

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF NORTHERN INDIANA PUBLIC)
SERVICE COMPANY LLC FOR (1) APPROVAL OF)
PETITIONER'S TDSIC PLAN FOR ELIGIBLE)
TRANSMISSION, DISTRIBUTION, AND STORAGE SYSTEM)
IMPROVEMENTS, PURSUANT TO IND. CODE § 8-1-39-10(a))
INCLUDING TARGETED ECONOMIC DEVELOPMENT)
PROJECTS PURSUANT TO IND. CODE § 8-1-39-10(c), (2))
AUTHORITY TO DEFER COSTS FOR FUTURE)
RECOVERY, (3) APPROVAL FOR INCLUSION OF)
NIPSCO'S TDSIC PLAN PROJECTS IN ITS RATE BASE IN)
ITS NEXT GENERAL RATE PROCEEDING PURSUANT TO)
IND. CODE § 8-1-2-23, AND (4) AUTHORITY TO)
RECOVERY OPERATION AND MAINTENANCE EXPENSES)
AS TDSIC COSTS PURSUANT TO IND. CODE § 8-1-39-7)
UNDER ITS APPROVED RIDER 888 – ADJUSTMENT OF)
CHARGES OR TRANSMISSION, DISTRIBUTION AND)
STORAGE SYSTEM IMPROVEMENT CHARGES.)

CAUSE NO. 45557

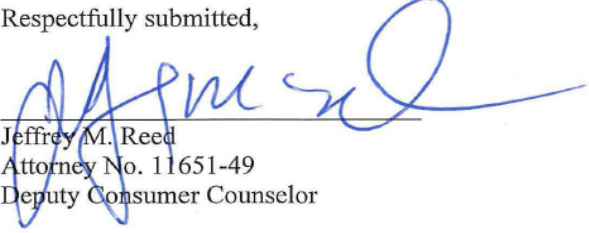
INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PUBLIC'S EXHIBIT NO. 1

TESTIMONY OF
OUCC WITNESS ANTHONY A. ALVAREZ

August 30, 2021

Respectfully submitted,



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

TESTIMONY OF OUCC WITNESS ANTHONY A. ALVAREZ
CAUSE NO. 45557
NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

I. INTRODUCTION

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

2 A: My name is Anthony A. Alvarez, 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 as a Utility Analyst in the Indiana Office of Utility Consumer
6 Counselor's ("OUCC") Electric Division. I describe my educational background in
7 Appendix A to my testimony.

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

10 A: Yes. I have testified in cases before the Commission, including electric utility base
11 rate cases; environmental and renewable energy Purchase Power Agreement and
12 tracker cases; Transmission, Distribution, and Storage System Improvement
13 Charge ("TDSIC") cases; and applications for Certificates of Public Convenience
14 and Necessity.

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

16 A: My testimony addresses Northern Indiana Public Service Company LLC's
17 ("NIPSCO" or "Petitioner") request for approval of its electric transmission,
18 distribution, and storage system improvements plan ("2021-2026 Electric Plan" or
19 "Plan") in this Cause.¹ In particular, my testimony: 1) addresses and discusses my

¹ See Petitioner's Verified Petition dated July 1, 2021.

1 review of NIPSCO's proposed advanced metering infrastructure ("AMI")
2 deployment ("AMI Project");² 2) discusses my review of the project costs and
3 operations and maintenance ("O&M") expense for the AMI Project
4 implementation,³ and explains why the cost estimate NIPSCO provided for the
5 AMI Project is not "the best estimate of the cost" as required by I.C. 8-1-39
6 ("TDSIC Statute");⁴ 3) evaluates NIPSCO's AMI business case and cost-benefit
7 analysis ("CBA")⁵ and discusses why the estimated cost of the AMI Project is not
8 "justified by incremental benefits attributable" to the project; and finally, 4)
9 recommends the Commission deny including the AMI Project in NIPSCO's 2021-
10 2026 Electric Plan and subsequent cost recovery in a TDSIC proceeding.

11 **Q: What did you do to prepare your testimony?**

12 A: I reviewed NIPSCO's amended petition, direct testimony, and exhibits filed in this
13 Cause. I attended NIPSCO's Electric TDSIC 2021-2026 Plan presentation with
14 OUCC staff and other Intervenors on April 26, 2021.

15 **Q: To the extent you do not address a specific item in your testimony, should it be**
16 **construed to mean you agree with NIPSCO's proposal?**

17 A: No. My silence regarding any topics, issues or items NIPSCO proposes does not
18 indicate my approval of those topics, issues or items. Rather, the scope of my
19 testimony is limited to the specific items addressed herein.

² Petitioner's Exhibit No. 1, Direct testimony of Allison M. Becker, p. 11, lines 13 – 14.

³ Petitioner's Exhibit No. 4, Direct testimony of Matthew G. Holtz, response A6, p. 4.

⁴ IC 8-1-39-10(b)(1).

⁵ Petitioner's Exhibit No. 3, Direct testimony of Christopher Kiergan, p. 3, lines 8 – 18. *See also* Petitioner's Exhibit No. 2, Charles A. Vamos, Confidential 2-B, Appendix C. 2021 – 2026 NIPSCO Electric AMI Business Case.

II. EXISTING AMR AND PROPOSED AMI METERING SYSTEMS

1 **Q: Please provide an overview of NIPSCO’s present electric automated meter**
2 **reading (“AMR”) system.**

3 A: NIPSCO currently has 481,338 electric AMR meters within its service territory.⁶
4 NIPSCO initiated AMR deployment on February 25, 2013 and completed it on
5 December 30, 2015.⁷ Table 1 below shows the timeline of activities associated with
6 NIPSCO AMR deployment.⁸

7 **Table 1**

Activity	Date
Project Study and Scope Creation	June 22, 2011
Charter Approved	November 30, 2012
Pilot Start	February 25, 2013
Pilot Complete	April 12, 2013
Project Start	March 14, 2013
Project Completion	December 30, 2015

8 NIPSCO assembled a formal project management team to oversee, manage and
9 have full responsibility of its AMR deployment.⁹ It incurred “minimal cost
10 escalations related to this [AMR] deployment (about 3.7%).”¹⁰ The original project
11 cost estimate for NIPSCO’s AMR deployment was “\$28.8 million and completed
12 the project with a final installed cost of \$29.95 million, including direct and indirect
13 costs.”¹¹ At present, NIPSCO’s non-weighted average cost of AMR meter
14 installations by customer type is as follows:¹²

⁶ Public Attachment AAA-2 – NIPSCO Response to OUCC 3-008 (a). *See also* Holtz, Direct Testimony, response A8, p. 4.
⁷ Attach. AAA-2 - NIPSCO Response to OUCC 3-009 (a) and (d).
⁸ Attach. AAA-2 - NIPSCO Response to OUCC 3-009 (d).
⁹ Attach. AAA-2 - NIPSCO Response to OUCC 3-009 (e).
¹⁰ Attach. AAA-2 - NIPSCO Response to OUCC 3-009 (i).
¹¹ Attach. AAA-2 - NIPSCO Response to OUCC 3-009 (h) and (m).
¹² Attach. AAA-2 - NIPSCO Response to OUCC 3-008 (d).

- 1 1. Residential / Small Commercial (self-contained metering) – \$249.61
- 2 2. Medium / Large Commercial / Industrial (transformer-rated metering) –
- 3 \$617.13

4 **Q: Please provide an overview of NIPSCO's proposed AMI system.**

5 A: NIPSCO plans to replace all of the AMR meters in its service territory within a six-

6 year period (2021-2026).¹³ To do so, NIPSCO included the AMI Project in the Grid

7 Modernization segment of its 2021-2026 Electric Plan.¹⁴ The AMI Project's

8 \$167,666,868 estimated capital cost makes up more than 10% of NIPSCO's

9 \$1,625,520,697 total 2021-2026 Electric Plan investments.¹⁵ The AMI Project also

10 accounts for the entire \$10,014,705 one-time O&M expense in the 2021-2026

11 Electric Plan¹⁶ plus \$11,143,849 recurring O&M expenses within and after the AMI

12 deployment period.¹⁷ Compared to AMR, an AMI deployment is a major

13 undertaking for a utility when considering the network architecture,

14 communication, management and information systems needed to build the

15 infrastructure integral to an AMI system.¹⁸

16 **Q: Does the OUCC oppose deploying AMI technology?**

17 A: No, the OUCC does not oppose AMI technology deployment.

¹³ Kiergan Direct, p. 14, lines 6 – 10. Kiergan Attachment 3-B, p. 5, "Meters not currently modeled for replacement during the 2024-2026 full deployment include approximately 350 large industrial, MV-90-read meters that require specific real-time data transmission and advanced data measuring functionality." *See also* Becker, Attachment 1-C, p. 29.

¹⁴ Becker Direct, p. 11, lines 13 – 15.

¹⁵ Petitioner's Exhibit No. 2, Charles A. Vamos, Direct Testimony, Table 2 – Annual Cost Breakdown by Type, p. 39, lines 9 – 10; and Kiergan, Attachment 3-B, table "Estimated NIPSCO AMI Project Capital Costs (2021-2036)," p. 11.

¹⁶ Vamos Direct, Table 2 – Annual Cost Breakdown by Type, p. 39, lines 9 – 10.

¹⁷ Kiergan, Attachment 3-B, Section C – NIPSCO Electric AMI Project Costs, p. 4.

¹⁸ *See* Becker, Attachment 1-C, pp. 25 – 29.

1 **Q: What is the OUCC's position regarding AMI deployment as part of a TDSIC**
2 **plan?**

3 A: Similar to other projects included in a utility's proposed TDSIC plan, the OUCC
4 reviews and evaluates a utility's proposed AMI deployment based on the
5 requirements of the TDSIC Statute. This includes determining whether the utility
6 provided the required "best estimate," if the public convenience and necessity
7 requires the project, and whether incremental benefits justify the estimated costs.
8 Particularly, as it relates to a "best estimate," the OUCC looks toward numerous
9 findings in previous Commission Orders related to the level of accuracy, flexibility
10 and completeness of the utility's project cost estimates.¹⁹

III. AMI PROJECT COST ESTIMATE

11 **Q: Please describe the AMI Project cost NIPSCO is seeking approval for in this**
12 **Cause.**

13 A: NIPSCO is seeking approval of the AMI Project's \$167,666,868 estimated capital
14 cost to install 494,515 AMI meters by the end of the AMI deployment period
15 (2026), as part of its overall 2021-2026 Electric Plan.²⁰ Petitioner's witness
16 Christopher Kiergan Direct, pp. 11 – 13, describes the methodology and
17 benchmarking process West Monroe Partners LLC ("West Monroe"), a NIPSCO
18 consultant, used to develop the forecasted AMI capital costs for the AMI CBA.²¹

¹⁹ Commission Order dated April 30, 2014, in Cause No. 44403, p. 18 ("44403 Order"). *See also* Commission Order On Remand dated September 23, 2015, in Cause Nos. 44370 and 44371, p. 9.

²⁰ Kiergan, Attachment 3-B, p. 4, and p. 11.

²¹ Kiergan Direct, p. 11 lines 11 to p. 13, lines 1 – 6. Attachment 3-B, pp. 11 – 12, contain tables showing the annual capital costs and O&M expenses during deployment and average annual costs post deployment (2021-2036).

