STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

APPLICATION OF INDIANAPOLIS POWER & LIGHT COMPANY D/B/A AES INDIANA FOR APPROVAL OF A FUEL COST FACTOR FOR ELECTRIC SERVICE DURING THE BILLING MONTHS OF DECEMBER 2021 THROUGH FEBRUARY 2022, IN ACCORDANCE WITH THE PROVISIONS OF I.C. 8-1-2-42, AND CONTINUED USE OF RATEMAKING TREATMENT FOR COSTS OF WIND POWER PURCHASES PURSUANT TO CAUSE NOS. 43485 AND 43740, AND APPROVAL OF A FUEL HEDGING PLAN AND AUTHORITY TO RECOVER COSTS OF THE FUEL HEDGING PLAN PURSUANT TO I.C. 8-1-2-42.

CAUSE NO. 38703
FAC-133

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC'S EXHIBIT NO. 2

TESTIMONY OF OUCC WITNESS
MICHAEL D. ECKERT

October 22, 2021

Respectfully submitted,

Lorraine Hitz

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TESTIMONY OF OUCC WITNESS MICHAEL D. ECKERT
CAUSE NO. 38703 FAC-133
INDIANAPOLIS POWER & LIGHT COMPANY D/B/A AES INDIANA

I. INTRODUCTION

Q: Please state your name, business address, and employment capacity.

A: My name is Michael D. Eckert, and my business address is 115 W. Washington St., Suite 1500 South, Indianapolis, Indiana 46204. I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as Assistant Director of the Electric Division. My qualifications are set forth in Appendix A of this document.

Q: Have you previously testified before the Indiana Utility Regulatory Commission ("Commission")?

A: Yes.

Q: What is the purpose of your testimony in this cause?

A: I discuss the following aspects of Indianapolis Power & Light Company's d/b/a AES Indiana's ("AES Indiana") application: 1) purchased power benchmark agreement approved in Cause No. 43414; 2) Ancillary Services Market ("ASM"); 3) bill analysis; 4) steam generation cost comparison; 5) actual cost of fuel (Mills/kWh) comparison; 6) coal contract analysis; 7) coal inventory; 8) Lakefield Wind Park ("Lakefield") and Hoosier Wind Power Project LLC ("Hoosier"); 9) coal price decrement; 10) unit commitment status; 11) hedging program; 12) the

Eagle Valley Outage; 13) Root Cause Analysis ("RCA"); and 14) sub-docket request. Ultimately, the OUCC recommends the Commission:

1. require AES Indiana to update the Commission in its next FAC filing on its current coal inventory situation;
2. approve, interim subject to refund, the OUCC's proposed fuel cost factors as calculated and proposed by OUCC witness Gregory T. Guerrettaz; and
3. create a sub-docket to investigate issues surrounding the Eagle Valley outage.

Q: Please describe the review and analysis you conducted in order to prepare your testimony.

A: I read AES Indiana's prefiled testimony and prefiled application in this proceeding, its revised schedules, workpapers, and relevant Commission Orders. I also reviewed AES Indiana's responses to OUCC data requests ("DR") and pertinent sections of Title 8 of the Indiana Code and Title 170 of the Indiana Administrative Code. The OUCC performed its field audit via conference call and Microsoft Teams on Friday, October 15, 2021. I attended the Commission's Technical Conference regarding Eagle Valley on Thursday, October 21, 2021 and participated in meetings with other OUCC staff members and AES Indiana personnel in developing issues identified in this Cause.

II. EAGLE VALLEY COMBINED-CYCLE GAS TURBINE ("CCGT") OUTAGE

Q: Please explain the Eagle Valley CCGT outage.

A: On April 24, 2021, the Eagle Valley CCGT was returning from a two-week scheduled maintenance outage and experienced issues during start-up. AES Indiana determined there was a ground fault in the steam turbine generator field which

damaged the generator's rotor and copper bars. Therefore, the maintenance outage was extended into a forced outage; AES Indiana expects the plant to return to service by November 7, 2021.[1] AES Indiana hired Reliability Center Incorporated to perform a Root Cause Analysis ("RCA"), which was completed on August 20, 2021 and was filed in this proceeding as Attachment JB-1 to the Direct Testimony of John Bigalbal on September 17, 2021.

Q: What AES Indiana FAC filings does/will the Eagle Valley CCGT outage impact?

A: The outage impacted or will impact portions of FAC 132, 133, 134, and 135.

Q: Did the OUCC review Petitioner's response to DR No. 3 in Cause No. 38703 FAC-132 which were pending at the time of the OUCC's testimony filing?

A: Yes. The OUCC reviewed IPL's data request response to DR No. 3.

Q: Did the OUCC inquire about insurance claims and proceeds, settlement discussions, manufacturer's warranties, and engineering, procurement, and construction ("EPC") contractor warranties and whether warranties and insurance applied to replacement power in Cause No. 38703 FAC-132?

A: Yes. IPL responded to OUCC Data Request Set 3-2:

> As the items in this request relate to the RCA and outage work currently underway, it is premature to provide and discuss the information that could be part of the RCA.
>
> AES Indiana will be in a better position to provide the requested data as the RCA is complete and appropriate actions are taken in response to the outage. As discussed in testimony (Jackson at p 32), AES Indiana has committed to providing more information and an update on the outage in the next FAC. AES Indiana will discuss and work with the OUCC to present the requested and relevant information before AES Indiana's next FAC proceeding[2].

Q: Did the OUCC inquire about insurance claims and proceeds, settlement discussions, manufacturer's warranties, and engineering, procurement, and construction ("EPC") contractor warranties and whether warranties and

[1] See AES Indiana's Witness John Bigalbal's testimony, pp. 8.
[2] See Attachment MDE-5

insurance applied to replacement power in this proceeding?

A: Yes. IPL provided information on these issues in its responses to OUCC Data Request 2, Questions 10[3].

Q: Has AES Indiana submitted any insurance claims in connection with the Eagle Valley outage and received any payments received in association with the Eagle Valley outage?

A: No. IPL stated in its response to OUCC Data Request Set Number 2, Question 10(c):

> Since the claim is still active, AES Indiana has not requested any payments, and thus no payments have been made or are pending. Payments will occur once the unit is back in service and when it is known that there are no repair costs for Eagle Valley. Recovery will be for the costs incurred in repairing the property damage in excess of the deductible.

Q: Has AES Indiana begun pursuing any warranty claims against the EPC contractor related to the Eagle Valley Outage,?

A: No. IPL stated in its response to OUCC Data Request Set Number 2, Question 10(h) that "[w]arranty claims are still being evaluated."

Q: Did the OUCC ask about the status of any settlement or settlement discussions with the EPC Contractor?

A: Yes. IPL stated in response to OUCC DR 3-10(i) that "[t]here have been no settlement discussions. AES Indiana is focusing on the necessary work to repair the facility safely, expeditiously, and efficiently."

Q: Did the OUCC request 1) copies of the Manufacturer warranty; 2) information about any warranty claims AES Indiana is pursuing against the manufacturer related to the Eagle Valley Outage; and 3) status of settlement or settlement discussions with the Manufacturer?

A: Yes. IPL stated in response to OUCC DR 3-10(j, k, & l):

> N/A. AES Indiana makes warranty claims to the EPC contractor because warranties to AES Indiana are the responsibility of the EPC

[3] See Attachment MDE-6.

> Contractor per the EPC Contract (OUCC DR 2-10f Confidential Attachment 1) and the Novation and Release Agreement between IPL and the EPC Contractor dated June 12, 2014, a copy of which is included herewith as OUCC DR 2-10j Confidential Attachment 1.

Q: Is AES Indiana seeking an insurance claim for replacement power?

A: No. IPL stated in response to OUCC DR 3-10(m):

> Consequential damages are specifically excluded from the EPC Contract. See Section 16.3 of the contract provided as OUCC DR 2-10f Confidential Attachment 1. This provision is not unusual. In negotiating an EPC contract the EPC contractor accepted substantial risk including cost and schedule risk. As a general matter, a contractor would not reasonably be expected to accept liability for consequential losses such as replacement power costs because acceptance of such liability would expose the contractor to risk that outweighs the benefit of the job.

Q: Has the OUCC had time to thoroughly review Petitioner's response to DR No. 2, the Root Cause Analysis, and the information provided in the Commission's October 21, 2021 Technical Conference?

A: No.

Q: Has AES Indiana concluded its analysis of the Eagle Valley outage?

A: No. In the October 21, 2021 technical conference, AES Indiana indicated they still need to have discussion with different parties in this proceeding, including discussions with Toshiba about system logic functions. Additionally, slides 15-16[4] of the presentation that AES Indiana gave to the Commission identify five action

[4] See Attachment MDE-7.

items and 4 recommendations. Only three of these nine items were fully completed as of the date of the Technical conference.

Q: What did the Root Cause Analysis determine?

A: According to AES Indiana Witness Bigalbal, "[t]he root cause investigation determined that the incident was caused by several different factors including physical, human, and latent."[5] Witness Bigalbal identifies these factors later in his testimony at pages 11-12.

Q: Did AES Indiana provide information regarding the cost of the outages?

A: Yes. Mr. Bigalbal's revised direct testimony stated that, "[r]epair costs are estimated to be approximately $3,683,824 in Operation & Maintenance and $3,648,900 in Capital Expenditures. These costs are not recoverable through the FAC process and therefore are not part of this FAC application."[6] In addition, IPL witness David Jackson testified, "[t]he portion of purchased power above the benchmark that could be attributable to the Eagle valley outage was $1,108,510 (see workpaper DJ-3)."[7]

Q: Did AES Indiana Witness Bigalbal ask the Commission to conclude that AES Indiana did not act imprudently?

A: Yes.

Q: Does the OUCC oppose this request?

A: Yes. The OUCC believes it is too early to make a finding at this time. AES Indiana has not had discussions with the EPC Contractor and manufacturer and has not submitted any claims to the insurance company. In the technical conference, AES

[5] Cause No. 38703 FAC 133, Verified Direct Testimony of John Bigalbal, p. 10, ll. 12-13.
[6] Cause No. 38703 FAC 133, Verified Direct Testimony of John Bigalbal, page 14, lines ll. 12-13.
[7] Cause No. 38703 FAC 133, Verified Direct Testimony of David Jackson, page 32, lines 3-9.

Indiana's presenters emphasized that AES Indiana has been focused on getting Eagle Valley up and running and not dealing with warranty and insurance claims.

Q: What is the OUCC's recommendation regarding the Eagle Valley outage?

A: The OUCC recommends the Commission create a sub-docket to allow more detailed examination of costs and issues associated with the Eagle Valley outage. Additionally, the OUCC recommends the Commission make the rates in this Cause interim subject to refund, to reflect any cost recovery changes resulting from the outcome of further analysis on the Eagle Valley outage and the RCA.

