

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF NORTHERN INDIANA )  
PUBLIC SERVICE COMPANY FOR (1) )  
APPROVAL OF AN ADJUSTMENT TO ITS GAS )  
SERVICE RATES THROUGH ITS )  
TRANSMISSION, DISTRIBUTION, AND )  
STORAGE SYSTEM IMPROVEMENT CHARGE )  
("TDSIC") RATE SCHEDULE; (2) AUTHORITY )  
TO DEFER 20% OF THE APPROVED CAPITAL )  
EXPENDITURES AND TDSIC COSTS FOR )  
RECOVERY IN PETITIONER'S NEXT )  
GENERAL RATE CASE; AND (3) APPROVAL OF )  
PETITIONER'S UPDATED 7-YEAR GAS PLAN, )  
INCLUDING ACTUAL AND PROPOSED )  
ESTIMATED CAPITAL EXPENDITURES AND )  
TDSIC COSTS THAT EXCEED THE APPROVED )  
AMOUNTS IN CAUSE NO. 44403-TDSIC-6, ALL )  
PURSUANT TO IND. CODE CH. 8-1-39-9. )

FILED

October 30, 2017

INDIANA UTILITY  
REGULATORY COMMISSION

CAUSE NO. 44403 TDSIC-07

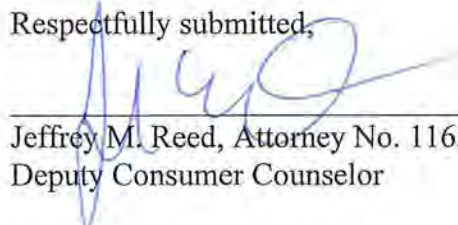
INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC'S EXHIBIT NO. 2

PUBLIC (REDACTED) TESTIMONY OF OUCC WITNESS LEON A. GOLDEN

October 30, 2017

Respectfully submitted,

  
Jeffrey M. Reed, Attorney No. 11651-49  
Deputy Consumer Counselor

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Chief Deputy Consumer Counselor

**PUBLIC (REDACTED) TESTIMONY OF  
OUCC WITNESS LEON A. GOLDEN  
CAUSE NO. 44403 TDSIC-7  
NORTHERN INDIANA PUBLIC SERVICE COMPANY**

**NOTE - [REDACTED] INDICATES CONFIDENTIAL INFORMATION**

**I. INTRODUCTION**

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

2 A: My name is Leon A. Golden, and my business address is 115 West Washington  
3 Street, 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 for the Energy Resources Division. My educational background  
7 and experience are detailed in Appendix LAG-1 attached to this testimony.

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

9 A: My testimony discusses my analysis of transmission, distribution, and storage  
10 projects included in Northern Indiana Public Service Company’s (“NIPSCO” or  
11 “Petitioner”) Updated 7-Year Gas Plan. My testimony discusses thirty-seven  
12 specific projects that have experienced increased costs, why the OUCC does not  
13 object to some of the projects that I determined to have sufficient testimonial or  
14 evidentiary support, while recommending disallowance of cost estimate updates  
15 that have experienced substantial increases without sufficient support.

1 **Q: Within the context of your understanding of the definition of “best estimate,”**  
2 **please describe your approach in analyzing NIPSCO’s project cost estimate**  
3 **support and its justification for project cost increases.**

4 A: While analyzing NIPSCO’s project cost estimate support, I relied on Indiana Code  
5 and recent Commission Orders for a “best estimate” definition.<sup>1</sup> Indiana Code § 8-  
6 1-39-9(f) provides that “[a]ctual capital expenditures and TDSIC costs that exceed  
7 the approved capital expenditures and TDSIC costs require specific justification by  
8 the public utility and specific approval by the commission before being authorized  
9 for recovery in customer rates.” In the Commission’s Order in 44403 TDSIC-4, the  
10 Commission explains that “...in a Section 9 proceeding, a utility must update its  
11 approved plan and explain any changes in the best estimate of costs, necessity, or  
12 incremental benefits.”<sup>2</sup> The Order goes on to state that “[a] TDSIC best estimate  
13 should reflect, at a minimum, costs a utility reasonably could or should have  
14 foreseen at the time the estimate was created.”<sup>3</sup> Within that context, I reviewed each  
15 project, paying particular attention to projects that experienced cost estimate  
16 increases, or actual costs that exceeded NIPSCO’s previously approved best  
17 estimate.

18 With regard to showing satisfactory reason for increased cost estimates, the  
19 Commission stated in its Order in Cause No. 44430 TDSIC-3:

20 [B]ecause our approval of the plan as reasonable was based on our  
21 determination of the best estimate of the cost of the eligible

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<sup>1</sup> See Cause Nos. 44403 TDSIC-4 (NIPSCO Gas); 44429 TDSIC-3 (Vectren South); 44430 TDSIC-3 (Vectren North); 44403 TDSIC-1 (NIPSCO Gas).

<sup>2</sup> Cause No. 44403 TDSIC-4, Order at page 27.

<sup>3</sup> *Id.* Page 28.

1 improvements, whether public convenience and necessity require  
2 the eligible improvements, and whether the estimated costs of the  
3 eligible improvements are justified by the incremental benefits, it  
4 seems reasonable that any update to the plan include changes to  
5 those factors we considered in approving the plan, i.e., changes in  
6 an eligible improvement's cost estimate, necessity, and associated  
7 benefits.<sup>4</sup>

8 In its Order in Cause No. 44403 TDSIC-1, the Commission also addressed this  
9 topic, saying, "[t]his does not mean that the utility may simply detail the reasons  
10 why the increase occurred. Rather, the utility must explain why the increase in best  
11 estimated costs (i.e., costs that were considered to be highly reliable) is reasonable  
12 or warranted under the circumstances presented."<sup>5</sup> Furthermore, in the  
13 Commission's Order in Cause No. 44403 TDSIC-4, the Commission stated:

14 Whether the utility seeks to provide specific justification for  
15 approval of an increase in the best estimate at the time it seeks cost  
16 recovery or prior to incurring actual costs, the standard is the same.  
17 As we explained in the TDSIC-1 Order at 20, a utility may not  
18 simply detail the reasons for the increase in costs. Instead, it must  
19 explain why the increase in the best estimated cost, which was  
20 considered to be better than all others in quality or value, is  
21 reasonable or warranted under the circumstances presented.<sup>6</sup>

22 These three Commission Orders address the level of detail needed in order to  
23 determine whether cost increases for specific TDSIC projects are justified.

