STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF
INDIANAPOLIS POWER & LIGHT COMPANY FOR APPROVAL OF IPL’S TDSIC PLAN FOR ELIGIBLE TRANSMISSION, DISTRIBUTION, AND STORAGE SYSTEM IMPROVEMENTS PURSUANT TO IND. CODE § 8-1-39-10.

CAUSE NO. 45264

PETITIONER’S SUBMISSION OF DIRECT TESTIMONY OF
JAMES WILLIAM SHIELDS JR.

Indianapolis Power & Light Company ("IPL" or "Petitioner"), by counsel, hereby submits the direct testimony of James William Shields Jr.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing was served this 24th day of July, 2019, by email transmission, hand delivery or United States Mail, first class, postage prepaid to:

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ATTORNEYS FOR APPLICANT
INDIANAPOLIS POWER & LIGHT COMPANY

Lauren M. Box
VERIFIED DIRECT TESTIMONY

OF

JAMES (JIM) WILLIAM SHIELDS JR.

ON BEHALF OF

INDIANAPOLIS POWER & LIGHT COMPANY
Q1. Please state your name, employer and business address.

A1. My name is James (Jim) William Shields Jr. I am employed by AES US Services, LLC, (“the Service Company”) which is a wholly-owned subsidiary of The AES Corporation. The Service Company is located at the headquarters of Indianapolis Power & Light Company (“IPL” or the “Applicant”) at One Monument Circle, Indianapolis, Indiana 46204. The Service Company provides accounting, legal, human resources, information technology and other corporate services to the businesses owned by The AES Corporation in the United States of America, including IPL.

Q2. What is your position with the Service Company?

A2. I am Director of TDSIC Plan Development. In this role, my principal responsibilities include the development of transmission and distribution (“T&D”) capital infrastructure plan investments in IPL’s service territory, including the development of project scope and engineering. I currently lead the planning and development of IPL’s TDSIC Plan.

Q3. Please briefly describe your educational and professional background.

A3. I am a graduate of Purdue University – Indianapolis where I received a Bachelor of Science in Electrical Engineering Technology. I am also a graduate of the University of Indianapolis where I received a master’s degree in Business Administration. I am currently a Licensed Professional Engineer in the states of Indiana, Ohio and Wisconsin. I have over 30 years of electric utility and other industry experience, including prior positions with Wisconsin Public Service Co, Johnson County REMC, Eli Lilly & Co, Duke Energy Indiana and Northern Indiana Public Service Company.
Q4. Please summarize your prior work experience.

A4. My experience includes various leadership roles in T&D engineering over the last 30 years. This experience includes electric distribution planning, field operations management, scope development and estimation of T&D capital projects, and system reliability and integrity program development and execution. I also have experience in distribution operation control center management, including experience with distribution management systems.

Q5. What is the purpose of your testimony in this proceeding?

A5. My testimony explains how IPL developed the TDSIC Plan. I support both the 13 Projects in the TDSIC Plan as well as the best estimates of the costs of TDSIC Projects. I also summarize the process used for independent validation of the cost estimates. I support the Plan Development costs which, as discussed by IPL Witness Rogers, the Company proposes to recover through a TDSIC rider. I also discuss Plan implementation and the annual process IPL proposes to use to update the TDSIC Plan cost estimates and to keep the Commission informed of the Plan progress.

Q6. Are you sponsoring any attachments or appendices?

A6. Yes. I sponsor Appendix 8.7 to the IPL TDSIC Plan, which provides year by year Project details, including cost estimates in a sortable list and an associated summary of the Plan’s cost by FERC account. I also sponsor Appendices 8.8, 8.9 and 8.10, which provide, as an example, one of the Association for the Advancement of Cost Engineering (“AACE”) Class 2, Class 3 and Class 4 confidential cost estimates prepared for the IPL TDSIC Plan. Portions of Appendices 8.7, 8.8, 8.9 and 8.10 are confidential. I am also a co-sponsor of
the IPL TDSIC Plan, which is included with IPL Witness Bentley’s testimony as Attachment BJB-2.