1 **Q: Did NIPSCO provide a “best estimate” of the cost for its proposed AMI**
2 **Project?**

3 A: No. NIPSCO did not provide a “best estimate” as required by statute and as that
4 term has been defined by the Commission. The Commission’s Order dated June 22,
5 2016, in NIPSCO Cause No. 44403 TDSIC-4, page 27, states “[w]e found in our
6 TDSIC-3 Order that the Appellate Order requires that the Commission's finding of the
7 “best estimate of the costs of eligible improvements” is to be determined in a Section
8 10 proceeding, where it is a factor to be considered in whether a utility’s seven-year
9 plan is reasonable and should be approved.” The Order goes on to state: “[a] TDSIC
10 best estimate should reflect, at a minimum, costs a utility reasonably could or
11 should have foreseen at the time the estimate was created.” *Id.* at page 28. Further,
12 the Order states” ...a utility must update its approved plan and explain any changes
13 in the best estimate of costs, necessity, or incremental benefits.” *Id.* at page 27.
14 NIPSCO did not provide any work order level detail cost estimate, or any detailed
15 materials, labor and equipment cost estimates to support the AMI Project cost
16 because it was still at an initiation phase of a project. Kiergan Direct, p. 12, lines
17 17 – 18, states “[b]ecause NIPSCO is just initiating the AMI Project, it did not have
18 vendor-supplied cost information for certain components.”²²

19 In comparison, Petitioner’s Exhibit No. 2, Charles A. Vamos, Direct
20 Testimony, Table-6, p. 88, designates line item with “Project ID: DLAMI[1]” for

²² Kiergan Direct, p. 12, lines 13 – 19 and p. 13, lines 1 – 3, states “West Monroe, however, benchmarked the cost inputs based on industry experience and perspective from similar efforts. The benchmarking process helped balance scope and investment to match anticipated benefits based on the experience of other utilities. Because NIPSCO is just initiating the AMI Project, it did not have vendor-supplied cost information for certain components. For these components, including AMI meter costs, AMI communication asset costs, and a 1 Meter Data Management System (“MDMS”), West Monroe used benchmark data from several recent AMI business cases and deployments to estimate the scope needed and the corresponding costs.”

1 “Project Name: Advanced Metering Infrastructure (AMI).”²³ This line item
2 DLAMI[1] consistently appeared “as is” showing the capital cost for the AMI
3 Project in years 2021 thru 2026 in NIPSCO’s “Electric [Year] Project Detail –
4 Direct Capital Dollars Only” without providing any additional support.²⁴ Mr.
5 Vamos referred to the AMI investment, business case and CBA discussions to
6 Petitioner’s witness Matthew G. Holtz’s²⁵ and Mr. Kiergan’s²⁶ testimonies
7 respectively, but offered no additional support himself for the AMI Project cost line
8 items he presented.²⁷

9 NIPSCO has yet to create the architecture or network designs for the AMI
10 technology it plans to deploy.²⁸ NIPSCO still needs to identify the specific meter,
11 equipment, hardware, and systems including the headend, communication and
12 meter data management systems it needs to build and serve as the AMI
13 infrastructure’s backbone.²⁹ The high-level capital and O&M expense estimates
14 shown in Attachment 3-B, pp. 11 – 12, did not include any detailed cost breakdown
15 of the AMI Project.³⁰ Based on NIPSCO’s case-in-chief and responses to discovery
16 questions,³¹ NIPSCO will not be able to provide a “best estimate” for the cost of
17 the project until it develops, issues and evaluates its request for proposals (“RFPs”)

²³ Vamos Direct, Table 6, p. 88.

²⁴ Vamos Direct, Confidential Attachment 2-A (Redacted).

²⁵ Vamos Direct, footnote 7, p. 17.

²⁶ Vamos Direct, footnote 9, p. 33.

²⁷ Vamos Direct, Confidential Attachment 2-A (Redacted). *See also* Vamos Direct, Confidential Appendix C, AMI Business Case.

²⁸ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-007.

²⁹ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-005.

³⁰ Kiergan, Attachment 3-B, pp. 11 – 12, did not contain any detailed cost breakdown such as materials and labor costs for the AMI project.

³¹ Public’s Attachment AAA-1 – NIPSCO response to OUCC DR Set 2 and Public’s Attachment AAA-2 – NIPSCO response to OUCC DR Set 3.

1 for the various AMI Project components.³² The earliest NIPSCO could initiate and
2 develop a proper best estimate and detailed cost breakdown of the AMI Project
3 would be during the second year of the deployment (2024).³³

4 **Q: Mr. Kiergan considers the AMI Project cost estimate in the CBA is an AACE**
5 **Class 4 estimate. Do you agree with his statement?**

6 A: No, I do not agree with his statement. If an estimate falls off a Class 3 classification
7 does not automatically make it a Class 4 or the default Class 5 estimate, as in this
8 case.³⁴ In responses to OUCC discovery, NIPSCO admitted it has yet to identify
9 and select the AMI meters and create the architecture or network designs for its
10 proposed AMI Project.³⁵ The AMI meters are the most basic element of an AMI
11 system, and the architecture or network designs define the system's fundamental
12 infrastructure. Without these most basic elements in place, NIPSCO's AMI Project
13 is still at its initial stages.

14 **Q: Please state your concern on the AMI Project estimate's status.**

15 A: The OUCC's concern is, at an initial stage, the estimated cost of NIPSCO's AMI
16 Project has a very high degree of uncertainty. Likewise, the project has a high
17 possibility of future cost escalations with magnitudes of several factors.³⁶ Using a
18 comparative review of AMI deployments among other Indiana electric utilities

³² Kiergan, Attachment 3-B, p. 1.

³³ Becker, Attachment 1-C, p. 29.

³⁴ Kiergan, Attachment 3-B, p. 1, states "As a result, there is a high degree of confidence that the sensitivity of the estimate, based on the current assumptions, is within the Class 3 ranges detailed by AACE (-10 to 20%, +10 to 30%). However, at present, no RFPs have been issued and no proposals from vendors have been received. Therefore, this estimate is considered a Class 4 estimate in alignment with NIPSCO's overall TDSIC program.

³⁵ Public's Attachment AAA-1 – NIPSCO response to OUCC 2-005 and 2-005.

³⁶ *Id.* Website:

https://www.costengineering.eu/Downloads/articles/AACE_CLASSIFICATION_SYSTEM.pdf. Accessed: 08/13/2021.

1 shows NIPSCO's \$168 million AMI Project cost forecast (as it appears on
 2 Petitioner's Attachment 3-B, p. 4) is already significantly higher than the \$121
 3 million overall budget of another Indiana electric utility with a similar number of
 4 AMI meter installations concurrently building its own AMI system.³⁷ Table 1
 5 below compares NIPSCO's AMI deployment with other Indiana electric utility
 6 AMI deployments on an all-in, cost-per-meter installed basis.³⁸

7 **Table 2**

Utility	AMI Meter, Planned Units	Estimated Deployment Cost, \$ million	All-In, Per AMI Install Cost, \$/unit	Status	Reference, Cause No.
NIPSCO ¹	495,000	\$167.70	\$338.79	Proposed	45557
I&M ²	470,000	\$121.00	\$257.45	Proposed	45576
DEI ³	817,000	\$181.00	\$221.54	Completed	44526

Note: ¹ Northern Indiana Public Service Company, LLC ("NIPSCO")

² Indiana Michigan Power Company ("I&M")

³ Duke Energy Indiana, LLC ("DEI")

8 NIPSCO's proposed AMI deployment, together with the Project cost, is
 9 surrounded by a significant degree of uncertainty. Ratepayers should not be
 10 burdened paying for a project cost not supported by a "best estimate" or justified
 11 by the incremental benefits.

³⁷ Cause No. 45576, Indiana Michigan Power Company ("I&M") witness Toby L. Thomas, direct Testimony, p. 5, lines 11 -13, filed July 1, 2021, with the Commission. Mr. Thomas states, "[t]he AMI Project that is part of I&M's integrated distribution strategy is scheduled to occur over four years (2021 through 2024) and is estimated to have a cumulative capital cost of approximately \$121 million." I&M supplies electric service to approximately 470,000 retail customers in northern and east-central Indiana and 130,000 retail customers in southwestern Michigan. *Id.* (Thomas Direct, p. 9, lines 8 – 10). In Cause No. 44526, Duke Energy Indiana ("DEI") proposed to install 817,000 AMI meters for an estimated cost of \$181 million, which includes "the cost of technology components and the installation labor –including the AMI meters, communication devices/grid routers, and IT systems." (DEI witness Donald L. Schneider, Jr., p. 3, lines 4 – 6, and p. 16, lines 10 – 15, in Cause No. 44526, filed August 29, 2014, with the IURC) Website: <https://iurc.portal.in.gov/advanced-search/>. Accessed: Friday, 08/13/2021.

³⁸ *Id.*

1 **Q: Please summarize the results of your AMI Project cost estimate review.**

2 A: Without the basic project elements and components in place, NIPSCO's AMI
3 Project remains at its initial stage with a substantial possibility of further cost
4 escalations. NIPSCO's AMI Project cost estimate is already significantly higher
5 than another Indiana utility's overall budget for a similarly sized AMI
6 deployment.³⁹ It is, on an all-in, cost-per-meter installed basis, much higher than
7 the most recent AMI deployment by another neighboring utility with more than
8 twice the service territory size and almost twice the number of AMI meters
9 deployed.⁴⁰ NIPSCO's estimate is speculative. The Commission should find
10 NIPSCO did not provide a "best estimate" as required by statute and therefore the
11 AMI Project should be excluded from the Plan at this time.

IV. NIPSCO AMI COST-BENEFIT ANALYSIS

12 **Q: Please identify what NIPSCO presented as its comprehensive business case**
13 **supporting its proposed Indiana AMI deployment.**

14 A: NIPSCO presented a cost-benefit analysis or "CBA" in Appendix C. 2021-2026
15 NIPSCO Electric AMI Business Case, prepared by West Monroe,⁴¹ and included
16 in the 2021-2026 TDSIC Investment Plan Business Case, dated May 2021, as
17 prepared by Sargent & Lundy, in support of the AMI Project.⁴² Mr. Kiergan also
18 provided a detailed summary result of the CBA ("CBA Results") in his testimony.⁴³

³⁹ Cause No. 45576, I&M AMI deployment.

⁴⁰ Cause No. 44526, DEI AMI deployment.

⁴¹ Vamos, Confidential 2-B, Appendix C. 2021 – 2026 NIPSCO Electric AMI Business Case.

⁴² Vamos, Confidential 2-B, 2021-2026 TDSIC Investment Plan Business Case, Sargent & Lundy, May 2021.

⁴³ Kiergan, Attachment 3-B – AMI Project Cost-Benefit Analysis – Detailed Results.

1 **Q: Did Petitioner identify the enabling capabilities AMI provides in integrating**
2 **electric vehicles (“EV”) and EV charging for NIPSCO?**

3 A: Yes. Petitioner’s witness Alison Becker, Attachment 1-C, pp. 25 – 29, identified
4 the enabling capabilities AMI provides in integrating EV and EV charging for
5 NIPSCO.

6 **Q: Did NIPSCO calculate and include the benefits or operational savings from**
7 **AMI and EV charging in the AMI CBA? Please explain.**

8 A: No. NIPSCO did not calculate or include the benefits or operational savings from
9 AMI and EV charging in its AMI CBA due to the “conservative approach” Mr.
10 Kiergan took in developing the CBA, although Mr. Kiergan himself identified EV
11 as among the drivers for utilities to install AMI.⁴⁴

12 In responses to OUCC discovery, it admitted “NIPSCO has not calculated
13 any benefits or operational savings with respect to AMI meters and EV charging,”⁴⁵
14 or included these benefits in its AMI CBA although, Ms. Becker, Attachment 1-C,
15 p. 25, claims AMI “is central to NIPSCO’s efforts to enable modern utility
16 capabilities.” She also enumerated a list of capability requirements in the areas of
17 integrating EV charging into NIPSCO’s “distribution grid,” “improved forecasting
18 of new assets and load patterns for integrated resource planning,” among others.
19 Further, NIPSCO specified EV charging as among the “follow-on programs”
20 category instead although, “Usage Data for EV Loads,” as shown in Ms. Becker,
21 Attachment 1-C, p. 27, is one of the items included in “Advanced Grid Sensing &
22 Control” category that NIPSCO specifically identified as among the “considerable
23 benefits” “AMI will deliver” “upon deployment.”

⁴⁴ Kiergan Direct, p. 7, lines 7 – 10 and 21.

⁴⁵ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-003 (a).