24 **Q: Please describe how NIPSCO's TDSIC Plan is organized.**

25 A: NIPSCO's TDSIC Plan is organized into three broad categories consisting of  
26 Transmission System Investment, Distribution System Investment, and Storage

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<sup>4</sup> Cause No. 44430 TDSIC-3, Order at page 5.

<sup>5</sup> Cause No. 44403 TDSIC-1, Order at page 20.

<sup>6</sup> Cause No. 44403 TDSIC-4, Order at page 28.

1 System Investment. All of NIPSCO's TDSIC projects fit into one of these three  
2 broad categories:

3 • NIPSCO's Transmission System Investment project category consists of five  
4 subcategories: Transmission Pipeline Replacement, Prepare Lines for In-Line  
5 Inspection, Shallow Pipe Replacement, Inspect & Mitigate, and System  
6 Deliverability.

7 • The Distribution System Investment project category consists of four  
8 subcategories: Bare Steel Replacement, System Deliverability, Inspect &  
9 Mitigate, and Rural Extensions subcategories.

10 • The Storage System Investment project category consists of a single Storage  
11 Projects subcategory.

12 **Q: What cost support information did NIPSCO provide in regard to its TDSIC**  
13 **Plan projects that were relevant to your analysis?**

14 A: NIPSCO included its Gas Plan Update-6 and Gas Plan Update-7 as attachments to  
15 its Petition. Gas Plan Update-7 also includes Confidential Appendix 2, which is a  
16 summary of unit cost data used to create NIPSCO's unit cost-based estimates;  
17 Confidential Appendix 4, which includes Project Changes Requests ("PCRs") for  
18 project changes, and; Confidential Appendix 5, which is NIPSCO's Gas Risk  
19 Model Update prepared by EN Engineering. Petitioner's Exhibit No. 1, Attachment  
20 1-A, Schedule 1 shows TDSIC Plan actual capital costs incurred through June 30,  
21 2017. Witness Robert Mooney's testimony also includes detailed discussion for  
22 TDSIC Plan projects that have increased by \$100,000 or 20%, whichever is greater.

23 **Q: Please describe your analysis of the support provided by NIPSCO for actual**  
24 **project costs and cost estimate updates in this Cause.**

25 A: My analysis began with a review of the cost support provided by NIPSCO. For  
26 projects that have experienced actual or estimate increases, I reviewed the  
27 testimonial and evidentiary support provided by NIPSCO to determine the

1           reasonableness of the increases, and to determine if the increases should have been  
2           reasonably foreseeable at the time the estimates were last approved. My testimony  
3           discusses projects included in NIPSCO's TDSIC Plan Update that experienced  
4           substantial increases over estimates approved in TDSIC-6. The OUCC continues to  
5           define "substantial" as an increase of either \$100,000 or 20% above the most  
6           recently approved estimate, whichever is greater. Increases above these thresholds  
7           trigger a deeper review. Class 2 estimates, the level of accuracy typically used by  
8           NIPSCO for its current year projects, are widely considered to carry an expected  
9           accuracy range of -15% to +20%.<sup>7</sup>

10       **Q:   Were there any new or emergent projects included in NIPSCO's TDSIC-7**  
11       **Plan Update?**

12       A:   No. NIPSCO's TDSIC-7 Plan Update contains no new or emergent projects.

## II. TRANSMISSION SYSTEM INVESTMENTS

13       **Q:   In your analysis of NIPSCO's TDSIC Plan Update, are there any**  
14       **Transmission System Investment projects that have increased by at least**  
15       **\$100,000 or 20%?**

16       A:   Yes. The seventeen Transmission System Improvement projects listed below in  
17       Table 1 are projects that show increases of 20% or \$100,000 over NIPSCO's  
18       TDSIC-6 Plan Update.<sup>8</sup>

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<sup>7</sup> The expected variance range for a Class 2 estimate is -15% to +20%. I selected 20% as the most extreme point within the expected variance range. See American Association of Cost Engineering International Recommended Practice No. 18R-97. Rev. March 1, 2016. Page 3. [http://www.aacei.org/toc/toc\\_18R-97.pdf](http://www.aacei.org/toc/toc_18R-97.pdf)

<sup>8</sup> Exhibit Gas Plan Update-6 (Confidential), pages 3 – 29.

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**Transmission System Projects (Table 1)**