Q7. Did IPL submit any workpapers?

A7. Yes. IPL’s confidential workpapers include electronic spreadsheets underlying: (a) the sortable list; (b) the detailed cost estimates for the TDSIC Plan; and (c) the Plan development costs. Portions of these workpapers are confidential. Additionally, IPL Witnesses De Stigter and Williams also submitted workpapers.

1. TDSIC PLAN DEVELOPMENT

Q8. Please describe your role in the development of the IPL TDSIC Plan.

A8. My role in the development of the IPL TDSIC Plan was to coordinate and direct the various IPL functional areas and external engineering service providers to identify eligible TDSIC projects that enable IPL to continue to operate a safe and reliable electric system while modernizing the grid for the future. These activities were conducted through the lens of providing incremental benefits to our customers.

Q9. Please provide an overview of how IPL developed its TDSIC Plan.

A9. To develop the proposed TDSIC Plan, IPL conducted an iterative process to prioritize system needs and determine how to best address aging infrastructure while also building a modern grid that is ready and able to meet the today’s demands as well as the demands of the future. This is discussed in IPL TDSIC Plan Section 2.5.

As discussed in the IPL TDSIC Plan, IPL engaged a third-party consultant, Burns & McDonnell Engineering Company, Inc. to model and prioritize investments (“Risk Model”). The Risk Model is described and supported by IPL Witness De Stigter. To provide further rigor to the analysis, IPL engaged Black & Veatch Corporation to review
the Risk Model, validate the cost estimates, and otherwise assist in the TDSIC Plan
development.

IPL considered plan feasibility in developing the scope and schedule of the proposed
improvements. Feasibility includes considerations such as: (a) protecting public and
worker safety, (b) recruiting and providing sufficient skilled labor, (c) contracting in such
a way to provide for the on-time availability of needed equipment on reasonable
commercial terms, (d) back office capabilities, including design work, in order to meet the
demands of managing plan implementation, (e) securing necessary local permits, and (f)
designing a schedule and pace for the work that that minimizes customer power
disruptions.

Q10. Please discuss the terms “safety”, “reliability”, “resilience”, and “modernization”, as
used in IPL’s TDSIC Plan and supporting evidence.
A10. The term “safety” is defined as reducing the risk of harm to people and property posed by
the potential physical hazards associated with IPL-owned T&D assets and operation and
maintenance thereof.

“Reliability” refers to the capability to meet the electric demands of customers while
providing uninterrupted electric service. For purposes of the TDSIC Plan, reliability-
related outages include all recorded sustained outages and momentary outages as defined
by the Institute of Electrical and Electronics Engineers (IEEE) standard 1366.

The term “resilience” refers to the ability of the system to withstand major weather events,
which in turn means that fewer customers will experience power outages in these
circumstances and repairs will take less time when outages do occur. In other words,
resilience is the capability to reduce future outages and to reduce the duration of future
outages. The effectiveness of a resilient electric system depends upon its ability to anticipate, absorb, adapt to, and/or rapidly recover from a disruptive event. The term ‘hardening’ is sometimes used if the system improvements reduce the likelihood of the outage occurring in the future. For purposes of IPL’s TDSIC Plan, this concept of ‘hardening’ is encompassed in resilience.

“Modernization” means replacing assets with modern equipment/material or adding new technology onto the system for improved performance, functionality and operational efficiency.

For further information on these and other terms see Section 3.1 of the IPL TDSIC Plan.

Q11. Did IPL consider the economic impact of its TDSIC Plan?

A11. Yes. While the Plan does not include any “targeted economic development projects” as that term is used in the TDSIC Statute, energy delivery infrastructure remains important to the communities in which IPL provides retail service. Because the Plan modernizes this infrastructure, improves system reliability and resiliency and otherwise lays the foundation for advancements in customer services and technology, the Plan supports economic development in IPL’s service area.