III. PURCHASED POWER OVER THE BENCHMARK

Q: Is the purchased power over the benchmark treatment controlled by the Commission's Cause No. 43414 Order?

A: Yes. On April 23, 2008, the Commission issued its Cause No. 43414 Final Order approving a joint Settlement Agreement and ordering AES Indiana and Vectren South to file testimony in each FAC regarding any purchased power, including the volume, cost, and reasons for purchases. The Settlement Agreement provides a mechanism by which AES Indiana may recover purchased power costs that exceed the benchmark. After reviewing the Cause No. 43414 Settlement Agreement and AES Indiana's testimony and workpapers in the current proceeding, it is my opinion

AES Indiana followed the guidelines and procedures that were established in Cause No. 43414.

Q: Did you review AES Indiana's workpapers to determine if AES Indiana calculated its purchased power costs that exceed the benchmark correctly?

A: Yes. I also reviewed AES Indiana's daily plant logs for the generating stations that were off-line on the days AES Indiana incurred purchased power over the benchmark.

Q: How does your calculation of purchased power over the benchmark compare to AES Indiana's calculation?

A: I calculated the same amount of purchased power cost in excess of the benchmark as AES Indiana, following the procedures established in Cause No. 43414. AES Indiana's purchased power cost that exceeded the benchmark of $1,198,183 is recoverable.[8]

Q: Were actual natural gas and purchased power prices higher than the forecast for this historical FAC period?

A: Yes.

Q: Does the OUCC have concerns that IPL met all the requirements of the Purchased Power Over The Benchmark Order in Cause No. 43414?

A: Yes. While I have determined that IPL performed the calculation of the purchased power over the benchmark correctly, the OUCC is concerned that IPL did not determine if the Eagle Valley outage (as discussed above) was a result of "imprudence, malfeasance, nonfeasance, or other inappropriate acts." Specifically,

[8] See AES Indiana's Exhibit DJ-2, Column labeled "Amount Above Daily Benchmark."

the Settlement in Cause No. 43414 that established the over-the-benchmark methodology in Section I(c)(3) states:

> 3. After application of section (c)(1), if the sum of unplanned full forced outages, qualifying environmental derates, partial outages, and qualifying scheduled maintenance outages total 11 % or more of the utility's seasonal generating fleet capacity, this condition is considered as a special condition whereby purchases made to account for such outages which exceed the benchmark shall be recovered. In addition, any power purchases made to account for environmental derates are recoverable.
>
> To quantify this, determine the total MW of unplanned full forced outages, qualifying environmental derates, partial outages, and qualifying scheduled maintenance outages for each generating unit in the particular hour.
>
> a. *An unplanned full forced outage is defined as a complete outage due to mechanical or electrical equipment failure, which is not the result of imprudence, malfeasance, nonfeasance, or other inappropriate acts.*[9] *[emphasis added]*

[9] *Joint Petition of Indianapolis Power & Light,* Cause No. 43414, Final Order, Exhibit 1, Exhibit A, pp. 1 - 2 (Ind. Util. Regul. Comm'n Apr. 23, 2008).

Q: What does the OUCC recommend?

A: The OUCC recommends that final resolution of the recoverability of the $1,198,183 in purchased power over the benchmark be deferred to the sub-docket proceeding being recommended by the OUCC.

IV. ASM

Q: Is AES Indiana's calculation of ASM charges consistent with the Commission's Cause No. 43426 Order?

A: Yes. AES Indiana's proposed ratemaking treatment for the ASM charge types is consistent with the Commission's approved ratemaking treatment in its Cause No. 43426 Phase II Order, dated June 30, 2009.

V. BILL ANALYSIS

Q: Have you calculated the bill impact on a typical residential customer's bill using 1,000 kWhs at AES Indiana's proposed rate and compared that to the same typical customer's bill using the currently approved rate?

A: Yes, I did, and I arrived at the same numbers as AES Indiana witness Natalie Herr Coklow, using AES Indiana's original forecast. An average residential customer using 1,000 kWh will experience an increase of $5.39 or 4.66%.

Q: Have you calculated the bill impact on a typical residential customer's bill using 500, 1,000, 1,500, and 2,000 kWhs using AES Indiana's proposed rate of $0.005350 and then compared it to the same typical customer's bill using the currently approved rate?

A: Yes, I did, as reflected in the table below. Table 1 below demonstrates the comparison using the AES Indiana's proposed rate.

Table 1 – Petitioner's Proposed FAC

Consumption	Bill at Proposed FAC	Bill at Current FAC	Dollar Inc/(Dec)	% Increase/ (Decrease)
500	$72.90	$70.21	$2.69	3.84%
1,000	$120.95	$115.57	$5.39	4.66%

1,500	$169.00	$160.93	$8.08	5.02%
2,000	$217.06	$206.28	$10.77	5.22%

Q: What assumptions did you make in this calculation?

A: In making this calculation, I did not include any dollar amount for other trackers, nor did I include taxes. Therefore, this calculation reflects the proposed change to the FAC factor and AES Indiana's base rates.

Q: Have you provided a calculation of a typical customer's bill using 1,000 kWh as of October 2021?

A: Yes. See Attachment MDE-4. A typical residential customer using 1,000 kWh as of October 2021 will pay $123.00, excluding taxes. This amount consists of $115.60 in base charges that were set in AES Indiana's last rate case (Cause No. 45029), ($0.04) in FAC charges, and $7.44 in non-FAC tracker charges (DSM, ECR, Capacity, OSS, & RTO).

Q: Why do the FAC charges register as a credit of ($0.04) in the answer above, when your chart above shows an increase to 1,000 kw/month customers of $5.39?

A: The October 2021 bill uses an FAC factor of $(0.000036), which was authorized in Cause No. 38703 FAC-132 for the billing months of September 2021, October 2021, and November 2021. The table above calculates the increase in a customer's bill from the current authorized FAC (132) factor of $(0.000036) to the proposed

FAC factor of $0.005350 in this proceeding (133). Therefore, a customer using 1,000 kWh will see an increase of $5.39.[10]

VI. STEAM GENERATION COST COMPARISON

Q: Did you do a comparison of steam generation costs for Indiana's five electric investor-owned utilities ("IOUs")?

A: Yes, I did. AES Indiana's steam generation costs are comparable to the other Indiana electric IOUs (See Attachment MDE-1).

VII. ACTUAL COST OF FUEL (MILLS/KWH) COMPARISON

Q: Did you do a comparison of the actual monthly cost of fuel (Mills/kWh) for the five Indiana electric IOUs?

A: Yes. AES Indiana's actual monthly cost of fuel (including wind and solar) (mills/kWh) is comparable to the other Indiana electric IOUs (see Attachment MDE-2).

VIII. COAL CONTRACTS

Q: Did you prepare a schedule that shows the timelines associated with each of AES Indiana's coal contracts?

A: Yes, I did. The timeline shows contract expiration dates by coal mine (see Attachment MDE-3).

[10]Calculation: $5.35 - $(0.00036) = $5.39 *1,000 kWh = $5.39

IX. LAKEFIELD AND HOOSIER

Q: Did AES Indiana update the Commission on locational marginal prices ("LMPs") at Lakefield and Hoosier wind farms?

A: Yes. AES Indiana witness David Jackson provided testimony on this issue.[11] AES Indiana offers Lakefield and Hoosier into the day-ahead market to mitigate the impact of negative LMPs in real-time.

X. COAL INVENTORY

Q: What is AES Indiana's current coal inventory?

A: AES Indiana's current coal inventory is within AES Indiana's target levels (25-50 days).

Q: Is AES Indiana actively trying to manage its coal purchases and coal inventory?

A: Yes. AES Indiana indicated in discussions with the OUCC that it is actively looking at options[12] to address its coal inventory.

Q: Should AES Indiana update the Commission on its coal inventory?

A: Yes. AES Indiana should also update the Commission in future FAC proceedings on its 2021 projected coal burn and coal purchases.

XI. HEDGING PROPOSAL

Q: Did AES Indiana file the results of its natural gas hedging program?

A: Yes. Mr. Jackson provided the results of its natural gas hedging program. AES Indiana did not transact any financial hedges in May 2021, June 2021, and July 2021.[13] Therefore, AES Indiana did not incur any savings or losses.

Q: Did AES Indiana provide additional information regarding its natural gas

[11] See AES Indiana's Witness Jackson's testimony, pp. 14-16.
[12] *Id.*, pp. 29-30.
[13] See AES Indiana's Witness Jackson's testimony, pp. 37.

hedging program?

A: Yes. AES Indiana provided information in the testimony of Mr. Jackson[14] and during the FAC audit.

Q: Did the OUCC review AES Indiana's revisions to its hedging program?

A: Yes. The OUCC has reviewed IPL's revisions to its natural gas hedging program and does not oppose those revisions.

Q: What does the OUCC recommend regarding AES Indiana's natural gas hedging proposal?

A: The OUCC recommends the Commission require AES Indiana to:

1) Continue to file the results of its natural gas hedging program in each subsequent FAC filing; and

2) Provide analysis of the facts and circumstances as they existed at the time the transactions at issue were entered into in future FAC proceedings.

XII. PURCHASE POWER HEDGING

Q: Did IPL hedge purchased power during this FAC period?

A: Yes. Due to the loss of the generating capacity of the Eagle Valley CCGT, AES Indiana customers were exposed to price risk during the summer when higher temperatures create periods of high-priced peak power. In recognition of the

[14] *Id.*

continued outage, AES Indiana hedged blocks of purchased power to mitigate increased costs.

Q: Is the OUCC opposing the purchased power hedges?

A: No.

XIII. UNIT COMMITMENT STATUS

Q: Does the OUCC review AES Indiana's unit commitment status during its FAC audit?

A: Yes. The OUCC generally reviews AES Indiana's unit commitment status and Mr. Guerrettaz's testimony details some of the analysis done by the OUCC during its FAC audit. In general, the OUCC's FAC audit process has focused more on the cost of fuel and the cost of purchased power.

Q: Did AES Indiana provide an update on the commitment of the Petersburg Generating Station Units ("Petersburg Units")?

A: Yes. Mr. Jackson provided fourteen (14) pages of testimony updating the Commission on the Petersburg Units' status.[15]

Q: What is the status of the Petersburg Units and when were they last called on by MISO to produce power?

A: As of October 15, 2021, the status of the Peterburg Units and the last time MISO called on each of the Petersburg Units is shown below:

Generating Units	Last Date Called on by MISO	Online/Offline	Offer Status
Petersburg Unit 1			Retired
Petersburg Unit 2	September 17, 2021	Offline	Outage
Petersburg Unit 3	October 15, 2021	Online	Economic
Petersburg Unit 4	October 15, 2021	Online	Economic

[15] See AES Indiana's Witness Jackson's testimony, pp. 16-29.