| Project Year | Project ID | Project Title   | Approved Project Cost (TDSIC6-G) | Updated Project Cost (TDSIC7-G) | Variance (%) |
|--------------|------------|---|----------------------------------|---------------------------------|--------------|
| 2017         | TP1        | State Line to Highland Transmission Project           | ██████████                       | ██████████                      | 29.1         |
| 2017         | TP3        | Engineering for Transmission Pipeline Replacements    | ██████████                       | ██████████                      | N/A          |
| 2017         | IM7        | GSO RTU Communications Upgrade – Age & Condition      | ██████████                       | ██████████                      | 59.0         |
| 2017         | IM27       | Engineering Capital Projects                          | ██████████                       | ██████████                      | 154          |
| 2017         | SD8        | GSIT Crown Point 165psig System Improvement           | ██████████                       | ██████████                      | 490          |
| 2018         | TP2        | 22" From Aetna to US 35 - LaPorte                     | ██████████                       | ██████████                      | 7.9          |
| 2018         | TP9        | 16" Aetna to Tassinong                                | ██████████                       | ██████████                      | N/A          |
| 2018         | ILI6       | ILI System Modification 30" Tassinong to LaPorte      | ██████████                       | ██████████                      | 38.5         |
| 2018         | IM6        | GSO RTU Upgrade – Age & Condition                     | ██████████                       | ██████████                      | 84.4         |
| 2018         | IM26       | Transmission Regulator Station Upgrades and Enclosure | ██████████                       | ██████████                      | 28.0         |
| 2019         | IM1        | Company-Wide Gas Transmission Crossing Replacement    | ██████████                       | ██████████                      | 124          |
| 2019         | IM6        | GSO RTU Upgrade – Age & Condition                     | ██████████                       | ██████████                      | 23.9         |
| 2019         | IM7        | GSO RTU Communication Upgrade – Age & Condition       | ██████████                       | ██████████                      | 103          |
| 2019         | IM23-DIM34 | Corrosion AC Mitigation                               | ██████████                       | ██████████                      | 241          |
| 2019         | IM25-DIM35 | Corrosion Moisture Monitoring                         | ██████████                       | ██████████                      | 136          |
| 2020         | IM7        | GSO RTU Communication Upgrade – Age & Condition       | ██████████                       | ██████████                      | 204          |
| 2020         | IM25-DIM35 | Corrosion Moisture Monitoring                         | ██████████                       | ██████████                      | 136          |

1 **Q: Are there any project estimate updates listed in Table 1 to which the OUCC**  
2 **does not object?**

3 A: Yes. Other than [Project ID: IM23-DIM34] *Corrosion AC Mitigation*, NIPSCO has  
4 adequately explained the cost increases for the remaining sixteen projects listed in  
5 Table 1 and the OUCC does not object to these updated cost estimates:

6 **[Project ID: TP1] *State Line to Highland Transmission Project***

7 This project shows an increase of 29.1% due to problems with a stuck valve that  
8 did not completely allow the flow of gas to be stopped. The problems with this  
9 valve resulted in the addition of a 16-inch stopple to safely tie-in the new  
10 construction.<sup>9</sup> In addition, a 30-inch stopple was required to ensure that existing  
11 industrial customers had sufficient capacity and reliable pressure during the tie-in,  
12 as these customers could be isolated from possible disruptions during the tie-in  
13 procedure. Construction delays and remobilization of crews also added to the  
14 overall increase, as the tie-ins could not be performed during NIPSCO's heating  
15 season. While this project has increased by 29.1% for Plan Year 2017, the overall  
16 impact to this multi-year project is an increase of 3.2%.

17 **[Project ID: TP3] *Engineering for Transmission Pipeline Replacements***

18 The increase for this project is directly related to [TP8] *36/22 Highland Junction to*  
19 *Grant St.* The increased engineering for this project relates to increased time  
20 required for environmental permitting, in addition to longer lead times required for  
21 project materials. The increased lead times requires NIPSCO to order materials

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<sup>9</sup> A stopple is a piece of equipment used to temporarily stop the flow of gas in an active pipeline to allow for tie-ins or maintenance activities.



1 earlier in the design process to avoid project delays, in this case beginning  
2 engineering in 2017 for a 2018 project. The overall impact to this multi-year project  
3 is an increase of 3.2%.

4 **[Project ID: IM7] *GSO RTU Communications Upgrade – Age & Condition***

5 As Remote Terminal Units (“RTU”) in this project have been replaced, NIPSCO  
6 discovered that it requires information technology (“IT”) resources for  
7 programming the new RTUs. The unit cost for RTU projects has been updated to  
8 reflect the added IT support. In addition, NIPSCO has selected new IT vendors and  
9 is negotiating costs in efforts to achieve savings. The OUCC will continuously  
10 monitor this project to ensure the end result of these negotiations are reasonable.  
11 The updated 2017 cost estimate for this project consists of carry-over costs from  
12 2016. As a result, the OUCC does not object to the actual costs for this project.

13 The IT related unit cost increase also affects RTU projects for 2019 and  
14 2020; however, the increases of 103% and 204%, respectively, are skewed upward  
15 as a result of additional RTU units being moved into 2019 and 2020 from 2018. My  
16 review confirmed these are not new RTU projects being added to NIPSCO’s  
17 TDSIC Plan, but have been moved into other Plan years.

18 **[Project ID: IM27] *Engineering Capital Projects***

19 The engineering increase for this project is attributable to [IM26] *North Hayden*  
20 *Regulator Station* and longer lead times for materials related to transmission  
21 pipeline projects. The increased lead times require NIPSCO to order materials  
22 earlier in the design process to avoid project delays, in this case beginning  
23 engineering in 2017 for a 2018 project.

1                   **[Project ID: SD8] *GSIT Crown Point 165psig System Improvement***

2                   The increase for this project is related to an unresolved change order as discussed  
3                   by Mr. Mooney in TDSIC-6. The OUCC made note of the possibility of additional  
4                   expenses incurred in 2017 and reviewed these costs as they were updated in this  
5                   filing. In addition to these anticipated further costs, I identified additional costs  
6                   related to line pickling, electrical grounding requirements at the regulator station,  
7                   and a small structure required to protect new equipment.<sup>10</sup> There were also added  
8                   costs as a result of project carryover that spilled into the planting season, resulting  
9                   in unforeseen crop damages. While this multi-year project has increased  
10                  substantially for the 2017 Plan Year, the overall impact is an increase of 3.0%.

