 99-03-04) - April 1999

United Illuminating Company stranded costs.

Maryland Public Service Commission (Docket 8795) - December 1998

Future operating performance of Delmarva Power Company's nuclear units.

Maryland Public Service Commission (Dockets 8794/8804) - December 1998

Baltimore Gas and Electric Company's proposed replacement of the steam generators at the Calvert Cliffs Nuclear Power Plant. Future performance of nuclear units.

Indiana Utility Regulatory Commission (Docket 38702-FAC-40-S1) - November 1998

Whether the ongoing outages of the two units at the D.C. Cook Nuclear Plant were caused or extended by mismanagement.

Arkansas Public Service Commission (Docket 98-065-U) - October 1998

Entergy's proposed replacement of the steam generators at the ANO Unit 2 Steam Generating Station.

Massachusetts Department of Telecommunications and Energy (Docket 97-120) - October 1998

Western Massachusetts Electric Company's Transition Charge. Whether the extended 1996-1998 outages of the three units at the Millstone Nuclear Station were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 98-01-02) - September 1998

Nuclear plant operations, operating and capital costs, and system reliability improvement costs.

Illinois Commerce Commission (Docket 97-0015) - May 1998

Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1996 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

Public Service Commission of West Virginia (Case 97-1329-E-CN) - March 1998

The need for a proposed 765 kV transmission line from Wyoming, West Virginia, to Cloverdate, Virginia.

Illinois Commerce Commission (Docket 97-0018) - March 1998

Whether any of the outages of the Clinton Power Station during 1996 were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 97-05-12) - October 1997

The increased costs resulting from the ongoing outages of the three units at the Millstone Nuclear Station.

New Jersey Board of Public Utilities (Docket ER96030257) - August 1996

Replacement power costs during plant outages.

Illinois Commerce Commission (Docket 95-0119) - February 1996

Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1994 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

Public Utility Commission of Texas (Docket 13170) - December 1994

Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1991, through December 31, 1993, were caused or extended by mismanagement.

Public Utility Commission of Texas (Docket 12820) - October 1994

Operations and maintenance expenses during outages of the South Texas Nuclear Generating Station.

Wisconsin Public Service Commission (Cases 6630-CE-197 and 6630-CE-209) - September and October 1994

The reasonableness of the projected cost and schedule for the replacement of the steam generators at the Point Beach Nuclear Power Plant. The potential impact of plant aging on future operating costs and performance.

Public Utility Commission of Texas (Docket 12700) - June 1994

Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in Unit 3 could be expected to generate cost savings for ratepayers within a reasonable number of years.

Arizona Corporation Commission (Docket U-1551-93-272) - May and June 1994

Southwest Gas Corporation's plastic and steel pipe repair and replacement programs.

Connecticut Department of Public Utility Control (Docket 92-04-15) - March 1994

Northeast Utilities management of the 1992/1993 replacement of the steam generators at Millstone Unit 2.

Connecticut Department of Public Utility Control (Docket 92-10-03) - August 1993

Whether the 1991 outage of Millstone Unit 3 as a result of the corrosion of safety-related plant piping systems was due to mismanagement.

Public Utility Commission of Texas (Docket 11735) - April and July 1993

Whether any of the outages of the Comanche Peak Unit 1 Nuclear Station during the period August 13, 1990, through June 30, 1992, were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 91-12-07) - January 1993 and August 1995

Whether the November 6, 1991, pipe rupture at Millstone Unit 2 and the related outages of the Connecticut Yankee and Millstone units were caused or extended by mismanagement. The impact of environmental requirements on power plant design and operation.

Connecticut Department of Public Utility Control (Docket 92-06-05) - September 1992
United Illuminating Company off-system capacity sales. [Confidential Testimony]

Public Utility Commission of Texas (Docket 10894) - August 1992

Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1988, through September 30, 1991, were caused or extended by mismanagement.

Connecticut Department of Public Utility Control (Docket 92-01-05) - August 1992

Whether the July 1991 outage of Millstone Unit 3 due to the fouling of important plant systems by blue mussels was the result of mismanagement.

California Public Utilities Commission (Docket 90-12-018) - November 1991, April 1992, June and July 1993

Whether any of the outages of the three units at the Palo Verde Nuclear Generating Station during 1989 and 1990 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses and program deficiencies could have been avoided or addressed prior to outages. Whether specific plant operating cost and capital expenditures were necessary and prudent.

Public Utility Commission of Texas (Docket 9945) - June 1991

Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in the unit could be expected to generate cost savings for ratepayers within a reasonable number of years. El Paso Electric Company's management of the planning and licensing of the Arizona Interconnection Project transmission line.

Arizona Corporation Commission (Docket U-1345-90-007) - December 1990 and April 1991

Arizona Public Service Company's management of the planning, construction and operation of the Palo Verde Nuclear Generating Station. The costs resulting from identified instances of mismanagement.

New Jersey Board of Public Utilities (Docket ER89110912J) - July and October 1990

The economic costs and benefits of the early retirement of the Oyster Creek Nuclear Plant. The potential impact of the unit's early retirement on system reliability. The cost and schedule for siting and constructing a replacement natural gas-fired generating plant.

Public Utility Commission of Texas (Docket 9300) - June and July 1990

Texas Utilities management of the design and construction of the Comanche Peak Nuclear Plant. Whether the Company was prudent in repurchasing minority owners' shares of Comanche Peak without examining the costs and benefits of the repurchase for its ratepayers.

Federal Energy Regulatory Commission (Docket EL-88-5-000) - November 1989

Boston Edison's corporate management of the Pilgrim Nuclear Station.

Connecticut Department of Public Utility Control (Docket 89-08-11) - November 1989

United Illuminating Company's off-system capacity sales.

Kansas State Corporation Commission (Case 164,211-U) - April 1989

Whether any of the 127 days of outages of the Wolf Creek generating plant during 1987 and 1988 were the result of mismanagement.

Public Utility Commission of Texas (Docket 8425) - March 1989

Whether Houston Lighting & Power Company's new Limestone Unit 2 generating facility was needed to provide adequate levels of system reliability. Whether the Company's investment in Limestone Unit 2 would provide a net economic benefit for ratepayers.

Illinois Commerce Commission (Dockets 83-0537 and 84-0555) - July 1985 and January 1989

Commonwealth Edison Company's management of quality assurance and quality control activities and the actions of project contractors during construction of the Byron Nuclear Station.

New Mexico Public Service Commission (Case 2146, Part II) - October 1988

The rate consequences of Public Service Company of New Mexico's ownership of Palo Verde Units 1 and 2.

United States District Court for the Eastern District of New York (Case 87-646-JBW) - October 1988

Whether the Long Island Lighting Company withheld important information from the New York State Public Service Commission, the New York State Board on Electric Generating Siting and the Environment, and the U.S. Nuclear Regulatory Commission.

Public Utility Commission of Texas (Docket 6668) - August 1988 and June 1989

Houston Light & Power Company's management of the design and construction of the South Texas Nuclear Project. The impact of safety-related and environmental requirements on plant construction costs and schedule.

Federal Energy Regulatory Commission (Docket ER88-202-000) - June 1988

Whether the turbine generator vibration problems that extended the 1987 outage of the Maine Yankee nuclear plant were caused by mismanagement.

Illinois Commerce Commission (Docket 87-0695) - April 1988

Illinois Power Company's planning for the Clinton Nuclear Station.

North Carolina Utilities Commission (Docket E-2, Sub 537) - February 1988

Carolina Power & Light Company's management of the design and construction of the Harris Nuclear Project. The Company's management of quality assurance and quality control activities. The impact of safety-related and environmental requirements on construction costs and schedule. The cost and schedule consequences of identified instances of mismanagement.

Ohio Public Utilities Commission (Case 87-689-EL-AIR) - October 1987

Whether any of Ohio Edison's share of the Perry Unit 2 generating facility was needed to ensure adequate levels of system reliability. Whether the Company's investment in Perry Unit 1 would produce a net economic benefit for ratepayers.

North Carolina Utilities Commission (Docket E-2, Sub 526) - May 1987

Fuel factor calculations.

New York State Public Service Commission (Case 29484) - May 1987

The planned startup and power ascension testing program for the Nine Mile Point Unit 2 generating facility.

Illinois Commerce Commission (Dockets 86-0043 and 86-0096) - April 1987

The reasonableness of certain terms in a proposed Power Supply Agreement.

Illinois Commerce Commission (Docket 86-0405) - March 1987

The in-service criteria to be used to determine when a new generating facility was capable of providing safe, adequate, reliable and efficient service.

Indiana Public Service Commission (Case 38045) - November 1986

Northern Indiana Public Service Company's planning for the Schaefer Unit 18 generating facility. Whether the capacity from Unit 18 was needed to ensure adequate system reliability. The rate consequences of excess capacity on the Company's system.

Superior Court in Rockingham County, New Hampshire (Case 86E328) - July 1986

The radiation effects of low power testing on the structures, equipment and components in a new nuclear power plant.

New York State Public Service Commission (Case 28124) - April 1986 and June 1987

The terms and provisions in a utility's contract with an equipment supplier. The prudence of the utility's planning for a new generating facility. Expenditures on a canceled generating facility.

Arizona Corporation Commission (Docket U-1345-85) - February 1986

The construction schedule for Palo Verde Unit No. 1. Regulatory and technical factors that would likely affect future plant operating costs.

New York State Public Service Commission (Case 29124) – December 1985 and January 1986

Niagara Mohawk Power Corporation's management of construction of the Nine Mile Point Unit No. 2 nuclear power plant.

New York State Public Service Commission (Case 28252) - October 1985

A performance standard for the Shoreham nuclear power plant.

New York State Public Service Commission (Case 29069) - August 1985

A performance standard for the Nine Mile Point Unit No. 2 nuclear power plant.

Missouri Public Service Commission (Cases ER-85-128 and EO-85-185) - July 1985

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Wolf Creek Nuclear Plant.

Massachusetts Department of Public Utilities (Case 84-152) - January 1985

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

Maine Public Utilities Commission (Docket 84-113) - September 1984

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

South Carolina Public Service Commission (Case 84-122-E) - August 1984

The repair and replacement strategy adopted by Carolina Power & Light Company in response to pipe cracking at the Brunswick Nuclear Station. Quantification of replacement power costs attributable to identified instances of mismanagement.

Vermont Public Service Board (Case 4865) - May 1984

The repair and replacement strategy adopted by management in response to pipe cracking at the Vermont Yankee nuclear plant.

New York State Public Service Commission (Case 28347) -January 1984

The information that was available to Niagara Mohawk Power Corporation prior to 1982 concerning the potential for cracking in safety-related piping systems at the Nine Mile Point Unit No. 1 nuclear plant.

New York State Public Service Commission (Case 28166) - January 1983 and February 1984

Whether the January 25, 1982, steam generator tube rupture at the Ginna Nuclear Plant was caused by mismanagement.

U.S. Nuclear Regulatory Commission (Case 50-247SP) - May 1983

The economic costs and benefits of the early retirement of the Indian Point nuclear plants.

REPORTS, ARTICLES, AND PRESENTATIONS

How the High Cost of Power from Prairie State is Affecting Bowling Green Municipal Utilities' Customers. July, 2014.

Overpriced Power: Why Batavia is Paying So Much for Electricity. Updated March 2014.

Huntley Generating Station: Coal Plant's Weak Financial Outlook Calls for Corporate & Community Leadership. January 2014. Co-authored with Cathy Kunkel and Tom Sanzillo.

When, Not If: Bridgeport's Future and the Closing of PSEG's Coal Plant.

Changing Course: A Clean Energy Investment Plan for Dominion Virginia Power. Co-authored with Jeff Loiter and Anna Sommer. August 2013.

Mountain State Maneuver: AEP and FirstEnergy try to stick ratepayers with Risky Coal Plants. September 2013. Co-authored with Cathy Kunkel.

Public Utility Regulation without the Public: The Alabama Public Service Commission and Alabama Power. Co-authored with Anna Sommer. March 2013

A Texas Electric Capacity Market: The Wrong Tool for a Real Problem. Co-authored with Anna Sommer. February 2013.

Dark Days Ahead: Financial Factors Cloud Future Profitability at Dominion's Brayton Point Power Plant. Co-authored with Tom Sanzillo. February 2013.

Report on the Kemper IGCC Project: Cost and Schedule Risks. November 2012.

The Prairie State Coal Plant: the Reality vs. the Promise. August 2012.

The Impact of EPA's Proposed 316(b) Existing Facility Rule on Electric System Reliability, July 2011.

The Economics of Existing Coal-Fired Power Plants, Presentation at EUCI Conference in St. Louis, MO, November 2010.

Presentation to the Indiana Utility Regulatory Commission on the Need for the Proposed Duke Energy Indiana Edwardsport IGCC Project, November 2010.

Reply Comments on Portland General Electric Company's 2009 Integrated Resource Plan, September 2010.

Presentation to the Oregon Public Utility Commission on Portland General Electric Company's 2009 Integrated Resource Plan, May 2010.

Comments on Portland General Electric Company's 2009 Integrated Resource Plan, May 2010.

Comments on the Facility Cost Report for Tenaska's Proposed Taylorville IGCC Plant, April 2010.

Comments on City of Holland Board of Public Work's 2010 Power Supply Plan, April 2010.

Phasing Out Federal Subsidies for Coal, April 2010.

Comments on Draft Portland General Electric Company 2009 Integrated Resource Plan, October 2009.