Q: Should AES Indiana continue to update the Commission on AES Indiana's Petersburg Units' commitment status?

A: Yes.

XIV. RECOMMENDATIONS

Q: What does the OUCC recommend in this proceeding?

A: The OUCC recommends the Commission:

1) Approve, interim subject to refund, the proposed fuel cost factor as proposed and calculated by Mr. Guerrettaz;

2) Allow AES Indiana to recover, interim subject to refund, its total purchased power over the benchmark in the amount of $1,198,183;

3) Require AES Indiana to continue to file the results of its natural gas hedging program in each FAC;

4) In future FAC proceedings, require AES Indiana to provide analysis of the facts and circumstances as they existed at the time any hedging transactions were entered into;

5) Require AES Indiana in future FAC proceedings to provide the Commission its revised hedging program (natural gas and purchased power), if revised;

6) Require AES Indiana in future FAC proceedings to update the Commission on its 2021-2022 projected coal burn and coal purchases;

7) Require AES Indiana to update the Commission on the Petersburg Units' commitment status in future FAC proceedings; and

8) Create a sub-docket to allow more detailed examination of costs and issues associated with the Eagle Valley outage.

Q: Does this conclude your testimony?

A: Yes, it does.

APPENDIX A

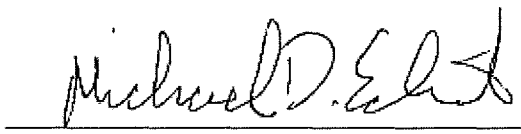
QUALIFICATIONS OF MICHAEL D. ECKERT

Q: Please describe your educational background and experience.

A: I graduated from Purdue University in West Lafayette, Indiana in December 1986, with a Bachelor of Science degree, majoring in Accounting. I am licensed in the State of Indiana as a Certified Public Accountant. Upon graduation, I worked as a Field Auditor with the Audit Bureau of Circulation in Schaumburg, Illinois until October 1987. In December 1987, I accepted a position as a Staff Accountant with the OUCC. In May 1995, I was promoted to Principal Accountant and in December 1997, I was promoted to Assistant Chief Accountant. As part of the OUCC's reorganization, I accepted the position of Assistant Director of its Telecommunications Division in July 1999. From January 2000 through May 2000, I was the Acting Director of the Telecommunications Division. As part of an OUCC reorganization, I accepted a position as a Senior Utility Analyst. In September 2017 I was promoted to Assistant Director of the Electric Division. As part of my continuing education, I have attended the National Association of Regulatory Utility Commissioners' ("NARUC") two-week seminar in Lansing, Michigan. I attended NARUC's Spring 1993 and 1996 seminars on system of accounts. In addition, I attended several CPA sponsored courses and the Institute of Public Utilities Annual Conference in December 1994 and December 2000.

AFFIRMATION

I affirm, under the penalties for perjury, that the foregoing representations are true.



By: Michael D. Eckert
Assistant Director of the Electric Division
Indiana Office of Utility Consumer Counselor

Cause No. 38703 FAC-133
AES Indiana

Date: October 22, 2021

Indianapolis Power & Light Company d/b/a AES Indiana
Cause No. 38703 FAC-133

Steam Generation Cost Comparison

Month	Year	Duke Energy	Indiana Michigan Power	Indianapolis Power & Light	NIPSCO	CenterPoint South	Month	Year	Duke Energy	Indiana Michigan Power	Indianapolis Power & Light	NIPSCO	CenterPoint South
January	2007	**	$17.170	$13.258	$19.628	$20.067	April	2014		26.567	24.278	29.116	28.722
February	2007		16.302	13.658	19.596	20.069	May	2014		28.489	24.487	29.296	26.666
March	2007		17.037	13.241	19.639	19.883	June	2014		27.603	23.021	28.575	27.346
April	2007		17.769	13.688	19.540	20.585	July	2014		26.952	23.416	27.969	26.762
May	2007		18.673	13.579	20.843	20.707	August	2014		27.390	28.445	28.231	25.763
June	2007		16.973	14.096	20.389	20.182	September	2014		21.997	30.773	28.230	26.197
July	2007		17.916	14.094	21.661	20.429	October	2014		25.738	32.170	27.248	26.417
August	2007		19.025	14.530	20.498	20.422	November	2014		26.728	24.532	28.011	25.478
August	2007					20.422	December	2014		25.605	23.527	26.574	26.039
September	2007		20.209	14.002	20.295	19.849							
October	2007		20.572	14.038	20.777	20.904	January	2015		27.191	23.497	25.752	27.287
November	2007		26.158	13.596	20.928	20.652	February	2015		26.269	24.232	25.913	26.293
December	2007		20.936	13.583	21.147	21.612	March	2015		22.549	24.195	25.525	26.750
January	2008		19.527	14.241	20.253	20.948	April	2015		22.438	23.437	24.555	26.463
February	2008		20.362	14.706	22.090	21.970	May	2015		25.270	23.325	25.308	25.994
March	2008		23.903	15.223	22.098	20.854	June	2015		27.006	25.561	26.773	26.904
April	2008		20.990	14.687	22.363	22.476	July	2015		26.312	23.672	26.544	26.387
May	2008		22.972	15.028	22.700	22.579	August	2015		24.397	23.601	27.554	25.480
June	2008		23.708	15.694	22.885	22.903	September	2015		17.891	23.741	26.131	26.280
July	2008		23.512	15.753	22.269	21.947	October	2015		25.405	23.667	26.135	26.346
August	2008		26.033	16.174	22.720	21.701	November	2015		24.520	23.089	29.840	27.464
September	2008		26.369	16.089	22.392	21.398	December	2015		26.001	28.690	22.179	29.998
October	2008		28.047	16.990	20.222	21.922	January	2016		26.382	22.756	29.902	28.590
November	2008		26.882	16.446	21.422	21.192	February	2016		24.782	24.789	29.464	28.292
December	2008		25.630	16.200	22.406	21.476	March	2016		12.691	23.912	29.439	29.261
January	2009		25.582	16.107	25.922	25.786	April	2016		24.150	23.508	29.110	27.242
February	2009		24.000	15.711	28.132	28.839	May	2016		24.981	23.653	28.551	27.164
March	2009		20.815	15.782	26.784	29.188	June	2016		25.364	22.978	25.862	26.213
April	2009		23.918	15.672	26.647	30.698	July	2016		25.592	24.093	26.559	26.252
May	2009		21.705	15.793	26.314	33.507	August	2016		26.126	23.881	25.866	26.767
June	2009		23.730	15.295	26.048	32.740	September	2016		26.854	23.757	26.956	25.976
July	2009		22.364	15.113	26.327	32.846	October	2016		25.295	25.603	27.421	25.344
August	2009		20.489	15.247	25.707	33.152	November	2016		26.251	23.529	27.415	27.014
September	2009		19.544	14.968	25.708	34.242	December	2016		25.324	24.034	26.265	26.114
October	2009		22.783	15.046	25.820	31.128	January	2017		24.234	23.289	26.796	25.785
November	2009		22.076	14.985	26.323	33.328	February	2017		25.272	23.028	26.318	26.177
December	2009		22.543	15.117	27.094	33.067	March	2017		18.832	21.687	27.503	25.618
January	2010		21.322	15.724	27.370	31.800	April	2017		24.427	23.770	28.401	26.435
February	2010		20.569	17.057	26.853	32.762	May	2017		24.615	23.800	29.785	25.270
March	2010		22.576	18.453	25.518	32.732	June	2017		24.941	22.189	28.828	24.834
April	2010		22.109	18.843	26.032	33.361	July	2017		24.333	22.378	27.586	25.042
May	2010		22.244	19.988	25.762	34.854	August	2017		24.583	23.027	26.420	25.339
June	2010		22.853	20.389	27.820	32.529	September	2017		24.531	23.494	25.583	26.558
July	2010		24.191	20.687	32.402	33.720	October	2017		20.555	24.385	24.418	26.092
August	2010		25.663	21.080	26.834	33.480	November	2017		24.661	23.090	27.061	26.360
September	2010		24.650	20.705	26.115	34.401	December	2017		23.847	23.840	25.733	26.961
October	2010		22.395	21.082	26.942	34.857	January	2018		23.180	22.415	26.382	26.764
November	2010		22.491	21.118	26.585	35.410	February	2018		25.057	22.815	28.280	26.907
December	2010		22.659	20.555	28.795	35.591	March	2018		20.209	22.083	26.959	26.656
January	2011		20.956	20.753	27.896	35.043	April	2018		24.048	21.120	27.127	25.571
February	2011		22.068	21.425	28.394	35.582	May	2018		23.933	22.590	24.337	26.095
March	2011		24.766	21.651	29.036	36.068	June	2018		25.669	21.705	24.064	26.096
April	2011		23.263	22.169	29.308	37.562	July	2018		25.526	21.817	25.030	25.669
May	2011		23.302	21.442	28.825	35.813	August	2018		24.755	22.268	27.141	25.227
June	2011		23.935	22.420	29.311	35.859	September	2018		26.052	21.867	26.613	25.425
July	2011		24.189	22.527	29.875	36.551	October	2018		18.367	21.395	26.252	25.825
August	2011		23.782	23.009	29.334	35.493	November	2018		24.338	23.050	25.631	25.805
September	2011		23.088	22.088	27.931	36.721	December	2018		25.841	21.380	24.654	26.225
October	2011		23.970	22.163	27.925	37.020	January	2019		27.252	21.678	26.527	26.319
November	2011		23.311	22.263	26.560	38.509	February	2019		28.353	21.415	27.631	26.192
December	2011		21.902	22.376	26.644	38.877	March	2019		22.088	22.505	25.570	24.653
January	2012		21.278	21.584	26.283	27.727	April	2019		26.536	21.771	24.720	24.620
February	2012		21.571	22.496	24.679	26.060	May	2019		27.450	22.668	24.365	24.981
March	2012		26.117	21.941	24.520	25.741	June	2019		28.017	21.700	24.427	25.731
April	2012		21.401	23.745	24.526	26.097	July	2019		25.638	20.550	24.218	24.456
May	2012		21.419	23.965	25.157	26.037	August	2019		26.093	20.107	23.645	24.936
June	2012		22.167	22.958	26.526	25.572	September	2019		26.601	20.371	23.086	24.475
July	2012		22.455	25.210	27.584	25.854	October	2019		26.979	19.891	24.856	25.012
August	2012		22.751	24.524	27.429	26.735	November	2019		27.029	20.701	24.098	24.902
September	2012		21.266	23.399	26.974	28.336	December	2019		27.624	19.249	23.921	25.989
October	2012		21.222	23.124	26.595	28.630	January	2020		39.156	20.278	24.143	24.714
November	2012		22.161	22.904	25.797	28.008	February	2020		27.154	19.399	25.026	25.625
December	2012		22.868	22.894	25.730	29.143	March	2020		15.799	18.525	25.307	26.131
January	2013		24.306	23.140	28.319	29.340	April	2020		25.067	(0.211)	26.145	27.705
February	2013		25.587	22.911	27.123	28.796	May	2020		27.314	37.614	30.549	26.225
March	2013		25.487	22.800	27.074	28.431	June	2020		27.210	19.931	27.363	25.008
April	2013		24.394	23.318	28.563	29.049	July	2020		27.938	19.821	24.607	24.803
May	2013		26.229	22.910	28.938	28.567	August	2020		27.166	20.531	23.200	25.166
June	2013		26.294	24.314	28.394	28.089	September	2020		28.022	19.618	23.573	25.349
July	2013		25.817	23.734	28.072	28.035	October	2020		0.507	24.045	24.194	25.057
August	2013		25.693	24.479	27.054	28.219	November	2020		28.331	20.884	24.650	25.508
September	2013		23.863	23.218	26.685	28.022	December	2020		#DIV/0!	19.269	27.295	24.803
October	2013		26.216	23.472	26.844	27.719	January	2021		120.491	19.069	26.999	25.073
November	2013		25.848	23.232	27.822	28.231	February	2021		28.541	19.566	28.005	25.814
December	2013		26.081	24.007	27.499	28.142	March	2021		43.462	19.445	26.299	25.180
January	2014		25.529	24.550	29.414	28.097	April	2021		32.723	19.814	26.911	25.023
February	2014		27.393	24.538	32.326	28.048	May	2021		29.301	20.725	26.446	25.550
March	2014		23.107	23.463	31.978	27.154	June	2021			20.845	30.644	