1 Likewise, NIPSCO did not include the benefits and operational savings
2 associated with reduced truck rolls and drive-by meter reading in the AMI CBA.⁴⁶
3 NIPSCO incorrectly considered reduced truck rolls and drive-by meter reading as
4 “societal benefits” rather than an operational benefit, as reflected in its response to
5 discovery with reference to Mr. Kiergan Direct, Q&A 30, p. 29, lines 4 – 9.⁴⁷

6 NIPSCO’s conservative approach in developing the AMI CBA and
7 excluding benefits from the baseline cost-benefit comparison made it very difficult
8 to discern which benefits could add support to the viability of AMI and be attainable
9 upon deployment, and which ones were simply aspirational and may take many
10 years to materialize, if ever.⁴⁸ This adds to the uncertainty of the project, since
11 neither the costs nor the benefits were included.

12 **Q: Please summarize the results of NIPSCO’s AMI CBA.**

13 A: NIPSCO’s AMI CBA shows the benefits from AMI deployment will not breakeven
14 until 13.5 years (2033) after the project starts.⁴⁹ Said another way, that would occur
15 after the end of this 2021-2026 Electric Plan and quite possibly NIPSCO’s next
16 TDSIC Plan. At the end of the AMI deployment period in 2026, NIPSCO estimates
17 the project will be at a net cost of \$165.15 million. However, it forecasts net annual
18 benefits of \$21.82 million over the next 10 years resulting in a net benefit of \$53.05

⁴⁶ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-006.

⁴⁷ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-006 (a). NIPSCO states, “[a]s stated in Mr. Kiergan direct testimony at page 29, lines 4-9, while West Monroe and NIPSCO are confident the AMI Project will produce some additional level of societal benefits, it was deemed appropriate not to monetize these benefits and to exclude them from the baseline cost-benefit comparison to provide a customer-focused assessment of the planned investments.” Again, for reference, the societal benefits include a reduction in GHG emissions and overall economic impact of the planned investments.”

⁴⁸ Public’s Attachment AAA-1 – NIPSCO response to OUCC 2-002 and 2-003.

⁴⁹ Kiergan Direct, Figure 2, p. 10, lines 7 – 8.

1 million in 2036. The net benefit mostly accumulated during the last 2.5 years of the
2 15-year study period.⁵⁰

3 **Q: Please state your concern regarding the results of NIPSCO's AMI CBA.**

4 A: The results of NIPSCO's AMI CBA are quite concerning considering the
5 "conservative approach" NIPSCO claims it took and despite the "considerable"
6 number of AMI benefits it included into its business case over an extended 15-year
7 study period to support the probable viability of its proposed AMI Project.⁵¹
8 NIPSCO did not include the benefits and operational savings associated with EV,
9 EV charging, reduced truck rolls and drive-by meter reading in the AMI CBA.
10 NIPSCO's business case did not consider ratepayers' loss of opportunity to finally
11 receive the benefits from the \$30 million investment ratepayers made in the short-
12 lived AMR deployment less than six years ago. NIPSCO ratepayers paid for new
13 AMR meters and will now never fully realize the enhanced benefits AMR
14 technology promised such as cost reductions associated with manual meter
15 readings, meter reading accuracy, streamline billing process, among others.⁵²
16 Meanwhile, NIPSCO realizes immediate returns of its AMI deployment
17 investments through the TDSIC tracker mechanism. It is unreasonable to approve

⁵⁰ *Id.* Kiergan Direct, Figure 2, p. 10, lines 7 – 8.

⁵¹ *See* Becker, Attachment 1-C, p. 27.

⁵² Commission Order dated November 4, 2009, in Cause No. 43501, p. 35

1 the AMI Project at this time based on the lack of supporting cost data and the cost
2 benefit analysis in NIPSCO's business case.⁵³

3 **Q: Do the incremental benefits presented in NIPSCO's AMI CBA justify the cost**
4 **of deploying AMI and including the AMI Project as part of NIPSCO's new**
5 **TDSIC Plan?**

6 A: No. Currently, the incremental benefits in NIPSCO's business case neither justify
7 the cost of the AMI Project nor support deploying AMI technology. The AMI CBA
8 NIPSCO presented to support its proposed AMI deployment was inadequate in
9 validating the actual ratepayer benefits and utility operational benefits that may be
10 achieved in the deployment. The analysis NIPSCO presented in its case-in-chief to
11 endorse the AMI Project was underwhelming compared to the expectations it
12 generated for AMI deployment in its April 26, 2021, NIPSCO Electric TDSIC
13 2021-2026 Plan presentation.⁵⁴ With NIPSCO ratepayers still at the threshold of
14 realizing benefits from its recent investments on NIPSCO's \$30 million AMR
15 deployment just a few years back, it would be unreasonable to now subject the same
16 ratepayers to a much more expensive metering technology deployment with
17 inadequate and suspect benefits to justify the project cost.

⁵³ See Cause No. 43501, Duke Energy Indiana witness Christopher D. Kiergan, Supplemental Testimony, p. 2, lines 15 – 21. “One thing that is essential to keep in mind while reviewing this (or any) cost/benefit model is that it really is just a model. The cost/benefit analysis performed for this proceeding uses a good model with sound results. However, it is still a model that relies heavily on input assumptions and forecasts. For that reason, sound utility judgment, policy considerations, and qualitative concerns are each essential ingredients when examining the output of a model and in making utility decisions based on that model.”

⁵⁴ See Becker, Attachment 1-C, pp. 5, 24 – 29.

V. AFFORDABILITY

1 **Q: Have you considered affordability in your analysis?**

2 A: Yes. In 2016, the Indiana General Assembly articulated a policy that includes an
3 affordability component in I.C. 8-1-2-0.5. It specifically states affordability should
4 be protected when the utilities invest in infrastructure necessary for their operation
5 and maintenance.

6 **Q: Does NIPSCO's AMI Project meet this policy objective?**

7 A: No. As set forth in my testimony, including the higher costs relative to other
8 projects, the lack of project detail, the absence of a "best estimate", the likelihood
9 of substantial cost increases and the shortcomings of the cost benefit analysis,
10 NIPSCO has failed to meet the TDSIC statute requirements regarding its proposed
11 AMI Project. The substantial expense and absence of sufficient justification for the
12 necessity and benefits of those expenditures fail to justify why ratepayers should
13 bear higher utility bills to pay these expenses. Therefore, there is insufficient
14 evidence for the Commission to conclude that the AMI Project request is protecting
15 the affordability of utility services for NIPSCO customers as required by the statute.

VI. CONCLUSIONS AND RECOMMENDATION

16 **Q: What do you conclude based on your review?**

17 A: I conclude:

- 18 1. NIPSCO did not provide a "best estimate" as required by I.C. 8-1-39-
19 10(b)(1) for its proposed AMI Project;
- 20 2. NIPSCO's AMI Project is still in the initial stage and the project cost
21 estimate is speculative with a substantial risk for future escalation;
- 22 3. NIPSCO's AMI CBA shows the incremental benefits do not justify the AMI
23 Project cost; and

1 4. NIPSCO should improve the level of accuracy and completeness of the AMI
2 Project cost estimate before requesting inclusion in a subsequent TDSIC
3 tracker proceeding.

4 **Q: What do you recommend?**

5 A: Based on my conclusions above, I recommend the Commission deny the inclusion
6 of the AMI project in NIPSCO's 2021-2026 Electric Plan and subsequent cost
7 recovery in a TDSIC proceeding.

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

9 A: Yes.

APPENDIX A

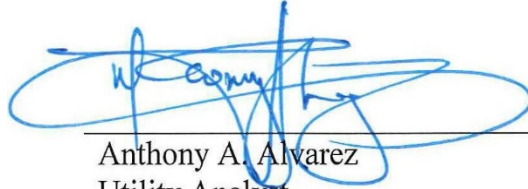
1 **Q: Please describe your educational background and experience.**

2 A: I hold a Master of Business Administration degree from the University of the
3 Philippines (“UP”), in Diliman, Quezon City, Philippines. I also hold a Bachelor of
4 Science degree in Electrical Engineering from the University of Santo Tomas
5 (“UST”), in Manila, Philippines.

6 I joined the OUCC in July 2009 and have completed the regulatory studies
7 program at Michigan State University sponsored by the National Association of
8 Regulatory Utility Commissioners (“NARUC”). I have also participated in other
9 utility and renewable energy resources-related seminars, forums, and conferences.
10 Prior to joining the OUCC, I worked for the Manila Electric Company
11 (“MERALCO”) in the Philippines as a Senior Project Engineer responsible for
12 overall project and account management for large and medium industrial and
13 commercial customers. I evaluated electrical plans, designed overhead and
14 underground primary and secondary distribution lines and facilities, primary and
15 secondary line revamps, extensions and upgrades with voltages up to 34.5 kV. I
16 successfully completed the MERALCO Power Engineering Program, a two-year
17 program designed for engineers in the power and electrical utility industry.

AFFIRMATION

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



Anthony A. Alvarez
Utility Analyst
Indiana Office of Utility Consumer Counselor
Cause No. 45557

Date: August 30, 2021

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF NORTHERN INDIANA)
PUBLIC SERVICE COMPANY LLC FOR (1) APPROVAL)
OF PETITIONER'S TDSIC PLAN FOR ELIGIBLE)
TRANSMISSION, DISTRIBUTION, AND STORAGE)
SYSTEM IMPROVEMENTS, PURSUANT TO IND.)
CODE § 8-1-39-10(a) INCLUDING TARGETED)
ECONOMIC DEVELOPMENT PROJECTS PURSUANT)
TO IND. CODE § 8-1-39-10(c), (2) AUTHORITY TO)
DEFER COSTS FOR FUTURE RECOVERY, (3))
APPROVAL FOR INCLUSION OF NIPSCO'S TDSIC)
PLAN PROJECTS IN ITS RATE BASE IN ITS NEXT)
GENERAL RATE PROCEEDING PURSUANT TO IND.)
CODE § 8-1-2-23, AND (4) AUTHORITY TO RECOVER)
OPERATION AND MAINTENANCE EXPENSES AS)
TDSIC COSTS PURSUANT TO IND. CODE § 8-1-39-7)
UNDER ITS APPROVED RIDER 888 – ADJUSTMENT)
OF CHARGES FOR TRANSMISSION, DISTRIBUTION)
AND STORAGE SYSTEM IMPROVEMENT CHARGES.)

CAUSE NO. 45557

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S
OBJECTIONS AND RESPONSES TO THE
OFFICE OF UTILITY CONSUMER COUNSELOR'S
SECOND SET OF DATA REQUESTS

Northern Indiana Public Service Company LLC ("Petitioner" or "NIPSCO"), pursuant to 170 IAC 1-1.1-16, and the discovery provisions of Rules 26 and 37 of the Indiana Rules of Trial Procedure, by its counsel, hereby submits the following Objections and Responses to the Office of Utility Consumer Counselor's Second Set of Data Requests ("Requests").

General Objections

All of the following General Objections are incorporated by reference in the response to each of the Requests:

1. The responses provided to the Requests have been prepared pursuant to a reasonable investigation and search conducted in connection with the Requests in those areas where information is expected to be found. To the extent the Requests purport to require more than a reasonable investigation and search, Petitioner objects on grounds that they seek to impose an undue burden and unreasonable expense and exceed the scope of permissible discovery.

2. To the extent that the Requests seek production of electronically stored information, Petitioner objects to producing such information from sources that are not reasonably accessible because of undue burden or cost.

3. The responses provided to the Requests set forth the information in reasonably complete detail. To the extent that the requesting party contends that a Request calls for more detail, Petitioner objects to the Request on the grounds that it is overly broad, seeks to impose an undue burden and unreasonable expense, and exceeds the scope of permissible discovery.

4. Petitioner objects to the Requests to the extent they seek documents or information which are not relevant to the subject matter of this proceeding and to the extent they are not reasonably calculated to lead to the discovery of admissible evidence.

5. Petitioner objects to the Requests to the extent they seek an analysis, calculation, compilation or study which has not already been performed and which Petitioner objects to performing.

6. Petitioner objects to the Requests to the extent they are vague and ambiguous and do not provide a reasonable basis from which Petitioner can determine what information is sought.

7. Petitioner objects to the Requests to the extent they seek information that is subject to the attorney/client, work product, settlement negotiation or other applicable privileges.

8. Petitioner objects to the Requests to the extent they purport to require Petitioner to supply information in a format other than that in which Petitioner normally keeps such information.