11                   **[Project ID: TP2] *22" From Aetna to US 35 - LaPorte***

12                  This project shows an increase of [REDACTED], or 7.9% for Phase III due to project  
13                  challenges and risks associated with the Calumet Prairie Wetlands. NIPSCO had  
14                  intended to open- trench, but a bore will be required to avoid disturbing the wetland  
15                  area. These project changes will also result in a two acre reduction to NIPSCO's  
16                  compensatory wetland mitigation requirements. During my review, it seemed  
17                  reasonable to me that NIPSCO should have known the project was located in a  
18                  wetlands area and would have certain environmental requirements. In response to  
19                  a data request, NIPSCO explained that it was aware the project would be in a  
20                  wetlands area; however, it was during the public comment period that the Indiana  
21                  Department of Natural Resources ("DNR") expressed "significant concern" over

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<sup>10</sup> When new pipe is installed, it can absorb odorant which results in the dangerous situation of having odorless gas. "Pickling" a gas line refers to the process of pre-saturating the pipe with odorant.

1 NIPSCO's plan to open-cut on property adjacent to the wetlands area. During the  
2 final permitting phase, NIPSCO negotiated the permit with DNR and the Army  
3 Corps of Engineers, which lead to the project increase.<sup>11</sup> The right of way is owned  
4 by NIPSCO and the ground elevation is higher at the construction location, leading  
5 NIPSCO to reasonably believe that obtaining a permit would not be as complicated.  
6 The impact of the 2018 increases to this multi-year project is an overall increase of  
7 3.0%.

8 **[Project ID: TP9] 16" Aetna to Tassinong**

9 The increase for this project is related to land acquisition and permitting activities  
10 that were originally planned for 2019 that were pulled into 2018 to mitigate risks  
11 of project delays. I confirmed there is a corresponding decrease for this project in  
12 2019.<sup>12</sup>

13 **[Project ID: ILI6] ILI System Modification 30" Tassinong to LaPorte**

14 This project estimate has now been updated as further design is complete, including  
15 a contractor bid. Material and labor costs are higher than estimated in the originally  
16 approved Plan, in addition to only one tie-in being permitted each day to avoid  
17 customer service disruptions and more expensive stopples being required to  
18 accommodate the tie-in work. In addition, as a result of the work being performed  
19 in a high-traffic area with little extra room, additional traffic control labor  
20 associated with the tie-in work will be required.

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<sup>11</sup> See Attachment LAG-1. NIPSCO Response to OUCC Data Request 1-001.

<sup>12</sup> Confidential Exhibit Gas Plan Update-7, page 20.

1                                   **[Project ID: IM6] *GSO RTU Upgrade – Age & Condition***

2           This project shows an increase of 84.4% for 2018 based on different equipment that  
3           must be used as a result of the unavailability of equipment used to create the initial  
4           estimate, and the replacement equipment being quadruple the cost of the obsolete  
5           equipment. In addition, updated electrical and safety standards have added to the  
6           estimated increase. The increase of 23.9% shown for 2019 reflects a move of one  
7           unit out of 2018 and into 2019.

8                                   **[Project ID: IM26] *Transmission Regulator Station Upgrades and Enclosure***

9           This project now has a final design and has been updated to include the cost of a  
10          required heater to protect the regulator station from frost heave, and a filter to help  
11          protect the equipment and downstream piping from internal corrosion. The updated  
12          bid cost of the project has been updated and shows a 28.0% increase over the  
13          originally approved estimate.

14                                  **[Project ID: IM1] *Company-Wide Gas Transmission Crossing Replacement***

15          This multi-year project shows a 2019 cost estimate increase of 124%; however, the  
16          overall project estimate has decreased. The updated estimate includes site specific  
17          information and includes pipe wrap. NIPSCO noted the updated estimate for pipe  
18          wrap is less than the 2019 unit cost for installing pipe wrap.

19                                  **[Project ID: IM25-DIM35] *Corrosion Moisture Monitoring***

20          The updated estimates for this project show 136% increases for both 2019 and  
21          2020; however, some of this increase is due to project moves. I determined two  
22          projects were moved out of 2018 and one each into 2019 and 2020, respectively.

23          The cost increase is due to a unit cost update and is 69.7% for 2019 and 103% for

1 2020. The unit cost update is a result of protective structures required to protect  
2 sensitive monitoring equipment to measure hydrogen sulfide and carbon dioxide,  
3 in addition to moisture. This additional monitoring equipment was an anticipated  
4 requirement of new 2017 PHMSA rules.

5 **Q: Why is the OUCG concerned with the *Corrosion AC Mitigation* project**  
6 **[IM23-DIM34]?**

7 A: After reviewing [Project ID: IM23-DIM34] *Corrosion AC Mitigation* and  
8 NIPSCO's discussion of the MATCOR Mitigator product in its testimony and  
9 technical meetings, I determined that the MATCOR product claims appear to be  
10 substantiated and the product appears to be held in high regard by the industry.<sup>13</sup>  
11 My research also noted one of the product claims states it provides "greater ease of  
12 installation and lower cost."<sup>14</sup> The updated estimate for this project reflects a net  
13 move of \$ [REDACTED] from 2018 into 2019 and an increase of \$ [REDACTED], or 88%. The  
14 increase to the estimate reflects the use of MATCOR Mitigator for all on-going AC  
15 mitigation projects. Given the product claims of greater ease of installation and  
16 lower cost, I was unable to find sufficient support in NIPSCO's case-in-chief to  
17 support the 88% cost estimate increase for this project. I recommend the 88% cost  
18 estimate increase be disallowed.

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<sup>13</sup> Petitioner's Exhibit No. 3, page 59, lines 8 – 25.

<sup>14</sup> MATCOR. *The MITIGATOR: Engineered AC Mitigation System*. Product Data Sheet. Website:  
[http://www.matcor.com/wp-content/uploads/2015/10/matcor\\_mitigator\\_MT1015.pdf](http://www.matcor.com/wp-content/uploads/2015/10/matcor_mitigator_MT1015.pdf) (Accessed October  
17, 2017).

