

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF INDIANAPOLIS)
POWER & LIGHT COMPANY FOR)
APPROVAL OF IPL'S TDSIC PLAN FOR) CAUSE NO. 45264
ELIGIBLE TRANSMISSION, DISTRIBUTION,)
AND STORAGE SYSTEM IMPROVEMENTS)
PURSUANT TO IND. CODE § 8-1-39-10)

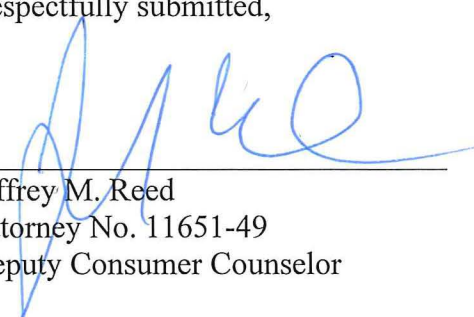
INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC TESTIMONY OF

BRIEN R. KRIEGER – PUBLIC'S EXHIBIT NO. 2

OCTOBER 7, 2019

Respectfully submitted,



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**TESTIMONY OF
OUCC WITNESS BRIEN R. KRIEGER
CAUSE NO. 45264
INDIANAPOLIS POWER & LIGHT COMPANY**

I. INTRODUCTION

1 **Q: Please state your name and business address.**

2 A: My name is Brien R. Krieger and my business address is 115 W. Washington Street,
3 Suite 1500 South, Indianapolis, Indiana 46204.

4 **Q: By whom are you employed and in what capacity?**

5 A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as
6 a utility analyst in the Natural Gas Division. For a summary of my educational and
7 professional experience and general preparation for this case, please see Appendix
8 BRK-1.

9 **Q: What is the purpose of your testimony?**

10 A: My testimony discusses the review and analysis I conducted of Indianapolis Power
11 & Light Company's ("IPL" or "Petitioner") Transmission, Distribution, and
12 Storage System Improvement Charge ("TDSIC") Plan ("TDSIC Plan" or "Plan")
13 and the thirteen Project Categories ("programs"), including projects or subprojects,
14 making up the Project Category.

15 The OUCC is concerned with the \$1.2B cost of the Plan, particularly given
16 IPL's testimony in recent proceedings regarding the overall reliability of its
17 network. Because so many projects rely on Class 4 estimates, with costs that could
18 increase by 50%, the \$1.2B estimated cost could wind up being substantially
19 greater. IPL's inclusion of contingency, despite statutorily-guaranteed recovery of

1 all actual costs found reasonable by the IURC, unnecessarily inflates cost estimates.

2 In some circumstances, proposed TDSIC project costs have not been demonstrated

3 to be separate from amounts already included in base rates.

4 **Q: DOES THE FACT THAT YOU DO NOT ADDRESS EVERY ISSUE RAISED**
5 **IN IPL'S TESTIMONY MEAN THAT YOU AGREE WITH IPL?**

6 A No. It should be not considered agreement with that position, only that I did not
7 address it.

II. OVERVIEW OF IPL'S PLAN

8 **Q: Please provide an overview of IPL's 7-Year TDSIC Plan.**

9 A: IPL proposes 13 programs (Table 1); each program has multiple projects. IPL
10 characterizes eleven programs as Age and Condition programs with the remaining
11 two characterized as Deliverability. All programs, except No. 6 Meter Replacement
12 and No. 11 Steel Tower Life Extension, have estimated costs for each year of the
13 entire seven year Plan starting in year 2020 and ending in year 2026. Program No.
14 6 is planned to end in 2024 and Program No. 11 is planned to end in 2023.

15 The total Plan budget estimate for capital costs is \$1,218,454,910. IPL has
16 determined \$213,710,716 represents transmission projects and \$1,004,744,194 is
17 for distribution projects. Project No. 7 CBD Secondary Network Upgrades (Central
18 Business District) is focused on downtown Indianapolis with the remaining 12
19 projects spread across the IPL system. Petitioner does not specifically identify any
20 economic development projects.¹

¹ IPL witness Shields Testimony, Page 5, Lines 11-13.