9. Petitioner objects to the Requests to the extent that they seek production of documents created during an unreasonably long or unlimited period, on the grounds that the Requests are overly broad, seek to impose an undue burden and unreasonable expense, and exceed the scope of permissible discovery.

10. Petitioner objects to the Requests to the extent they request the production of information and documents not presently in Petitioner's possession, custody or control.

11. Petitioner objects to the Requests to the extent they request the production of (a) multiple copies of the same document; (b) additional copies of the same document merely because of immaterial or irrelevant differences; and (c) copies of the same information in multiple formats on the grounds that such Requests are irrelevant, overbroad, unreasonably burdensome, unreasonably cumulative and duplicative, not required by the Commission rules, and inconsistent with practice in Commission proceedings.

12. The responses constitute the corporate responses of Petitioner and contain information gathered from a variety of sources. Petitioner objects to the Requests to the extent they request identification of and personal information about all persons who participated in responding to each data request on the grounds that: (a) they are overbroad and unreasonably burdensome given the nature and scope of the requests and the many people who may be consulted about them; and (b) they seek information that is subject to the attorney/client and work product privileges. Petitioner also objects to the Requests to the extent they request identification of witnesses to be called in Petitioner's case-in-chief or rebuttal who can answer questions regarding the information supplied in the responses on the grounds that: (a) Petitioner is under no obligation to call witnesses

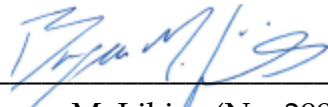
to respond to questions about information provided in discovery; and (b) the Requests seek information subject to the work product privilege.

13. Petitioner assumes no obligation to supplement these responses except to the extent required by Ind. Tr. R. 26(E) (1) and (2).

Without waiving these objections, Petitioner responds to the Requests in the manner set forth in the attached.

Dated this 28th day of July, 2021.

As to objections,



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Attorney for Northern Indiana Public
Service Company LLC

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OUCC 2-001:

Petitioner's witness Mr. Christopher Kiergan discussed the NIPSCO's proposed advanced metering infrastructure ("AMI") project ("AMI Project") and the functionality of AMI meters in his testimony. In this regard, please provide the manufacturer or technical brochure of NIPSCO's AMI meter.

Objections:

Response:

NIPSCO has not yet selected an AMI meter or meters for deployment for NIPSCO's electric customers. Upon approval of the Electric AMI Program, NIPSCO will issue a request for proposals for electric AMI meters with specific functional, technical, and communications requirements. This is indicated in Mr. Kiergan's direct testimony at page 15, line 4, Figure 3. In referring to the functionality of AMI meters in his testimony and to support the cost-benefit analysis (or "CBA") of AMI, Mr. Kiergan is using the typical functionality provided in standard electric AMI meters on the market today.

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OUCC 2-002:

Mr. Kiergan, Direct at 7, lines 17 – 20, testified “AMI meters and systems can provide valuable usage, load, and voltage information to improve distribution management operations and enable/enhance functionality such as Volt-VAR Optimization (“VVO”).” Please respond to the following:

- a. Was NIPSCO able to identify and quantify (in dollars) the value and operational savings it could derive from the “usage, load, and voltage information” using AMI meters? If yes, please identify and quantify the operational savings, in dollars on a monthly and annual basis for the period 2021 thru 2026. If no, please explain why.
- b. Please quantify the annual operational savings NIPSCO would derive after year 2026 from the “usage, load, and voltage information” using AMI meters. If none, please explain why.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

Response:

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

- a. NIPSCO has not calculated any benefits or operational savings with respect to improved distribution management or Volt-Var Optimization that are attributable to AMI deployment. As indicated in Mr. Kiergan's direct testimony at page 32, lines 16 – 20 and page 33, line 1, AMI is a foundational technology that provides data and functionality that can be used to offer follow-on programs in future years. At this time, NIPSCO has not analyzed the additional costs or resulting benefits of any follow-on programs and has not developed a plan to determine which follow-on programs might be offered. Improved distribution operations and Volt-Var Optimization are specifically listed as programs that fall into the “follow-on program” category,

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as indicated in Mr. Kiergan's direct testimony at page 33, lines 17-19 and at page 34, lines 1-6.

Additionally, as noted in Question / Answer 29 of Mr. Kiergan's direct testimony, the cost-benefit analysis (or "CBA") performed by West Monroe on behalf of NIPSCO took a relatively conservative approach and did not quantify all potential benefits associated with implementation of the AMI Project. However, NIPSCO intends to fully leverage potential functionality of AMI metering technology and realize potential benefits and savings to the extent feasible, and, to the extent implemented, potential benefits and savings associated with these "follow-on programs" could be significant.

- b. See NIPSCO's response to sub-part a. above.

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OUCC 2-003:

Mr. Kiergan, Direct at 8, lines 4 – 8, discussed the requirement of AMI meters in understanding the impact of electric vehicle (“EV”) charging. In this regard, please identify the factors and quantify the operational savings, in dollars (\$), NIPSCO would derive in conjunction with AMI meters and EV charging in its service territory. If none, please explain why.

- a. How much operational savings, in dollars (\$), did NIPSCO forecast it could achieve with AMI meters and EV charging, and include in its 2021-2026 Electric Plan (“Plan”)? If NIPSCO did not recognize and include any related operational savings in the Plan, please explain why.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

Response:

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

- a. NIPSCO has not calculated any benefits or operational savings with respect to AMI meters and EV charging. As indicated in Mr. Kiergan’s direct testimony at page 32, lines 16 – 20 and page 33, line 1, AMI is a foundational technology that provides data and functionality that can be used to offer follow-on programs in future years. With respect to electric vehicles, AMI can both enable and support the adoption of EVs in the NIPSCO service territory. At this time, NIPSCO has not analyzed the additional costs or resulting benefits of any follow-on programs and has not developed a plan addressing which follow-on programs might be offered. Electric vehicle charging rates and optimized distributed energy resources/renewables/EV charging infrastructure through demand insights for load and capacity forecasting are specifically listed as programs that fall into the “follow-on program” category, as indicated in Mr. Kiergan’s direct testimony at page 33, line 9 and page 34, lines 4-5.

Additionally, as noted in Question / Answer 29 of Mr. Kiergan’s direct testimony, the cost-benefit analysis (or “CBA”) performed by West Monroe on

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behalf of NIPSCO took a relatively conservative approach and did not quantify all potential benefits associated with implementation of the AMI Project. However, NIPSCO intends to fully leverage potential functionality of AMI metering technology and realize potential benefits and savings to the extent feasible, and, to the extent implemented, potential benefits and savings associated with these "follow-on programs" could be significant.

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OUCC 2-004:

Mr. Kiergan, Direct at 8, lines 17 – 25, discussed empowering customers by offering advance programs possible with AMI capabilities. Please identify the factors and quantify the operational savings, in dollars (\$), NIPSCO would derive in conjunction with AMI meters and advance program offerings. If none, please explain why.

- a. How much savings, in dollars (\$), did NIPSCO forecast it could achieve with AMI meters and advanced program offerings over the life of the 2021-2026 Electric Plan ("Plan")? If NIPSCO did not recognize and include any related operational savings in the Plan, please explain why.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

Response:

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

- a. Advanced programs empowering customers encompasses a broad range of possibilities, two of which have been quantified in the electric AMI cost-benefit analysis (or "CBA") performed by West Monroe on behalf of NIPSCO and others that have been identified as "follow-on programs" enabled by the deployment of the foundational AMI technology. In the quantified category, the two programs are:
 1. Remote connects/disconnects and on-demand reads – Estimated operational savings resulting from this functionality, which is described in the NIPSCO Electric AMI Benefit – O&M and Expense Reduction section of the AMI Project Cost-Benefit Analysis – Detailed Results (Mr. Kiergan's direct testimony, Attachment 3-B, at pages 16-17) under Meter Servicing, reflect both savings from the ability to remotely provide on-demand reads and remotely connect and disconnect customers and savings on truck rolls to customers. These remote operations also provide an improved customer experience. The operational savings in 2021-2026 are estimated at \$7.3 million, while average annual savings

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after deployment are estimated at \$8.8 million, resulting in an estimated \$94.9 million in operational savings over the 15-year modeled timeframe. (As stated in Mr. Kiergan's direct testimony, Attachment 3-B, at page 17, NIPSCO is not asking to remove the door knock requirement for disconnects for non-pay as part of this filing. Specifically, NIPSCO notes that "door knocks for non-pay are modeled to be retained, but it is assumed that less expensive hourly labor could be utilized to simply notify the customer.")

2. Customer Electricity Saving – Although not calculated as operational savings to NIPSCO, the CBA estimates that a percentage of customers will realize savings by adjusting their usage patterns based on reviewing interval usage made available to them by NIPSCO on a customer portal. This benefit is estimated at \$3.1 million in savings over the 15-year modeled period and is detailed in the AMI Project Cost-Benefit Analysis – Detailed Results (Mr. Kiergan's direct testimony, Attachment 3-B, at page 19).

In addition, as indicated in Mr. Kiergan's direct testimony at pages 32, lines 16 – 20 and page 33, line 1, AMI is a foundational technology that provides data and functionality that can be used to offer follow-on programs in the years to come. At this time, NIPSCO has not analyzed the additional costs or resulting benefits of any follow-on programs and has not developed a plan addressing which follow-on programs might be offered. Potential customer-empowering programs are specifically listed as programs that fall into the "follow-on program" category, as indicated in Mr. Kiergan's direct testimony at page 33, lines 5-10.

Furthermore, as noted in Question / Answer 29 of Mr. Kiergan's direct testimony, the CBA took a relatively conservative approach and did not quantify all potential benefits associated with implementation of the AMI Project. However, NIPSCO intends to fully leverage potential functionality of AMI metering technology and realize potential benefits and savings to the extent feasible, and to the extent implemented, potential benefits and savings associated with these "follow-on programs" could be significant.

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OUCC 2-005:

Mr. Kiergan, Direct at 9, lines 1 – 16, discussed the gathering of customer information and cyber security related to AMI installation. In this regard, please identify the specific customer data, information and energy usage NIPSCO would collect using AMI technology.

- a. Please explain how NIPSCO would protect the privacy of its customer's data and information collected thru AMI.
- b. Please identify and explain the digital information protocol NIPSCO would deploy together with its AMI program to protect the privacy of its customer's data and information.

Objections:

Response:

Because NIPSCO has not yet selected the specific AMI meters, AMI headend system, AMI communications system, or meter data management system ("MDMS"), it is not possible to identify the exact customer information that would be collected using AMI technology. Based on typical AMI deployments, it is expected that information collected would include customer electricity consumption on an interval basis (15-, 30-, or 60-minute intervals), the on/off status of electric service, additional meter alarm data around meter temperature, meter tampering, and meter communication issues, and possibly voltage levels.

- a. NIPSCO will protect its customer data collected through AMI via several methods. Requests for proposals for AMI meters, AMI headend systems, AMI communications system, and the MDMS, when issued after approval of the AMI Program, will require vendor certification of specific device, software, and data center security protocols and emphasize cyber-security as a critical criteria for any potential vendor. Data transmitted over an AMI network will be required to be encrypted. Access points into NIPSCO systems will be protected by firewalls and monitored by security monitoring applications as current NIPSCO applications are protected.

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- b. As NIPSCO has not yet selected the specific AMI meters, AMI headend system, AMI communications system, or MDMS, it is not possible to identify the digital information protocol NIPSCO would deploy with its AMI Program to protect customer data.

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OUCC 2-006:

Mr. Kiergan, Direct at 11, lines 3 – 8, discussed additional qualitative benefits associated with AMI deployment such as reduction in meter reading drive-by and truck rolls that were quantified but not included in the cost-benefit analysis (“CBA”) results. Please identify, explain and quantify, in dollars (\$), the operational savings derived from reduced meter reading drive-by and truck rolls.

- a. Please explain why the quantified operational savings derived from reduced meter reading drive-by and truck rolls were not included in the CBA.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request is vague and ambiguous as it refers to a section of Mr. Kiergan’s direct testimony that is discussing “qualitative” (i.e., unquantified) benefits, but this Request asks NIPSCO to “quantify, in dollars (\$), the operational savings derived from reduced meter reading drive-by and truck rolls.”