Furthermore, the TDSIC Plan capital investment will require contract labor and other resources over the Plan period. This too has a positive economic impact. IPL commissioned a study by the Indiana Business Research Center, Kelly School of Business, Indiana University to evaluate the economic impact resulting from the TDSIC Plan. This report is included as Appendix 8.5 to the IPL TDSIC Plan and is supported by IPL Witness Kinghorn.
2. TDSIC PLAN PROJECTS

Q12. Please provide an overview of the TDSIC Plan Projects.

A12. The IPL TDSIC Plan is comprised of two project types: Age & Condition and Deliverability. As shown below, the Age & Condition project type has eleven overall Projects, and the Deliverability project type has two overall Projects.

- Age & Condition:

  1) Circuit Rebuilds - Rebuilding 3-phase, mainline circuit sections to standard 13.2 kV construction.

  2) Substation Assets Replacement - Replacing substation power transformers, breakers and batteries.

  3) XLPE Cable Replacement - Replacing or extending the life of existing Cross-Linked Polyethylene (XLPE) type cable.

  4) 4 kV Conversion - Converting IPL’s remaining 4 kV general distribution circuits to 13.2 kV operation.

  5) Tap Reliability Improvement Projects (“TRIP”) - Improving reliability on distribution overhead fused tap lines that are underperforming. Improved performance will be achieved through various methods, including conversion to underground, equipment replacement, and reconfiguration of circuits.

  6) Meter Replacement - Replacing residential and small commercial single and three phase meters with AMI meters.

  7) Central Business District (“CBD”) Secondary Network Upgrades - Relocating manhole and duct bank facilities, replacing feeder cables, network
protectors and network transformers and installing vault monitoring technology.

8) **Static Wire Performance Improvement** - Replacing static wire on IPL’s 138 kV transmission system with standard Optical Ground Wire (OPGW).

9) **Remote End – Breaker Relay/Upgrades** - Replacing oil circuit breakers and/or electromechanical relays on the remote end of transmission lines opposite a modernized breaker.

10) **Pole Replacements** - Replacing wood poles based on inspection results of a ground line inspection and treatment program.

11) **Steel Tower Life Extension** - Excavating and applying an anticorrosive protective coating to direct-buried steel transmission structures. The life-extending coating is designed to last up to 20 years.

**Deliverability:**

12) **Distribution Automation** - Installing new reclosers and a new central control system.

13) **Substation Design Upgrades** - Reconfiguring and/or adding capacity at existing substations and constructing new substations for additional distribution system capacity.

I further discuss the two Project types below and the IPL TDSIC Plan provides a narrative discussion, cost estimates and other supporting details for each TDSIC Project.¹

¹ As noted above, the IPL TDSIC Plan is included with IPL Witness Bentley’s testimony as IPL Attachment BJB-2.
Q13. Please describe the Age and Condition project type.

A13. The “Age and Condition” project type includes projects that address the risks posed by aging assets. These Projects address the replacement and rebuilding of substations and overhead circuits, the rehabilitation and repair of underground residential circuits, and rebuilding portions of the Indianapolis central business district. The Age & Condition project type covers approximately 83.3% of the Plan’s estimated cost. Additionally, most of the Age and Condition assets are subject to an asset management-based risk assessment and quantification. A description of the Risk Model that was used to evaluate T&D assets is found in Appendix 8.3 to the TDSIC Plan and further discussed by IPL Witnesses De Stigter and Williams.

Q14. Please describe the Deliverability project type.

A14. The “Deliverability” project type includes the two remaining projects listed above, and comprises approximately 16.7% of the Plan’s estimated cost:

- Distribution Automation enables:
  - distribution system self-healing networks; and
  - distribution system voltage management technology for efficient energy delivery.