The Economic Impact of Restricting Mountaintop/Valley Fill Coal Mining in Central Appalachia, August 2009.

Energy Future: A Green Energy Alternative for Michigan, report, July 2009.

Energy Future: A Green Energy Alternative for Michigan, presentation, July 2009.

Preliminary Assessment of East Kentucky Power Cooperative's 2009 Resource Plan, June 2009.

The Financial Risks to Old Dominion Electric Cooperative's Consumer-Members of Building and Operating the Proposed Cypress Creek Power Station, April 2009.

An Assessment of Santee Cooper's 2008 Resource Planning, April 2009.

Nuclear Loan Guarantees: Another Taxpayer Bailout Ahead, Report for the Union of Concerned Scientists, March 2009.

New Hampshire Senate Bill 152: Merrimack Station Scrubber, March 2009.

The Risks of Building and Operating Plant Washington, Presentation to the Sustainable Atlanta Roundtable, December 2008.

The Risks of Building and Operating Plant Washington, Report and Presentation to EMC Board Members, December 2008.

Don't Get Burned, the Risks of Investing in New Coal-Fired Power Plants, Presentation at the University of California at Berkeley Energy and Resources Group Colloquium, October 2008.

Don't Get Burned, the Risks of Investing in New Coal-Fired Power Plants, Presentation at Georgia Tech University, October 2008.

Nuclear Power Plant Construction Costs, Synapse Energy Economics, July 2008.

Coal-Fired Power Plant Construction Costs, Synapse Energy Economics, July 2008.

Synapse 2008 CO₂ Price Forecasts, Synapse Energy Economics, July 2008.

Don't Get Burned, the Risks of Investing in New Coal-Fired Power Plants, Presentation at the NARUC ERE Committee, NARUC Summer Meetings, July 2008.

Are There Nukes In Our Future, Presentation at the NASUCA Summer Meetings, June 2008.

Risky Appropriations: Gambling US Energy Policy on the Global Nuclear Energy Partnership, Report for Friends of the Earth, the Institute for Policy Studies, the Government Accountability Project, and the Southern Alliance for Clean Energy, March 2008.

Don't Get Burned, the Risks of Investing in New Coal-Fired Power Plants, Presentation to the New York Society of Securities Analysts, February 26, 2008.

Don't Get Burned, Report for the Interfaith Center for Corporate Responsibility, February 2008.

The Risks of Participating in the AMPGS Coal Plant, Report for NRDC, February 2008.

Kansas is Not Alone, the New Climate for Coal, Presentation to members of the Kansas State Legislature, January 22, 2008.

The Risks of Building New Nuclear Power Plants, Presentation to the Utah State Legislature Public Utilities and Technology Committee, September 19, 2007.

The Risks of Building New Nuclear Power Plants, Presentation to Moody's and Standard & Poor's rating agencies, May 17, 2007.

The Risks of Building New Nuclear Power Plants, U.S. Senate and House of Representative Briefings, April 20, 2007.

Carbon Dioxide Emissions Costs and Electricity Resource Planning, New Mexico Public Regulation Commission, Case 06-00448-UT, March 28, 2007, with Anna Sommer.

The Risks of Building New Nuclear Power Plants, Presentation to the New York Society of Securities Analysts, June 8, 2006.

Conservation and Renewable Energy Should be the Cornerstone for Meeting Future Natural Gas Needs. Presentation to the Global LNG Summit, June 1, 2004. Presentation given by Cliff Chen.

Comments on natural gas utilities' Phase I Proposals for pre-approved full cost recovery of contracts with liquid natural gas (LNG) suppliers and the costs of interconnecting their systems with LNG facilities. Comments in California Public Utilities Commission Rulemaking 04-01-025. March 23, 2004.

The 2003 Blackout: Solutions that Won't Cost a Fortune, The Electricity Journal, November 2003, with David White, Amy Roschelle, Paul Peterson, Bruce Biewald, and William Steinhurst.

The Impact of Converting the Cooling Systems at Indian Point Units 2 and 3 on Electric System Reliability. An Analysis for Riverkeeper, Inc. November 3, 2003.

The Impact of Converting Indian Point Units 2 and 3 to Closed-Cycle Cooling Systems with Cooling Towers on Energy's Likely Future Earnings. An Analysis for Riverkeeper, Inc. November 3, 2003.

Entergy's Lost Revenues during Outages of Indian Point Units 2 and 3 to Convert to Closed-Cycle Cooling Systems. An Analysis for Riverkeeper, Inc. November 3, 2003.

Power Plant Repowering as a Strategy for Reducing Water Consumption at Existing Electric Generating Facilities. A presentation at the May 2003 Symposium on Cooling Water Intake Technologies to Protect Aquatic Organisms. May 6, 2003.

Financial Insecurity: The Increasing Use of Limited Liability Companies and Multi-tiered Holding Companies to Own Electric Generating Plants. A presentation at the 2002 NASUCA Annual Meeting. November 12, 2002.

Determining the Need for Proposed Overhead Transmission Facilities. A Presentation by David Schlissel and Paul Peterson to the Task Force and Working Group for Connecticut Public Act 02-95. October 17, 2002.

Future PG&E Net Revenues From The Sale of Electricity Generated at its Brayton Point Station. An Analysis for the Attorney General of the State of Rhode Island. October 2, 2002.

PG&E's Net Revenues From The Sale of Electricity Generated at its Brayton Point Station During the Years 1999-2002. An Analysis for the Attorney General of the State of Rhode Island. October 2, 2002.

Financial Insecurity: The Increasing Use of Limited Liability Companies and Multi-Tiered Holding Companies to Own Nuclear Power Plants. A Synapse report for the STAR Foundation and Riverkeeper, Inc., by David Schlissel, Paul Peterson, and Bruce Biewald, August 7, 2002.

Comments on EPA's Proposed Clean Water Act Section 316(b) for Cooling Water Intake Structures at Phase II Existing Facilities, on behalf of Riverkeeper, Inc., by David Schlissel and Geoffrey Keith, August 2002.

The Impact of Retiring the Indian Point Nuclear Power Station on Electric System Reliability. A Synapse Report for Riverkeeper, Inc. and Pace Law School Energy Project. May 7, 2002.

Preliminary Assessment of the Need for the Proposed Plumtree-Norwalk 345-kV Transmission Line. A Synapse Report for the Towns of Bethel, Redding, Weston, and Wilton Connecticut. October 15, 2001.

ISO New England's Generating Unit Availability Study: Where's the Beef? A Presentation at the June 29, 2001 Restructuring Roundtable.

Clean Air and Reliable Power: Connecticut Legislative House Bill HB6365 will not Jeopardize Electric System Reliability. A Synapse Report for the Clean Air Task Force. May 2001.

Room to Breathe: Why the Massachusetts Department of Environmental Protection's Proposed Air Regulations are Compatible with Reliability. A Synapse Report for MASSPIRG and the Clean Water Fund. March 2001.

Generator Outage Increases: A Preliminary Analysis of Outage Trends in the New England Electricity Market, a Synapse Report for the Union of Concerned Scientists, January 7, 2001.

Cost, Grid Reliability Concerns on the Rise Amid Restructuring, with Charlie Harak, Boston Business Journal, August 18-24, 2000.

Report on Indian Point 2 Steam Generator Issues, Schlissel Technical Consulting, Inc., March 10, 2000.

Preliminary Expert Report in Case 96-016613, Cities of Wharton, Pasadena, et al v. Houston Lighting & Power Company, October 28, 1999.

Comments of Schlissel Technical Consulting, Inc. on the Nuclear Regulatory Commission's Draft Policy Statement on Electric Industry Economic Deregulation, February 1997.

Report to the Municipal Electric Utility Association of New York State on the Cost of Decommissioning the Fitzpatrick Nuclear Plant, August 1996.

Report to the Staff of the Arizona Corporation Commission on U.S. West Corporation's telephone cable repair and replacement programs, May, 1996.

Nuclear Power in the Competitive Environment, NRRI Quarterly Bulletin, Vol. 16, No. 3, Fall 1995.

Nuclear Power in the Competitive Environment, presentation at the 18th National Conference of Regulatory Attorneys, Scottsdale, Arizona, May 17, 1995.

The Potential Safety Consequences of Steam Generator Tube Cracking at the Byron and Braidwood Nuclear Stations, a report for the Environmental Law and Policy Center of the Midwest, 1995.

Report to the Public Policy Group Concerning Future Trojan Nuclear Plant Operating Performance and Costs, July 15, 1992.

Report to the New York State Consumer Protection Board on the Costs of the 1991 Refueling Outage of Indian Point 2, December 1991.

Preliminary Report on Excess Capacity Issues to the Public Utility Regulation Board of the City of El Paso, Texas, April 1991.

Nuclear Power Plant Construction Costs, presentation at the November, 1987, Conference of the National Association of State Utility Consumer Advocates.

Comments on the Final Report of the National Electric Reliability Study, a report for the New York State Consumer Protection Board, February 27, 1981.

OTHER SIGNIFICANT INVESTIGATIONS AND LITIGATION SUPPORT WORK

Reviewed the salt deposition mitigation strategy proposed for Reliant Energy's repowering of its Astoria Generating Station. October 2002 through February 2003.

Assisted the Connecticut Office of Consumer Counsel in reviewing the auction of Connecticut Light & Power Company's power purchase agreements. August and September, 2000.

Assisted the New Jersey Division of the Ratepayer Advocate in evaluating the reasonableness of Atlantic City Electric Company's proposed sale of its fossil generating facilities. June and July, 2000.

Investigated whether the 1996-1998 outages of the three Millstone Nuclear Units were caused or extended by mismanagement. 1997 and 1998. Clients were the Connecticut Office of Consumer Counsel and the Office of the Attorney General of the Commonwealth of Massachusetts.

Investigated whether the 1995-1997 outages of the two units at the Salem Nuclear Station were caused or extended by mismanagement. 1996-1997. Client was the New Jersey Division of the Ratepayer Advocate.

Assisted the Associated Industries of Massachusetts in quantifying the stranded costs associated with utility generating plants in the New England states. May through July, 1996

Investigated whether the December 25, 1993, turbine generator failure and fire at the Fermi 2 generating plant was caused by Detroit Edison Company's mismanagement of fabrication, operation or maintenance. 1995. Client was the Attorney General of the State of Michigan.

Investigated whether the outages of the two units at the South Texas Nuclear Generating Station during the years 1990 through 1994 were caused or extended by mismanagement. Client was the Texas Office of Public Utility Counsel.

Assisted the City Public Service Board of San Antonio, Texas in litigation over Houston Lighting & Power Company's management of operations of the South Texas Nuclear Generating Station.

Investigated whether outages of the Millstone nuclear units during the years 1991 through 1994 were caused or extended by mismanagement. Client was the Office of the Attorney General of the Commonwealth of Massachusetts.

Evaluated the 1994 Decommissioning Cost Estimate for the Maine Yankee Nuclear Plant. Client was the Public Advocate of the State of Maine.

Evaluated the 1994 Decommissioning Cost Estimate for the Seabrook Nuclear Plant. Clients were investment firms that were evaluating whether to purchase the Great Bay Power Company, one of Seabrook's minority owners.

Investigated whether a proposed natural-gas fired generating facility was need to ensure adequate levels of system reliability. Examined the potential impacts of environmental regulations on the unit's expected construction cost and schedule. 1992. Client was the New Jersey Rate Counsel.

Investigated whether Public Service Company of New Mexico management had adequately disclosed to potential investors the risk that it would be unable to market its excess generating capacity. Clients were individual shareholders of Public Service Company of New Mexico.

Investigated whether the Seabrook Nuclear Plant was prudently designed and constructed. 1989. Clients were the Connecticut Office of Consumer Counsel and the Attorney General of the State of Connecticut.

Investigated whether Carolina Power & Light Company had prudently managed the design and construction of the Harris nuclear plant. 1988-1989. Clients were the North Carolina Electric Municipal Power Agency and the City of Fayetteville, North Carolina.

Investigated whether the Grand Gulf nuclear plant had been prudently designed and constructed. 1988. Client was the Arkansas Public Service Commission.

Reviewed the financial incentive program proposed by the New York State Public Service Commission to improve nuclear power plant safety. 1987. Client was the New York State Consumer Protection Board.

Reviewed the construction cost and schedule of the Hope Creek Nuclear Generating Station. 1986-1987. Client was the New Jersey Rate Counsel.

Reviewed the operating performance of the Fort St. Vrain Nuclear Plant. 1985. Client was the Colorado Office of Consumer Counsel.