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

Response:

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

Mr. Kiergan’s direct testimony at page 11, lines 3-8 specifically refers to only the reduced greenhouse gas emissions (“GHG”) associated with reduced truck rolls and drive-by meter reading. These GHG emission savings are categorized as Societal Benefits.

- a. As stated in Mr. Kiergan direct testimony at page 29, lines 4-9, while West Monroe and NIPSCO are confident the AMI Project will produce some additional level of societal benefits, it was deemed appropriate not to monetize these benefits and to exclude them from the baseline cost-benefit comparison to provide a customer-focused assessment of the planned investments.

Benefits derived from remote meter reading and reduced truck rolls are quantified as part of the cost-benefit analysis (or “CBA”) and appeared in the AMI Project Cost-

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Benefit Analysis – Detailed Results (Mr. Kiergan's direct testimony, Attachment 3-B, at pages 16-18).

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OUCC 2-007:

Mr. Kiergan, Direct at 14, lines 11 – 15, described the timeline, planning, and major decisions required for AMI and information technology ("IT") systems deployment. In this regard, please provide a detailed topography and architecture map depicting and detailing the major equipment, system and component requirements necessary for NIPSCO's proposed AMI and IT system and infrastructure.

Objections:

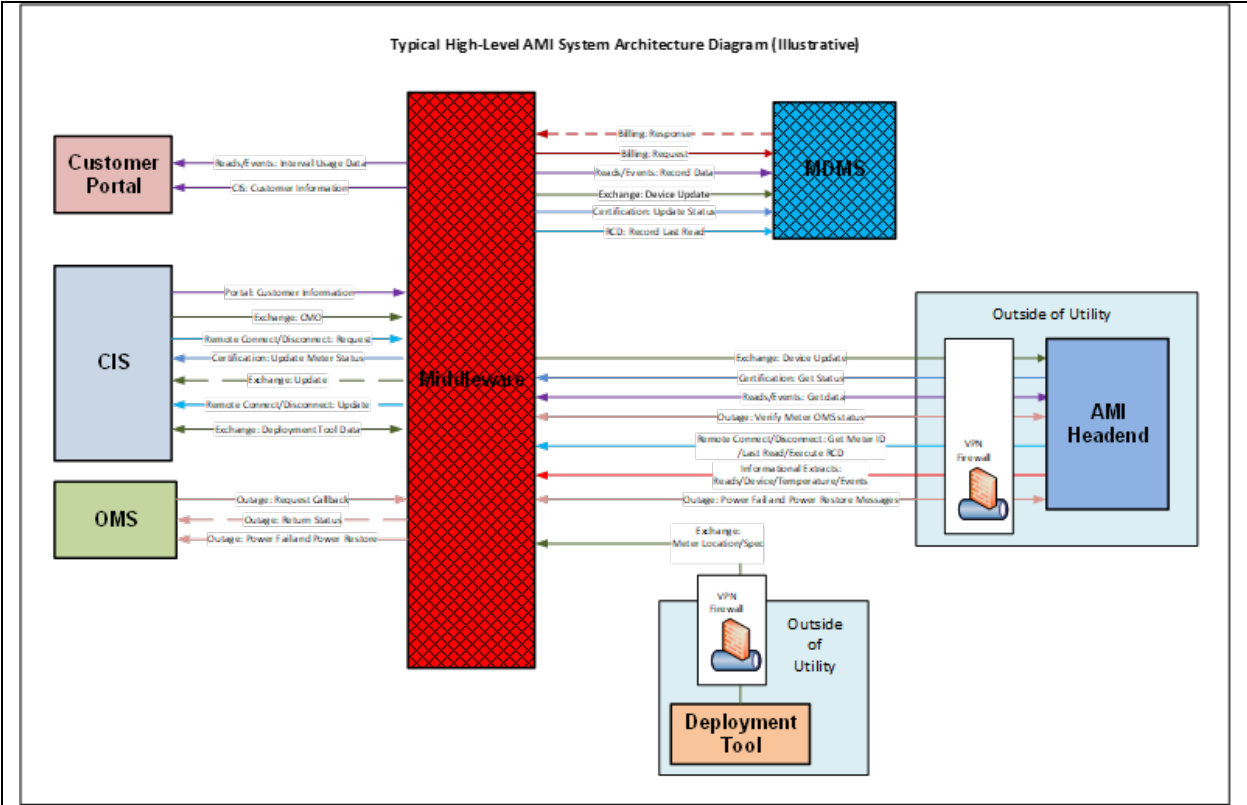
Response:

NIPSCO has not yet selected the specific systems associated with deploying AMI, nor has it created architecture or network designs for these systems. At a high-level, the equipment and systems will include:

- AMI meters – At customer premises
- AMI communications equipment – In the field
- AMI headend system – Likely in the AMI vendor data center
- Meter data management system ("MDMS") – Likely in the NIPSCO data center
- Integration between the AMI headend, the MDMS, and existing or planned NIPSCO systems including billing, outage management, and the customer portal.

As stated, NIPSCO has not yet designed the network architecture for systems and functionality associated with its planned AMI Program, but below is an illustrative, high-level system architecture diagram taking into account modeled systems and assumptions around system locations, as well as integrations required to provide modeled functionality:

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OUCC 2-008:

Mr. Kiergan, Attachment 3-A, p.2, discussed his involvement in the AMI cost benefit analysis and testimony he supported, authored, and sponsored for Duke Energy Indiana ("DEI"). In this regard, please provide a copy of that testimony, identifying where in the testimony Mr. Kiergan addresses the factors identified and operational savings quantified, in dollars (\$), in DEI's AMI program.

- a. How much savings, in dollars (\$), did Mr. Kiergan quantify and DEI recognize in deploying AMI?

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks publicly available information.

Response:

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

For convenience, please see OUCC Request 2-008 Attachment A, which includes Mr. Kiergan's testimony and exhibit in Cause No. 43501. In Mr. Kiergan's direct testimony in Cause No. 43501, pages 5-16 discuss the various inputs into the model. Pages 16-17 include the results of the model, as well as the accompanying Exhibit H-1, which is a summary of the cost/benefit analysis, including specific assumptions, inputs and results.

- a. According to Mr. Kiergan's testimony (page 17), in terms of the net present value ("NPV") for the cost/benefit model for the SmartGrid project, including customer and societal benefits, a twenty-year NPV of \$365.08 million is calculated.

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OUCC 2-009:

Petitioner's witness Ms. Alison Becker, Direct at 22, lines 12-14 cites that Petitioner proposes to update the Cause No. 45557 TDSIC plan on an annual basis. For clarification, will this annual filing update be a joint plan and cost recovery update to review a year's worth of data?

Objections:

Response:

Please see the Ms. Becker's Supplemental Testimony, filed on July 27, 2021, which provides additional detail about NIPSCO's proposal to submit an annual update to its 2021-2026 Electric Plan and two cost update filings.

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OUCC 2-010:

Ms. Becker, Direct at 6, cites Petitioner's request to approve Rider 888, which has been used for Cause No. 44733 "Electric Plan 1", for use to track the costs of the proposed plan. Does this mean NIPSCO also intends to seek recovery of unrecovered costs from Cause No. 44733 through Rider 888? If so, please explain how the Cause No. 44733 costs will be identifiable as separate from costs in this case.

Objections:

Response:

Yes. Consistent with Ind. Code § 8-1-39-10(d), NIPSCO intends to seek recovery of unrecovered costs from Cause No. 44733 through Rider 888. NIPSCO's next TDSIC tracker filing under Cause No. 44733-TDSIC-9 will seek approval for recovery of capital costs through May 31, 2021, the date on which NIPSCO's Electric Plan 1 was terminated. Tracker filings related to the 2021-2026 Electric Plan, Cause No. 45557, will include the Cause No. 44733-TDSIC-9 capital balance. Additional capital costs incurred on or after June 1, 2021 for projects *not* included in Cause No. 45557 will not be recovered through Rider 888. There are projects included in Cause No. 45557 that were also included in Cause No. 44733, and those capital costs incurred after May 31, 2021 will be recovered through Rider 888 to the extent that such project is approved by the Commission.

NIPSCO identifies and tags work orders in its asset management system (PowerPlant) so that only charges eligible for TDSIC recovery are captured for a given time period. Therefore, NIPSCO will be able to delineate between costs incurred on or before May 31, 2021 and those incurred on or after June 1, 2021.

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OUCC 2-011:

Petitioner's witness Ms. Erin Meece, Direct at 18-19, cites Petitioner's proposal to recover O&M expenses related to the Advanced Metering Infrastructure project at actual cost as a regulatory asset. Is Petitioner requesting pre-approval to defer the full O&M expense to be treated as guaranteed recovery in the next base rate case, similar to the 20% deferred portion allowed under the TDSIC statute? If not, please explain in detail the relief sought.

Objections:

Response:

No. NIPSCO is not requesting pre-approval to defer the full O&M expense to be treated as guaranteed recovery in the next base rate case, similar to the 20% deferred portion allowed under the TDSIC statute. NIPSCO proposes to reflect O&M expenses related to the Advanced Metering Infrastructure project in the amounts recovered through the TDSIC rider using the same methodology as was previously approved in Cause No. 44403. This methodology will entail 80% recovery of O&M expenses incurred through the tracker and 20% deferral to a TDSIC regulatory asset. The proposed ratemaking treatment will follow the current methodology used for other expenses (depreciation, property tax) and carrying costs in TDSIC Electric Cause No. 44733. NIPSCO's ratemaking methodology for expenses has been approved in Cause Nos. 44733-TDSIC-1 through TDSIC-7. The most recent work papers supporting treatment of expenses and carrying costs can be found in the Verified Petition filed Cause No. 44733-TDSIC-8, Petitioner's Exhibit No. 1, Attachment 1, Schedule 4, Pages 1-2 and Attachment 1, Schedule 10.

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OUCC 2-012:

Ms. Meece, Direct at 15-18, proposes a using a three-year historical average of FERC Form 1 capital amounts at the end of the test period to offset the depreciation expense on assets retired due to the TDSIC investments requested under this filing.

- a. Why is Petitioner proposing to use an historical average of three years?
- b. Regarding the three-year historical average, is Petitioner proposing the offset be delayed for three years to capture the relevant period of TDSIC assets' installation? If the answer is "no", explain the basis for the three-year period proposed to be used in the first cost recovery filing.
- c. As FERC Form 1 is filed on April 30th of each year, how will that affect the calculation of this proposed offset on an annualized basis?

Objections:

Response:

- a. NIPSCO is proposing the use of a historical three-year average to determine retirements for a number of reasons. As stated in Question / Answer 22 of the direct testimony of Ms. Meece, NIPSCO believes the use of a three-year average is reasonable and sustainable, and also addresses the difficulty of identifying the precise assets and the time it often takes for retirements to be completely processed. As further explained in Question / Answer 23 of the direct testimony of Ms. Meece, the proposed methodology aligns with the FERC method by reflecting actual history and reducing variabilities over time by using a three-year average to be representative of NIPSCO's retirement experience for each FERC account. NIPSCO follows the FERC method of retirements and reduces the appropriate FERC accounts. Finally, NIPSCO is proposing the use of a historical three-year average because this has been approved as reasonable by the Commission for use in NIPSCO's gas TDSIC tracker.
- b. No. A delay is not being proposed. The use of a three-year historical average will be utilized to facilitate the retirement calculation for the reasons described above. As stated in Question / Answer 23 of the direct testimony of Ms. Meece, NIPSCO proposes to calculate the retirement depreciation expense reduction

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amount on both new and replacement asset values using the capital amounts at the end of the test period. This approach benefits customers because the highest capital amounts during the test period are used in the calculation. This is in lieu of using only replacement assets, ratably placed in service, for the revenue requirement months. These calculations increase the depreciation expense associated with retirement assets and, therefore, are likely to provide a larger reduction to the TDSIC revenue requirement compared to trying to estimate the depreciation expense associated with specific retired assets.

- c. NIPSCO proposes to utilize the filed FERC Form 1 from the most recent three years available as the source document for retirement details by FERC account. NIPSCO will annually update the three-year historical average in the TDSIC tracker filing made immediately following NIPSCO's submission of its FERC Form 1.