- New substation equipment and design configurations for improved ability to deliver energy.

Q15. Did IPL provide a sortable list of the Projects included in the TDSIC Plan?

A15. Yes. See Appendix 8.7 to the IPL TDSIC Plan and accompanying electronic spreadsheet provided in IPL’s workpapers.
3. **IPL TDSIC PLAN BEST COST ESTIMATE**

Q16. **What is IPL’s best estimate of the cost of the IPL TDSIC Plan?**

A16. Table 1 below sets forth IPL’s TDSIC Plan cost by Year and Project.

**Table 1 – IPL’s TDSIC Plan Projected Annual Capital Costs (in millions)**

<table>
<thead>
<tr>
<th>Project Type</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>7-Year Total</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit Rebuilds</td>
<td>$27.2</td>
<td>$23.0</td>
<td>$45.8</td>
<td>$52.8</td>
<td>$47.8</td>
<td>$49.9</td>
<td>$49.9</td>
<td>$298.7</td>
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<tr>
<td>Substation Assets Replacement</td>
<td>$16.7</td>
<td>$27.0</td>
<td>$39.9</td>
<td>$39.2</td>
<td>$34.5</td>
<td>$44.3</td>
<td>$46.5</td>
<td>$248.1</td>
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<td>XLPE Cable Replacement</td>
<td>$12.2</td>
<td>$11.8</td>
<td>$12.5</td>
<td>$12.4</td>
<td>$12.3</td>
<td>$12.8</td>
<td>$12.3</td>
<td>$86.2</td>
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<td>4 kV Conversion</td>
<td>$19.7</td>
<td>$13.8</td>
<td>$15.4</td>
<td>$15.5</td>
<td>$7.6</td>
<td>$12.4</td>
<td>$7.5</td>
<td>$92.0</td>
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<td>$10.9</td>
<td>$10.4</td>
<td>$10.6</td>
<td>$10.8</td>
<td>$11.0</td>
<td>$11.3</td>
<td>$11.5</td>
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<td>$11.0</td>
<td>$11.2</td>
<td>$11.4</td>
<td>$11.6</td>
<td>$-</td>
<td>$-</td>
<td>$55.9</td>
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<tr>
<td>CBD Secondary Network Upgrades</td>
<td>$4.6</td>
<td>$5.9</td>
<td>$5.3</td>
<td>$5.9</td>
<td>$5.0</td>
<td>$5.9</td>
<td>$6.4</td>
<td>$39.0</td>
</tr>
<tr>
<td>Static Wire Performance Improvement</td>
<td>$4.8</td>
<td>$6.9</td>
<td>$9.5</td>
<td>$11.2</td>
<td>$11.5</td>
<td>$10.7</td>
<td>$7.6</td>
<td>$62.1</td>
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<tr>
<td>Remote End - Breaker Relay/Upgrades</td>
<td>$3.0</td>
<td>$2.0</td>
<td>$5.6</td>
<td>$1.6</td>
<td>$6.2</td>
<td>$3.1</td>
<td>$6.4</td>
<td>$28.0</td>
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<tr>
<td>Pole Replacements</td>
<td>$3.3</td>
<td>$3.3</td>
<td>$3.4</td>
<td>$3.5</td>
<td>$3.5</td>
<td>$3.6</td>
<td>$3.7</td>
<td>$24.2</td>
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<tr>
<td>Steel Tower Life Extension</td>
<td>$1.1</td>
<td>$1.1</td>
<td>$1.1</td>
<td>$0.9</td>
<td>$-</td>
<td>$-</td>
<td>$-</td>
<td>$4.2</td>
</tr>
<tr>
<td>Age &amp; Condition Projects Total</td>
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<td>$118.6</td>
<td>$160.3</td>
<td>$165.1</td>
<td>$151.0</td>
<td>$153.9</td>
<td>$151.8</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Distribution Automation</td>
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<td>$19.2</td>
<td>$13.6</td>
<td>$13.9</td>
<td>$14.2</td>
<td>$14.5</td>
<td>$14.8</td>
<td>$109.0</td>
</tr>
<tr>
<td>Substation Design Upgrades</td>
<td>$3.8</td>
<td>$16.2</td>
<td>$15.8</td>
<td>$32.9</td>
<td>$6.3</td>
<td>$16.8</td>
<td>$2.6</td>
<td>$94.5</td>
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<td>Deliverability Projects Total</td>
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<td>$29.5</td>
<td>$46.8</td>
<td>$20.5</td>
<td>$31.3</td>
<td>$17.4</td>
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<td>Total Capital Costs</td>
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<td>$212.0</td>
<td>$171.5</td>
<td>$185.2</td>
<td>$169.2</td>
<td>$1,218.5</td>
</tr>
</tbody>
</table>