**III. DISTRIBUTION SYSTEM INVESTMENTS**

1 **Q: In your analysis of NIPSCO's TDSIC Plan Update, are there any Distribution**  
2 **System Investment projects that have increased by at least \$100,000 or 20%?**

3 **A:** The ten Distribution System Improvement projects listed below in Table 2 are  
4 projects that show increases of 20% or \$100,000 over NIPSCO's TDSIC-6 Plan  
5 Update.<sup>15</sup>

6 **Distribution System Projects (Table 2)**

| Project Year | Project ID | Project Title   | Approved Project Cost (TDSIC6-G) | Updated Project Cost (TDSIC7-G) | Variance (%) |
|--------------|------------|---|----------------------------------|---------------------------------|--------------|
| 2017         | DIM15      | Buried Regulator Station or Single Regulator Multi-Customer | ██████████                       | ██████████                      | 126          |
| 2018         | K1         | Kokomo Low Pressure Replacement                             | ██████████                       | ██████████                      | N/A          |
| 2018         | DIM31      | Company-Wide Gas Distribution Crossing Replacement          | ██████████                       | ██████████                      | 23.8         |
| 2018         | RE1        | Rural Extensions  | ██████████                       | ██████████                      | 2.6          |
| 2019         | DSD10      | System Deliverability Projects                              | ██████████                       | ██████████                      | 9.8          |
| 2019         | RE1        | Rural Extensions  | ██████████                       | ██████████                      | 14.4         |
| 2020         | DSD10      | System Deliverability Projects                              | ██████████                       | ██████████                      | 210          |
| 2020         | DIM15      | Buried Regulator Station or Single Regulator Multi-Customer | ██████████                       | ██████████                      | 236          |
| 2020         | DIM31      | Company-Wide Gas Distribution Crossing Replacement          | ██████████                       | ██████████                      | 32.2         |
| 2020         | RE1        | Rural Extensions  | ██████████                       | ██████████                      | 26.9         |

<sup>15</sup> Exhibit Gas Plan Update-6 (Confidential), pages 3 – 29.

1 **Q: Are there any project estimate updates listed in Table 2 to which the OUCC**  
2 **does not object?**

3 A: Yes. Other than [Project ID: DSD10] *Burlington System Deliverability* for Plan  
4 Years 2019 and 2020, NIPSCO has adequately explained the cost increases for the  
5 eight remaining projects in Table 2 and the OUCC does not object to these eight  
6 project cost estimate changes:

7 **[Project ID: DIM15] *Buried Regulator Station or Single Regulator Multi-***  
8 ***Customer***

9 This project shows an increase of 126% for 2017, but \$ [REDACTED] of this increase is  
10 due to a move into 2017 from 2019. The actual estimate increase is \$ [REDACTED], or  
11 90.8%. I discussed this project in great detail with NIPSCO technical staff to  
12 understand the reasonableness of this increase. The previous estimate was based on  
13 unit cost data and required an update when engineering design work began.  
14 Specifically, the existing regulator station is located on the backside of a customer's  
15 property, near farm equipment and not easily accessible. NIPSCO's design includes  
16 relocation of this regulator station to the public right-of-way for safety and  
17 maintenance reasons.

18 **[Project ID: K1] *Kokomo Low Pressure Replacement***

19 The increase for this project in 2018 is to commence survey work in 2018 to avoid  
20 possible construction delays in 2020. NIPSCO received an estimate from external  
21 engineers and it came in higher than expected. During my review, I was initially  
22 concerned with survey work being scheduled in 2018 for a 2020 project. In  
23 response to a data request, NIPSCO explained that through discussions with its  
24 outside engineering firm, it was determined it was unrealistic to complete both

1 surveying work and detailed engineering in 2019.<sup>16</sup> The overall impact to this multi-  
2 year project is an increase of 4.0%.

3 **[Project ID: DIM31] *Company-Wide Gas Distribution Crossing Replacement***

4 The project estimate increase is due in part to a net move into 2018 from 2017 of  
5 \$ [REDACTED] and a cost increase for 2018 projects of \$ [REDACTED], or 17.5%. This update  
6 reflects the previous unit cost estimate being updated with specific engineering  
7 considerations. The project crosses a creek and is constrained by a wooded area,  
8 requiring additional environmental permitting, erosion control, and matting. In  
9 addition, camera inspections were conducted during the design to identify potential  
10 problems with cross-bores.

11 **[Project ID: RE1] *Rural Extensions***

12 The cost estimates for 2018, 2019 and 2020 have been updated and show an  
13 increase of 2.6% for 2018, 14.4% for 2019 and 26.9% for 2020. These increases  
14 are based on updated average service costs for the last twelve months and an  
15 updated number of service installations expected for 2018, 2019 and 2020.  
16 NIPSCO's New Business department projects 521 services will be added in 2018,  
17 an additional 1,024 services in 2019, and an additional 1,477 services in 2020.

18 **[Project ID: DIM15] *Buried Regulator Station or Single Regulator Multi-***  
19 ***Customer***

20 This multi-year project shows a 2020 cost estimate increase of 236%; however, the  
21 project estimate over the entire 7-Year Plan has increased by 15.6%. I determined  
22 there was a net move into 2020 from 2017 of \$ [REDACTED] and an increase for all 2020

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<sup>16</sup> See Attachment LAG-2. NIPSCO Response to OUCC Data Request 1-003.



1 projects of \$ [REDACTED]. The updated estimate includes updates on unit costs based on  
2 actual estimates from three 2018 projects.