WORK HISTORY

2012- Director of Resource Planning Analysis, Institute for Energy Economics and Financial Analysis
2010 - President, Schlissel Technical Consulting, Inc.
2000 - 2009: Senior Consultant, Synapse Energy Economics, Inc.
1994 - 2000: President, Schlissel Technical Consulting, Inc.
1983 - 1994: Director, Schlissel Engineering Associates
1979 - 1983: Private Legal and Consulting Practice
1975 - 1979: Attorney, New York State Consumer Protection Board
1973 - 1975: Staff Attorney, Georgia Power Project

EDUCATION

1983-1985: Massachusetts Institute of Technology
Special Graduate Student in Nuclear Engineering and Project Management,
1973: Stanford Law School,
Juris Doctor
1969: Stanford University
Master of Science in Astronautical Engineering,
1968: Massachusetts Institute of Technology
Bachelor of Science in Astronautical Engineering,

PROFESSIONAL MEMBERSHIPS

- New York State Bar since 1981

ATTACHMENT DAS-2

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.1

Request:

Please provide:

- a. Any memorandum or other writing prepared by or for Duke setting out, quantifying, analyzing, explaining or otherwise detailing, in whole or in part, the actual, expected or projected retail revenue requirement for the Edwardsport IGCC for 2018, 2019, 2020, or 2021;
- b. Any financial analysis prepared by or for Duke setting out, quantifying, analyzing, explaining or otherwise detailing, in whole or in part, the actual, expected or projected retail revenue requirement for the Edwardsport IGCC for 2018, 2019, 2020 or 2021; and
- c. Any tables or workpapers prepared by or for Duke setting out, quantifying, analyzing, explaining or otherwise detailing, in whole or in part, the actual, expected or projected retail revenue requirement for the Edwardsport IGCC for 2018, 2019, 2020 or 2021.
- d. Any memorandum, financial analysis, workpaper or other writing prepared by or for Duke setting out, quantifying, analyzing, explaining or otherwise detailing, in whole or in part, any deferred retail revenue requirement for the Edwardsport IGCC for 2018 through 2027.
- e. Any memorandum, financial analysis, workpaper or other writing prepared by or for Duke setting out, quantifying, analyzing, explaining or otherwise detailing the recovery in base rates, in whole or in part, any actual, expected, projected or deferred retail revenue requirement for the Edwardsport IGCC for 2018 through 2027.
- f. Any memorandum, financial analysis, workpaper or other writing prepared by or for Duke describing, analyzing, explaining or otherwise referencing the recovery through any rate rider in whole or in part any actual, expected, projected or deferred retail revenue requirement for the Edwardsport IGCC for 2018 through 2027.

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly the references to “any memorandum or other writing . . .,” “any financial analysis . . .,” “any tables or workpapers . . .” Duke Energy Indiana also objects to this request as vague, ambiguous and impossible to answer as written, particularly the references to “deferred retail revenue requirement” without additional explanation or definition. Duke Energy Indiana further objects to the portion of this request seeking information through 2027 as not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- a.– c. Please see the Company’s response to IG 8.1, including Attachments IG 8.1-A and 8.1-B.
- d.-f. Please see objection.

Witness: Diana Douglas

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.2

Request:

Please provide each organization chart for the Edwardsport IGCC in effect from January 1, 2018 through the pendency of this proceeding showing names, titles and reporting relationships for all employees with management responsibility for operation of the Plant, in whole or in part, from direct reports to the Plant Manager up through and including Duke Energy Chairman, President and Chief Executive Officer Lynn Good.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the reference to “management responsibility for operation of the Plant...” In addition, Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly the portion of the request seeking “each organization chart.” Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections and providing the requested information as it is kept in the normal course of business, Duke Energy Indiana responds as follows: The current hierarchy of Edwardsport Station up through Duke Energy Chairman, President and Chief Executive Officer Lynn Good is listed below:

Lynn J. Good – Chairman, President & CEO
Dhiaa M. Jamil – EVP & Chief Operating Officer, Generation & Transmission
Regis Repko – SVP Chief Fossil/Hydro Officer
Cecil Gurganus – VP Edwardsport
Joshua Smith – Dir Edwardsport Cont Improvement & Gov
Jamie McDaniel – Executive Assistant I
Gary Cook – GMIII, Regulated Stations
Greg Kennett – Development Assignment Leader
Jefferson Hamilton – Dir Technical Edwardsport
Russ Sheffler – Mgr Maintenance
Brandon DeMoss – Sr H&S Professional
Caleb Johnson – Sr H&S Professional

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.3

Request:

Please provide DEI Monthly Operations Reports (or equivalent) for the Edwardsport IGCC for January 2018 and each month thereafter through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the term “DEI Monthly Operations Reports (or equivalent)” without further definition or explanation. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see Attachment 4.3-A for a summary of data provided on a monthly basis regarding Edwardsport’s operations from January 2018-June 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.4

Request:

Please provide DEI Monthly Financial Reports (or equivalent) for the Edwardsport IGCC for January 2018 and each month thereafter through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the use of the term “DEI Monthly Financial Reports (or equivalent)” without additional explanation or definition. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see Attachments CAC 4.4-A (capital) and 4.4-B (O&M) for copies of financial reporting performed on a monthly basis for Edwardsport from January 2018 through June 2019. The capital amounts on Attachment CAC 4.4-A are construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.5

Request:

Please provide any electronic or other communication (including attachments) from or to Mr. Gurganus from January 1, 2018 through the pendency of this proceeding relating to the operating performance, financial performance, specific technical issues, or particular equipment problems of the Edwardsport IGCC.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests “any electronic or other communication ... from January 1, 2018 ... through the pendency of this proceeding.” Duke Energy Indiana further objects to this request on the grounds that the phrase “operating performance, financial performance, specific technical issues, or particular equipment problems” is vague and ambiguous. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney-client privileged communications or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Duke Energy Indiana is conducting a reasonable search of Mr. Gurganus’ electronic mailbox using the requested search terms above between January 1, 2018 and June 30, 2019 and will provide the responsive documents that it locates.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.6

Request:

Please provide any electronic or other communication (including attachments relating to the Edwardsport IGCC) from January 1, 2018 through the pendency of this proceeding for which:

- a. Ms. Good or another member of the Duke Executive Leadership Team is the sender and any other member of the Duke Executive Leadership Team is a primary addressee;
- b. Any member of the Duke Executive Leadership Team is the sender and Ms. Good is a primary addressee;
- c. Ms. Good or another member of the Duke Executive Leadership Team is the sender and any member of the Duke Board of Directors is a primary addressee; and
- d. Any member of the Duke Board of Directors is the sender and Ms. Good or another member of the Duke Executive Leadership Team is a primary recipient.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests “any ... communication ... from January 1, 2018 through the pendency of this proceeding.” Duke Energy Indiana also objects to this request as vague and ambiguous, particularly its references to the “Executive Leadership Team.” Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney-client privileged materials or attorney work product.

Response:

Subject to and without waiving or limiting its objections and assuming this request seeks communications between Ms. Good and her direct reports and/or the Board of Directors, Duke Energy Indiana responds that after conducting a reasonable search for the requested emails between January 1, 2018 and June 30, 2019, Duke Energy Indiana did not locate responsive documents.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.7

Request:

Please provide any presentation or report to the Duke Energy and/or DEI Board of Directors relating to the Edwardsport IGCC, along with any resolution, minutes or other documentation of action by the Board(s) regarding such presentation, on or after January 1, 2018 through the pendency of this proceeding.

Objection:

To the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana further objects to this request to the extent it seeks attorney-client privileged materials or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Duke Energy Indiana has conducted a reasonable search for requested documents between January 1, 2018 and June 30, 2019. See Attachment CAC 4.7-A and Confidential Attachment CAC 4.7-B.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.8

Request:

Please provide any Root Cause Analysis or comparable study performed by or for DEI of any equipment failure or technical problem which occurred at the Edwardsport IGCC on or after January 1, 2018 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly as the request seeks “any Root Cause Analysis or comparable study.” Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Confidential Attachments CAC 4.8-A through CAC 4.8-D for Root Cause Analyses from January 1, 2018 through June 30, 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.9

Request:

Please provide copies of all the Company's Power Generation Operations Weekly Reports (or renamed equivalent) for the Edwardsport IGCC prepared for the period January 1, 2018 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests "all ... Power Generation Operations Weekly Reports (or renamed equivalent) ... prepared for the period January 1, 2018 through the pendency of this proceeding." Duke Energy Indiana further objects that "(or renamed equivalent)" is vague and ambiguous, requiring the Company to make assumptions to properly respond. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.9-A.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.10

Request:

Please provide the amounts of fuel costs for the Edwardsport IGCC and all coal generating units by month for the period January 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests “fuel costs for the Edwardsport IGCC and all coal generating units by month for the period January 2018 through the pendency of this proceeding.” Duke Energy Indiana also objects to this request as vague and ambiguous, particularly the phrase “any adjustments made to actual costs” without further definition or explanation. In addition, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.10-A.

Witness: Suzanne Sieferman

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.11

Request:

Please provide the amounts of variable non-fuel O&M costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrases “variable non-fuel O&M costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections and assuming that O&M is defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation), Duke Energy Indiana responds as follows: Please see Attachment CAC 4.11-A for monthly O&M for January 2018 through June 2019.

Witness: Cecil Gurganus / Diana Douglas

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.12

Request:

Please provide the amounts of fixed O&M costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustment made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrases “fixed O&M costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.11.

Witnesses: Cecil Gurganus / Diana Douglas

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.13

Request:

Please provide the amounts of capital costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the terms “amounts of capital costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, and assuming the request is seeking information regarding ongoing capital expenses at Edwardsport, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) for January 2018 through June 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.14

Request:

Please provide by category name, account number(s) and amounts any costs for Edwardsport, by month for the period January 1, 2018 through the pendency of this proceeding other than those provided in response to Data Requests 4.7 through 4.10 above. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the terms “any costs for Edwardsport by month” and “any adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.11.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.15

Request:

Please provide by month for the period January 1, 2018 through the pendency of this proceeding the amounts of Edwardsport costs which were recovered through (a) base rates, (b) Rider 60, (c) Rider 61, and (d) by number, any other Rider. Please identify and explain any adjustments made to actual costs recovered in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the phrase “any adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects to performing. Additionally, Duke Energy Indiana objects to the extent this request seeks information regarding costs that are not a subject of this proceeding as not reasonably calculated to lead to admissible evidence in this proceeding. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company’s response to IG 8.1(b), specifically Attachment IG 8.1-B.
- (b) Please see the Company’s response to CAC 4.10 for monthly Edwardsport fuel costs from January 2018 through June 2019.
- (c) Please see the Company’s response to CAC 4.11 for monthly Edwardsport O&M (defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation) from January 2018 through June 2019. Please also see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) from January 2018 through June 2019.

Please also see the Company's response to IG 8.1(a), specifically Attachment IG 8.1-A, which shows the components of IGCC revenue requirements embedded in the Rider 61 rates billed to customers from 2017 through projected 2020.

(d) See objection.

Witness: Diana Douglas (parts a and c) and Suzanne Sieferman (part b)

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.16

Request:

Please provide copies of the most current Edwardsport operating expense budgets by month and/or year for (a) 2018, (b) 2019, (c) 2020, and (d) 2021.

Objection:

Duke Energy Indiana objects to this request as over broad, unduly burdensome, and not reasonably calculated to lead to admissible evidence in this proceeding, particularly the portion of the request seeking Edwardsport's 2018 operating expense budget when the 2018 actual operating expenses are known and the portion seeking 2021. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or analysis the Company has not performed and to which it objects performing. Duke Energy Indiana further objects to this request as vague and ambiguous, particularly the portion of the request seeking the "most current Edwardsport operating expense budgets . . ." without further definition or explanation.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company's response to CAC 4.4, specifically Attachment CAC 4.4-B.
- (b) Please see the Company's response to CAC 4.4, specifically Attachment CAC 4.4-B.
- (c) Please see the Company's response to CAC 4.26(b).
- (d) See objection.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.17

Request:

Please provide copies of the most current Edwardsport capital maintenance budgets by month and/or year for (a) 2018, (b) 2019, (c) 2020, and (d) 2021.

Objection:

Duke Energy Indiana objects to this request as over broad, unduly burdensome, and not reasonably calculated to lead to admissible evidence in this proceeding, particularly the portion of the Request seeking the 2018 capital maintenance budget when 2018 actual capital expenditures are known and the portion seeking 2021 information. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or analysis the Company has not performed and to which it objects performing. Duke Energy Indiana further objects to this request as vague and ambiguous, particularly the portion of the request seeking the “most current Edwardsport capital maintenance budgets . . .” without further definition or explanation.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A.
- (b) Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A.
- (c) Please see the Company’s response to CAC 4.26(c).
- (d) See objection.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.18

Request:

Please provide copies of the most current projections of Edwardsport operating expenses by month and/or year for (a) 2020 and (b) 2021.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrase “most current projections . . . by month and/or year” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to provide information regarding costs outside of the scope of this proceeding, such as for 2021, as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.16.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.19

Request:

Please provide copies of the most current projections of Edwardsport capital maintenance expenditures by month and/or year for (a) 2020 and (b) 2021.

Objection:

Duke Energy Indiana objects to this Request as vague and ambiguous, particularly the phrase “most current projections . . . by month and/or year” without further definition or explanation. Duke Energy Indiana further objects to this request, to the extent it seeks Duke Energy Indiana to provide information regarding costs outside of the scope of this proceeding, such as 2021, as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

See the Company’s response to CAC 4.17.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.20

Request:

Please provide by month and fuel source from January 2018 through the pendency of this proceeding both the gross and the net amounts of Edwardsport generation by fuel source.

Objection:

To the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Further, Duke Energy Indiana objects to this request seeks the Company to perform a study or compilation that it has not performed and to which it objects performing.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.20-A.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.21

Request:

Please provide DEI's Events Data reported to NERC¹ pursuant to Section III of NERC's Generating Availability Data System (GADS) Data Reporting Instructions for the Edwardsport IGCC²:

- a. for each of the 12 months of 2018; and,
- b. for purposes of comparison over time, for each month from January 2019 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to provide information outside the scope of this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- a. See Confidential Attachment CAC 4.21-A for the requested information.
- b. See objection. Answering further, N/A for January through June 2019.