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF NORTHERN INDIANA)
PUBLIC SERVICE COMPANY LLC FOR (1) APPROVAL)
OF PETITIONER'S TDSIC PLAN FOR ELIGIBLE)
TRANSMISSION, DISTRIBUTION, AND STORAGE)
SYSTEM IMPROVEMENTS, PURSUANT TO IND.)
CODE § 8-1-39-10(a) INCLUDING TARGETED)
ECONOMIC DEVELOPMENT PROJECTS PURSUANT)
TO IND. CODE § 8-1-39-10(c), (2) AUTHORITY TO)
DEFER COSTS FOR FUTURE RECOVERY, (3))
APPROVAL FOR INCLUSION OF NIPSCO'S TDSIC)
PLAN PROJECTS IN ITS RATE BASE IN ITS NEXT)
GENERAL RATE PROCEEDING PURSUANT TO IND.)
CODE § 8-1-2-23, AND (4) AUTHORITY TO RECOVER)
OPERATION AND MAINTENANCE EXPENSES AS)
TDSIC COSTS PURSUANT TO IND. CODE § 8-1-39-7)
UNDER ITS APPROVED RIDER 888 – ADJUSTMENT)
OF CHARGES FOR TRANSMISSION, DISTRIBUTION)
AND STORAGE SYSTEM IMPROVEMENT CHARGES.)

CAUSE NO. 45557

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S
OBJECTIONS AND RESPONSES TO THE
INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR'S
THIRD SET OF DATA REQUESTS

Northern Indiana Public Service Company LLC ("Petitioner" or "NIPSCO"), pursuant to 170 IAC 1-1.1-16, the June 24, 201 Docket Entry in this Cause, and the discovery provisions of Rules 26 and 37 of the Indiana Rules of Trial Procedure, by its counsel, hereby submits the following Objections and Responses to the Indiana Office of Utility Consumer Counselor's Third Set of Data Requests ("Requests").

General Objections

All of the following General Objections are incorporated by reference in the response to each of the Requests:

1. The responses provided to the Requests have been prepared pursuant to a reasonable investigation and search conducted in connection with the Requests in those areas where information is expected to be found. To the extent the Requests purport to require more than a reasonable investigation and search, Petitioner objects on grounds that they seek to impose an undue burden and unreasonable expense and exceed the scope of permissible discovery.

2. To the extent that the Requests seek production of electronically stored information, Petitioner objects to producing such information from sources that are not reasonably accessible because of undue burden or cost.

3. The responses provided to the Requests set forth the information in reasonably complete detail. To the extent that the requesting party contends that a Request calls for more detail, Petitioner objects to the Request on the grounds that it is overly broad, seeks to impose an undue burden and unreasonable expense, and exceeds the scope of permissible discovery.

4. Petitioner objects to the Requests to the extent they seek documents or information which are not relevant to the subject matter of this proceeding and to the extent they are not reasonably calculated to lead to the discovery of admissible evidence.

5. Petitioner objects to the Requests to the extent they seek an analysis, calculation, compilation or study which has not already been performed and which Petitioner objects to performing.

6. Petitioner objects to the Requests to the extent they are vague and ambiguous and do not provide a reasonable basis from which Petitioner can determine what information is sought.

7. Petitioner objects to the Requests to the extent they seek information that is subject to the attorney/client, work product, settlement negotiation or other applicable privileges.

8. Petitioner objects to the Requests to the extent they purport to require Petitioner to supply information in a format other than that in which Petitioner normally keeps such information.

9. Petitioner objects to the Requests to the extent that they seek production of documents created during an unreasonably long or unlimited period, on the grounds that the Requests are overly broad, seek to impose an undue burden and unreasonable expense, and exceed the scope of permissible discovery.

10. Petitioner objects to the Requests to the extent they request the production of information and documents not presently in Petitioner's possession, custody or control.

11. Petitioner objects to the Requests to the extent they request the production of (a) multiple copies of the same document; (b) additional copies of the same document merely because of immaterial or irrelevant differences; and (c) copies of the same information in multiple formats on the grounds that such Requests are irrelevant, overbroad, unreasonably burdensome, unreasonably cumulative and duplicative, not required by the Commission rules, and inconsistent with practice in Commission proceedings.

12. The responses constitute the corporate responses of Petitioner and contain information gathered from a variety of sources. Petitioner objects to the Requests to the extent they request identification of and personal information about all persons who participated in responding to each data request on the grounds that: (a) they are overbroad and unreasonably burdensome given the nature and scope of the requests and the many people who may be consulted about them; and (b) they seek information that is subject to the attorney/client and work product privileges. Petitioner also objects to the Requests to the extent they request identification of witnesses to be called in Petitioner's case-in-chief or rebuttal who can answer questions regarding the information supplied in the responses on the grounds that: (a) Petitioner is under no obligation to call witnesses

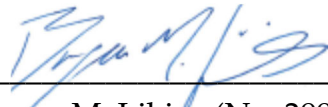
to respond to questions about information provided in discovery; and (b) the Requests seek information subject to the work product privilege.

13. Petitioner assumes no obligation to supplement these responses except to the extent required by Ind. Tr. R. 26(E) (1) and (2).

Without waiving these objections, Petitioner responds to the Requests in the manner set forth in the attached.

Dated this 5th day of August, 2021.

As to objections,



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Attorney for Northern Indiana Public
Service Company LLC

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OUCC 3-001:

Please refer to Petitioner's Exhibit 3, Attachment 3-B, page 14, "Meter Reading Vehicle Purchases." Please provide detailed explanation how NIPSCO calculated the following items for the "Avoided Capital Benefits: Vehicle Purchases." Please provide support and show all calculations in Excel format with formulas intact.

- a. Deployment Total - \$632,500
- b. 2027-2036 Average - \$274,439
- c. 2027-2036 Total - \$2,744,392
- d. 2021-2036 Total - \$3,376,892
- e. For each of the four items set forth in Q 3.1(a)-(d), NIPSCO's estimated Avoided Capital Benefit for Vehicle Purchases, has NIPSCO estimated the probabilities of achieving
 - 1) less than 75%,
 - 2) between 75 – 84%,
 - 3) between 85 – 104%,
 - 4) between 105 - 110%, or
 - 5) greater than 110%,

of each estimated benefit? If yes, please explain and provide support for your response. If not, please detail NIPSCO's level of certainty of achieving these four estimated Avoided Capital Benefits for Vehicle Purchases and the basis for that opinion.

f. For each of the four items set forth in Q 3.1(a)-(d), NIPSCO's estimated Avoided Capital Benefit for Vehicle Purchases, does NIPSCO consider these estimates more "conservative" (meaning a higher probability of achieving the estimate) or more "aspirational" (meaning a greater risk of failing to achieve the estimate)? Please explain the basis for the response, including specifying the factors which tend to make each estimate more "conservative" or more "aspirational".

g. For each of the four items set forth in Q 3.1(a)-(d), NIPSCO's estimated Avoided Capital Benefit for Vehicle Purchases, please provide the detailed action plan of how NIPSCO will achieve the operational goals and targets for

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each item. If no such action plan exists, please explain why and provide support for NIPSCO's plan to achieve these estimates.

h. What is "the current number of vehicles being utilized to service AMR customers"? For each of the vehicles, please provide the description, year, make and model, miles driven to date (mileage), year acquired, expected retirement year, expected residual value (in dollars) on retirement ("detailed vehicle description"). If any of the vehicle information is not available, please explain why and provide support to your response.

i. Are any of "the current number of vehicles being utilized to service AMR customers" luxury-class, hybrid or (full) electric vehicles? If yes, please identify such vehicles.

j. Are any of "the current number of vehicles being utilized to service AMR customers" assigned to any individual personnel as a service vehicle available for personal use? If yes, please identify such vehicles, the corresponding personnel and provide support justifying the need for the personal use of the vehicle.

k. During the AMI deployment period, is NIPSCO planning to procure vehicles it will utilize to service AMR customers? If yes, please provide the "detailed vehicle description" and support to your response. If no, please explain why.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request is unduly burdensome and calls for the compilation and production of voluminous materials.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding

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and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

NIPSCO objects to this Request on the grounds and to the extent that this Request is vague and ambiguous as the term "luxury class vehicles" is undefined.

Response:

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

Please see OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, and Model.

"Avoided Capital Benefits: Vehicle Purchases" is the benefit associated with reducing the need for meter reading and routine turn-ons and turn-offs, thereby reducing the need for the vehicles performing these functions and removing the planned capital investments associated with replacing these vehicles as they reach their planned life.

- a. The calculation of the benefit for Avoided Purchases of Meter Reading/Serviceing vehicles appears in Row 366 and Row 388 of the Model tab and incorporates inputs from Rows 260-262 and Row 284 of the General_Inputs tab and Rows 169-176 of the Input_Calcs tab. The annual benefit calculation is generally: [(Number of AMR Meter Reading Vehicles and Meter Serviceing Vehicles applicable to electric customers) x (Average Meter Reading/Serviceing Vehicle Cost) x (Contingency)] taking into account the average useful life remaining (four years) and the average useful lives of the AMR meter reading and meter serviceing vehicles (eight years). The Deployment Total is the sum of the annual benefits during the years 2021-2026.
- b. The same calculation delineated in 3-001 sub-part a. above for the annual benefit. The 2027-2036 Average simply sums the annual benefits during the years 2027-2036 and divides by ten (10).
- c. The same calculation delineated in 3-001 sub-part a. above for the annual benefit. The 2027-2036 Total simply sums the annual benefits during the years 2027-2036.
- d. The same calculation delineated in 3-001 sub-part a. above for the annual benefit. The 2021-2036 Total simply sums the annual benefits during the years 2021-2036.
- e. NIPSCO has not conducted a sensitivity analysis around the likelihood of achieving specific benefits at this time. However, based on West Monroe's experience with AMI cost benefit analyses ("CBAs") and AMI deployments

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across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO is confident in the ability to achieve the estimated benefits.

- f. Based on West Monroe's experience with AMI CBAs and AMI deployments across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO considers the estimated benefits to be realistic estimates, fitting between aspirational and conservative levels of benefits.
- g. As NIPSCO has not yet received approval for the AMI Project and is currently in the pre-planning stages of the filed AMI deployment, concrete action plans for achieving operational benefits have not been developed. Assuming the approval of the AMI Project, NIPSCO is committed to delivering the delineated value of the AMI Program and anticipates developing and tracking proactive and transparent measurement of costs, benefits, and functionality as the deployment progresses.
- h. As part of the AMI CBA, reductions in the number of vehicles needed for meter reading and meter services, specifically routine turn-ons/turn-offs, were modeled. At the time of the business case development, the number of meter reading vehicles servicing electric AMR customers was 25, and the number of electric meter servicing vehicles was 37. These were the two areas in which vehicle reductions were modeled but does not represent the total number of vehicles servicing AMR customers, a number which was not calculated. Regarding the additional information requested regarding these specific vehicles, detailed data was not utilized or gathered. Benefits were estimated on average statistics (cost, monthly operating cost) for the fleet of vehicles.
- i. No. None of the vehicles being utilized to service AMR customers are considered luxury-class, hybrid or (full) electric vehicles. The meter reading vehicles are Jeep Patriots and Jeep Compasses upfitted with AMR equipment.
- j. No. All vehicles being utilized to serve AMR customers are departmental, and none of these vehicles are assigned to any individual. As one vehicle is serviced, the driver is put into another departmental vehicle based upon availability. NIPSCO employees do not drive these departmental vehicles for personal use.
- k. NIPSCO's current plan is to maintain the AMR vehicles during the electric AMI deployment based upon the need to service/read AMR meters. Due to the planned AMI deployment, there is no plan to add additional vehicles or upgrade current vehicles, though the model estimates benefits for avoided vehicle purchasing. This modeled benefit, based on the scenario where NIPSCO

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maintains the current state; i.e., NIPSCO does not deploy AMI and continues to use AMR, is calculated utilizing average vehicle life remaining of four years and average useful life of the vehicles of eight years.