The costs in Table 1 were developed by creating AACE Class 2, Class 3 and Class 4 estimates for each Project in the 7-Year Plan. Project sequencing through the 7 years was established by considering annual construction schedules, sequencing critical projects and ability to coordinate multiple clearance requirements for construction. As noted above, the detailed Class 2, 3, and 4 cost estimates are provided in IPL’s workpapers.

Q17. **How were these cost estimates developed?**
IPL developed cost estimates for the Projects included in the proposed 7-year TDSIC Plan.

As shown in Table 2 below, IPL prepared AACE Class 2, 3 and 4 estimates.

<table>
<thead>
<tr>
<th>Plan Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tr>
<td>Project</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit Rebuilds</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Substation Assets Replacement</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
</tr>
<tr>
<td>XLPE Cable Replacement</td>
<td>Class 3</td>
<td>Class 3</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
</tr>
<tr>
<td>4 kV Conversion</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Tap Reliability Improvement Projects</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
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<td>Meter Replacement</td>
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<td>Class 4</td>
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<td>CBD Secondary Network Upgrades</td>
<td>Class 2</td>
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<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Static Wire Performance Improvement</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Remote End - Breaker Relay/Upgrades</td>
<td>Class 2</td>
<td>Class 2</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Pole Replacements</td>
<td>Class 3</td>
<td>Class 3</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
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<tr>
<td>Steel Tower Life Extension</td>
<td>Class 3</td>
<td>Class 3</td>
<td>Class 4</td>
<td>Class 4</td>
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<table>
<thead>
<tr>
<th>Deliverability</th>
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<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
<td>Class 4</td>
</tr>
</tbody>
</table>

Q18. Please further discuss the various estimates developed for the TDSIC Plan.

A18. As shown in Table 2 above, AACE Class 2 estimates were developed for eight of the Projects for Year 1 and Year 2 of the Plan. For Class 2 estimates, IPL employed the help of engineering firms to complete the detailed engineering at the individual project level. IPL created project scope statements for each project and worked closely with the engineering firms through the design process to ensure the design matched to the planned scope. The construction labor component of the estimate was then validated by IPL.
through a competitive bid process. The construction labor estimate from the bid process was then used to confirm and/or adjust the Class 2 estimates.

Four of the Projects have AACE Class 3 estimates for Year 1 and Year 2, since these four Projects consist of low complexity and high-volume work. XLPE Cable Replacement, Pole Replacement and Steel Tower Life Extension have scopes and designs that are known at a broad level, and variation in scope does not cause wide swings in cost, therefore IPL used unitized costs for these Projects. Unit costs were developed then applied to the number of units planned for replacement. One of these Projects, Distribution Automation, is comprised of two components: the deployment of a Distribution Automation control system and 1,200 distribution line reclosers. The distribution line reclosers deployment is high volume and low complexity work like the three projects designated as Class 3 estimates described above. While the deployment of the Distribution Automation control system is more complex, IPL has developed a specification that includes system requirements, capabilities and deliverables that include the integration of existing systems. This specification has been competitively bid and the estimate is based on the results of the bid process. The Class 3 cost estimate designation was used for the Distribution Automation Project because it combines these two components into one Project.