*** Information was obtained from the prefiled applications of the identified companies.

July 2021 20.500

Indianapolis Power & Light Company d/b/a AES Indiana
Cause No. 38703 FAC-133

Actual Cost of Fuel (Mills/kWh) Comparison

Month	Year	Duke Energy	FAC #	Indiana Michigan Power	FAC #	Indianapolis Power & Light	FAC #	NIPSCO	FAC #	CenterPoint South	FAC #	Month	Year	Duke Energy	FAC #	Indiana Michigan Power	FAC #	Indianapolis Power & Light	FAC #	NIPSCO	FAC #	CenterPoint South	FAC #
January	2007	16.974	72	12.337	59	16.730	75	26.497	75	23.256	75	April	2014	31.230	101	16.280	73	34.215	104	33.396	104	29.794	104
February	2007	20.526	72	11.853	59	18.388	76	33.278	75	23.609	75	May	2014	33.277	101	15.244	73	32.795	105	35.651	104	27.875	104
March	2007	16.663	73	11.358	59	18.436	76	26.336	75	25.221	76	June	2014	32.242	102	16.754	74	30.676	105	33.714	104	27.178	105
April	2007	20.748	73	12.022	59	17.626	76	25.958	76	23.806	76	July	2014	32.587	102	16.282	74	30.751	105	29.863	105	26.598	105
May	2007	21.021	73	11.225	59	17.867	77	30.934	76	22.858	76	August	2014	34.960	102	16.243	74	28.445	106	32.375	105	26.957	105
June	2007	17.418	74	11.088	60	15.589	77	32.563	76	18.872	77	September	2014	29.212	103	14.004	74	30.773	106	30.605	105	28.087	106
July	2007	21.455	74	11.943	60	17.772	77	35.423	77	24.456	77	October	2014	32.201	103	19.319	74	32.170	106	32.872	106	28.093	106
August	2007	26.428	74	12.454	60	21.676	78	35.433	77	29.769	77	November	2014	36.849	103	20.385	74	33.967	107	31.478	106	32.155	106
August	2007									28.097	77	December	2014	31.869	104	14.991	75	30.310	107	28.582	106	29.112	107
September	2007	18.147	75	13.895	60	18.446	78	26.007	77	22.298	78												
October	2007	21.620	75	14.564	60	21.142	78	24.308	78	25.574	78	January	2015	30.854	104	17.009	75	32.323	107	27.706	107	29.391	107
November	2007	16.620	75	13.773	60	17.260	79	24.781	78	19.199	78	February	2015	32.468	104	17.573	75	35.110	108	28.799	107	29.554	107
December	2007	18.545	76	11.834	61	17.212	79	40.363	78	23.509	79	March	2015	27.299	105	16.500	75	33.821	108	27.126	107	30.336	108
January	2008	21.946	76	12.156	61	18.146	79	28.307	79	23.349	79	April	2015	28.062	105	20.400	75	31.806	108	26.642	108	30.921	108
February	2008	22.933	76	13.413	61	18.902	80	32.597	79	25.213	79	May	2015	29.738	105	16.035	75	32.544	109	30.997	108	28.615	108
March	2008	29.699	77	14.311	61	19.380	80	33.271	79	27.944	80	June	2015	28.414	106	21.881	76	32.135	109	29.840	108	28.305	109
April	2008	24.034	77	16.399	61	18.572	80	28.639	80	27.651	80	July	2015	27.835	106	21.461	76	29.603	109	30.308	109	27.887	109
May	2008	20.159	77	14.082	61	16.300	81	28.679	80	21.578	80	August	2015	26.964	106	16.383	76	30.582	110	29.217	109	26.355	109
June	2008	20.286	78	15.185	62	23.130	81	33.815	80	32.926	81	September	2015	25.864	107	13.252	76	32.514	110	27.402	109	27.100	10
July	2008	25.296	78	15.569	62	24.171	81	32.511	81	26.389	81	October	2015	24.907	107	16.024	76	33.759	110	29.067	110	29.740	110
August	2008	25.728	78	17.520	62	20.897	82	28.751	81	23.701	81	November	2015	25.149	107	15.709	76	33.194	111	29.507	110	30.239	110
September	2008	24.964	79	16.509	62	20.028	82	28.292	81	22.788	82	December	2015	24.158	108	15.995	77	33.830	111	25.701	110	29.121	111
October	2008	24.546	79	20.783	62	20.981	82	26.998	82	29.726	82	January	2016	26.742	108	16.819	77	31.011	111	28.094	111	29.836	111
November	2008	24.389	79	20.375	62	19.596	83	23.261	82	22.063	82	February	2016	25.444	108	15.968	77	31.384	112	27.173	111	30.855	111
December	2008	23.936	80	18.698	63	19.337	83	25.457	82	21.687	83	March	2016	21.266	109	14.427	77	31.872	112	28.643	111	30.488	112
January	2009	27.448	80	17.482	63	20.815	83	30.202	83	30.813	83	April	2016	26.465	109	20.311	77	34.113	112	29.993	112	29.950	112
February	2009	24.684	80	17.523	63	19.347	84	29.775	83	28.921	83	May	2016	25.192	109	14.354	77	31.826	113	27.882	112	28.771	112
March	2009	24.500	81	15.505	63	18.389	84	27.207	83	31.381	84	June	2016	28.079	110	15.392	78	32.695	113	29.012	112	28.365	113
April	2009	24.759	81	19.811	63	18.739	84	29.287	84	34.001	84	July	2016	27.782	110	18.104	78	33.373	113	29.037	113	26.712	113
May	2009	22.499	81	16.054	63	20.030	85	27.833	84	30.723	84	August	2016	27.651	110	16.533	78	32.393	114	30.725	113	29.685	113
June	2009	27.280	82	16.643	64	18.840	85	29.152	84	31.368	85	September	2016	27.841	111	15.273	78	33.792	114	26.647	113	30.003	114
July	2009	26.289	82	15.337	64	18.466	85	27.687	85	33.710	85	October	2016	29.245	111	20.381	78	36.193	114	29.456	114	27.882	114
August	2009	25.006	82	15.682	64	18.198	86	27.712	85	29.665	85	November	2016	27.750	111	21.278	78	33.237	115	25.671	114	31.210	114
September	2009	22.959	83	14.044	64	18.897	86	26.006	85	32.274	86	December	2016	30.778	112	22.101	79	34.630	115	31.266	114	28.482	115
October	2009	24.637	83	14.412	64	17.674	86	26.106	86	33.582	86	January	2017	26.384	112	15.457	79	32.794	115	28.030	115	28.520	115
November	2009	23.295	83	14.699	64	18.699	87	26.635	86	29.872	86	February	2017	24.410	112	14.317	79	33.628	116	25.559	115	35.215	115
December	2009	19.885	84	16.257	65	18.259	87	30.148	86	33.634	87	March	2017	24.557	113	12.664	79	33.489	116	29.281	115	30.258	116
January	2010	25.965	84	16.738	65	19.873	87	28.790	87	39.151	87	April	2017	25.677	113	13.343	79	35.914	116	27.979	116	30.792	116
February	2010	25.727	84	16.056	65	21.255	88	28.178	87	31.502	87	May	2017	27.259	113	13.208	79	34.165	117	29.776	116	31.200	116
March	2010	24.621	85	18.985	65	22.269	88	26.411	87	33.092	88	June	2017	26.043	114	14.564	80	31.957	117	28.270	116	27.976	117
April	2010	25.886	85	17.165	65	22.762	88	31.716	88	39.423	88	July	2017	25.285	114	14.677	80	30.707	117	30.394	117	26.568	117
May	2010	25.060	85	16.867	65	25.530	89	32.805	88	32.517	88	August	2017	24.613	114	14.294	80	30.919	118	27.890	117	27.277	117
June	2010	26.848	86	17.196	66	25.690	89	31.756	88	35.231	89	September	2017	25.109	115	19.375	80	34.909	118	30.863	117	28.353	118
July	2010	26.317	86	18.178	66	25.909	89	31.162	89	39.798	89	October	2017	25.602	115	17.582	80	35.980	118	26.716	118	29.896	118
August	2010	27.218	86	18.703	66	26.035	90	28.523	89	31.924	89	November	2017	24.787	115	21.173	80	34.357	119	28.242	118	30.349	118
September	2010	24.990	87	19.171	66	24.232	90	24.429	89	35.523	90	December	2017	25.806	116	14.732	81	34.259	119	27.849	118	30.329	119
October	2010	26.407	87	20.662	66	24.893	90	27.117	90	37.109	90	January	2018	31.487	116	15.784	81	40.410	119	28.257	119	28.035	119
November	2010	26.666	87	21.777	66	25.345	91	29.378	90	34.065	90	February	2018	24.675	116	14.173	81	31.217	120	24.417	119	29.460	119
December	2010	27.022	88	19.573	67	25.683	91	29.331	90	38.433	91	March	2018	24.277	117	19.081	81	32.695	120	26.439	119	29.980	120
January	2011	29.136	88	16.798	67	27.062	91	28.619	91	40.315	91	April	2018	26.283	117	21.019	81	32.296	120	28.143	120	30.418	120
February	2011	25.958	88	16.740	67	27.910	92	28.461	91	34.423	91	May	2018	30.197	117	15.780	81	31.038	121	33.338	120	30.170	120
March	2011	29.082	89	17.181	67	26.976	92	30.975	91	36.973	92	June	2018	27.354	118	13.872	82	30.336	121	27.222	120	27.684	121
April	2011	29.339	89	15.747	67	26.946	92	30.774	92	43.978	92	July	2018	26.688	118	13.917	82	29.239	121	29.397	121	27.445	121
May	2011	28.250	89	16.369	67	24.905	93	31.881	92	34.593	92	August	2018	27.940	118	14.113	82	31.372	122	30.370	121	27.448	121
June	2011	27.832	90	17.305	68	29.536	93	31.557	92	36.617	93	September	2018	29.008	119	12.953	82	34.948	122	30.804	121	27.542	122
July	2011	31.451	90	17.568	68	29.255	93	36.835	93	37.800	93	October	2018	26.435	119	10.769	82	32.335	122	30.741	122	29.909	122
August	2011	28.949	90	17.986	68	28.442	94	31.232	93	35.610	93	November	2018	27.691	119	12.686	82	36.504	123	29.687	122	29.551	122
September	2011	28.408	91	18.269	68	27.791	94	27.128	93	35.023	94	December	2018	24.204	120	12.918	83	31.266	123	28.404	122	28.984	123
October	2011	27.558	91	20.142	68	28.766	94	30.278	94	34.156	94	January	2019	30.530	120	14.366	83	31.347	123	29.419	123	29.326	123
November	2011	28.766	91	19.616	68	30.366	95	28.628	94	34.967	94	February	2019	26.123	120	14.762	83	28.457	124	26.500	123	30.169	123
December	2011	26.691	92	17.589	69	28.416	95	29.604	94	35.743	95	March	2019	26.897	121	17.431	83	31.421	124	27.621	123	28.991	124
January	2012	30.394	92	17.181	69	28.597	95	28.343	95	29.573	95	April	2019	25.594	121	19.356	83	34.101	124	25.467	124	28.693	124
February	2012	29.462	92	16.920	69	29.297	96	26.878	95	27.723	95	May	2019	27.571	121	14.822	83	29.268	125	28.110	124	28.448	124
March	2012	28.690	93	19.052	69	29.722	96	27.168	95	27.919	96	June	2019	27.335	122	11.564	84	28.508	125	26.717	124	27.533	125
April	2012	30.379	93	19.120	69	31.524	96	28.242	96	28.661	96	July	2019	28.209	122	14.454	84	26.575	125	28.479	125	25.998	125
May	2012	30.401	93	14.828	69	30.213	97	30.838	96	27.456	96	August	2019	25.731	122	12.032	84	25.729	126	26.392	125	26.539	125
June	2012	30.005	94	16.243	70	29.701	97	29.793	96	26.781	97	September	2019	26.562	123	12.689	84	28.648	126	27.152	125	26.291	126
July	2012	30.599	94	17.145	70	35.113	97	33.010	97	28.243	97	October	2019	24.114	123	19.518	84	29.860	126	26.212	126	28.829	126
August	2012	29.082	94	16.517	70	29.341	98	27.818	97	28.784	97	November	2019	21.544	123	17.722	84	29.860	127	27.676	126	28.011	126
September	2012	29.848	95	15.550	70	27.939	98	25.748	97	28.926	98	December	2019	26.016	124	11.469	85	26.835	127	25.033	126	28.696	127
October	2012	30.726	95	15.928	70	30.855	98	27.643	98	31.975	98	January	2020	26.864	124	10.987	85	25.755	127	24.481	127	26.646	127
November	2012	30.373	95	16.195	70	30.706	99	29.119	98	30.425	98	February	2020	24.757	124	10.919	85	27.088	128	23.630	127	26.672	127
December	2012	34.198	96	16.430	71	29.430	99	28.481	98	31.466	99	March	2020	24.827	125	8.987	85	26.905	128	21.374	127	26.041	128
January	2013	30.711	96	17.914	71	29.732	99	28.891	99	32.678	99	April	2020	23.371	125	11.337	85	26.252	128	21.644	128	26.045	128
February	2013	29.757	96	17.017	71	29.296	100	27.903	99	30.967	99	May	2020	22.540	125	11.961	85	25.556	129	24.053	128	26.714	128
March	2013	32.416	97	17.671	71	28.759	100	29.276	99	31.333	100	June	2020	24.115	126	11.477	86	26.005	129	26.901	128	25.925	129
April	2013	31.695	97	20.385	71	30.248	100	30.441	100	32.686	100	July	2020	26.857	126	11.665	86	23.987	129	27.977	129	25.437	129
May	2013	31.786	97	19.934	71	29.122	101	31.942	100	33.775	100	August	2020	25.449	126	10.864	86	26.124	130	25.991	129	24.932	129
June	2013	33.334	98	17.433	72	29.588	101	32.265	100	29.550	101	September	2020	22.303	127	13.659	86	26.131	130	19.997	129	24.619	130
July	2013	33.399	98	18.668	72	28.960	101	32.283	101	29.274	101	October	2020	23.768	127	13.087	86	29.929	130	28.251	130	26.318	130
August	2013	32.052	98	17.363	72	30.085	102	32.861	101	28.900	101	November	2020	24.622	127	11.624	86	31.287	131	29.694	130	30.687	130
September	2013	31.190	99	15.683	72	30.182	102	27.129	101	27.660	102	December	2020	22.877	128	10.072	87	27.119	131	30.029	130	27.405	131
October	2013	31.548	99	21.742	72	30.331	102	31.098	102	28.817	102	January	2021	27.127	128	10.156	87	26.626	131	27.361	131	27.194	131
November	2013	31.975	99	20.324	72	30.725	103	32.083	102	29.709	102	February	2021	29.441	128	12.965	87	39.622	132	32.801	131	26.828	131
December	2013	32.863	100	18.467	73	33.448	103	32.002	102	28.584	103	March	2021	26.233	129	11.377	87	30.181	132	28.966	131	30.896	132
January	2014	43.923	100	17.821	73	38.669	103	34.595	103	31.372	103	April	2021	28.873	129	14.976	87	32.441	132	31.601	132	30.067	132
February	2014	38.863	100	18.468	73	33.548	104	36.066	103	28.081	103	May	2021	27.837	129	16.225	87	33.832	133	32.142	132	26.700	132
March	2014	35.381	101	14.478	73	31.913	104	37.834	103	34.157	104	June	2021					33.744	133	36.472	132		
												July	2021						133				