1

TABLE 1 - IPL TDSIC PLAN

Program No.	Project Type	7-Year Total
Age & Condition Projects		
1	Circuit Rebuilds	\$298,714,965
2	Substation Assets Replacement	\$248,143,853
3	XLPE Cable Replacement	\$86,238,147
4	4 kV Conversion	\$91,988,229
5	Tap Reliability Improvement Projects	\$76,525,725
6	Meter Replacement	\$55,868,879
7	CBD Secondary Network Upgrades	\$38,969,896
8	Static Wire Performance Improvement	\$62,129,679
9	Remote End - Breaker Relay/Upgrades	\$28,017,437
10	Pole Replacements	\$24,207,021
11	Steel Tower Life Extension	\$4,182,691
Deliverability Projects		
12	Distribution Automation	\$109,011,446
13	Substation Design Upgrades	\$94,456,942
Total Capital Costs		\$1,218,454,910

2 **Q: What support did IPL provide to demonstrate its Plan is consistent with the**
3 **TDSIC statute’s requirements?**

4 **A:** IPL witness Mr. Barry J. Bentley’s testimony discusses each Plan program and
5 includes aspects of safety, reliability, system modernization, or general economic
6 development. Additionally, IPL provided an Asset Risk & Investment Assessment
7 Report, prepared by Burns & McDonnell Engineering Company (“B&McD”, IPL
8 Attachment BJB-2, Appendix 8.3). Black & Veatch performed two different
9 studies for IPL: Black & Veatch Review of the Burns & McDonnell Risk Model

1 (IPL Attachment BJM-2 Appendix 8.4) and Black & Veatch Cost Estimate Review
2 and Validation Report (IPL Attachment BJM-2 Appendix 8.6).

3 **Q: Has the TDSIC Plan cost allocation of IPL’s customer classes been**
4 **determined?**

5 A: Yes. Table 2 below shows TDSIC cost allocations approved in IPL’s most recent
6 base rate case, Cause No. 45029, and provided in Settlement Agreement
7 Attachment E, Page 1 of 1.

8 **TABLE 2 - TDSIC ALLOCATION**

Rate Class	Rate Codes	Percent of TDSIC Cost
Residential	RS, RC, RH	57.06%
Small C&I	SS, SH, SE, CB, UW	15.84%
Large C&I - Secondary	SL, PH	17.95%
Large C&I - Primary	PL, HL	8.28%
Lighting	APL, MU1	0.86%

III. ASSET RISK & INVESTMENT ASSESSMENT
REPORT

9 **Q: How does the Burns & McDonnell (“B&McD”) risk analysis relate to the**
10 **TDSIC proposal?**

11 A: The B&McD Asset Risk & Investment Assessment Report used risk modeling to
12 evaluate only five proposed programs:

- 13 No. 1 - Circuit Rebuilds
- 14 No. 2 - Substation Assets Replacement
- 15 No. 3 - XLPE Cable Replacement
- 16 No. 4 - 4kv Conversion, and
- 17 No. 9 - Remote End - Breaker Relay

1 Collectively, these programs generally address substations and circuit assets and
2 have a combined estimated cost of \$746M. The analysis seeks to determine high
3 risk projects using likelihood of failure (“LOF”) and consequence of failure
4 (“COF”) analysis. Three project combination scenarios (“heat maps”) were
5 compared to each other and a “do-nothing” scenario to examine capital
6 expenditures and to assign a risk improvement rating as compared to the ‘do-
7 nothing” scenario.

8 B&McD describes “do-nothing” as “the increase in risk for the assets in the
9 Asset Risk Model if no assets are replaced during the 7-Year planning period.” IPL
10 Attachment BJB-2 (Public) Appendix 8.3, Page 12, Section 1.3 ‘Do Nothing’ Risk
11 Results, first sentence. The “do-nothing” scenario is an unreasonable baseline
12 assumption that artificially inflates the incremental value of the new projects. For
13 example, this scenario assumes only broken distribution poles get repaired or
14 replaced. Remaining “bad” (but unbroken) poles are left in place. The scenario
15 assigns zero dollars for ongoing work, despite operations & maintenance expense,
16 and depreciation expense included in base rates for system improvements and
17 maintenance. Neither of these assumptions are reasonable proxies for IPL’s normal
18 system maintenance obligation consistent with its obligation to provide safe,
19 reliable service at reasonable rates.

1 **Q: What is the result of the other eight programs not being analyzed by this**
2 **model?**

3 A: Because the remaining eight programs were not included within this risk analysis,
4 nearly \$500M worth of projects lack this type of support. Their prioritization, and
5 ultimately, inclusion within the Plan, is inherently more subjective.