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OUCC 3-002:

Please refer to Petitioner's Exhibit 3, Attachment 3-B, page 21, the table "Estimated NIPSCO AMI Project Benefits (2021-2036)." Please provide detailed explanation how NIPSCO calculated each of the following items under the "O&M and Expense Reduction Benefits" category. Please provide support and show all calculations in Excel format with formulas intact.

- a. Meter Reading
- b. Meter Servicing
- c. Outage Management
- d. Residential AMR Meter Replacement
- e. Commercial AMR Meter Replacement
- f. Bad Debt
- g. For each of the six items set forth in Q 3.2(a)-(f), NIPSCO's estimated O&M and Expense Reduction Benefits, has NIPSCO estimated the probabilities of achieving
 - 1) less than 75%,
 - 2) between 75 – 84%,
 - 3) between 85 – 104%,
 - 4) between 105 - 110%, or
 - 5) greater than 110%,

of each estimated benefit? If yes, please explain and provide support for your response. If not, please detail NIPSCO's level of certainty of achieving these six estimated O&M and Expense Reduction Benefits and the basis for that opinion.

- h. For each of the six items set forth in Q 3.2(a)-(f), NIPSCO's estimated O&M and Expense Reduction Benefits, does NIPSCO consider these estimates more "conservative" (meaning a higher probability of achieving the estimate) or more "aspirational" (meaning a greater risk of failing to achieve the estimate)? Please explain the basis for the response, including specifying the factors which tend to make each estimate more "conservative" or more "aspirational".

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i. For each of the six items set forth in Q 3.2(a)-(f), NIPSCO's estimated O&M and Expense Reduction Benefits, please provide the detailed action plan of how NIPSCO will achieve the operational goals and targets for each item. If no such action plan exists, please explain why and provide support for NIPSCO's plan to achieve these estimates.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request is unduly burdensome and calls for the compilation and production of voluminous materials.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

Response:

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

Please see OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, and Model.

- a. O&M Expense Reduction Benefit: Meter Reading is the AMR labor and meter reading vehicle O&M savings associated with the AMI capability to read meters remotely. The calculation of the benefit for Meter Reading O&M Expense Reduction appears in Rows 358-360 and 362-364 of the Model tab and incorporates inputs from Rows 246, Row 248, and Rows 253-255 of the General_Inputs tab and primarily Row 152 and Row 163 of the Input_Calcs tab. The annual benefit calculation is generally: [(Total Labor Costs of Electric AMR Meter Reading for Reads, Re-Reads, and Change Name Reads) x (Cumulative

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Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Labor Inflation Rate)] + [(Average Operating and Maintenance Expenses of Meter Reading Vehicles) x (Percentage of Meter Reading Costs Allocated to Electric) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Inflation Rate)].

- b. O&M Expense Reduction Benefit: Meter Servicing is the labor and vehicle O&M savings associated with the AMI capability to remotely turn on and turn off meters which are modeled to reduce premise visits to disconnect/reconnect at the pole, execute routine turn-ons and turn-offs, and execute turn-ons and turn-offs for non-pay. (Note: With respect to non-pay disconnects, NIPSCO is not currently asking to remove the door knock requirement but has modeled the use of less expensive resources to perform the door knock while still performing the actual disconnect remotely). Currently, at NIPSCO, these processes are conducted by Electric Services, Gas Services, and Line Services. The calculation of the benefit for Meter Servicing O&M Expense Reduction appears in Rows 370-377 and Rows 379-386 of the Model tab and incorporates inputs from Row 121, Rows 267-286, Rows 290-291, and Row 342 of the General_Inputs tab and Row 177-179 and Rows 183-184 of the Input_Calcs tab. The annual benefit calculation is generally: [((Total Labor Costs of Electric Pole Disconnects/Reconnects and Turn-Ons and Turn-Offs) + (75% of Labor Costs of Turn-Ons and Turn-Offs for Non-Pay)) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Labor Inflation Rate)] + [(Average Operating and Maintenance Expenses of Vehicles Performing Disconnects and Turn-Ons and Turn-Offs) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Inflation Rate)].
- c. O&M Expense Reduction Benefit: Outage Management is the benefit associated with a decrease in time needed to locate an outage during both storms and non-storm outages due to locational insights provided by AMI meters, the reduction in field visits that result in a "found-on" status facilitated by AMI pinging functionality, and the decrease in vehicle expenses associated with the reduction in "found-on" truck rolls. The calculation of the benefit for Outage Management O&M Expense Reduction appears in Rows 402-404 and Row 406 of the Model tab and incorporates inputs from Rows 273-311 of the Input_Calcs tab and Rows 7-14 of the Reliability_Calcs tab. The annual benefit calculation is generally: [(Average NIPSCO Outage Restoration Costs Storms) x (Percentage of Outage Time Spent Locating the Outage (modeled at 15%)) x (Percentage of Time Spent Locating Outages that can be Reduced due to AMI (modeled at 50%)) x

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(Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Labor Inflation Rate)] + [(Average NIPSCO Outage Restoration Costs Non-Storms) x (Percentage of Outage Time Spent Locating the Outage (modeled at 15%)) x (Percentage of Time Spent Locating Outages that can be Reduced due to AMI (modeled at 50%)) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Labor Inflation Rate)] + [(Average NIPSCO "Found-On" Labor Costs) x (Percentage of "Found-On" Field Visits that can Be Avoided (modeled at 50%)) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Labor Inflation Rate)] + [(Average NIPSCO "Found-On" Vehicle Costs) x (Percentage of "Found-On" Field Visits that can Be Avoided (modeled at 50%)) x (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year) x (Inflation Rate)].

- d. O&M Expense Reduction Benefit: Residential AMR Meter Replacement is the benefit associated with eliminating costs, specifically labor costs for this benefit, for replacing residential AMR meters that would be forecasted to fail during the modeled years. Since AMR meters are going to be replaced with AMI meters, this benefit is counter to the costs associated with AMI meter exchanges modeled to occur after deployment. The calculation of the benefit for Residential AMR Meter Replacement O&M Expense Reduction appears in Row 421 of the Model tab and incorporates inputs from Row 30 of the General_Inputs tab and Row 61 of the Model tab. The annual benefit calculation is generally: [(NIPSCO Labor Cost for Installing a Residential AMR Meter) x (Number of Residential AMR Meters Forecasted to Be Replaced) x (Labor Inflation Rate)].
- e. O&M Expense Reduction Benefit: Commercial AMR Meter Replacement is the benefit associated with eliminating costs, specifically labor costs for this benefit, for replacing commercial AMR meters that would be forecasted to fail during the modeled years. Since AMR meters are going to be replaced with AMI meters, this benefit is counter to the costs associated with AMI meter exchanges modeled to occur after deployment. The calculation of the benefit for Commercial AMR Meter Replacement O&M Expense Reduction appears in Rows 422-425 of the Model tab and incorporates inputs from Row 42, Row 54, Row 66, and Row 78 of the General_Inputs tab and Rows 62-65 of the Model tab. The annual benefit calculation is generally: [(NIPSCO Labor Cost for Installing a Commercial AMR Meter) x (Number of Commercial AMR Meters Forecasted to Be Replaced) x (Labor Inflation Rate)].

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- f. O&M Expense Reduction Benefit: Bad Debt is the benefit associated with reducing NIPSCO write-offs through using AMI insights and remote turn-off capabilities to address customer non-pay situations, within existing regulatory guidelines. The calculation of the benefit for Bad Debt O&M Expense Reduction appears in Row 392 of the Model tab and incorporates inputs from Rows 323-325 of the General_Inputs tab. The annual benefit calculation is generally: [(NIPSCO Average Annual Bad Debt Provision) × (Percentage of Bad Debt Provision Attributable to Electric (modeled at 61%)) × (Percentage of Bad Debt Provision That can be Reduced with AMI (modeled at 25%)) × (Cumulative Percentage of AMR Meters Replaced with AMI at the Beginning of the Year)].
- g. NIPSCO has not conducted a sensitivity analysis around the likelihood of achieving specific benefits at this time. However, based on West Monroe's experience with AMI cost benefit analyses ("CBAs") and AMI deployments across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO is confident in the ability to achieve the estimated benefits.
- h. Based on West Monroe's experience with AMI CBAs and AMI deployments across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO considers the estimated benefits to be realistic estimates, fitting between aspirational and conservative levels of benefits.
- i. As NIPSCO has not yet received approval for the AMI Project and is currently in the pre-planning stages of the filed AMI deployment, concrete action plans for achieving operational benefits have not been developed. Assuming the approval of the AMI Project, NIPSCO is committed to delivering the delineated value of the AMI Program and anticipates developing and tracking proactive and transparent measurement of costs, benefits, and functionality as the deployment progresses.

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OUCC 3-003:

Please refer to Petitioner's Exhibit 3, Attachment 3-B, page 21, the table "Estimated NIPSCO AMI Project Benefits (2021-2036)", O&M and Expense Reduction Benefits category, and respond to the following. Please provide support to your response and show all calculations in Excel format with formulas intact.

- a. For the period 2016 thru 2020, please provide the actual Bad Debt amounts and growth rates on an annual basis.
- b. During the AMI deployment period, please provide NIPSCO's forecasted Bad Debt amounts on an annual basis prior to the application of any reduction benefits related to AMI deployment. What is the annual Bad Debt reduction rate (in percent) attributed to the AMI deployment during the same period? Please provide support and show all calculations in Excel format with formulas intact.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

Response:

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

Please see OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, and Model.

- a. An average Bad Debt Provision for the years 2018-2019 was modeled as representative baseline data. Data for 2020 was not included as the year 2020 was considered a potential outlier year due to COVID-19 impacts and

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restrictions on disconnects. Bad debt data for 2016-2017 and annual growth rates were also not modeled.

- b. As stated in sub-part a. above, an average bad debt provision was modeled as representative baseline data. This value was used in each year of the model to represent the bad debt provision for that year. No growth rate in baseline bad debt provision was modeled. Based on both West Monroe's experience with other AMI cost benefit analyses ("CBAs") and detailed discussion with NIPSCO resources, a reduction in the bad debt provision of 25% was modeled to be attributable to AMI for each year, taking into account the percentage of AMI deployment completed.

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OUCC 3-004:

Please refer to Petitioner's Exhibit 3, Attachment 3-B, page 21, the table "Estimated NIPSCO AMI Project Benefits (2021-2036)" Customer Benefits category, and also please refer to the text in Section D. part 4 of the same document, "Reduced Customer Outage Minutes Benefit," pages 18-19. Please respond to the following and provide support to your response, showing all calculations in Excel format with formulas intact if possible.

- a. Please define the term "CAIDI" as that term is used on page 19. Please identify the industry standard NIPSCO used as basis and source of the definition and provide support for your response. If NIPSCO did not use any industry standard, please explain why and provide support to your response.
- b. Please define the term "average 138 CAIDI metric" as that term is used on page 19.
- c. Please provide NIPSCO's calculation of the "average 138 CAIDI metric" discussed on page 19.
- d. Did the "average 138 CAIDI metric" include Customer Average Interruption Duration Index ("CAIDI") minutes "with Major Events" and "without Major Events"? If no, please explain why and provide support to your response.
- e. Please identify the period NIPSCO utilized as basis for the "average 138 CAIDI metric" it used to estimate the "Customer Outage Benefit."
- f. How many CAIDI minutes "with Major Events" were included in the "average 138 CAIDI metric"? Please identify and provide the inclusive dates and the number of minutes for each "Major Event" in an electronic tabulated Excel format and show all calculations with formulas intact.
- g. How many CAIDI minutes "without Major Events" were included in the "average 138 CAIDI metric"?
- h. For the period 2016 thru 2020, please provide NIPSCO's CAIDI minutes "with Major Events" on an annual basis in an electronic tabulated Excel format and show all calculations with formulas intact.
- i. For the period 2016 thru 2020, please provide NIPSCO's CAIDI minutes "without Major Events" on an annual basis in an electronic tabulated Excel format and show all calculations with formulas intact.