Witness: Cecil Gurganus

¹ NERC means North American Electric Reliability Corporation.

² See Section III of

<https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/2018%20GADS%20Data%20Reporting%20Instructions.pdf> , esp. pp. iii-5 to 9.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.22

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the offers DEI made to the MISO Real Time and Day Ahead Markets for Edwardsport.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to update this request throughout the pendency of this proceeding as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 4.22-A for the Day-Ahead and Real-Time Energy Offers for Edwardsport Station from January 1, 2018 through June 30, 2019.

sCAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.23

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the actual operational status of Edwardsport in a format comparable to that of the offers made to the MISO markets.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to update this request throughout the pendency of this proceeding as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 4.22-A for the actual operational status of Edwardsport Units from January 1, 2018 through June 30, 2019.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.24

Request:

For the Spring 2018, Fall 2018, and Spring 2019 Edwardsport maintenance outages, please provide:

- a. Please state the start and end dates of each outage;
- b. Please itemize and summarize the major maintenance, repair, replacement, and other activities performed during each outage;
- c. Please provide electronic copies (in searchable PDF) of the Company's detailed outage report(s) for each outage; and
- d. Please state whether it was necessary to extend the duration of either outage to accomplish all of the activities described in the response to subsection (b) of this request and, if so, explain for how long as a result of which activities.

Objection:

Duke Energy Indiana objects to subpart (c) of this request as vague and ambiguous, particularly the reference to "detailed outage report(s)" without further explanation.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Duke Energy Indiana is performing a reasonable search for the requested information and will provide when located.

Response: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.25

Request:

Please provide for each month of 2018 and the first seven months of 2019, the same monthly operational information for the Edwardsport IGCC plant as was provided in Petitioner's Exhibit 1-C (GWW) in IURC Cause No. 43114 IGCC-16, at page 7 of 13.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

See Attachment CAC 4.3-A (commercial operational statistics). In addition, see Attachment CAC 4.25-A (fuel report), CAC 4.25-B (generation log), and CAC 4.25-C (generation start and stop times) for the requested information from January 2018 through June 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.26

Request:

Please provide any of the following forecasts, projections, budgets or plans for the entire year or any month(s) of 2020 prepared or updated by or for DEI through August 6, 2019 with regard to the Edwardsport IGCC:

- a. Net Generation in total or by fuel source;
- b. O&M Expenses;
- c. Capital Maintenance Costs;
- d. Equipment Inventory Costs;
- e. Fuel Costs;
- f. Base Rates Revenues;
- g. Rider 61 Revenues;
- h. Rider 72 Revenues; and
- i. Spring or Fall Maintenance Outage activities and expenses.

Objection:

Duke Energy Indiana objects to this request to the extent it seeks a calculation, analysis or compilation that has not already been performed and that Duke Energy Indiana objects to performing. Duke Energy Indiana also objects to this request as overbroad and unduly burdensome.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- a. See Attachment CAC 4.26-A.
- b. See Attachment CAC 4.26-B for the 2020 Edwardsport station budget for all FERC O&M accounts. The amounts presented exclude property insurance and property tax applicable to Edwardsport.

- c. See Attachment CAC 4.26-C for the 2020 Edwardsport station budget for capital (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory).
- d. The projected inventory balance at 12/31/2020 is \$154.8 million.
- e. See Attachment CAC 4.26-D.
- f. See the Company's response to IG 8.1(b), specifically Attachment IG 8.1-B.
- g. See the Company's response to IG 8.1(b), specifically Attachment IG 8.1-B.
- h. See objection.
- i. See Attachment CAC 4.26-E for the Edwardsport station budget for outage costs (including but not limited to the major outage), both O&M and capital (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory).

Witness: Cecil Gurganus (a, b, c, d, i), Suzanne Sieferman (e), and Diana Douglas (f, g, h)

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.27

Request:

Please see Table 2 on p. 19 of Petitioner's Exhibit 20. Please provide details on the \$51 million of capital expenditures expected in 2020. Please provide any supporting documentation.

Objection:

Duke Energy Indiana objects to this request as overbroad and vague, particularly the portion of the request seeking "details on the \$51 million of capital expenditures."

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see Confidential Attachment CAC 4.27-A.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.28

Request:

Please see pages 1-4 of Petitioner's Exhibit 20-A (CTG). Please update the Edwardsport IGCC performance information shown on those pages through July 2019 and through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request to the extent it seeks to impose an ongoing obligation to provide information outside the scope of this proceeding as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks the Company to perform a study or analysis the Company has not performed and to which it objects performing.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see the Company's response to CAC 4.3.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.29

Request:

Please provide for each month in the period June 2013 through July 2019, the input data and workpapers used to develop the Gasifier Availability Factors, Equivalent Availability Factors, and Equivalent Forced Outage Rates shown for each of these months at pages 1-4 in Petitioner's Exhibit 20-A (CTG).

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly as it seeks information from June 2013 through July 2019. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Duke Energy Indiana further objects to this request as vague and ambiguous, particularly the references to "input data" and "workpapers used to develop . . ." without further explanation or definition.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.30

Request:

Please indicate how many hours of each month in the period June 2013 through July 2019, are used in the calculation of the Gasifier Availability Factor, Equivalent Availability Factor, and Equivalent Forced Outage Rate shown for that month at pages 1- 4 in Petitioner's Exhibit 20-A (CTG).

Objection:

Duke Energy Indiana objects to this request as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request as seeking Duke Energy Indiana to perform a study or analysis the Company has not performed and to which it objects performing.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

CAC 4.31

Request:

Please identify by name the Company witness or witnesses or other employee or employees who would be able to authenticate and respond to cross-examination or deposition questions on each of the Company's responses to each request in this set of discovery requests.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is overbroad and unduly burdensome as the Company would not know what questions any party might possibly be asking witnesses. Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request as it seeks Duke Energy Indiana to potentially provide names of Company employees who may not be witnesses to this proceeding. Duke Energy Indiana additionally objects to this request as vague and ambiguous, particularly the reference to witnesses authenticating discovery responses.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana states that it will provide the name of any Company case-in-chief witness in this proceeding who responds to specific data requests when that individual can be identified.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 8/20/19
SUPPLEMENTAL INFORMATION IN BOLD BELOW
CAC 4.24

Request:

For the Spring 2018, Fall 2018, and Spring 2019 Edwardsport maintenance outages, please provide:

- a. Please state the start and end dates of each outage;
- b. Please itemize and summarize the major maintenance, repair, replacement, and other activities performed during each outage;
- c. Please provide electronic copies (in searchable PDF) of the Company's detailed outage report(s) for each outage; and
- d. Please state whether it was necessary to extend the duration of either outage to accomplish all of the activities described in the response to subsection (b) of this request and, if so, explain for how long as a result of which activities.

Objection:

Duke Energy Indiana objects to subpart (c) of this request as vague and ambiguous, particularly the reference to "detailed outage report(s)" without further explanation.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Duke Energy Indiana is performing a reasonable search for the requested information and will provide when located.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- a. Please see Attachments CAC 4.24-A, 4.24-B and 4.24-C.
- b. Please see Attachments CAC 4.24-A, 4.24-B and 4.24-C.
- c. Please see Attachments CAC 4.24-A, 4.24-B and 4.24-C.
- d. Yes. The Spring 2018 planned derate was extended for the following reasons:

Exchanger Scope

Larger than expected exchanger scope - 21 Flange/head repairs were completed, a significant number more than the four known repairs in original scope. Final System 13 common exchanger not completed until 5/22/18.

Train 1 Dome Refractory

Entry to and inspection of Train 1 RSC identified necessary refractory replacement. Demo and replacement spanned 17 days from 4/18/18 to 5/5/18.

Train 2 Lower Throat Refractory

Entry to and inspection of Train 2 Gasifier identified necessary Lower Throat refractory replacement. Demo and replacement spanned 10 days from 4/20/18 to 4/22/18 and from 5/4/18 to 5/12/18.

Condensate Ammonia Stripper Repairs

Entry to and inspection of Condensate Ammonia Stripper vessel identified extensive internal damage. Complete demo of 46' vessel internals/refractory and subsequent replacement spanned 19 days from 4/29/18 to 5/18/18.

Contractor Recordable Stand Down

Following contractor recordable injury on 4/30/18, Edwardsport immediately implemented a safety stand down of all work activities. Return to work authorization was granted for a majority of site personnel on 5/2/18.

Lightning Delays

Numerous lightning delays were encountered throughout the spring outage. These varied from a half hour to several hours in duration.

Answering further, the Spring 2019 planned outage was also extended for the following reason:

Combustion Turbine 1 Start-up

Ending with the CT Boundary LOTO, all LOTOs necessary for unit operation were restored by 0500 on 5/11/19. However, throughout the day, issues related to both outage and non-outage work were experienced, including Generator Excitation Transformer Breaker failure, loss of communication on HP Feedwater Valve 33-LV-1161, miscellaneous profibus problems, failed CT ignitor verifications, and a failed start related to Syngas Module damper position.

Response: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 9/11/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.5

Request:

Please provide any electronic or other communication (including attachments) from or to Mr. Gurganus from January 1, 2018 through the pendency of this proceeding relating to the operating performance, financial performance, specific technical issues, or particular equipment problems of the Edwardsport IGCC.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests “any electronic or other communication ... from January 1, 2018 ... through the pendency of this proceeding.” Duke Energy Indiana further objects to this request on the grounds that the phrase “operating performance, financial performance, specific technical issues, or particular equipment problems” is vague and ambiguous. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney-client privileged communications or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Duke Energy Indiana is conducting a reasonable search of Mr. Gurganus’ electronic mailbox using the requested search terms above between January 1, 2018 and June 30, 2019 and will provide the responsive documents that it locates.

Supplemental Response:

Subject to and without waiving or limiting its objections, see Confidential Attachment CAC 4.5-A.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.2

Request:

Please provide each organization chart for the Edwardsport IGCC in effect from January 1, 2018 through the pendency of this proceeding showing names, titles and reporting relationships for all employees with management responsibility for operation of the Plant, in whole or in part, from direct reports to the Plant Manager up through and including Duke Energy Chairman, President and Chief Executive Officer Lynn Good.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the reference to “management responsibility for operation of the Plant...” In addition, Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly the portion of the request seeking “each organization chart.” Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections and providing the requested information as it is kept in the normal course of business, Duke Energy Indiana responds as follows: The current hierarchy of Edwardsport Station up through Duke Energy Chairman, President and Chief Executive Officer Lynn Good is listed below:

Lynn J. Good – Chairman, President & CEO
Dhiaa M. Jamil – EVP & Chief Operating Officer, Generation & Transmission
Regis Repko – SVP Chief Fossil/Hydro Officer
Cecil Gurganus – VP Edwardsport
Joshua Smith – Dir Edwardsport Cont Improvement & Gov
Jamie McDaniel – Executive Assistant I
Gary Cook – GMIII, Regulated Stations
Greg Kennett – Development Assignment Leader
Jefferson Hamilton – Dir Technical Edwardsport
Russ Sheffler – Mgr Maintenance
Brandon DeMoss – Sr H&S Professional
Caleb Johnson – Sr H&S Professional

Supplemental Response:

Subject to and without waiving or limiting its objections, Greg Kennett's job title has changed to Mgr Operations.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.3

Request:

Please provide DEI Monthly Operations Reports (or equivalent) for the Edwardsport IGCC for January 2018 and each month thereafter through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the term “DEI Monthly Operations Reports (or equivalent)” without further definition or explanation. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see Attachment 4.3-A for a summary of data provided on a monthly basis regarding Edwardsport’s operations from January 2018-June 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see Attachment CAC 4.3-B for information provided on a monthly basis regarding Edwardsport’s operations from July 2019-September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.4

Request:

Please provide DEI Monthly Financial Reports (or equivalent) for the Edwardsport IGCC for January 2018 and each month thereafter through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the use of the term “DEI Monthly Financial Reports (or equivalent)” without additional explanation or definition. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see Attachments CAC 4.4-A (capital) and 4.4-B (O&M) for copies of financial reporting performed on a monthly basis for Edwardsport from January 2018 through June 2019. The capital amounts on Attachment CAC 4.4-A are construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory.

Supplemental Response:

Please see Revised Attachments CAC 4.4-A (capital) and 4.4-B (O&M) for copies of financial reporting performed on a monthly basis for Edwardsport from January 2018 through September 2019. The capital amounts on Revised Attachment CAC 4.4-A are construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.8

Request:

Please provide any Root Cause Analysis or comparable study performed by or for DEI of any equipment failure or technical problem which occurred at the Edwardsport IGCC on or after January 1, 2018 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly as the request seeks “any Root Cause Analysis or comparable study.” Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Confidential Attachments CAC 4.8-A through CAC 4.8-D for Root Cause Analyses from January 1, 2018 through June 30, 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, see Confidential Attachment CAC 4.8-E for additional Root Cause Analyses from January 1, 2019 through September 30, 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.9

Request:

Please provide copies of all the Company's Power Generation Operations Weekly Reports (or renamed equivalent) for the Edwardsport IGCC prepared for the period January 1, 2018 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests "all ... Power Generation Operations Weekly Reports (or renamed equivalent) ... prepared for the period January 1, 2018 through the pendency of this proceeding." Duke Energy Indiana further objects that "(or renamed equivalent)" is vague and ambiguous, requiring the Company to make assumptions to properly respond. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.9-A.