Indianapolis Power and Light Company
Cause No. 38703 FAC-133

Coal Contract Timelines

Provider		2021 1 2 3 4 5 6 7 8 9 10 11 12
Sunrise Coal Sales	Oaktown Mine	
Peabody	Somerville/Bear Run Mine	

Indianapolis Power and Light Company
Cause Number 38703 FAC 133

October 2021 Residential Customer Bill using 1,000kWh

Line No.	Description:	kWh	Rate	$	% of Bill
1	Customer Charge			$17.00	13.82%
2	Energy Charge (First 500 KWH per month)	500	$0.106454	53.23	43.27%
3	Energy Charge (Second 500 KWH per month)	500	$0.090752	45.38	36.89%
4	Fuel Charge	1,000	($0.000036)	(0.04)	-0.03%
5	Demand Side Management Adjustment	1,000	$0.004990	4.99	4.06%
6	ECR (NOX)	1,000	$0.000186	0.19	0.15%
7	Capacity Adjustment	1,000	$0.001116	1.12	0.91%
8	Off-System Sales Margin Sharing	1,000	$0.001009	1.01	0.82%
9	Regional Transmission Organization Adjustment	1,000	$0.000135	0.14	0.11%
7	Total Billing Amount (Excluding Taxes)			$123.00	100.00%
8	Base Charge (Lines 1, 2, and 3)			$115.60	93.98%
9	Non-FAC Trackers (Lines 5 & 6)			7.44	6.05%
10	FAC (Line 4)			(0.04)	-0.03%
11	Total			$123.00	100.00%

Note: Per Online tariffs as of October 22, 2021

Data Request OUCC DR 3 - 2

Referring to the Eagle Valley Outage (ground fault in the field of the steam turbine generator) of April 2021, please provide the following information:
a. Detailed results of the initial visual inspection of Eagle Valley after it tripped;
b. All incident reports concerning the Eagle Valley outage;
c. Maintenance Reports and records for the period January 2021 through April 2021;
d. From January 2021 to the date of outage, provide prior issues and incident reports, including photographs, with the generator's rotor and copper bars;
e. Summary of all damage to Eagle Valley that led to and/or was identified post-outage;
f. All measures AES Indiana took and continues to take to mitigate the duration of the Eagle Valley outage;
g. A copy of AES Indiana's inspection and maintenance policies and practices regarding Eagle Valley, including any changes made to such policies and practices since the outage occurred;
h. Identify all insurance policies that cover the damage to Eagle Valley, including the associated deductible(s) and limits of coverage;
i. All insurance adjuster's report(s) associated with the Eagle Valley outage. If no insurance adjuster has been to the site, please explain why not;
j. Identify (i) any insurance claims submitted in connection with the Eagle Valley outage and (ii) any payments received in association with the Eagle Valley outage, including whether additional payments have been requested or are otherwise pending;
k. Copies of all documentation in AES Indiana's possession discussing the contributing causes of the Eagle Valley outage;
l. Copies of AES Indiana's internal and/or external legal analysis regarding the RCA;
m. Copy of the EPC Contractor warranty/warranties, including details regarding all coverage related to the outage;
n. Copy of the contract(s) between EPC Contractor and AES Indiana;
o. Any warranty claims AES Indiana is pursuing against the EPC Contractor related to the Eagle Valley Outage, with descriptions of claims and dollar amounts;
p. Status of settlement or settlement discussions with the EPC Contractor;
q. Details of and copy of the Manufacturer warranty;
r. Any warranty claims AES Indiana is pursuing against the manufacturer related to the Eagle Valley Outage, with descriptions of claims and dollar amounts;
s. Status of settlement or settlement discussions with the Manufacturer;
t. If the company is not seeking a claim for replacement power, please explain why not. If it is seeking a claim for replacement power, please provide the total dollar amount the company is seeking and the calculations and supporting documentation for the amount;
u. Status of the discussions regarding a resolution between AES Indiana and EPC Contractor; and
v. When does the company expect these discussions to conclude or reach resolution?