3 **[Project ID: DIM31] *Company-Wide Gas Distribution Crossing Replacement***

4 This multi-year project shows a 2020 cost estimate increase of 32.2%. I determined  
5 that there was a net move out of 2020 of \$ [REDACTED] and an increase for the remaining  
6 2020 projects of \$ [REDACTED]. The updated estimate includes updates on unit costs  
7 based on actual estimates from seventeen 2018 and 2019 projects. These increases  
8 are attributable to more stringent tie-in and cross-bore safety requirements, as  
9 discussed by Mr. Mooney.<sup>17</sup>

10 **Q: Why does the OUCC have concerns with the *System Deliverability Projects***  
11 **[Project ID: DSD10]?**

12 A: This project shows a cost estimate increase of \$ [REDACTED], or 9.8% for 2019. This  
13 increase reflects a net move of \$ [REDACTED] out of 2019 into 2020, and a cost increase  
14 of \$ [REDACTED]. The specific System Deliverability project, [Project ID: DSD10]  
15 *Burlington System Deliverability*, came in with bids higher than expected. The  
16 estimate reflects the current bids, but NIPSCO intends to redesign the project in  
17 an effort to find a shorter route and reduce project costs.

18 The System Deliverability Projects for 2020 reflect a net move from 2019  
19 into 2020 and a 3% escalation factor applied. Given the current level of uncertainty  
20 associated with the project's final design, the OUCC believes it is prudent the net  
21 cost estimate increases for 2019 and 2020 be disallowed until NIPSCO can finalize

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<sup>17</sup> Petitioner's Confidential Exhibit No. 3, page 14, lines 1 – 15.

1 the project design and the OUCC has an opportunity to review the updated  
2 information.

**IV. STORAGE SYSTEM INVESTMENTS**

3 **Q: In your analysis of NIPSCO's TDSIC Plan Update, are there any Storage**  
4 **System Investment projects that have increased by at least \$100,000 or 20%?**

5 A: Yes. The ten Storage System Improvement projects listed below in Table 3 are  
6 projects that show increases of 20% or \$100,000 over NIPSCO's TDSIC-6 Plan  
7 Update.<sup>18</sup>

**Storage System Projects (Table 3)**

| Project Year | Project ID | Project Title                                   | Approved Project Cost (TDSIC6-G) | Updated Project Cost (TDSIC7-G) | Variance (%) |
|--------------|------------|---|----------------------------------|---------------------------------|--------------|
| 2017         | S41        | Engineering for Capital Projects                | ██████████                       | ██████████                      | 312          |
| 2018         | S41        | Engineering for Capital Projects                | ██████████                       | ██████████                      | 177          |
| 2019         | S15        | RCUGS – Trenton Field Isolation Valves          | ██████████                       | ██████████                      | 61.2         |
| 2019         | S35        | LNG – Mechanical / Electrical System Upgrade    | ██████████                       | ██████████                      | 59.1         |
| 2019         | S36        | LNG – Compressor / Vaporizer Upgrade            | ██████████                       | ██████████                      | 424          |
| 2019         | S37        | RCUGS – Mechanical / Electrical System Upgrade  | ██████████                       | ██████████                      | 31.3         |
| 2019         | S38        | RCUGS – Replace Drips / Gathering System Piping | ██████████                       | ██████████                      | 158          |
| 2020         | S15        | RCUGS – Trenton Field Isolation Valves          | ██████████                       | ██████████                      | 45.8         |
| 2020         | S35        | LNG – Mechanical / Electrical System Upgrade    | ██████████                       | ██████████                      | 32.1         |
| 2020         | S38        | RCUGS – Replace Drips / Gathering System Piping | ██████████                       | ██████████                      | 329          |

<sup>18</sup> Exhibit Gas Plan Update-6 (Confidential), pages 3 – 29.

1 **Q: Are there any project estimate updates listed in Table 3 to which the OUCC**  
2 **does not object?**

3 A: Yes. Other than [Project ID: S36] *LNG – Compressor / Vaporizer Upgrade*,  
4 NIPSCO has adequately explained the cost increases for the remaining nine  
5 projects in Table 3. The OUCC does not object to the updated cost estimates for  
6 these nine projects:

7 **[Project ID: S41] *Engineering for Capital Projects***

8 This project shows a 2017 increase of \$ [REDACTED] as a result of advance design and  
9 engineering of 2018 projects, in addition to the use of external engineering  
10 resources. Due to the large scope and complex storage system projects, NIPSCO  
11 pursued external engineering because of internal resource constraints, as well as the  
12 need for outside expertise. The engineering projects estimated in 2018 for 2019  
13 projects also reflect estimate updates based on NIPSCO's 2017 experience.  
14 NIPSCO's 2019 TDSIC Plan shows no change for 2019 engineering expenditures  
15 and no estimated engineering at all for 2020.

16 **[Project ID: S15] *RCUGS – Trenton Field Isolation Valves***

17 The 2019 project shows an estimated increase of \$ [REDACTED], and the 2020 project an  
18 increase of \$ [REDACTED] as a result of unit cost estimates that have been updated based  
19 on further engineering and specific valves being identified for replacement. For the  
20 2019 project, the estimate also includes work to temporarily plug the well, replace  
21 a 6-inch well meter run, and an associated master valve.

1                   **[Project ID: S35] LNG – Mechanical / Electrical System Upgrade**

2                   This project estimate update for 2019 shows an increase of \$ [REDACTED], or 59.1% and  
3                   the 2020 project shows an increase of \$ [REDACTED], or 32.1%. The increase for 2019 is  
4                   based on previous unit cost estimates and have now been updated as engineering  
5                   has progressed on 2019 projects. The specific project for 2019 represents the final  
6                   phase of NIPSCO's "Replace Plant Process Safety Valves" program planned for  
7                   2017 and 2018. The increase shown for 2020 projects reflects an update on unit  
8                   cost data from 2017 – 2019.

9                   **[Project ID: S37] RCUGS – Mechanical / Electrical System Upgrade**

10                  This project shows an estimated increase of \$ [REDACTED], or 31.3%. The driver for this  
11                  increase is due to unit cost estimates that have been updated based on further  
12                  engineering and project coordination. Specifically, the components of the  
13                  equipment to be replaced are located inside a building adjacent to process pumps.  
14                  In addition, project coordination is critical to ensure construction activities are able  
15                  to be completed within facility operating and maintenance schedules.