Supplemental Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.9-B for the period July-September, 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.10

Request:

Please provide the amounts of fuel costs for the Edwardsport IGCC and all coal generating units by month for the period January 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests “fuel costs for the Edwardsport IGCC and all coal generating units by month for the period January 2018 through the pendency of this proceeding.” Duke Energy Indiana also objects to this request as vague and ambiguous, particularly the phrase “any adjustments made to actual costs” without further definition or explanation. In addition, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.10-A.

Supplemental Response:

Subject to and without waiving or limiting its objections, see Revised Attachment CAC 4.10-A which has been updated to include the requested information through September 2019.

Witness: Suzanne E. Sieferman

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.11

Request:

Please provide the amounts of variable non-fuel O&M costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrases “variable non-fuel O&M costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections and assuming that O&M is defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation), Duke Energy Indiana responds as follows: Please see Attachment CAC 4.11-A for monthly O&M for January 2018 through June 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections and assuming that O&M is defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation), Duke Energy Indiana responds as follows: Please see Revised Attachment CAC 4.11-A for monthly O&M for January 2018 through September 2019.

Witness: Cecil Gurganus / Diana Douglas

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.12

Request:

Please provide the amounts of fixed O&M costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustment made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrases “fixed O&M costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.11.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see the Company’s supplemental response to CAC 4.11.

Witnesses: Cecil Gurganus / Diana Douglas

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.13

Request:

Please provide the amounts of capital costs for Edwardsport by month for the period January 1, 2018 through the pendency of this proceeding. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the terms “amounts of capital costs for Edwardsport by month” and “adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, and assuming the request is seeking information regarding ongoing capital expenses at Edwardsport, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) for January 2018 through June 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, and assuming the request is seeking information regarding ongoing capital expenses at Edwardsport, Duke Energy Indiana responds as follows:

Please see the Company’s supplemental response to CAC 4.4, specifically Revised Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in

FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) for January 2018 through September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.14

Request:

Please provide by category name, account number(s) and amounts any costs for Edwardsport, by month for the period January 1, 2018 through the pendency of this proceeding other than those provided in response to Data Requests 4.7 through 4.10 above. Please identify and explain any adjustments made to actual costs incurred in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the terms “any costs for Edwardsport by month” and “any adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects performing. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.11.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see the Company’s supplemental response to CAC 4.11.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.15

Request:

Please provide by month for the period January 1, 2018 through the pendency of this proceeding the amounts of Edwardsport costs which were recovered through (a) base rates, (b) Rider 60, (c) Rider 61, and (d) by number, any other Rider. Please identify and explain any adjustments made to actual costs recovered in the amounts provided.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous, particularly the phrase “any adjustments made to actual costs incurred” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to perform a study or compilation it has not performed and to which it objects to performing. Additionally, Duke Energy Indiana objects to the extent this request seeks information regarding costs that are not a subject of this proceeding as not reasonably calculated to lead to admissible evidence in this proceeding. Further, to the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request and to provide information regarding costs outside of the scope of this proceeding, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company’s response to IG 8.1(b), specifically Attachment IG 8.1-B.
- (b) Please see the Company’s response to CAC 4.10 for monthly Edwardsport fuel costs from January 2018 through June 2019.
- (c) Please see the Company’s response to CAC 4.11 for monthly Edwardsport O&M (defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation) from January 2018 through June 2019. Please also see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in FERC account 107

excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) from January 2018 through June 2019.

Please also see the Company's response to IG 8.1(a), specifically Attachment IG 8.1-A, which shows the components of IGCC revenue requirements embedded in the Rider 61 rates billed to customers from 2017 through projected 2020.

(d) See objection.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- (b) Please see the Company's supplemental response to CAC 4.10 for monthly Edwardsport fuel costs from January 2018 through September 2019.**
- (c) Please see the Company's supplemental response to CAC 4.11 for monthly Edwardsport O&M (defined as operation and maintenance expenses, payroll taxes, property taxes, and property insurance, net of the credit for operating expenses of the retired Edwardsport coal plant (excluding fuel and depreciation) from January 2018 through September 2019. Please also see the Company's supplemental response to CAC 4.4, specifically Revised Attachment CAC 4.4-A, for monthly capital costs (construction work in progress spend in FERC account 107 excluding AFUDC, net of credits in FERC account 108 for parts returned to inventory) from January 2018 through September 2019.**

Please also see the Company's response to IG 8.1(a), specifically Attachment IG 8.1-A, which shows the components of IGCC revenue requirements embedded in the Rider 61 rates billed to customers from 2017 through projected 2020.

Witness: Diana Douglas (parts a and c) and Suzanne Sieferman (part b)

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.16

Request:

Please provide copies of the most current Edwardsport operating expense budgets by month and/or year for (a) 2018, (b) 2019, (c) 2020, and (d) 2021.

Objection:

Duke Energy Indiana objects to this request as over broad, unduly burdensome, and not reasonably calculated to lead to admissible evidence in this proceeding, particularly the portion of the request seeking Edwardsport's 2018 operating expense budget when the 2018 actual operating expenses are known and the portion seeking 2021. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or analysis the Company has not performed and to which it objects performing. Duke Energy Indiana further objects to this request as vague and ambiguous, particularly the portion of the request seeking the "most current Edwardsport operating expense budgets . . ." without further definition or explanation.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company's response to CAC 4.4, specifically Attachment CAC 4.4-B.
- (b) Please see the Company's response to CAC 4.4, specifically Attachment CAC 4.4-B.
- (c) Please see the Company's response to CAC 4.26(b).
- (d) See objection.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- (a) Please see the Company's supplemental response to CAC 4.4, specifically **Revised Attachment CAC 4.4-B.**
- (b) Please see the Company's supplemental response to CAC 4.4, specifically **Revised Attachment CAC 4.4-B.**

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.17

Request:

Please provide copies of the most current Edwardsport capital maintenance budgets by month and/or year for (a) 2018, (b) 2019, (c) 2020, and (d) 2021.

Objection:

Duke Energy Indiana objects to this request as over broad, unduly burdensome, and not reasonably calculated to lead to admissible evidence in this proceeding, particularly the portion of the Request seeking the 2018 capital maintenance budget when 2018 actual capital expenditures are known and the portion seeking 2021 information. Duke Energy Indiana also objects to this request to the extent it seeks Duke Energy Indiana to perform a study or analysis the Company has not performed and to which it objects performing. Duke Energy Indiana further objects to this request as vague and ambiguous, particularly the portion of the request seeking the “most current Edwardsport capital maintenance budgets . . .” without further definition or explanation.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- (a) Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A.
- (b) Please see the Company’s response to CAC 4.4, specifically Attachment CAC 4.4-A.
- (c) Please see the Company’s response to CAC 4.26(c).
- (d) See objection.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- (a) **Please see the Company’s supplemental response to CAC 4.4, specifically Revised Attachment CAC 4.4-A.**
- (b) **Please see the Company’s supplemental response to CAC 4.4, specifically Revised Attachment CAC 4.4-A.**

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.18

Request:

Please provide copies of the most current projections of Edwardsport operating expenses by month and/or year for (a) 2020 and (b) 2021.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the phrase “most current projections . . . by month and/or year” without further definition or explanation. Duke Energy Indiana further objects to this request to the extent it seeks Duke Energy Indiana to provide information regarding costs outside of the scope of this proceeding, such as for 2021, as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

Please see the Company’s response to CAC 4.16.

Supplemental Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows: Please see the Company’s supplemental response to CAC 4.16

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.19

Request:

Please provide copies of the most current projections of Edwardsport capital maintenance expenditures by month and/or year for (a) 2020 and (b) 2021.

Objection:

Duke Energy Indiana objects to this Request as vague and ambiguous, particularly the phrase “most current projections . . . by month and/or year” without further definition or explanation. Duke Energy Indiana further objects to this request, to the extent it seeks Duke Energy Indiana to provide information regarding costs outside of the scope of this proceeding, such as 2021, as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

See the Company’s response to CAC 4.17.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: See the Company’s supplemental response to CAC 4.17.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.20

Request:

Please provide by month and fuel source from January 2018 through the pendency of this proceeding both the gross and the net amounts of Edwardsport generation by fuel source.

Objection:

To the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Further, Duke Energy Indiana objects to this request seeks the Company to perform a study or compilation that it has not performed and to which it objects performing.

Response:

Subject to and without waiving or limiting its objections, see Attachment CAC 4.20-A.

Supplemental Response:

Subject to and without waiving or limiting its objections, see Revised Attachment CAC 4.20-A which has been updated to include the requested information through September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.21

Request:

Please provide DEI's Events Data reported to NERC¹ pursuant to Section III of NERC's Generating Availability Data System (GADS) Data Reporting Instructions for the Edwardsport IGCC²:

- a. for each of the 12 months of 2018; and,
- b. for purposes of comparison over time, for each month from January 2019 through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to provide information outside the scope of this proceeding.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

- a. See Confidential Attachment CAC 4.21-A for the requested information.
- b. See objection. Answering further, N/A for January through June 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections,

- b. See Confidential Attachment CAC 18.8-A.**

Witness: Cecil Gurganus

¹ NERC means North American Electric Reliability Corporation.

² See Section III of

<https://www.nerc.com/pa/RAPA/gads/DataReportingInstructions/2018%20GADS%20Data%20Reporting%20Instructions.pdf>, esp. pp. iii-5 to 9.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.22

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the offers DEI made to the MISO Real Time and Day Ahead Markets for Edwardsport.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to update this request throughout the pendency of this proceeding as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 4.22-A for the Day-Ahead and Real-Time Energy Offers for Edwardsport Station from January 1, 2018 through June 30, 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, please refer to Revised Attachment CAC 4.22-A for the Day-Ahead and Real-Time Energy Offers for Edwardsport Station from January 1, 2018 through September 30, 2019.

sCAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.23

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the actual operational status of Edwardsport in a format comparable to that of the offers made to the MISO markets.

Objection:

Duke Energy Indiana objects to this request to the extent that it seeks to impose an ongoing obligation to update this request throughout the pendency of this proceeding as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 4.22-A for the actual operational status of Edwardsport Units from January 1, 2018 through June 30, 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, please refer to Revised Attachment CAC 4.22-A for the Day-Ahead and Real-Time Energy Offers for Edwardsport Station from January 1, 2018 through September 30, 2019.

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.25

Request:

Please provide for each month of 2018 and the first seven months of 2019, the same monthly operational information for the Edwardsport IGCC plant as was provided in Petitioner's Exhibit 1-C (GWW) in IURC Cause No. 43114 IGCC-16, at page 7 of 13.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome.

Response:

Subject to and without waiving or limiting its objections, and in the spirit of cooperation, Duke Energy Indiana responds as follows:

See Attachment CAC 4.3-A (commercial operational statistics). In addition, see Attachment CAC 4.25-A (fuel report), CAC 4.25-B (generation log), and CAC 4.25-C (generation start and stop times) for the requested information from January 2018 through June 2019.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

See also Attachment CAC 4.3-B (commercial operational statistics). In addition, see Attachments CAC 4.25-D (fuel report), CAC 4.25-E (generation log), and CAC 4.25-F (generation start and stop times) for the requested information from July 2019 through September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 4
Received: August 6, 2019

SUPPLEMENTAL RESPONSE 10/21/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 4.28

Request:

Please see pages 1-4 of Petitioner's Exhibit 20-A (CTG). Please update the Edwardsport IGCC performance information shown on those pages through July 2019 and through the pendency of this proceeding.

Objection:

Duke Energy Indiana objects to this request to the extent it seeks to impose an ongoing obligation to provide information outside the scope of this proceeding as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks the Company to perform a study or analysis the Company has not performed and to which it objects performing.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see the Company's response to CAC 4.3.

Supplemental Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see the Company's supplemental response to CAC 4.3.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

CAC 5.1

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the offers DEI made to the MISO Real Time and Day Ahead Markets for each of Duke's Cayuga and Gibson generating units.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests "all hours...through the pendency of this proceeding." To the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 5.1-A for the Day-Ahead and Real-Time energy market hourly offers for Cayuga 1-2, & 4, and Gibson 1-5 for the period from January 1, 2018 through June 30, 2019.

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

CAC 5.2

Request:

For all hours of each month from January 2018 through the pendency of this proceeding, please provide the actual operational status of each of Duke's Cayuga and Gibson generating units in a format comparable to that of the offers made to the MISO markets provided in response to DR 5.1.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly as it requests "all hours...through the pendency of this proceeding." To the extent this request seeks to impose an ongoing obligation on the Company to supplement its response to this request, Duke Energy Indiana objects as unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding.

Response:

Subject to and without waiving or limiting its objections, please refer to Attachment CAC 5.1-A for the operational Status of Cayuga 1-2, & 4, and Gibson 1-5 for the period January 1, 2018 through June 30, 2019.

CAC
 IURC Cause No. 45253
 Data Request Set No. 5
 Received: August 7, 2019

CAC 5.3

Request:

Please provide any of the following forecasts, projections, budgets or plans for the entire year or any month(s) of 2020 prepared or updated by or for DEI through August 6, 2019 with regard to each of Duke's Cayuga and Gibson generating units:

- a. Net Generation in total or by fuel source;
- b. O&M Expenses;
- c. Capital Maintenance Costs;
- d. Fuel Costs;
- e. Base Rates Revenues;
- f. Rider 72 Revenues; and
- g. Spring or Fall Maintenance Outage activities and expenses.