IV. IPL'S RELIABILITY VS. PLAN SIZE

6 **Q: Does the OUCC agree with the size and cost of IPL's proposed Plan?**

7 A: No, IPL's testimony in recent cases touting network reliability does not seem in
8 sync with the cost of the requested Plan. IPL has testified the network is well
9 maintained and in good condition and ranks favorably (top quartile) in performance
10 benchmarking compared to 80+ other utilities. IPL has said that based on SAIDI
11 results, IPL expected to be in the industry's top quartile in "average customer
12 experience" for 2018. Plus, the IURC's 2018 Reliability Report rates IPL second
13 compared to Indiana's five investor-owned electric utilities.

14 The current \$1.2B estimate could eventually be much larger, given the
15 +50% variability in estimates for years 3-7. The TDSIC statute now permits new
16 projects to be added in any TDSIC update proceeding, without limit. Because
17 today's Plan (and costs) could look significantly different than today's Plan, it is
18 virtually impossible today to accurately determine the ultimate cost of IPL's
19 proposal.

V. BEST ESTIMATE DISCUSSION

1 **Q: What cost estimate information did IPL provide for its proposed Plan**
2 **projects?**

3 A: Petitioner provided confidential cost estimates, Confidential BJB-2, Appendix 8.7
4 which I reviewed for thoroughness and reasonableness. Projects within IPL's
5 thirteen programs have individual estimates, calculated using 2019 costs. Some
6 estimates are parametric (based on a per mile cost basis or per unit cost basis with
7 2019 cost estimates from similar projects or characteristics). Some per unit
8 estimates were derived from a near-term IPL work-order-level detailed costs of
9 similar projects with the basis including such items as materials, contract labor, IPL
10 labor, and overhead.

11 IPL says it used the ACEE International cost engineering estimating
12 method. The ACEE estimate classification for each program is listed in Table 2,
13 BJB-2 Appendix 8.6, Page 8 of 11. TDSIC Plan years 1 and 2 use the Class 2 and
14 Class 3 ACEE method while years 3 through 7 use the Class 4 method.

15 **Q: What are your concerns with IPL's cost estimates?**

16 A: With five years of IPL's Plan based on Class 4 estimates, there is a strong chance
17 IPL's \$1.2B estimate is understated. While Class 2 and 3 methods rely on known
18 unit costs and contractor bids, Class 4 estimates are parametric. They do not include
19 site visits, and project engineering is typically only 1-15% complete. Expected
20 actual cost accuracy, per ACEE, ranges to be between 30% under estimate to 50%
21 greater than estimate cost for Class 4 estimates.

22 In addition, IPL's \$1.2B estimate does not make allowances for the
23 possibility of new projects which may be added as part of the TDSIC update

1 process. IPL's estimates also include contingency, which is unnecessary given the
2 TDSIC statute authorizes recovery of all actually incurred costs found reasonable
3 by the IURC. IPL's contingency is on top of any contingency built into estimates
4 based on contractor bids. IPL also applies its proposed 2% inflation factor to the
5 contingency component of the cost estimates. IPL's has not accounted for salvage
6 value for replaced plant. Regardless of whether that amount is a credit to consumers
7 or to IPL, omitting it from cost estimates further weakens a claim that these are "the
8 best estimate" as required by the TDSIC statute.

9 All Program estimates include an IPL contingency multiplier from 1% to
10 20% of total individual sub-project cost estimates. See IPL Attachment BJB-2,
11 Page 24 of 28, Section 4.3: Contingency, Indirect Costs, and Inflation. In Programs
12 using per unit estimates, the Class 3 and Class 4 projects are estimated by
13 multiplying the expected miles or number of units to be constructed by the 2019
14 basis that has contingency. In OUCC DR 1-14, the OUCC asked if contractor
15 contingency was included in cost estimates. IPL responded, "The outside
16 contractor bids did not include a line item for unknown risks or contingency." The
17 absence of line item labeled "Contingency" does not mean elements of a contractor
18 bid were not inflated to include contingency. If IPL, who should thoroughly
19 understand the recovery of actual reasonable costs guarantee of the TDSIC statute,
20 believes it requires a significant contingency adder, then it only stands to reason
21 that subcontractors, who are almost certainly less familiar with TDSIC statute, will

1 include contingency in some form, as guaranteed cost recovery is not the norm in
2 the competitive market.

3 All project estimates, including any IPL Contingency Multiplier amounts,
4 are escalated by the annual 2% inflation factor. In Cause No. 45183, the
5 Commission recently found applying inflation to contingency was inappropriate.
6 Any IPL estimate that layers inflation on contingency cannot be considered “the
7 best estimate” as required by the TDSIC statute.