For the remaining years of the Plan (Years 3-7), AACE Class 4 estimates were developed using a unit cost methodology. The exception to this is the Tap Reliability Improvement Projects (“TRIP”) estimates, which are based on AACE Class 4 estimates beginning in Year 2. TRIP is an inspect and mitigate project that is focused on improving reliability to identified sections of the distribution system. The specific sections and the scope of work are determined annually based on previous year’s outage data. For this reason, the TRIP
projects have Class 2 estimates for the Year 1 of the Plan and Class 4 estimates for Years 3-7 of the Plan. The TRIP Project is further defined in the TDSIC Plan in Section 6.5.

Finally, after the individual Project costs were determined, the costs were escalated by a 2.0% inflation rate, to determine the cost of the Project in the year scheduled for construction. The annual cost of the Plan as shown previously in Table 1 includes the inflation rate calculation.

Q19. **What process did IPL use to validate its cost estimate to ensure IPL is providing the Commission the best estimates of the TDSIC Plan costs?**

A19. IPL employed Black & Veatch to conduct an independent review of the cost estimates and process used to develop them. A summary of the review and the results of the analysis are found in IPL Witness Williams’ testimony and the “Black & Veatch Cost Review and Validation Report” is included with IPL’s TDSIC Plan as Appendix 8.6. As stated by IPL Witness Williams, IPL’s cost estimating process is aligned with industry good practice based on Black & Veatch experience and professional judgment and the AACE classification guidelines. ²

4. **PLAN DEVELOPMENT COSTS**

Q20. **Please discuss the costs IPL incurred to develop the TDSIC Plan and support this filing.**

A20. To obtain Commission approval of the TDSIC Plan, IPL was required to perform risk modeling and planning, and prepare evidence that the public convenience and necessity require the Projects, that the cost estimates constitute best estimates, and that the estimated

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² See IPL Witness Williams testimony QA 14.
costs of the proposed improvements are justified by the incremental benefits attributable
to the Plan. IPL hired independent consultants to support this effort including Burns and
McDonnell, Black & Veatch and the Indiana Business Research Center. The total amount
of these reasonably-incurred Plan development and case support costs is approximately
$2.3 million, as of the date of this filing. As discussed by IPL Witness Rogers, IPL requests
the Commission to authorize IPL to defer and recover through rates the costs incurred to
perform the risk analysis, to review cost estimates, to assess economic impact and
otherwise support IPL’s TDSIC Plan filing. Approval of this request is consistent with the
treatment of TDSIC plan development costs incurred by other companies.\(^3\)

5. **TDSIC PLAN IMPLEMENTATION**

Q21. Which organization within IPL will be responsible for the implementation of IPL’s
TDSIC Plan?

A21. An IPL Project Management Organization (“PMO”) will be responsible for the Plan
implementation. This organization will be designated to focus on the efficient and effective
implementation and management of the TDSIC Plan. The charge of the PMO is to
complete the approved scope of work on time and within budget. The PMO will monitor
and evaluate Plan progress on a regular basis and manage the schedule, as well as estimated
Project costs versus the actual costs to-date. This process will allow IPL to identify and
evaluate any significant variances, incorporate knowledge gained during Project
implementation, re-prioritize Projects as necessary or appropriate, and support the annual
plan update process.

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\(^3\) See IURC Order in Cause No. 44720 (6/29/2016), p. 29 (authorizing Duke Energy Indiana to recover these costs
through a rider over a three-year period); IURC order in Cause No. 44910 (9/20/2017) (approving settlement
agreement allowing $3.7 million of plan development costs to be recovered through a rider over a three-year period).
Q22. **How will IPL implement the TDSIC Plan?**

A22. Executing the TDSIC Plan will require an increase in both internal and external labor resources. External labor resources will be secured through a competitive-bid process. The Class 2 project cost estimates are based on contracted construction labor costs. IPL may choose to use internal labor resources for specific projects based on work plans and system knowledge needed to complete the work. Equipment and other materials needed for the Plan will also be obtained through competitive solicitation and existing negotiated agreements.