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly as it seeks "any of the following forecasts, projections, budgets or plans" Duke Energy Indiana objects to this request to the extent it seeks a calculation, analysis or compilation that has not already been performed and that Duke Energy Indiana objects to performing.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- a. See Attachment CAC 5.3-A.
- b. See Attachment CAC 5.3-B for the 2020 Cayuga and Gibson station budgets for all FERC O&M accounts.
- c. See Attachment CAC 5.3-C for the 2020 Cayuga and Gibson station budgets for capital (construction work in progress spend in FERC account 107 excluding AFUDC).
- d. See Attachment CAC 5.3-D.
- e. The Company did not calculate its proposed base rate revenues by generating station. However, it was able to estimate base rate revenues for Gibson and Cayuga using available rate case data. These amounts exclude any revenue requirement related to transmission or general plant at the stations, property taxes, property insurance, payroll taxes, and any regulatory asset amortizations related to the stations. See Attachment CAC 5.3-E.
- f. See objection.
- g. See Attachment CAC 5.3-F for the 2020 Cayuga and Gibson station budgets for outage costs, both O&M and capital (construction work in progress spend in FERC account 107 excluding AFUDC).

Witnesses: Mike Mosley (parts a-d, g) / Diana Douglas (parts e and f)

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

CAC 5.4

Request:

Please provide the same monthly performance data that is shown at pages 1 - 4 of Petitioner's Exhibit 20-A (CTG) for each month of 2016 - 2018 and 2019 to-date for each of DEI's Cayuga and Gibson generating units.

Objection:

Duke Energy Indiana objects to this request as overbroad, unduly burdensome and not reasonably calculated to lead to admissible evidence in this proceeding, particularly as it seeks "monthly performance data . . . for each month of 2016 – 2018 and 2019 to-date"

Response:

Subject to and without waiving or limiting its objections, please see Attachment CAC 5.4-A for the Cayuga net generation and operational metrics, and CAC 5.4-B for the Gibson net generation and operational metrics.

Witness: Mike Mosley

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

CAC 5.5

Request:

Please reference page 26, lines 14-19, of Petitioner's Exhibit 20. Please specify, in dollars, how much is included in the 2020 test year forecast for each of DEI's Gibson and Cayuga generating units.

Objection:

Duke Energy Indiana objects to this request as vague and ambiguous as it does not reference which costs are requested.

Response:

Subject to and without waiving or limiting its objections, and assuming that the costs requested are the material and supplies inventory amounts included in the 2020 forecasted rate base for Cayuga and Gibson stations: The amount of inventory included in the 2020 test period forecast for Cayuga and Gibson Coal Generating Units are \$8,823 and \$29,090 thousands respectively.

Witness: Mike Mosley

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

CAC 5.6

Request:

Please identify by name the Company witness or witnesses or other employee or employees who would be able to authenticate and respond to cross-examination or deposition questions on each of the Company's responses to each request in this set of discovery requests.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is overbroad and unduly burdensome as the Company would not know what questions any party might possibly be asking witnesses. Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request as it seeks Duke Energy Indiana to potentially provide names of Company employees who may not be witnesses to this proceeding. Duke Energy Indiana additionally objects to this request as vague and ambiguous, particularly the reference to witnesses authenticating discovery responses.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana states that it will provide the name of any Company case-in-chief witness in this proceeding who responds to specific data requests when that individual can be identified.

CAC
IURC Cause No. 45253
Data Request Set No. 5
Received: August 7, 2019

SUPPLEMENTAL RESPONSE 9/17/19
SUPPLEMENTAL INFORMATION IS IN BOLD
CAC 5.3

Request:

Please provide any of the following forecasts, projections, budgets or plans for the entire year or any month(s) of 2020 prepared or updated by or for DEI through August 6, 2019 with regard to each of Duke's Cayuga and Gibson generating units:

- a. Net Generation in total or by fuel source;
- b. O&M Expenses;
- c. Capital Maintenance Costs;
- d. Fuel Costs;
- e. Base Rates Revenues;
- f. Rider 72 Revenues; and
- g. Spring or Fall Maintenance Outage activities and expenses.

Objection:

Duke Energy Indiana objects to this request as overbroad and unduly burdensome, particularly as it seeks "any of the following forecasts, projections, budgets or plans" Duke Energy Indiana objects to this request to the extent it seeks a calculation, analysis or compilation that has not already been performed and that Duke Energy Indiana objects to performing.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- a. See Attachment CAC 5.3-A.
- b. See Attachment CAC 5.3-B for the 2020 Cayuga and Gibson station budgets for all FERC O&M accounts.
- c. See Attachment CAC 5.3-C for the 2020 Cayuga and Gibson station budgets for capital (construction work in progress spend in FERC account 107 excluding AFUDC).
- d. See Attachment CAC 5.3-D.
- e. The Company did not calculate its proposed base rate revenues by generating station. However, it was able to estimate base rate revenues for Gibson and Cayuga using available rate case data. These amounts exclude any revenue requirement related to transmission or general plant at the stations, property taxes, property insurance, payroll taxes, and any regulatory asset amortizations related to the stations. See Attachment CAC 5.3-E.
- f. See objection.
- g. See Attachment CAC 5.3-F for the 2020 Cayuga and Gibson station budgets for outage costs, both O&M and capital (construction work in progress spend in FERC account 107 excluding AFUDC).

Supplemental Response:

b. See Revised Attachment CAC 5.3-B.

Witnesses: Mike Mosley (parts a-d, g) / Diana Douglas (parts e and f)

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.1

Request:

Please reference the Company's previous Responses and Objections to CAC Data Request 4.1 to 4.30, especially but not exclusively the Company's failures to provide responsive information which is complete for 2018 or 2019 through June as well as its objection to supplementing its responses with information after June 2019.

- A. For CAC Data Requests 4.1 through 4.29, please provide responsive information now available for the additional elapsed time period of July 1 through September 30, 2019 (or for the months of July, August and September 2019, where such information is compiled and reported on a monthly rather than event-by-event basis), as well as any additional information which has now become available for the January 2018 through June 2019 period previously provided.
- B. For CAC Data Request No. 4.30, please provide Edwardsport's Gasifier Availability Factor, Equivalent Availability Factor, and Equivalent Forced Outage Rate for the months of July through September 2019, calculated on the same basis as the figures compiled in Petitioner's Exhibit 20-A (CTG).

Objection:

Duke Energy Indiana objects to this request as assuming facts not in evidence, namely that Duke Energy Indiana in any way "fail[ed] to provide responsive information." Duke Energy Indiana also objects to this request as overbroad and unduly burdensome. Duke Energy Indiana objects to subpart (B) of this request as asked and answered by subpart (A). Duke Energy Indiana also reiterates its specific objections to each of the requests from CAC 4.1 through 4.30. Duke Energy Indiana further objects to subpart (B) as vague and ambiguous, particularly its reference to "CAC Data Request 4.30."

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- A. Where supplemental information is available, Duke Energy Indiana is providing supplemental responses to CAC Set 4.

- B. Assuming this subpart seeks “Edwardsport’s Gasifier Availability Factor, Equivalent Availability Factor and Equivalent Forced Outage Rates for the months of July through September 2019,” please see the Company’s supplemental responses to CAC 4.3, 4.25 and 4.28.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.2

Request:

Please reference Confidential Attachment CAC 4.7-B previously provided in response to CAC Data Request 4.7.

- A. Please provide an unredacted copy of the Duke Energy Indiana Generation Fleet Modernization Planning Proposal in its entirety as presented to the Duke Energy Board of Directors on May 2, 2019 reflecting all elements of the Proposal and not only those limited to the Edwardsport IGCC, including especially but not exclusively unredacted copies of pages Bate-stamped 090013918-004707 and -004709.
- B. Please provide copies of all workpapers and other source or reference documents relied upon in the preparation of this Proposal, including especially but not exclusively pages Bate-stamped 090013918-004707 and -004709.
- C. Please explain with specificity and in detail any differences between the Proposal presented to the Duke Energy Board of Directors on May 2, 2019 and the DEI Integrated Resource Plan (“IRP”) filed with the Indiana Utility Regulatory Commission on or about July 1, 2019.
- D. Please provide any update(s) to the Proposal which has been prepared since May 2, 2019, whether or not such update(s) has/have been presented to the Duke Energy Board of Directors.
- E. Please provide the Duke Energy Board of Directors Minutes entry(ies) reflecting Board action or discussion on the Proposal or any update(s) to the Proposal.

Objection

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly the portions of this request seeking “all workpapers . . .” and to “explain with specificity and in detail.” Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney client communications or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- A. Please see Confidential Attachment CAC 18.2-A for the unredacted Duke Energy Indiana Generation Fleet Modernization Planning Proposal previously provided in Confidential Attachment CAC 4.7-B (unredacted Bate-stamped 090013918-004707). Bate-stamp -004709 is not part of the Generation Fleet Modernization Planning Proposal. See the Company's response to CAC 18.4.
- B. Please see the Company's 2018 IRP and its supporting workpapers.
- C. The information on the Duke Energy Indiana Generation Fleet Modernization Planning Proposal slide is largely consistent with the Company's 2018 IRP. Answering further, the coal retirements are consistent with the preferred portfolio in the 2018 IRP (through the planning horizon of the IRP of 2037). The gas additions in 2028 and 2034 are consistent with the IRP, but the renewables and storage additions are different, in order to achieve the Duke Energy corporate CO₂ planning reductions. Because the IRP study horizon is 2037, anything thereafter was not presented in the IRP and expansion plans were created for the purpose of planning for an 80% CO₂ reduction by 2050 over 2005 levels as an enterprise.
- D. Duke Energy Indiana is not aware of any updates to this Proposal.
- E. See Confidential Attachment CAC 18.2-B, which has been redacted to remove nonresponsive information.

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.3

Request:

Please reference Confidential Attachment CAC 4.7-B previously provided in response to CAC Data Request 4.7.

- A. Please provide an unredacted copy of the Duke Energy Indiana Legislative and Regulatory Plan in its entirety as presented to the Duke Energy Board of Directors on May 2, 2019 reflecting all elements of the Plan and not only those limited to the Edwardsport IGCC, including especially but not exclusively an unredacted copy of the page Bate-stamped 090013918-004706.
- B. Please provide copies of all workpapers and other source or reference documents relied upon in the preparation of this Plan, including especially but not exclusively the page Bate-stamped 090013918-004706.
- C. Please provide any update(s) to the Plan which has been prepared since May 2, 2019, whether or not such update(s) has/have been presented to the Duke Energy Board of Directors.
- D. Please provide the Duke Energy Board of Directors Minutes entry(ies) reflecting Board action or discussion on the Plan or any update(s) to the Plan.
- E. To the extent any document(s) responsive to requests A through D are withheld or redacted on the grounds of an asserted privilege, please provide a detailed privilege log.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly the portions of this request seeking “all workpapers . . .” and “any updates.” Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney client communications or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- A. See Confidential Attachment CAC 18.3-A for unredacted Bate-stamp 090013918-004706. See also Confidential Attachment CAC 18.3-B, redacted for attorney client privileged information.
- B. See Confidential Attachment CAC 18.3-C.
- C. See objection. Answering further, Duke Energy Indiana is not aware of any updates to this Legislative and Regulatory Plan.
- D. See Confidential Attachment CAC 18.2-B, which was redacted to remove references to nonresponsive information from other jurisdictions.
- E. Please see the privilege log prepared for this request (Attachment CAC 18.3-D).

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.4

Request:

Please reference Confidential Attachment CAC 4.7-B previously provided in response to CAC Data Request 4.7.

- A. Please provide an unredacted copy of the Duke Energy Update on Climate Policy in its entirety as presented to the Duke Energy Board of Directors on May 2, 2019 reflecting all elements of the Policy Update and not only those limited to the Edwardsport IGCC, including especially but not exclusively unredacted copies of the pages Bate-stamped 090013918-004709 and -004710.
- B. Please provide copies of all workpapers and other source or reference documents relied upon in the preparation of this Policy Update, including especially but not exclusively the pages Bate-stamped 090013918-004709 and -004710.
- C. Please provide any update(s) to the Policy Update which has been prepared since May 2, 2019, whether or not such update(s) has/have been presented to the Duke Energy Board of Directors.
- D. Please provide the Duke Energy Board of Directors' Minutes entry(ies) reflecting Board action or discussion on the Policy Update or any later update(s) to the Policy.
- E. To the extent any document(s) responsive to requests A through D are withheld or redacted on the grounds of an asserted privilege, please provide a detailed privilege log.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome, particularly the portions of this request seeking "all workpapers . . ." and "any updates." Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. Duke Energy Indiana also objects to this request to the extent it seeks attorney client communications or attorney work product.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- A. See objection. In the spirit of cooperation, however, please see Confidential Attachment CAC 18.4-A for additional information previously produced under Bate-stamped page 090013918-04709. The remaining redactions are to remove non-responsive information regarding other jurisdictions in Duke Energy. Regarding the request for an unredacted copy of Bate-stamped page 092213918-04710, this was not part of the Update on Climate Policy. Please see the Company's objections and privilege log (Attachment CAC 18.3-D).
- B. See objection. Regarding 4709, see Confidential Attachment 18.2-C. Regarding 4710, there are no workpapers or other source or reference documents.
- C. See objection.
- D. See Confidential Attachment CAC 18.2-B.
- E. Please see the privilege log prepared for this request (Attachment CAC 18.3-D).