Objection:
AES Indiana objects to the request on the grounds and to the extent the request is overly broad and unduly burdensome, particularly to the extent the request seeks voluminous documents and documents that have not yet been prepared. AES Indiana objects to the request on the grounds

and to the extent the request seeks information that is confidential, proprietary, competitively sensitive and/or trade secret. AES Indiana further objects to the request (including subparts (k), (l), (p), (s), (t), and (u)) on the grounds and to the extent the request seeks information that was prepared in anticipation of litigation or is otherwise subject to the attorney-client, work product, or other applicable privileges. AES Indiana further objects to the request on the grounds and to the extent the requests seeks an analysis, compilation, study, or calculation that AES Indiana has not performed and to which AES Indiana objects to performing. AES Indiana further objects to the request on the grounds and to the extent the request seeks information that exceeds the scope of this proceeding and is not reasonably calculated to lead to the discovery of relevant or admissible evidence. Subject to and without waiver of the foregoing objections, AES Indiana provides the following response.

Response:
As the items in this request relate to the RCA and outage work currently underway, it is premature to provide and discuss the information that could be part of the RCA.

AES Indiana will be in a better position to provide the requested data as the RCA is complete and appropriate actions are taken in response to the outage. As discussed in testimony (Jackson at p 32), AES Indiana has committed to providing more information and an update on the outage in the next FAC. AES Indiana will discuss and work with the OUCC to present the requested and relevant information before AES Indiana's next FAC proceeding.

Indianapolis Power & Light Company
d/b/a AES Indiana
Cause No. 38703 FAC 133
AES Indiana Responses to OUCC DR Set 2

Data Request OUCC DR 2 - 10

Referring to the Eagle Valley Outage (ground fault in the field of the steam turbine generator) of April 2021, please provide the following information:
a. Identify all insurance policies that cover the damage to Eagle Valley, including the associated deductible(s) and limits of coverage;
b. All insurance adjuster's report(s) associated with the Eagle Valley outage. If no insurance adjuster has been to the site, please explain why not;
c. Identify (i) any insurance claims submitted in connection with the Eagle Valley outage and (ii) any payments received in association with the Eagle Valley outage, including whether additional payments have been requested or are otherwise pending;
d. Copies of all documentation in AES Indiana's possession discussing the contributing causes of the Eagle Valley outage;
e. Copies of AES Indiana's internal and/or external legal analysis regarding the RCA;
f. Copy of the EPC Contractor warranty, including details regarding all coverage related to the outage;
g. Copy of the contract(s) between EPC Contractor and AES Indiana;
h. Any warranty claims AES Indiana is pursuing against the EPC contractor related to the Eagle Valley Outage, with descriptions of claims and dollar amounts;
i. Status of settlement or settlement discussions with the EPC Contractor;
j. Details of and copy of the Manufacturer warranty;
k. Any warranty claims AES Indiana is pursuing against the manufacturer related to the Eagle Valley Outage, with descriptions of claims and dollar amounts;
l. Status of settlement or settlement discussions with the Manufacturer;
m. If the company is not seeking a claim for replacement power, please explain why not. If it is seeking a claim for replacement power, please provide the total dollar amount the company is seeking and the calculations and supporting documentation for the amount;
n. Status of the discussions regarding a resolution between AES Indiana and EPC Contractor;
o. When does the company expect these discussions to conclude or reach resolution

Objection:
AES Indiana objects to the Request on the grounds and to the extent the request seeks information that is confidential, proprietary, competitively-sensitive and/or trade secret. AES Indiana further objects to the request to the extent it is overly broad and unduly burdensome, particularly in its solicitation of "all" information. AES Indiana further objects to the Request, and in particular subparts (n) and (o), on the grounds and to the extent it is vague and ambiguous as to what is meant by "discussions" as opposed to "settlement or settlement discussions" referenced in subpart (i). AES Indiana further objects to the Request on the grounds and to the extent the request solicits information that exceeds the scope of this proceeding and is not reasonably calculated to lead to the discovery of relevant or admissible evidence. Subject to and without waiver of the foregoing objections, AES Indiana provides the following response.

Response:

a. AES Indiana has Property Damage coverage with AIG for the period 01Jan21 – 01Jan22 covering various AES assets across the United States with a $1B limit and $5M property damage deductible for Eagle Valley.
b. An adjuster has been assigned and is handling the claim, reviewing the costs incurred and will report to the Insurers with his settlement recommendation once this review is completed and cause of loss has been determined to be covered by the policy. This is in normal process at this time.
c. Since the claim is still active, AES Indiana has not requested any payments, and thus no payments have been made or are pending. Payments will occur once the unit is back in service and when it is known that there are no repair costs for Eagle Valley. Recovery will be for the costs incurred in repairing the property damage in excess of the deductible.
d. The purpose of the RCA was to determine the most probable cause of the event and factors, that if eliminated, would have the highest probability of preventing a reoccurrence. The causes are memorialized in the RCA. A copy of the RCA was provided as an attachment filed in AES Indiana's case-in-chief in this Cause. Also See OUCC DR 2-10d Confidential Attachment 1 for a copy of an email related to the RCA.
e. Currently there is no formal legal analysis of the RCA.
f. For Contractor Warranties see Sections 9 and 15 of OUCC DR 2-10f Confidential Attachment 1, which AES Indiana provides pursuant to the nondisclosure agreement between AES Indiana and the OUCC.
g. See OUCC 2-10f Confidential Attachment 1.
h. Warranty claims are still being evaluated.
i. There have been no settlement discussions. AES Indiana is focusing on the necessary work to repair the facility safely, expeditiously, and efficiently.
j. N/A. AES Indiana makes warranty claims to the EPC contractor because warranties to AES Indiana are the responsibility of the EPC Contractor per the EPC Contract (OUCC DR 2-10f Confidential Attachment 1) and the Novation and Release Agreement between IPL and the EPC Contractor dated June 12, 2014, a copy of which is included herewith as OUCC DR 2-10j Confidential Attachment 1.
k. N/A; See response to subpart j.
l. N/A; see response to subpart j.
m. Consequential damages are specifically excluded from the EPC Contract. See Section 16.3 of the contract provided as OUCC DR 2-10f Confidential Attachment 1. This provision is not unusual. In negotiating an EPC contract the EPC contractor accepted substantial risk including cost and schedule risk. As a general matter, a contractor would not reasonably be expected to accept liability for consequential losses such as replacement power costs because acceptance of such liability would expose the contractor to risk that outweighs the benefit of the job.
n. See response to subpart (i) above.
o. See response to subpart (i) above.

FILED
October 21, 2021
INDIANA UTILITY
REGULATORY COMMISSION

STATE of INDIANA

INDIANA UTILITY REGULATORY COMMISSION
101 WEST WASHINGTON STREET, SUITE 1500 EAST
INDIANAPOLIS, INDIANA 46204-3419

www.in.gov/iurc
Office: (317) 232-2701
Facsimile: (317) 232-6758

APPLICATION OF INDIANAPOLIS POWER & LIGHT COMPANY D/B/A AES INDIANA FOR APPROVAL OF A FUEL COST FACTOR FOR ELECTRIC SERVICE DURING THE BILLING MONTHS OF DECEMBER 2021 THROUGH FEBRUARY 2022, IN ACCORDANCE WITH THE PROVISIONS OF I.C. 8-1-2-42, AND CONTINUED USE OF RATEMAKING TREATMENT FOR COSTS OF WIND POWER PURCHASES PURSUANT TO CAUSE NOS. 43485 AND 43740, AND APPROVAL OF A FUEL HEDGING PLAN AND AUTHORITY TO RECOVER COSTS OF THE FUEL HEDGING PLAN PURSUANT TO I.C. 8-1-2-42.	)	**CAUSE NO. 38703 FAC 133**

You are hereby notified that on this date the Indiana Utility Regulatory Commission ("Commission") has caused the following entry to be made:

On October 21, 2021, the Commission held a Technical Conference in the above-captioned Cause. The attached Power Point presentation was provided by Indianapolis Power & Light Company d/b/a AES Indiana.

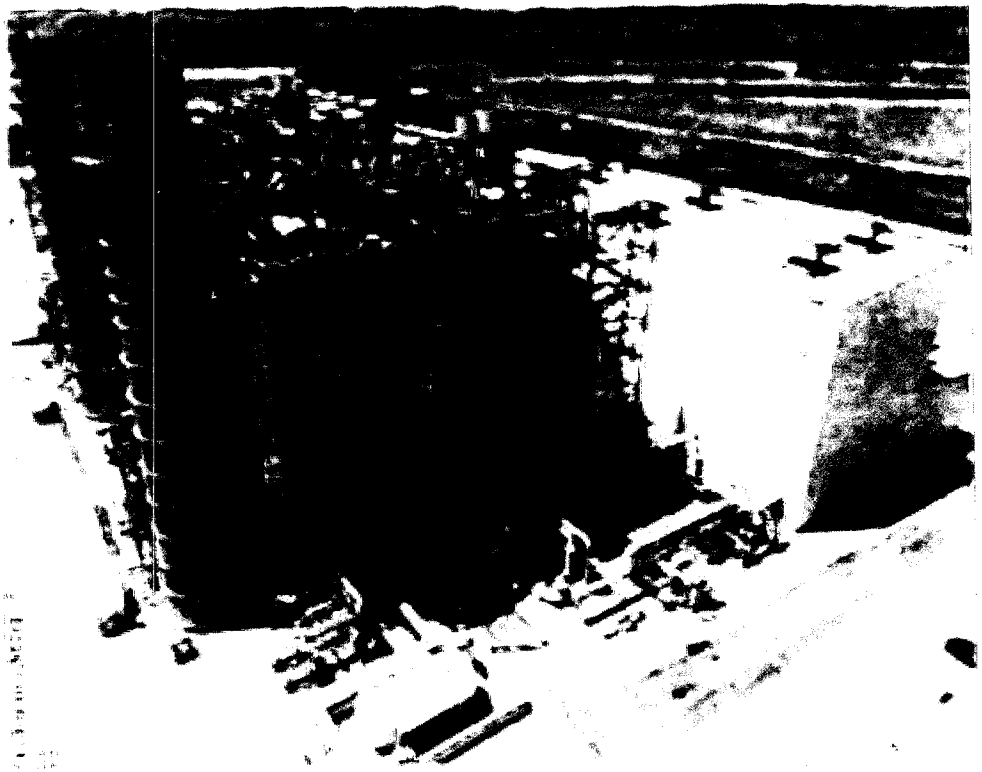
IT IS SO ORDERED.