8 IPL did not include salvage value in its original estimate (IPL Attachment
9 BJB-2, Appendix 8.6, Pages 5-6 of 11, Section 1.3.1: IPL's Cost Estimating
10 Approach). IPL's failure to reasonably account for, and detail their expected
11 process to deal with salvage costs means IPL's estimates, especially those for large
12 cost assets such as substations and transformers, cannot be considered “the best
13 estimate” as required by the TDSIC statute.

VI. VEGETATION MANAGEMENT

14 **Q: Are vegetation management costs as included in Petitioner's project cost**
15 **estimates part of a TDSIC-eligible project under Ind. Code § 8-1-39?**

16 **A:** Yes. While vegetation management costs might theoretically be TDSIC eligible,
17 IPL already has \$11M in vegetation management embedded in base rates. Cause
18 No. 45029, October 31, 2018. The TDSIC statute specifically excludes costs
19 included in the public utility's rate base in its most recent general rate case. I.C. 8-
20 1-39-2(a)(2).

21 IPL proposes five Programs with an existing overhead, which might
22 reasonably be associated with the existing Vegetation Management amounts:

- 1 Program No. 1- Circuit Rebuilds
- 2 Program 4- 4kV Conversion
- 3 Program 5- Tap Reliability Improvement Projects
- 4 Program 9- Remote End–Breaker Relay/Upgrades, and
- 5 Program 10 - Pole Replacements

6 These five programs have vegetation removal costs included in some Class 2 and
7 Class 4 estimates. Petitioner's confidential work orders contain at least three different
8 headings that could reasonably include vegetation management, including
9 “ingress/RW clearing,” “line clearing,” and “vegetation”. IPL's TDSIC Plan includes
10 significant work improving existing circuits. These circuits are on existing right-of-
11 ways or easements, which could be included in existing vegetation management cycles.
12 Petitioner did not demonstrate how these TDSIC vegetation removal costs are not
13 included in present rates, which also include a mechanism to address any cumulative
14 shortfalls / additional spending in a regulatory liability to be addressed in IPL's next
15 base rate case.. Additionally, I have concerns about vegetation management costs
16 within Program 5-Tap Reliability Improvement Projects. Because these are Class 4
17 estimates, with undefined locations and typically are not based on a site visit, vegetation
18 management costs (for sites that haven't been selected), is inappropriate as part of “the
19 best estimate”.

VII. RECOMMENDATIONS

- 20 **Q: What do you recommend regarding IPL's proposed TDSIC Plan?**
- 21 A: I recommend the Commission reject IPL's proposed TDSIC Plan as presented. The
- 22 proposal is too large based on IPL's current reliability. The cost estimates are not

1 “the best estimate” required by the TDSIC statute. The estimates are unnecessarily
2 inflated by contingency and inflation added to that contingency. The estimates may
3 contain contractor contingency coupled with IPL contingency. They do not reflect
4 salvage value. Vegetation management amounts have not been demonstrated to be
5 entirely separate from amounts included in current rates, and have been added to
6 estimates for some projects whose location has yet to be determined. If these
7 concerns about “the best estimate” could be addressed, perhaps a less costly,
8 smaller-sized Plan might be reasonable.

9 **Q: If the Commission approves IPL’s proposed TDSIC Plan, what criteria do you**
10 **recommend IPL provide, with regard to actual cost and best estimate updates,**
11 **in TDSIC Plan update filings?**

12 A: IPL’s Plan should be evaluated at both the program and the project level. IPL
13 should be required to provide detailed cost estimate information, including variance
14 amounts, at the project level, consistent with levels of detail in existing TDSIC Plan
15 updates. IPL witness Shields’ direct, at page 15, line 23 to page 16, line 1, states
16 IPL intends to explain variances. Ideally, the IURC will direct IPL to work with
17 the OUCC and develop a review packet with information consistent with, and
18 formatted similarly to, data the OUCC receives from the other investor-owned
19 utilities for their TDSIC updates.

20 **Q: What steps do you recommend IPL be required to take regarding new projects**
21 **added as part of a TDSIC update proceeding?**

22 A: New projects should be specifically identified and include the same level of detail
23 and support required in the original Plan proceeding.

24 **Q: Does this conclude your testimony?**

25 A: Yes.

APPENDIX BRK-1 TO THE TESTIMONY OF
OUCC WITNESS BRIEN R. KRIEGER

1 **Q: Please describe your educational background and experience.**

2 **A:** I graduated from Purdue University in West Lafayette, Indiana with a Bachelor of Science
3 Degree in Mechanical Engineering in May 1986, and a Master of Science Degree in
4 Mechanical Engineering in August 2001 from Purdue University at the IUPUI campus.