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.5

Request:

Please reference the Company's Response to CAC Data Requests 4.8 and 4.9. Please explain with specificity and in detail why no Root Cause Analysis was provided in response to CAC Data Request 4.8 for these incidents documented in response to CAC Data Request 4.9:

- A. At 06:27 on 1/1, the Train 1 Gasifier tripped due to high temperatures on the 03-MP-108A/B RSC Circ Pumps. An ACA will be performed on this event. The gasifier returned to service on 1/3.

Response:

A Root Cause Analysis was not provided for the referenced event as a Root Cause Analysis was not performed.

Witness: Cecil T. Gurganus

CAC
 IURC Cause No. 45253
 Data Request Set No. 18
 Received: October 11, 2019

CAC 18.6

Request:

Please reference the Company's Response to CAC Data Requests 4.8, 4.9 and 4.21(a).

- A. Please explain with specificity and in detail why the incidents resulting in the Root Cause Analyses provided in Confidential CAC Attachments 4.8-A, B and C are not reflected and reported in Confidential CAC Attachment 4.21-A.
- B. Please explain with specificity and in detail why these incidents reported in the Company's Response to Data Request 4.9 are not reflected and reported in Confidential CAC Attachment 4.21-A:
 - (1) At 06:27 on 1/1, the Train 1 Gasifier tripped due to high temperatures on the 03-MP-108A/B RSC Circ Pumps. An ACA will be performed on this event. The gasifier returned to service on 1/3.
 - (2) At 1212 on 1/25, CT1 tripped due to an Aux Stop Valve closed limit issue. The vendor, GE, was contacted and determined the cause as well as the recommended actions to address/confirm. The CT was returned to service on 1/26 at 0528.
 - (3) During initial morning rounds, the Gas Tech noticed the Train 1 Slag Crusher was leaking at the drive end packing. Maintenance inspected the Slag Crusher and determined there was no adjustment remaining. The decision was made to remove the gasifier from service and make the necessary repairs. The gasifier was shutdown at 10:16 a.m. on 2/14. The expected return to service date is 2/19.
 - (4) CT2 tripped offline at 0914 on 2/27 due to the CT2 Exhaust Duct pressure transmitters 28-PDT-2004 A/B both spiking high due to moisture in the sensing line. I&C was contacted to blowdown and calibrate both transmitters. The CT was returned to service at 1607 on 2/27.
 - (5) At 00:21 EST on 3/17, the CT2 High Exhaust Duct Pressure Alarm came in and immediately tripped the CT. The CRO's took appropriate actions to stabilize the plant. Two of the three pressure transmitters spiked and the two that spiked share the same probe. The Controls Engineer and I&C were called in to troubleshoot. The CT returned to service at 14:33 EST on 3/17.
 - (6) At approximately 1000 EDT on 3/25, the CRO received a low slurry flow alarm. The Gas Tech and the OTS went to 17th floor to investigate and found a slurry pipe leak. The Gasification Tower was cleared. The Train 1 Gasifier was removed from service to investigate the leak and Taken Offline determine needed repairs. Extent of condition inspections were performed and the piping repaired. The Train 2 Gasifier

- was also inspected and addressed. The Train 1 Gasifier returned to service at 1914 EDT on 3/27.
- (7) At about 1447 EDT, the CT2 GSU T60 Relay opened both 345KV breakers. This tripped CT2. The loss of auxiliary power feed from this CT2 GSU T60 system caused Train 2 ASU to trip. The resulting upsets required the Train 2 Gasifier be removed from service. GT2 returned to service at 0251 EDT on 3/26. The Train 2 Gasifier returned to service at 1013 EDT on 3/28.
 - (8) The Edwardsport Spring 2018 Planned Derate begins at 2300 EDT on 4/6 with the Train 2 Gasifier being taken out of service. The Train 1 Gasifier will be taken off line at 0500 EDT on 4/7. The dual gasifier outage is planned for six weeks. Parts of the Power Block will be serviced within the six weeks of Gasification outage.
 - (9) CTI tripped off line at 1511 EDT on 4/11 due to the T60 GSU relay. The Relay Team was contacted and arrived on site at 1700 EDT. The relay was found to have a faulty module and the module was replaced. The unit returned to service at 0406 EDT on 4/12.
 - (10) At 0454 EDT on 5/2 turbine protection controls logic initiated a shutdown on CTG 1 ending in a CTG 1 and STG trip. The shutdown initiator was syngas transfer valve pressure Low Low limit. This is the differential pressure across valve VGC-11 A (syngas to natural gas fuel blending valve.). Due to various outage scopes the backup nitrogen system that normally is used was not available and an N2 tube bundle truck was being utilized to maintain pressure in the CTG nitrogen purge vessel. Pressure in the vessel had dropped to 267 PSI (normal 545 PSI) and the differential across the VGC-11 A dropped into the Low Low limit. A level 3 alarm came in and immediately a logic controlled shutdown was initiated. The CT returned to service at 1123 EDT that morning with the ST going back on line at 2131 EDT that same day. An ACA will be performed. [Only partial report provided in Confidential CAC Attachment 4.21-A].
 - (11) At 11:27 on 6/7/2018, the Train 2 Gasifier was removed from service due to a loss of slurry flow from the Train 2 Slurry Charge Pump. Investigation and repairs to the Slurry Charge Pump are in progress. The gasifier is expected to return to service on 6/9/2018.
 - (12) After the successful light off of the Train 2 Gasifier, syn gas was being introduced into CTI early on 6/1. CO Alarms indicating a syngas leak were received upon its introduction. The CT was placed on natural gas only fuel after an initial investigation. The CT was removed from service late on 6/1 for inspections/ repairs. The CT was returned to service on 6/3. It was determined on 6/3 that additional work was needed. The CT was taken back out of service on 6/4 and returned to service on 6/7.
 - (13) On 6/11/2018 at 11:27, it was reported that the 4160V electrical lead box on the Train 1 Slurry Charge Pump motor bolts had failed and had fallen straining the motor leads. Operations, Engineering, and Support Team members investigated and determined that the Train 1 Gasifier would need to be removed from service for repairs to the junction box arm and inspect motor leads. An extent of condition was performed resulting in adding supports to the lead box up

- on both Train 1 and Train 2. Train 1 Gasifier was removed from service to make the repairs@ 17:26. The gasifier returned to service on 6/13.
- (14) At 0218 EDT on 6/21 the Train 1 Gasifier tripped off line on low O/C ration due to slurry pump suction issues. Clean up and investigation is in progress. The gasifier is expected to return to service this weekend.
 - (15) On 6/27 at 0952 EDT, the Train 1 Gasifier tripped due to Low Low Level in the RSC. The cause of the low level trip was a liquid leak in the system from the casing of the Lock Hopper Circulation pump. The pump could not be isolated in time to prevent the trip. An RCA team has been named due to the event being in the PSM covered process. The gasifier is scheduled to return to service on 6/29.
 - (16) On 7/2 at 18:55 EDT, Gas Tech doing rounds noticed the Train 1 Slurry Charge Pump vibrating. The Gas Tech saw the oil level dropping in the south cylinder faster than could be corrected and notified the control room of the situation. The CRO began proactive measures to control temperatures from the impending trip. The gasifier tripped on High O/C ratio at 19:00 EDT. The gasifier is expected to return to service on 7 /6. An ACA will be performed.
 - (17) At approximately 1224 EDT on 8/16, Operations determined the Train 1 Slurry Run Tank Agitator had a gear box issue. The decision was made to drop the tank level down until the Slurry Charge Pump operation could not be supported and have the gasifier come off. The gasifier came off line at 1918 EDT. The gasifier is expected to return to service on 8/19.
 - (18) On 8/25 at 05:24 EDT, Operations removed the Train 2 Gasifier from service due to a hole in the slurry feed line to the gasifier. The unit was safely removed from service and all SIS valves functioned properly. An extent of condition assessment was performed on both gasifiers' slurry lines at the location of the failure. The Train 2 Gasifier was returned to service on 8/29.
 - (19) On 9/3 at 0431 EDT, the Train 1 Gasifier tripped offline due to low level in the Radiant Syngas Cooler Stearn Drum while Operations was investigating a high steam flow alarm from the gasifier. The trip was initiated by a slurry line leak that caused insufficient slurry flow and increased steam production. The gasifier returned to service on 9/6. An Apparent Cause Analysis is in progress for slurry line issues.
 - (20) At 1030 EDT on 9/8, the Train 1 Gasifer tripped due to a communications fault that made its Acid Gas Removal, AGR, system unavailable. Later in the day, while troubleshooting the Train 1 issue, the communication network for the Train 2 faulted requiring the Train 2 Gasifier be taken off line at 1656 EDT. The Train 1 Gasification system was returned to service on 9/10. The Train 2 Gasification system was returned to service on 9/11. ACAs for the initial fault and the secondary issue will be performed.
 - (21) At 0100 EDT on 9/12, Operations received alarms on the Train 2 Gasifier Slurry Run Tank Agitator. Work on the agitator motor control system started immediately and progressed through the day. It was determined the tank needed to be emptied to resolve the issue. The tank level was allowed to drop until the

gasifier came off line from lack of feed at 1900 EDT. The gasifier is expected to return to service on 9/15.

- (22) Shortly after the Train 2 Gasifier Light Off on 9/15, Operations noticed an issue on the 17th floor related to the slurry line. The gasifier was removed from service. It was returned to service on 9/17. A root cause analysis will be performed on this event.
- (23) On the evening of 10/25, the Train I Gasifier tripped due to lock hopper and RSC blowdown issues. Clean-up and preparation work for the Train 1 Gasifier planned outage has started with it being off line.
- (24) April-May Spring Derate for Planned Maintenance.
- (25) October-November Derate for Planned Maintenance.

Objection:

Duke Energy Indiana objects to this request to the extent it seeks an analysis, calculation or compilation that has not already been performed and that Duke Energy Indiana objects to performing. Duke Energy Indiana also objects to this request as vague and ambiguous as Duke Energy Indiana is unable to determine what the CAC is referring to in Incident (10): “Only partial report provided in Confidential CAC Attachment 4.21-A” as Duke Energy Indiana provided a full report, not a partial report.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows:

- A. Confidential CAC Attachments 4.8-A, 4.8-B and 4.8-C did not result in site outages as asked for in Confidential CAC Attachment 4.21-A.
- B. Incident (10) was indicated in Confidential CAC Attachment 4.21-A as Events 116 and 117. Event 116 indicates the two-minute period in which CT1 was offline prior to the Steam Turbine coming offline (Event 117). Answering further, the remaining twenty-four (24) incidents did not result in site outages as asked for in Confidential CAC Attachment 4.21-A.

Witness: Cecil T. Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.7

Request:

Please reference the Company's Response and Objection to CAC Data Request 4.21(b).

- A. Please provide the requested information for the time period January 1 through September 30, 2019.
- B. If the Response is "N/A," please explain with specificity and in detail why the requested information is "N/A" for the time period requested.

Response:

Please see Confidential Attachment CAC 18.8-A for a summary of events reported to NERC regarding Edwardsport's operations from January 2018-September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.8

Request:

Please reference the Company's Response and Objection to CAC Data Request 4.21 as well as CAC's Requests and DEI's Responses to 18.6 and 18.7 above. Please provide **complete** NERC GADS Reports [i.e. reflecting **all** categories of reported Outages and Derates] for Edwardsport for the time periods of:

- A. January 1 through December 31, 2018; and
- B. January 1 through September 30, 2019.

Objection:

Duke Energy Indiana objects to this request on the grounds that it is vague and ambiguous, particularly the term "NERC GADS Reports" and the terms "complete" and "all" typed in bold without further definition or explanation.

Response:

Subject to and without waiving or limiting its objections, Duke Energy Indiana responds as follows: Please see Confidential Attachment CAC 18.8-A for a summary of events reported to NERC regarding Edwardsport's operations from January 2018-September 2019.

Witness: Cecil Gurganus

CAC
IURC Cause No. 45253
Data Request Set No. 18
Received: October 11, 2019

CAC 18.9

Request:

Please provide any proposals, reports, analyses, presentations, contracts or other document relating to the Edwardsport Alternative Fuel Initiative prepared by or for the Company on and January 1, 2018, including but not limited to any documents relating to replacing some or all the Plant's coal from the Bear Run Mine with coal from the Oaktown Mine as well as to washing slag from the Plant.

Objection:

Duke Energy Indiana objects to this request as overly broad and unduly burdensome as it seeks "any proposals, reports, analyses, presentations, contracts or other document." Duke Energy Indiana further objects to this request as not reasonably calculated to lead to admissible evidence in this proceeding. The Company has not decided whether to proceed with the referenced initiative and as such, objects to providing the requested information.