James F. Huston, Chairman

Stefanie Krevda, Commissioner

Loraine L. Seyfried, Administrative Law Judge

Date: October 21, 2021



Cause No. 38703 FAC133
Technical Conference

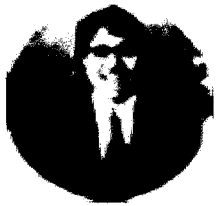
October 21, 2021

aes Indiana

AES Indiana Team

Presenters

Kristina Lund
President, US Utilities



John Bigalbal
Chief Operating Officer,
US Conventional Generation

David Jackson
Director, Commercial Operations

Other Team Members Present

Generation
- John Arose – Generation Complex Leader
- Kevin Cook – Plant Manager, Eagle Valley

Commercial Operations
- Aaron Cooper – Chief Commercial Officer

RCA Facilitator
- H. Holcombe Baird, III, Reliability Center, Inc. – Senior Reliability Consultant

Legal & Regulatory
- Judi Sobecki – General Counsel
- Nick Grimmer – Indiana Regulatory Counsel
- Kim Aliff – Senior Regulatory Analyst
- Teresa Morton Nyhart, Barnes & Thornburg LLP – Counsel

Regulatory Accounting
- Natalie Coklow – Manager, Regulatory Accounting

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Agenda

- → Eagle Valley Overview
- → Outage Management and Status
- → Summary of Incident
- → Root Cause Analysis
- → Action Plan & Recommendations
- → Peak Power Hedges
- → FAC Impacts
- → Discussion & Questions

Eagle Valley Overview

Eagle Valley CCGT

- → 671 MW Combined Cycle Gas Turbine
- → Commenced Commercial Operations on April 28, 2018
- → Portfolio benefits
  - Fast response and flexibility
  - High efficiency
  - Fuel source and technology diversification
  - Lower carbon emissions
- → Solid performance as Baseload Unit
  - Top decile and top quartile annual Equivalent Availability Factors in 2019 and 2020, respectively
  - Heat rate is top decile
  - Eagle Valley CCGT operates as a baseload plant with high capacity factors

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Outage Management and Status

→ Outage Period

- Began April 25, 2021
  - Incident occurred due to failure of unit to synchronize to grid after planned maintenance
  - A rewind of the field and repairs to the rotor are required to restart operations
- Eagle Valley is expected to return to service the second week of November 2021

→ Management Approach

- Objective: Mitigate the cost impact to customers
- Expedite Eagle Valley's return to service
- Identify root cause and take corrective actions for the future
- AES Indiana implemented first power hedging program to reduce price risk to our customers during the outage period

→ FAC Reconciliation Impact

- In total, the hedge reduced fuel and purchased power costs by $1.6M
- Purchased power costs above the benchmark attributable to the Eagle Valley Outage net of the hedge are $247K

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Summary of Incident

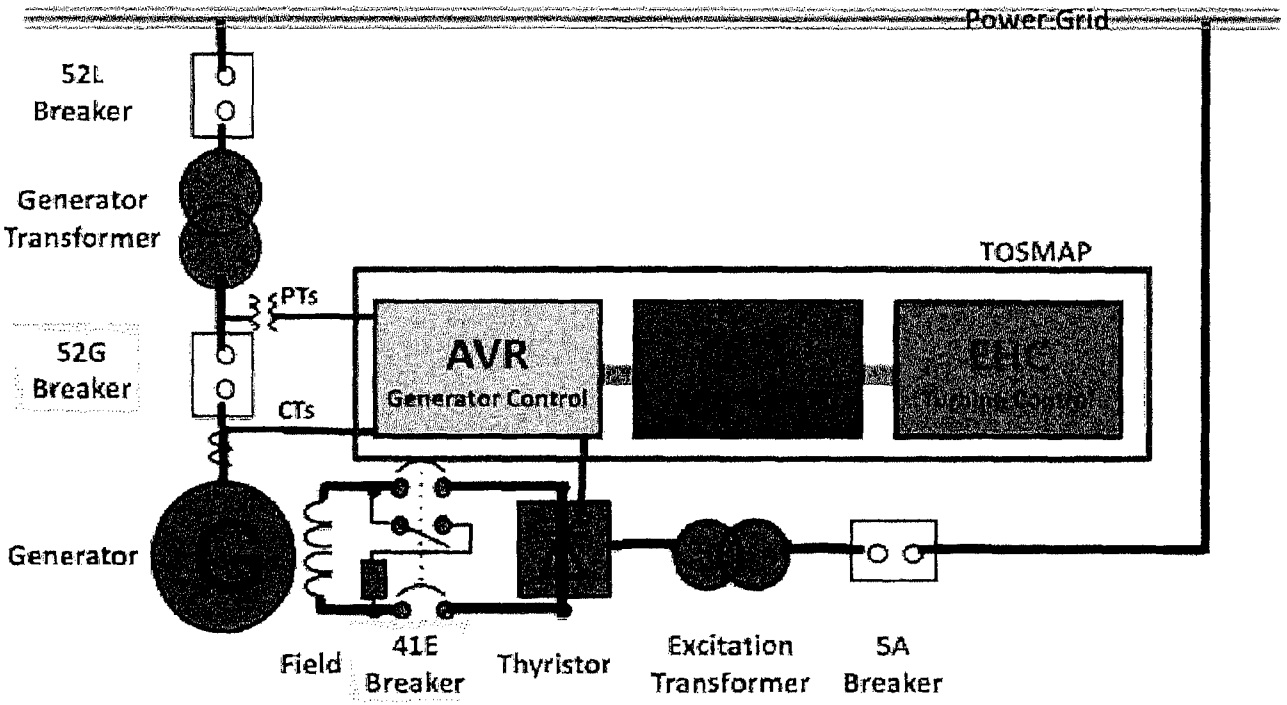

Figure 1, Simplistic diagram of generator protection and control components

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Summary of Incident

- → Eagle Valley completed a planned maintenance outage
- → During restart, the unit was not able to synchronize with the grid due to an issue with the generator breaker (52G)
  - Status mismatch - the generator breaker (52G) was showing closed on one indication and open on another
- → Hours of troubleshooting, with support from Toshiba, led to discovery of a disconnected wire in the generator breaker cabinet
  - Reconnecting the wire based on schematics did not resolve the breaker issue
- → As work proceeded into late night hours, shutdown of the plant was initiated with a plan to resume troubleshooting the next day
- → The generator lockout protective relays (86G) were reset while the field breaker (41E) was closed
- → The next morning, the connection of a jumper wire in the field breaker (41E) cabinet opened the field breaker and resolved the generator breaker (52G) issue
- → A short to ground in the field was identified and an RCA commenced immediately

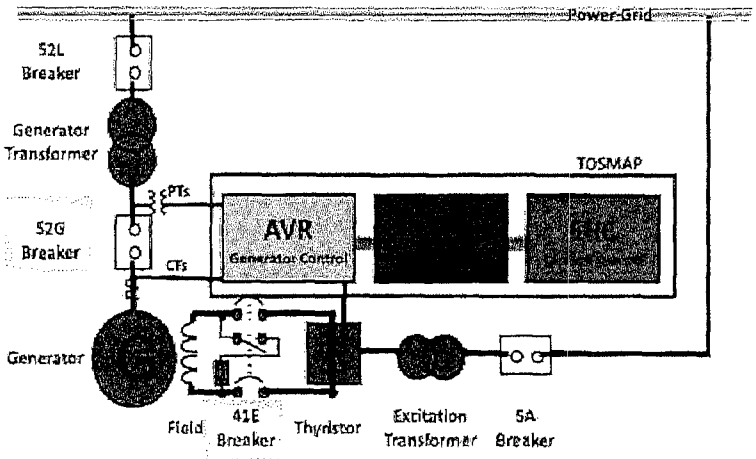

Figure 1. Simplistic diagram of generator protection and control components

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Root Cause Analysis (RCA)

→ RCA is a systematic process to identify all aspects of a system failure or identified problem, documenting what happened, how it happened and most importantly why it happened, so that actions can be developed for preventing reoccurrences

→ The purpose of an RCA is to determine the most probable cause of an event and factors, that if eliminated, would have the highest probability of preventing a reoccurrence

→ While an important tool, an RCA reviews an event after the fact and outside the plant environment – it is a hindsight analysis

→ The RCA process allows us to learn through hindsight analysis how to improve our business on a going forward basis so we can better serve our customers

Root Cause Analysis (RCA)

→ Immediately following incident, AES Indiana mobilized an RCA team

→ Team facilitated by third party – Holcombe Baird – Senior Reliability Consultant, Reliability Center, Inc.

→ RCA is completed and a copy has been provided in this Cause

→ RCA recommended action plan currently being implemented or completed

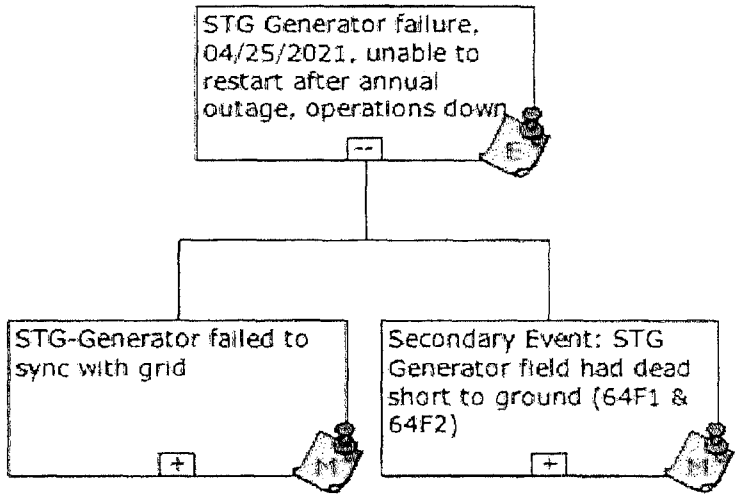
Root Cause Analysis (RCA)

→ Analysis broken down into two separate investigative efforts

1. Why the Steam Turbine Generator (STG) unit failed to synchronize to the power grid
2. What caused the field short to ground

→ The RCA involved:

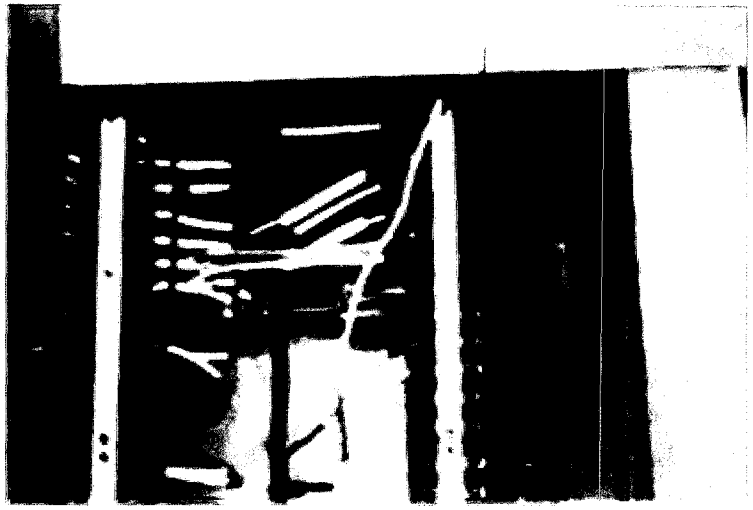
- Review of drawings to determine how the STG protection and controls system functioned during the start-up
- Review of historical data trends
- Interviews with the people that were involved in the event