IPL has created project schedules for nearly all the Year 1 and Year 2 Projects. IPL expects to complete the annual work plans for Year 1 and Year 2 of the TDSIC Plan by end of 2019. IPL plans to maintain this 2 year “runway” through the life of the Plan. Advancing the engineering by 2 years allows for improved ability to accurately secure both material and labor resources in the market through competitive bids, in advance of construction. The 2 year “runway” also allows for the development of annual work plans that provide time to acquire needed permits and any necessary Regional Transmission Organization ("RTO") outage approvals, along with being able to annually update the IURC on the Plan costs.

Q23. **Does IPL’s TDSIC Plan require flexibility?**

A23. Yes. The 13 Projects that comprise the IPL TDSIC Plan have varying complexity. While IPL has completed a thorough review of the proposed portfolio of work, project implementation is affected by outside factors, such as equipment available to be taken out of service, commodity costs, material lead times, labor resources, permitting lead times
and weather. In many cases, these factors are outside of IPL’s control and thus IPL will require flexibility in the Plan to reschedule work based on emergent information.

To successfully implement the Plan, IPL needs the ability to re-schedule Projects between years, if constraints arise. For example, substation projects that require Bulk Electric Transmission outages to complete the work, may be limited by emergent events on the Bulk Electric System (“BES”). Similarly, IPL substation projects scheduled for completion in outer years of the Plan compete for outage windows with other BES projects under the authority of the RTO. This may require changes to the IPL substation projects schedule.

6. **TDSIC PLAN UPDATE PROCESS**

Q24. Please discuss IPL’s proposal to update the TDSIC Plan and Project cost estimates over the 7-year period.

A24. IPL will provide updates to the TDSIC Plan as required by the TDSIC Statute during its future, annual rider filings. These annual filings will be based on the most recent information available so that the Commission may be kept informed of the Plan progress and significant changes in the Plan. The update will report on the work that has been completed and the work planned for the upcoming year. IPL plans to provide the actual completed costs of the Projects completed in the prior year and update cost estimates of the Projects for the following year. The ongoing, updated cost estimates will refine the cost estimates of future projects as they are engineered. For the Projects where work is based on inspection and mitigation (specifically Tap Reliability Improvement Project and Pole Replacements Project) IPL will provide an update on the facilities targeted for improvements and cost estimates for this work. For projects with actual or projected costs
higher than the previous estimate, IPL will provide an explanation of the variance. Finally, the annual update will include intra-year changes and longer-term changes in the Plan when appropriate. For example, should IPL determine that an asset should be replaced sooner than indicated in the Plan due to factors such as declining performance, asset health or failure, IPL will replace the asset and update the Commission on such changes in the Project implementation timeline through the annual update process.

To facilitate the annual update process, IPL is prepared to confer with the stakeholders on the format and content of the update prior to its initial filing and will also work with the stakeholders to refine the contents of the update filing over time as necessary and appropriate. IPL Witness Rogers further discusses the Company’s plans for the TDSIC rider filings.

7. CONCLUSION

Q25. Does this conclude your prepared verified direct testimony?
A25. Yes.

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4 At this juncture IPL contemplates providing information consistent with Vectren Witness Hoover’s Attachment SAH-9: TDSIC Plan – 7 Year Update in Cause No. 44429-TDSIC-9.
VERIFICATION

I, James (Jim) William Shields Jr., AES US Services, LLC, Director of TDSIC Plan Development, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

Dated: July 23, 2019

James (Jim) William Shields Jr.