5 From 1986 through mid-1997, I worked for PSI Energy and Cinergy progressing to
6 a Senior Engineer. After the initial four years as a field engineer and industrial
7 representative in Terre Haute, Indiana, I accepted a transfer to corporate offices in
8 Plainfield, Indiana where my focus changed to industrial energy efficiency implementation
9 and power quality. Early Demand Side Management (“DSM”) projects included ice
10 storage for Indiana State University, Time of Use rates for industrials, and DSM
11 Verification and Validation reporting to the IURC. I was an Electric Power Research
12 Institute committee member on forums concerning electric vehicle batteries/charging,
13 municipal water/wastewater, and adjustable speed drives. I left Cinergy and worked
14 approximately two years for the energy consultant, ESG, and then worked for the OUCC
15 from mid-1999 to mid-2001.

16 I completed my Masters in Engineering in 2001, with a focus on power generation
17 including aerospace turbines and left the OUCC to gain experience and practice in turbines.
18 I was employed by Rolls-Royce (2001-2008) in Indianapolis working in an engineering
19 capacity for military engines. This work included: fuel-flight regime performance,
20 component failure mode analysis, and military program control account management.

1 From 2008 to 2016 my employment included substitute teaching in the Plainfield,
2 Indiana school district, grades 3 through 12. I passed the math Praxis exam requirement
3 for teaching secondary school. During this period, I also performed contract engineering
4 work for Duke Energy and Air Analysis.

5 Over my career I have attended various continuing education workshops at the
6 University of Wisconsin and written technical papers. While previously employed at the
7 OUCC, I completed Week 1 of NARUC's Utility Rate School hosted by the Institute of
8 Public Utilities at Michigan State University. In 2016, I attended two cost of service/rate-
9 making courses: Ratemaking Workshop (ISBA Utility Law Section) and Financial
10 Management: Cost of Service Ratemaking (AWWA). In 2017, I attended the AGA Rate
11 School sponsored by the Center for Business and Regulation in the College of Business &
12 Management at the University of Illinois Springfield and attended Camp NARUC Week 2,
13 Intermediate Course held at Michigan State University. I completed the Fundamentals of
14 Gas Distribution on-line course developed and administered by Gas Technology Institute
15 in 2018. Recently, October 2019 I attended Camp NARUC Week 3, Advanced Regulator
16 Studies Program held at Michigan State University by the Institute of Public Utilities.

17 My current responsibilities include reviewing and analyzing Cost of Service
18 Studies ("COSS") relating to cases filed with the Commission by natural gas, electric and
19 water utilities. Additionally, I have taken on engineering responsibilities within the
20 OUCC's Natural Gas Division including participation in "Call Before You Dig-811"
21 incident review and natural gas emergency response training.

1 **Q: Have you previously filed testimony with the Commission?**

2 A: Yes. I have provided written testimony concerning cost of service studies in Cause Nos.
3 44731, 44768, 44880, 44988, 45027, 45072, 45116, 45117, 45214, and 45215.
4 Additionally, I have provided written testimony for Targeted Economic Development
5 “TED” projects in 2017/2018 and various Federal Mandate Cost Adjustment and
6 Transmission, Distribution, and Storage System Improvement Charges (“TDSIC”) Petitions.
7 While previously employed by the OUCC, I wrote testimony concerning the
8 Commission’s investigation into merchant power plants, power quality, Midwest
9 Independent System Operator and other procedures. Additionally, I prepared testimony
10 and position papers supporting the OUCC’s position on various electric and water rate
11 cases during those same years.

12 **Q: Please describe the general review you conducted to prepare this testimony.**

13 A: I reviewed Indiana Power and Light Company’s (“Petitioner”) Petition, Testimony,
14 Attachments, data responses, and confidential work papers for this Cause, Cause No. 45264
15 7-Year TDSIC Plan. I also reviewed Petitioner’s prior base rate case Petition (Cause No.
16 45029), Testimony, Stipulation and Settlement Agreement, and the Commission Order. I
17 participated in OUCC case team meetings concerning Petitioner’s case and “tech to tech”
18 meetings with Petitioner.

AFFIRMATION

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



Brian R. Krieger

Utility Analyst

Indiana Office of Utility Consumer Counselor

Cause No. 45264 IPL

October 7, 2019

Date

CERTIFICATE OF SERVICE

The undersigned counsel hereby certifies that a copy of the foregoing document was served via electronic mail, on October 7, 2019, upon the following:

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