16                  **[Project ID: S38] RCUGS – Replace Drips / Gathering System Piping**

17                  This project estimate update for 2019 shows an increase of \$ [REDACTED] and the 2020  
18                  project shows an increase of \$ [REDACTED]. The shown increase for 2019 is based on  
19                  a net move into 2019 from 2018 of \$ [REDACTED] and an actual increase of \$ [REDACTED].  
20                  The 2020 estimate increase reflects a net move into 2020 from 2019 of \$ [REDACTED]  
21                  and an actual increase of \$ [REDACTED]. The 2019 increase reflects an escalation factor  
22                  from bringing a 2018 project into 2019 and the estimate remains unchanged. The  
23                  increase for the 2020 project reflects a project moved from 2019 into 2020 with a

1 site specific estimate. Mr. Mooney indicated costs would increase for this project  
2 in later Plan Years because the projects would become more complex with wells  
3 located in more remote areas, which would increase material and labor costs.<sup>19</sup>

4 **Q: Why does the OUCC have concerns with the LNG – Compressor / Vaporizer**  
5 **Upgrade project [Project ID: S36]?**

6 A: The updated estimate for this project increased from \$██████ to \$██████, or  
7 424%. While reviewing Mr. Mooney's testimony, I noted the selected project  
8 includes large overhead fan coolers and associated structural steel and piping. I  
9 followed up with a data request to better understand the reasonableness of this  
10 substantial project estimate increases and to determine if these increases were  
11 reasonably foreseeable by NIPSCO. In response to the data request, NIPSCO  
12 explained the previous small project unit cost was a placeholder used until further  
13 engineering was completed and the specific projects selected.<sup>20</sup> This was  
14 concerning in light of the Commission's Order in 44403 TDSIC-4 as discussed on  
15 pages 2-3 of my testimony that states, "[the utility] must explain why the increase  
16 in the best estimated cost, which was considered to be better than all others in  
17 quality or value, is reasonable or warranted under the circumstances presented."<sup>21</sup>  
18 The best estimate for this project was provided as a small project unit cost without  
19 a specific project being identified. Now the project is being updated with a large  
20 project unit cost with an accompanying 424% increase, and is unreasonable. The

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<sup>19</sup> Cause No. 44403-TDSIC-6. Petitioner's Exhibit No. 3-R, page 10, lines 1 – 11.

<sup>20</sup> See Attachment LAG-3. NIPSCO Response to OUCC Data Request 1-004.

<sup>21</sup> Cause No. 44403 TDSIC-4, Order at page 28.

1 OUCC recommends this cost estimate update be disallowed and remain at the  
2 previously approved estimated amount of \$ [REDACTED].

**V. CONCLUSIONS AND RECOMMENDATIONS**

3 **Q: Please summarize your conclusions and recommendations.**

4 A: After analyzing NIPSCO's Updated 7-Year Gas Plan, I recommend the  
5 Commission:

- 6 1. Disallow the 2019 updated cost estimate increase for [Project ID: IM23-  
7 DIM34] *Corrosion AC Mitigation*;
- 8 2. Disallow the 2019 and 2020 updated cost estimate increase for [Project ID:  
9 DSD10] *System Deliverability Projects* until a project design is finalized,  
10 and;
- 11 3. Disallow the 2019 updated cost estimate increase for [Project ID: S36] *LNG*  
12 *– Compressor / Vaporizer Upgrade*.
- 13 4. Approve the remaining Updated 7-Year Gas Plan.

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

15 A: Yes.

**AFFIRMATION**

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



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Leon A. Golden  
Utility Analyst II  
Indiana Office of Utility Consumer Counsel  
Cause No. 44403 TDSIC-007  
NIPSCO

10/30/2017

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Date

**APPENDIX LAG-1 TO TESTIMONY OF  
OUCC WITNESS LEON A. GOLDEN**

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

2 A: I graduated from Purdue University School of Engineering and Technology -  
3 Indianapolis in 2011, with a Bachelor of Science degree in Mechanical  
4 Engineering. In October of 2011, I passed the Fundamentals of Engineering exam  
5 administered by the Indiana Professional Licensing Agency.

6 I worked as a civil engineering technician from 2005-2008, performing  
7 materials testing in field and laboratory settings, conducting analysis of mechanical  
8 properties of soils, and working in accordance with a variety of testing standards.  
9 From 2009-2014, I worked as an engineer co-op and project engineer in the electric  
10 utility industry in a number of different areas, including Customer Projects,  
11 Substation Relaying and Protection, and Standards and Code Compliance. I have  
12 also worked as a project engineer on nearly fifty distributed generation solar  
13 projects, ranging from 20 kW/ac to 10 MW/ac.

14 I have participated in several IEEE technical workshops, including Smart  
15 Grid Cyber-Security, Smart Distribution Systems, and Wind Farm Collector  
16 System Design workshops. I have attended New Mexico State University – Center  
17 for Public Utilities’ Basic Regulatory Training for the Electric and Natural Gas  
18 Industries in New Mexico, and the Institute of Public Utilities’ Intermediate  
19 Regulatory Studies Program at Michigan State University. In addition, I have  
20 attended MISO training courses on several topics, including Locational Marginal  
21 Price Mechanics, Financial Transmission Rights Mechanics, MISO Market  
22 Settlement Calculations, and Resource Adequacy Mechanics.



1 **Q: Have you previously testified before this Commission?**

2 A: Yes. I have testified in a number of Causes before this Commission.

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

5 A: I reviewed and analyzed Petitioner's direct testimony, and exhibits. I also reviewed  
6 project cost estimates provided by Northern Indiana Public Service Company  
7 ("NIPSCO" or "Petitioner") and responses to Data Requests issued by the OUCC.  
8 I participated in meetings with NIPSCO staff to discuss cost and engineering  
9 aspects of NIPSCO's Updated 7-Year Gas Plan. My analysis focuses on the  
10 reasonableness of project cost increases, the level of testimonial and evidentiary  
11 support in NIPSCO's case-in-chief for these cost increases, and to ensure that the  
12 drivers for the increases were not reasonably foreseeable by NIPSCO.