Root Cause Analysis (RCA) Findings

1 Why the Steam Turbine Generator Failed to Synchronize to the Grid

- → The steam turbine generator could not synchronize because the generator breaker (52G) was falsely indicating closed, but the breaker was actually open
- → The control system thought the generator was online
- → The generator breaker (52G) false indication was caused by a disconnected wire
  - Breaker cabinet is 30 feet off the ground, accessible via a ladder
- → It is undetermined how the wire became disconnected, but the wire was never properly terminated



Disconnected yellow wire in STG 52G Breaker Cabinet (with loose end lifted out of the way)

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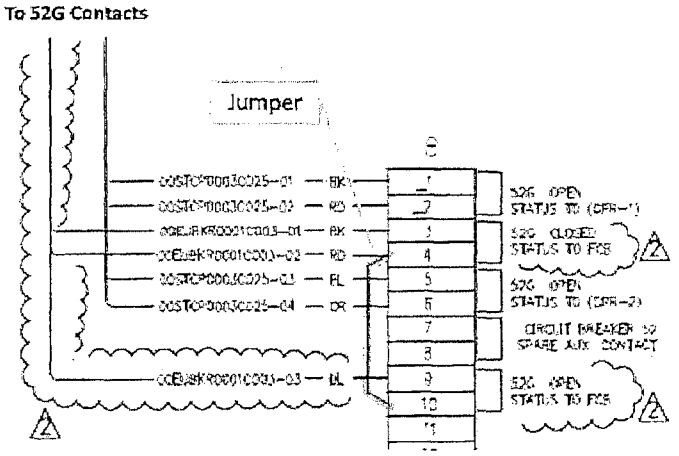
Root Cause Analysis (RCA) Findings

1 Why the Steam Turbine Generator Failed to Synchronize to the Grid (continued)

- → Troubleshooting was on the correct path to resolve the synchronization issue
- → Incorrect as-built drawings led efforts elsewhere rather than confirming the problem
- → RCA confirmed through re-enactment that the disconnected wire caused the synchronization issue and the status mismatch
  - Historical trend data showed the 41E Breaker and 52G Breaker functioned normally prior to the maintenance outage. Therefore, it is reasonable to conclude that the wire was connected when the STG was shut down on April10th.



Wiring connection diagram in 52G Breaker Cabinet.

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Root Cause Analysis (RCA) Findings

2 What Caused the Field Short to Ground

→ The field breaker (41E) should open to protect the generator due to any of 3 conditions:

- #1 TOSMAP signal
- #2 Turbine trip
- #3 86G protective relays

→ Due to the disconnected wire, the field breaker (41E) did not open to protect the generator because:

- #1 TOSMAP did not open the 41E breaker because it thought the generator was online
- #2 Turbine trip and #3 Generator protective relays (86Gs) were activated, but those signals were blocked by a hardwired interlock

→ The 86G protective relays did shutdown the AVR and stop the current to the field

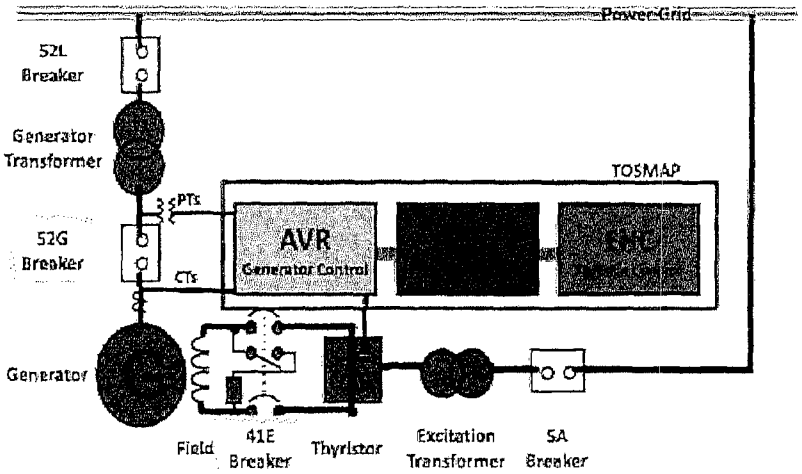

Figure 1. Simplistic diagram of generator protection and control components

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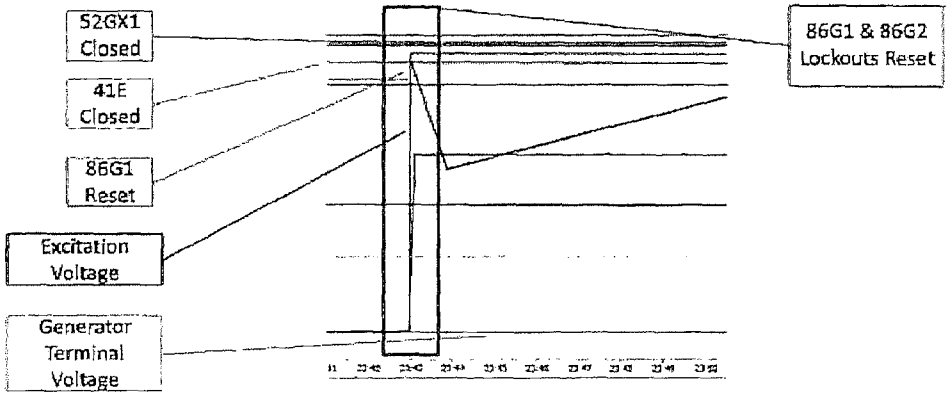
Root Cause Analysis (RCA) Findings

2 What Caused the Field Short to Ground (continued)

- → The generator protective relay (86G) lockouts were manually reset after the shutdown, and the AVR went back into service and sent current to the field
- → The steam turbine was on turning gear which was too slow to provide effective cooling of the field
- → Overheating of the field broke down the insulation causing the short to ground



Trend data when 86G1 and 86G2 Lockout Relays were reset.

Root Cause Analysis (RCA) Action Plan

AES Indiana is proactively implementing the RCA recommendations

Action	Status
Re-terminate the disconnected wire in using OEM standards	Complete
Clean up wiring in the 41E Breaker cabinet	Completed; final inspection is underway
Establish 86 series lockout relay reset Standard Operating Procedure	Complete
Establish operational pre-startup step to confirm agreement in status indicators for the 52G and 41E breakers	Will be completed this week

Recommendations

Recommendation	Status
Conduct an engineering review of the 41E Breaker open signal circuit hardwired interlocks and control system interlocks for effective redundancy as well as compliance with IEEE and EPRI standards	*Third party review has been solicited and work has begun*
OEM review of the incident details to consider installing provisions in the AVR (Automatic Voltage Regulator) logic to detect and alert operators of a discrepancy in the generator (52G Breaker) and field (41E Breaker) breaker status	*Toshiba is reviewing, and AES Indiana is awaiting a response*
Perform an audit of all wiring diagrams for accuracy of generator protection systems and document the findings and develop a plan to correct discrepancies	*Inspection and a redline markup of the drawings is complete CAD drawing update is underway*
Implement a training program for operators and technicians specifically on the design and operation of the generator protection system, including processes for operating breakers and resetting lockout relays	*Completed*

Peak Power Hedges

- → AES Indiana transacted power hedges to safeguard customer price risk over summer months
- → Hedges were modeled to determine appropriate hedge size to reduce net market exposure during June (345 MW), July, and August (365 MW each month)
- → Additional hedges for September and October were transacted using the same methodology once more information about the outage duration became available
- → The June and July peak power hedges realized a gain of $1,590,975 during the historical FAC period, which reduced overall fuel costs
- → Actual fuel costs (natural gas and purchased power) were higher than forecast during the historical FAC period and resulted in cost increases outside of the Eagle Valley outage

FAC Impacts

→ Purchased power costs above the benchmark attributable to the Eagle Valley Outage net of the hedge are $247k

→ In total, the hedge reduced fuel costs by $1.6M (see slide 19)

	Actual	Offset by Hedge	Purchased Power Over the Benchmark Net of Hedge
Total MWh Purchased Over the Benchmark	76,140	21,206	
Total Purchased Power Over the Benchmark	$ 1,198,183	$ 861,342	
Purchased Power Attributable to EV (up to 650MW per hour)	$ 1,108,511	$ 861,342	$ 247,169

aes Indiana

FAC Factor Breakdown

	per MWh		
	FAC 132	FAC 133	Difference
Forecast	$31.86	$34.58	$2.73
Earnings Test	($1.10)	$0.00	$1.10
Current variance 50%	$2.15	$1.86	($0.29)
FAC 132 carryover	$0.00	$1.77	$1.77
	$32.90	$38.21	$5.30
Base cost of fuel	$32.94	$32.94	$0.00
FAC Factor before URT	($0.04)	$5.27	$5.30
FAC Factor grossed up for URT	($0.04)	$5.35	$5.39

Discussion & Questions

Appendix

- → **AVR**: is the abbreviation for Automatic Voltage Regulator which controls the voltage of the generator to match the requirement of the power grid.
- → **Breaker**: Often referred to as a circuit breaker, is an automatic device for stopping the flow of current in an electric circuit as a safety measure to protect an electrical device.
  - 41E Breaker: also called the FCB, Field Circuit Breaker, is a device that functions to apply or interrupt the field excitation to the generator.
  - 52G Breaker: also called the GCB, Generator Circuit breaker, is device that is used to close and interrupt an a-c power circuit between the power gid and the generator under normal conditions or to interrupt this circuit under fault or emergency conditions.
- → **EHC**: Electro-Hydraulic Controller provides the operational control of the steam turbine, including start-up, shutdown, speed regulation and power generation.
- → **Excitation Transformer**: used to ultimately provide power to the field windings.
- → **86G1 and 86G2 Lockouts**: are 86 Series Lockout Relays which function to shut down and hold the STG equipment out of service upon the occurrence of abnormal generator conditions.
- → **OPS**: Operation System which provides the human machine interface for the operators, including the display consoles and data trending functions.
- → **Relay**: an electrical device, typically incorporating an electromagnet, which is activated by a current or signal in one circuit to open or close another circuit.
  - 64F1 and 64F2 Relays: or the Ground Protective Relays, are relays which actuate on failure of the insulation of the generator field, allowing current to short circuit to ground.
- → **Synchronize**: the process of connecting the generator to the power grid. The process requires the parameters of the power produced by the generator match the parameters of the power grid, including voltage, frequency, phase sequence and phase angle.
- → **Thyristor**: a solid-state semiconductor device.

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing ***Indiana Office of Utility Consumer Counselor Public's Exhibit No. 2, Testimony of OUCC Witness Michael D. Eckert*** has been served upon the following parties of record in the captioned proceeding by electronic service on October 22, 2021.

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