ATTACHMENT DAS-3



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

September 19, 2019

VIA CERTIFIED MAIL 7017 2400 0000 0752 0357

Duke Energy Indiana, LLC
Attn: Owen R. Schwartz
1000 East Main Street
Plainfield, Indiana 46168

Dear Mr. Schwartz:

Re: Request for Additional Information
Primary Ash Settling Pond
Closure/Post-Closure Plan
Cayuga Generating Station Ash
Pond System
Vermillion County
SW Program ID 83-UP-01

Pursuant to 329 IAC 10-9-1(c), IDEM has reviewed the closure/post-closure plan for Duke Cayuga Generating Station Ash Pond System. On February 15, 2019 (VFC #82698640), we received your response to our December 17, 2018 Request for Additional Information (VFC #82664512). Additional information and/or changes are needed before we can continue our review. Representatives of Duke Energy and IDEM also met to discuss the proposed closure activities at the facility on July 23, 2019.

1. Duke Energy has not demonstrated the proposed closure approach of leaving CCR in place for the Primary Ash Settling Pond controls, minimizes or eliminates, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere (40 CFR 257.102(d)(1)(i)). Submitted documentation for the proposed closure of the Primary Ash Settling Pond indicates CCR has been placed either in contact or potential contact with ground water, therefore providing a continuing source for releases of contaminants into the ground water. For purposes of this requirement, it is IDEM's position that "infiltration" can come from any direction, and it is not limited to liquids that pass through the final cover system. Specifically, it is IDEM's position that CCR placed at or below the water table constitutes "post-closure infiltration of liquids into the waste." Further, it is IDEM's position the phrase "releases of CCR, leachate, or contaminated run-off to the ground or surface waters" includes releases to the ground water.

2. In submitting your response to this additional information request in support of your closure method, please modify your current proposal to provide information on how the closure for Primary Ash Settling Pond will control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.
3. Update the closure and post-closure cost estimate in the document dated February 15, 2019 (VFC #82698640 pp. 153-167 of 224 and pp. 167-224), to reflect the expected expenses of any additional measures taken during closure to control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration and potential releases from CCR to the ground water.
4. Submit a revised Sheet 6 Site Existing Conditions – Test Boring Locations located in the *Proposed Modification to Existing Closure and Post-Closure Plans* (C/PC Plan) dated December 16, 2016 (VFC #80399269). Redesignate in the legend by symbol and color which ground water monitoring wells pertain to each CCR and non-CCR unit. For the CCR units, label MW-100 and MW-101 as upgradient wells on the drawing to better define the system on Sheet 6.

Please provide three copies of your response. At least two copies should be on paper printed double sided. If possible, please submit one copy in Acrobat PDF format, either on a CD or DVD with the printed copy, or by e-mail to Anna Mishel at AMishel@idem.IN.gov. Please note any e-mail and its attachment(s) must total less than 20 MB in size. The date we receive the paper copies will be the receipt date for your response.

Enclosed is a signature and certification statement which must be submitted with each copy of your response; you may submit one signed original and three copies of this statement. One copy can be included as part of the PDF version.

Please mail paper copies and CDs/DVDs to:

Anna Mishel, Permit Manager
Indiana Department of Environmental Management
Solid Waste Permits
IGCN 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Since our goal is to provide you with as timely a decision as possible, we request you provide the required information within 60 days from the date you receive this letter. If you believe you cannot submit the requested information within that time frame, please contact Anna Mishel to arrange a schedule for submitting the information.

Public records for your facility are available in IDEM's Virtual File Cabinet at www.idem.in.gov/idem. Indiana Code (IC) and Indiana Administrative Code (IAC) references in this document can be reviewed at iga.IN.gov. IC references are under the "Laws" link; IAC references are under the "Publications" link.

If you have any questions, please contact Anna Mishel, the Permit Manager assigned this facility, by dialing (317) 233-6725 or by e-mail at AMishel@idem.IN.gov.

Sincerely,

A handwritten signature in black ink, reading "Rebecca Eifert Joniskan". The signature is fluid and cursive, with the first name "Rebecca" being the most prominent.

Rebecca Eifert Joniskan, Chief
Permits Branch
Office of Land Quality

Enclosures: Certification Statement

Solid Waste Land Disposal Facilities
Signatures and Certification Statements for Requested Additional Information

329 IAC 10-11-3(d) requires that the signatory of a solid waste land disposal facility permit application and of other information requested by or on behalf of the Commissioner (including the supplemental information requested by our office for your solid waste land disposal facility permit application) sign the following certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information."

APPLICANT'S SIGNATURE

DATE

APPLICANT'S NAME TYPED

Note: It is not necessary to submit this form if an equivalent signed certification statement is incorporated into your submittal.

ATTACHMENT DAS-4



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

September 19, 2019

VIA CERTIFIED MAIL 7017 2400 0000 0752 0357

Duke Energy Indiana, LLC
Attn: Owen R. Schwartz
1000 East Main Street
Plainfield, Indiana 46168

Dear Mr. Schwartz:

Re: Request for Additional Information
Primary Pond Closure/Post-Closure
Plan
Gallagher Generating Station
Floyd County
SW Program ID 22-UP-01

Pursuant to 329 IAC 10-9-1(c), IDEM has reviewed the closure/post-closure plan for Duke Gallagher Generating Station Primary Pond. On February 15, 2019 (VFC #82698641), we received your response to our December 17, 2018, Request for Additional Information (VFC #82664063). Additional information and/or changes are needed before we can continue our review. Representatives of Duke Energy and IDEM also met to discuss the proposed closure activities at the facility on July 23, 2019.

Duke Energy has not demonstrated the proposed closure that would leave CCR in place for the Primary Pond controls, minimizes, or eliminates, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere (40 CFR 257.102(d)(1)(i)). Submitted documentation for the proposed closure of Primary Pond indicates CCR is either in contact or potential contact with ground water, therefore, providing a continuing source for releases of contaminants into the ground water. For purposes of this requirement, it is IDEM's position that "infiltration" can come from any direction, and it is not limited to liquids that pass through the final cover system. Specifically, it is IDEM's position that CCR placed at or below the water table constitutes "post-closure infiltration of liquids into the waste." Further, it is IDEM's position the phrase "releases of CCR, leachate, or contaminated run-off to the ground or surface waters" includes releases to the ground water.

In submitting your response to this additional information request in support of your closure method, please modify your current proposal to provide information on how the closure for Primary Pond will control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.

Also, please update the closure and post-closure cost estimate in the document dated February 15, 2019 (VFC #82698641 pp. 151-156 of 157), to reflect the expected expenses of any additional measures taken during closure to control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration and potential releases from CCR to the ground water.

Please provide three copies of your response. At least two copies should be on paper printed double sided. If possible, please submit one copy in Acrobat PDF format, either on a CD or DVD with the printed copy, or by e-mail to AMishel@idem.IN.gov. Please note any e-mail and its attachment(s) must total less than 20 MB in size. The date we receive the paper copies will be the receipt date for your response.

Enclosed is a signature and certification statement which must be submitted with each copy of your response; you may submit one signed original and three copies of this statement. One copy can be included as part of the PDF version.

Please mail paper copies and CDs/DVDs to:

Anna Mishel, Permit Manager
Indiana Department of Environmental Management
Solid Waste Permits
IGCN 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

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If you have any questions, please contact Anna Mishel, the Permit Manager assigned this facility, by dialing (317) 233-6725 or by email at AMishel@idem.IN.gov.

Sincerely,

A handwritten signature in black ink, reading "Rebecca Eifert Joniskan". The signature is written in a cursive style with a large, stylized "R" and "J".

Rebecca Eifert Joniskan, Chief
Permits Branch
Office of Land Quality

Enclosures: Certification Statement

Solid Waste Land Disposal Facilities
Signatures and Certification Statements for Requested Additional Information

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APPLICANT'S SIGNATURE

DATE

APPLICANT'S NAME TYPED

Note: It is not necessary to submit this form if an equivalent signed certification statement is incorporated into your submittal.

ATTACHMENT DAS-5



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

September 19, 2019

VIA CERTIFIED MAIL 7017 2400 0000 0752 0357
Duke Energy Indiana, LLC
Attn: Owen R. Schwartz
1000 East Main Street
Plainfield, Indiana 46168

Dear Mr. Schwartz:

Re: Request for Additional Information
Ash Pond B Closure/Post-Closure Plan
Wabash River Generating Station
Vigo County
SW Program ID 84-UP-09

Pursuant to 329 IAC 10-9-1(c), IDEM has reviewed the closure/post-closure plan for Wabash River Generating Station Ash Pond B. On February 15, 2019 (VFC #82698643), we received your response to our December 17, 2018 Request for Additional Information (VFC #82664516). Additional information and/or changes are needed before we can continue our review. Representatives of Duke Energy and IDEM also met to discuss the proposed closure activities at the facility on July 23, 2019.

Duke Energy has not demonstrated the proposed closure approach of leaving CCR in place for the Ash Pond B controls, minimizes or eliminates, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere (40 CFR 257.102(d)(1)(i)). Submitted documentation for the proposed closure of Ash Pond B indicates CCR either in contact or potential contact with ground water, therefore, providing a continuing source for releases of contaminants into the ground water. For purposes of this requirement, it is IDEM's position that "infiltration" can come from any direction, and it is not limited to liquids that pass through the final cover system. Specifically, it is IDEM's position that CCR placed at or below the water table constitutes "post-closure infiltration of liquids into the waste." Further, it is IDEM's position the phrase "releases of CCR, leachate, or contaminated run-off to the ground or surface waters" includes releases to the ground water.

In submitting your response to this additional information request in support of your closure method, please modify your current proposal to provide information on how the closure for Ash Pond B will control, minimize, or eliminate, to the maximum extent

feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere.

Also, please update the closure and post-closure cost estimate in the document dated February 15, 2019 (VFC #82698643), to reflect the expected expenses of any additional measures taken during closure to control, minimize, or eliminate, to the maximum extent feasible, post-closure infiltration and potential releases from CCR to the ground water.

Please provide four copies of your response. At least three copies should be on paper printed double sided. If possible, please submit one copy in Acrobat PDF format, either on a CD or DVD with the printed copy, or by e-mail to Anna Mishel at amishel@idem.IN.gov. Please note any e-mail and its attachment(s) must total less than 20 MB in size. The date we receive the paper copies will be the receipt date for your response.

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Please mail paper copies and CDs/DVDs to:

Anna Mishel, Permit Manager
Indiana Department of Environmental Management
Solid Waste Permits
IGCN 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

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If you have any questions, please contact Anna Mishel, the Permit Manager assigned this facility, by dialing (317) 233-6725 or by e-mail at AMishel@idem.IN.gov.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Eifert Joniskan". The signature is written in a cursive style with a large, stylized 'R' and 'J'.

Rebecca Eifert Joniskan, Chief
Permits Branch
Office of Land Quality

Enclosures: Certification Statement

Solid Waste Land Disposal Facilities
Signatures and Certification Statements for Requested Additional Information

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APPLICANT'S SIGNATURE

DATE

APPLICANT'S NAME TYPED

Note: It is not necessary to submit this form if an equivalent signed certification statement is incorporated into your submittal.

ATTACHMENT DAS-6

August 12, 2019

Ms. Anna Mishel
Environmental Manager
Solid Waste Permits Section
Office of Land Quality IDEM
100 North Senate Avenue IGCN 1154
Indianapolis, IN 46204

Re: Notification of Coal Ash Excavation
North Settling Basin 26-UP-13
Gibson Generating Station
Gibson County, Indiana

RECEIVED

SEP 19 2019

DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

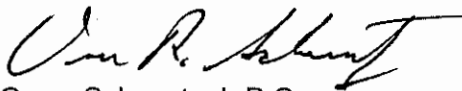
Dear Ms. Mishel:

This letter is submitted to the Indiana Department of Environmental Management (IDEM) by Duke Energy Indiana, LLC to serve as notification of the start of coal ash excavation at the North Settling Basin at Gibson Station located in Gibson County, Indiana. Excavated coal ash will be disposed in the onsite Gibson South Landfill. This work is being initiated in anticipation of approval of the closure plan previously submitted to IDEM.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information. Please contact Owen Schwartz of Duke Energy Indiana (317-838-6027) if you have any questions regarding the proposed construction.

Sincerely,

Duke Energy Indiana



Owen Schwartz, L.P.G.
Lead Environmental Specialist
EHS CCP Waste & Groundwater Programs

ATTACHMENT DAS-7

August 20, 2019

Ms. Anna Mishel
Environmental Manager
Solid Waste Permits Section
Office of Land Quality IDEM
100 North Senate Avenue IGCN 1154
Indianapolis, IN 46204

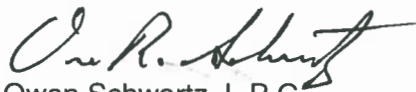
Re: Notification of Structural Fill Placement
Lined Ash Disposal Area
Cayuga Generating Station
Vermillion County, Indiana

Dear Ms. Mishel:

This letter is submitted to the Indiana Department of Environmental Management (IDEM) by Duke Energy Indiana, LLC to serve as notification of the start of structural fill placement at the Lined Ash Disposal Area at Cayuga Station located in Vermillion County, Indiana. Duke Energy plans to begin placing Coal Combustion Residuals (CCR) as structural fill in the Lined Ash Disposal Area in accordance with the Proposed Modification to Existing Closure and Post-Closure Plan dated December 21, 2016. This work is being initiated in anticipation of approval of the modification.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information. Please contact Owen Schwartz of Duke Energy Indiana (317-838-6027) if you have any questions regarding the proposed construction.

Sincerely,
Duke Energy Indiana



Owen Schwartz, L.P.G.
Lead Environmental Specialist
EHS CCP Waste & Groundwater Programs