Cause No. 44403-TDSIC-7  
Northern Indiana Public Service Company's  
Objections and Responses to  
Indiana Office of Utility Consumer Counselor's Data Request Set No. 1

**OUCC Request 1-001:**

Refer to Petitioner's Exhibit No. 3, pages 53. Regarding the **22" Aetna to US 35 - LaPorte [Project ID TP2]** project, Witness Mooney states,

Phase III of the project is primarily urban and wetland and has the most challenging construction conditions due to significant risk related to the amount of projected dewatering along the planned route and an increase in the amount of horizontal directional drilling required with the wetlands that will be crossed. In particular, the restrictions around the Calumet Prairie Wetland. The Calumet Prairie Wetland is both one of the most distinctive wetlands and a critically imperiled wetland in the State of Indiana. The wetland includes multiple State listed plants and animals, which are regulated under the Nongame and Endangered Species Conservation Act, including the state endangered species Spotted Turtle. The highest concentration of Spotted Turtles in the region is located in the NIPSCO right of way and a significant 3300' bore ... required to minimize disturbance to this wetland and reduce NIPSCO's compensatory wetland mitigation requirements by two acres.

This project was included in NIPSCO's original 7-Year Plan. Please explain why it is reasonable that NIPSCO could not have known that this project was located in a wetlands area at the time the project was identified by NIPSCO for inclusion in its original 7-Year Plan.

**Objections:**

**Response:**

NIPSCO did recognize that this project would occur through wetlands in the original 7-Year Plan, but the area where work was planned adjacent to the Calumet Prairie is higher in elevation than a typical wetland and occurs on NIPSCO owned right of way. Because of the elevation and right of way, the installation of pipe was originally planned to utilize the open-cut method. During the public comment period of the permitting process, the Indiana Department of Natural Resources ("DNR"), Division of Nature Preserves, which manages wetland, expressed significant concerns over open-cutting installation on an adjacent property and the potential impacts it would

**Cause No. 44403-TDSIC-7**  
**Northern Indiana Public Service Company's**  
**Objections and Responses to**  
**Indiana Office of Utility Consumer Counselor's Data Request Set No. 1**

have on the Calumet Prairie Wetland. As the project progressed and the final permit was negotiated through the DNR and the Army Corps of Engineers, it became clear that the only acceptable method of installation to the agencies was a bore.

Cause No. 44403-TDSIC-7  
Northern Indiana Public Service Company's  
Objections and Responses to  
Indiana Office of Utility Consumer Counselor's Data Request Set No. 1

**OUCR Request 1-003:**

Refer to Petitioner's Exhibit No. 3, pages 56. Regarding the **Kokomo Low Pressure Replacement [Project ID K1]** project, please explain why surveying work is being planned for 2018 for the project scheduled to begin construction in 2020.

**Objections:**

NIPSCO objects to this Request on the grounds and to the extent that such Request seeks information that is confidential, proprietary, and/or trade secret information. Specifically, data responsive to this request contains operational information that is sensitive from a public safety and security point of view.

**Response:**

Subject to and without waiver of the foregoing general and specific objections, NIPSCO is providing the following response:

Starting the surveying work in 2018 places this project within NIPSCO's guidelines of engineering a project 18-24 months in advance of construction. Through preliminary discussions with an outside engineering firm, it became clear that it was unrealistic to accomplish both the survey work and the detailed engineering of the first phase of construction in a single year. Completing the survey work in 2018 will support commencement of the necessary detailed engineering work in 2019, and the construction in 2020.

A map of the Kokomo Low Pressure Replacement project is attached hereto as OUCR Request 1-003 Confidential Attachment A. The work to be done in 2020 is shaded areas A and B, with A consisting of the mains and B the distribution lines. Please note this work is subject to modification as NIPSCO advances the engineering and design work and completes constructability reviews.

Cause No. 44403-TDSIC-7  
Northern Indiana Public Service Company's  
Objections and Responses to  
Indiana Office of Utility Consumer Counselor's Data Request Set No. 1

**OUCC Request 1-004:**

Refer to Petitioner's Exhibit No. 3, pages 61. Regarding the **CLNG – Compressor / Vaporizer Upgrade [Project ID S36]** project, Witness Mooney states,

Based on feedback from engineering, the two targeted projects are better represented by the unit costs for large projects rather than the current small project unit cost due to the scope and complexity expected.

This project was included in NIPSCO's original 7-Year Plan. Please explain why a small unit cost was chosen for creating the original estimate, and why it is reasonable that NIPSCO could not have known that this project would be better represented by a unit cost for large projects.

**Objections:**

**Response:**

The two specific projects to be constructed were recently prioritized by engineering. The previous small project unit cost represented in the 7-Year Plan was a placeholder until the specific projects were selected following NIPSCO's policy of engineering projects 18-24 months before construction. Once these two specific projects were identified as being the priority to be constructed, NIPSCO received feedback from the engineers that these projects would better be represented by either a large project unit cost or a small project unit cost rather than all of them represented by a small unit cost as previously done. This is consistent with NIPSCO's engineering workflow and following the Company's best estimate progression as more information is known. NIPSCO now knows the specific projects to be constructed and the large project unit cost better represents the best estimate. Once the specific engineering is completed, the unit cost estimate will be revised to a detailed estimate.

**CERTIFICATE OF SERVICE**

This is to certify that a copy of the foregoing *Indiana Office of Utility Consumer Counselor Public's Exhibit No. 2 Public (Redacted) Testimony of OUCC Witness Leon A. Golden* has been served upon the following counsel of record in the captioned proceeding by electronic service on October 30, 2017.

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