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j. Regarding the text on page 19, 2d paragraph - please explain how NIPSCO derived the "cost of outage minutes" used to calculate the Customer Outage Benefit amounts shown in the table on page 21. Please provide support to your response.

k. Regarding the text on page 19, 2d paragraph - please explain how NIPSCO derived the "value of improved reliability" used to calculate the Customer Outage Benefit amounts shown in the table on page 21. Please provide support to your response.

l. For the period 2016 thru 2020, what is NIPSCO's "cost of outage minutes" for service interruptions "with Major Events"? Please provide support to your response and show all calculations in electronic Excel format with formulas intact.

m. For the period 2016 thru 2020, what is NIPSCO's "cost of outage minutes" for service interruptions "without Major Events"? Please provide support to your response and show all calculations in electronic Excel format with formulas intact.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request is unduly burdensome and calls for the compilation and production of voluminous materials.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

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

NIPSCO first notes that, while CAIDI and system average interruption duration index ("SAIDI") figures were correctly modeled, the average SAIDI metric (138) was inadvertently transposed for the average CAIDI metric (136.5) on page 19 of Attachment 3-B to Mr. Kiergan's direct testimony. This does not impact any calculations or results, as it was a typographical error in the text of Attachment 3-B; however, NIPSCO will be filing a correction to Attachment 3-B to change "138" to "136.5."

Please see OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, and Model.

- a. As used in the NIPSCO cost benefit analysis ("CBA"), CAIDI is the abbreviation for Customer Average Interruption Duration Index and is a reliability metric for electric utilities. CAIDI represents the average non-momentary or sustained interruption duration per interrupted customer or, put another way, the average time to restore service per interrupted customer. CAIDI can be calculated using SAIDI and system average interruption frequency index ("SAIFI"), where $CAIDI = SAIDI/SAIFI$, or by $CAIDI = CMI/CI$, where CMI is Customer Minutes Interrupted and CI is Customers Interrupted. The Industry Standard NIPSCO uses to define CAIDI is IEEE 1366 – Reliability Indices.
- b. "Average 138 (136.5) CAIDI metric" is defined as an average CAIDI of 136.5 minutes calculated as an average over five years. From a modeling perspective, calculating an average CAIDI is more accurate than using a single year's CAIDI, especially if that year was an outlier for interruptions.
- c. In the NIPSCO Electric AMI CBA, the average CAIDI metric of 138 (136.5) minutes is found by calculating a straight average of five years' of CAIDI values at NIPSCO: 2015 – 137.3 minutes, 2016 – 139.6 minutes, 2017 – 129.7 minutes, 2018 – 139.2 minutes, and 2019 (through August) – 135.0 minutes.
- d. In the NIPSCO Electric AMI CBA, the average CAIDI metric of 138 (136.5) minutes is calculated excluding major event days (MEDs). This approach enables a more realistic estimate of benefits as highly variable major events are excluded from the calculation.
- e. See NIPSCO's response to sub-part c. above.

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- f. In the NIPSCO Electric AMI CBA, there are no major event minutes included in the CAIDI minutes. Dates and number of minutes for each Major Event were not included in the modeling data.
- g. See NIPSCO's response to sub-part c. above. The five years' Customer Minutes Interrupted (CMI) values at NIPSCO were as follows: 2015 – 56,272,957 minutes, 2016 – 62,923,132 minutes, 2017 – 59,770,717 minutes, 2018 – 70,578,258 minutes, and 2019 (through August) – 51,310,225 minutes.
- h. In the NIPSCO Electric AMI CBA, there are no major event minutes included in the CAIDI minutes so the data requested is unavailable from the analysis.
- i. In the NIPSCO Electric AMI CBA, CAIDI minutes without Major Events appear in Row 274 of the Input_Calcs tab, while other relevant data appears in the Input_Calcs tab in Row 275 (SAIDI), Row 286 (SAIFI), Row 279 (Number of Customers Served or CS), Row 280 (Number of Customer Interruptions or CI), and Row 286 (Customer Minutes Interrupted or CMI).
- j. In the NIPSCO Electric AMI CBA, the cost of outage minutes methodology was not used to calculate the customer benefit resulting from reduced customer outage minutes.
- k. In the NIPSCO Electric AMI CBA, the value of improved reliability, defined as a Customer Benefit, was calculated using the Interruption Cost Estimate ("ICE") Calculator. The ICE Calculator is an electric reliability planning tool developed by Lawrence Berkeley National Laboratory and Nexant, Inc.
- l. See NIPSCO's response to sub-part j. above.
- m. See NIPSCO's response to sub-part j. above.

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OUCC 3-005:

Petitioner's Exhibit 3, Attachment 3-B, page 19, states "[t]he ICE calculator offers two methodologies to calculate benefits: cost of outage minutes or value of improved reliability. The value of improved reliability produces a more conservative benefit estimate with similar inputs and provides an estimated 15-year benefit of \$95.6 million." Please provide the "cost of outage minutes" amounts used to calculate each of the following Customer Outage Benefits as shown in the tables on pages 18 and 21:

- a. Deployment Total
- b. 2027-2036 Average
- c. 2027-2036 Total
- d. 2021-2036 Total
- e. By selecting and using the "value of improved reliability" methodology in estimating Customer Outage Benefit because it "produces a more conservative benefit estimate," please explain and describe the degree of confidence NIPSCO has on the methodology it selected over the "cost of outage minutes" methodology. Please provide support to your response.
- f. By producing "a more conservative benefit estimate" does it make "value of improved reliability" methodology more reliable and realistic than over the "cost of outage minutes" methodology? Please explain and provide support to your response.
- g. Contrast and compare "value of improved reliability" and "cost of outage minutes" methodologies. Does the "cost of outage minutes" methodology produce a reasonably attainable or achievable operational goal or target? If no, please explain why and provide support to your response.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request is unduly burdensome and calls for the compilation and production of voluminous materials.

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NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

Response:

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

See OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, Model, and Reliability_Calcs.

- a. As stated in Mr. Kiergan, Direct, Attachment 3-B, Pages 19, the "value of improved reliability" methodology (Value of Reliability Improvement selection in the Interruption Cost Estimate ("ICE") Calculator) was chosen over the "cost of outage minutes" methodology (Estimate Interruption Costs selection in the ICE Calculator). Due to this choice, the "cost of outage minutes" amounts were not calculated and do not appear in the cost benefit analysis ("CBA"). The annual estimates of savings to customers calculated by the ICE Calculator using the value of improved reliability methodology appear in the CBA in Rows 408-410 of the Model tab and incorporates inputs from Rows 66-82 of the Reliability_Calcs tab.
- b. See NIPSCO's response to sub-part a. above.
- c. See NIPSCO's response to sub-part a. above.
- d. See NIPSCO's response to sub-part a. above.
- e. NIPSCO has confidence in the estimates of benefits calculated by the ICE Calculator, regardless of the methodology selected. Lawrence Berkeley National Laboratory created the model for the United States Department of Energy, specifically as a means to estimate the value of service reliability improvements for electricity customers. The ICE Calculator estimates the economic benefit of value of service improvements for specific customer classes which are derived from improvements in Customer Average Interruption

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Duration Index ("CAIDI"), System Average Interruption Duration Index ("SAIDI"), and System Average Interruption Frequency Index ("SAIFI"). As part of the CBA, an improvement of 5% in CAIDI due strictly to AMI was modeled for the purpose of the ICE Calculator. The ICE Calculator is well respected and often used in the U.S. electric industry as a reasonable source of service reliability valuation estimates. The researchers have also improved the model through several iterations since being introduced about a decade ago; the last major update occurred in 2018.

- f. The ICE Calculator is well respected and often used in the U.S. electric industry as a reasonable source of service reliability valuation estimates. These customer financial benefit estimates should be viewed as reliable and realistic regardless of the methodology used. The choice of methodology is often based on the degree of confidence in the associated inputs. NIPSCO is confident in the estimated improvement in CAIDI modeled to be delivered by AMI deployment. While the concept of customers realizing direct financial benefits from improving service reliability is well recognized and is realistically captured in the ICE calculator outputs, it is difficult to track the realization of this economic value to customers. However, NIPSCO will continue to measure and track the key metrics that are used when performing simulations with the ICE Calculator, including CAIDI, customer minutes of interruption, and customer interruptions.
- g. Having not used the "cost of outage minutes" methodology in the CBA, NIPSCO is not able to compare and contrast the two methodology choices within the ICE Calculator.

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OUCC 3-006:

Please refer to Petitioner's Exhibit 3, Attachment 3-B, page 21, and the yellow-highlighted row titled "Total NIPSCO Operational Benefits" and respond to the following.

- a. Does NIPSCO consider the amounts in this row more "conservative" (meaning a higher probability of achieving the estimate) or more "aspirational" (meaning a greater risk of failing to achieve the estimate)? Please explain the basis for the response, including specifying the factors which tend to make each estimate more "conservative" or more "aspirational".
- b. Were the amounts NIPSCO presented as "Total NIPSCO Operational Benefits" row based on real-world, attainable or achievable operational goals and targets? If yes, please provide detailed action plan of how NIPSCO will achieve such operational goals and targets for each item. If no, please explain why and provide support to your response.
- c. Please explain and describe the degree of confidence NIPSCO has on the "Total NIPSCO Operational Benefits" amounts presented on page 21 If NIPSCO has less than full confidence in the "Total NIPSCO Operational Benefits" amounts it presented in this Cause, please explain why and provide support to your response.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

Response:

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

- a. Based on West Monroe's experience with AMI cost benefit analyses ("CBAs") and AMI deployments across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO considers each of the estimated operational benefits, and thus the total estimated operational benefits, to be realistic estimates, fitting between aspirational and conservative levels of benefits.

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- b. The operational benefits modeled in the CBA represent realistic, achievable operational goals based on current conditions and current modeling assumptions, which are in turn based on West Monroe's experience with AMI CBAs and AMI deployments across the country and NIPSCO's detailed knowledge of their own system, organization, metrics, and capabilities. As NIPSCO has not yet received approval for the AMI Project and is currently in the pre-planning stages of the filed AMI deployment, concrete action plans for achieving operational benefits have not been developed. Assuming the approval of the AMI Project, NIPSCO is committed to delivering the delineated value of the AMI Program and anticipates developing and tracking proactive and transparent measurement of costs, benefits, and functionality as the deployment progresses.
- c. NIPSCO has not conducted a sensitivity analysis around the likelihood of achieving specific operational benefits at this time. However, based on West Monroe's experience with AMI CBAs and AMI deployments across the country, coupled with detailed discussions with responsible and impacted groups within NIPSCO, NIPSCO is confident in the ability to achieve the estimated operational benefits.

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OUCC 3-007:

Mr. Kiergan, Direct at 11, lines 3 – 8, discussed additional qualitative benefits associated with AMI deployment such as reduction in meter reading drive-by and truck rolls that were quantified but not included in the cost-benefit analysis (“CBA”) results. Please provide the operational savings (in dollars) derived from reduced meter reading drive-by and truck rolls for the following:

- a. Deployment Total
- b. 2027-2036 Average
- c. 2027-2036 Total
- d. 2021-2036 Total

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information that is confidential, proprietary, and/or trade secret.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request is vague and ambiguous as it refers to a section of Mr. Kiergan's direct testimony that is discussing “qualitative” (i.e., unquantified) benefits, but this Request asks NIPSCO to “quantify, in dollars (\$), the operational savings derived from reduced meter reading drive-by and truck rolls.”

Response:

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

Please see OUCC Request 3-001 Confidential Attachment A for the AMI cost and benefit inputs and calculations. The primary tabs containing data to support NIPSCO's responses to OUCC Set 3 questions are General_Inputs, Input_Calcs, and Model.

- a. Mr. Kiergan's direct testimony at page 11, lines 3-8 specifically refers to only the reduced greenhouse gas emissions (“GHG”) associated with reduced truck rolls and drive-by meter reading. These GHG emission savings are categorized as Societal Benefits. As stated in Mr. Kiergan's direct testimony at page 29, lines 4-9, while West Monroe and NIPSCO are confident the AMI Project will produce some additional level of societal benefits, it was deemed appropriate to exclude them from the baseline cost-benefit comparison to

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provide a customer-focused assessment of the planned investments. That being said, the GHG emissions benefit associated with reduced truck roles and reduced drive-by meter reading was estimated in the cost benefit analysis ("CBA") and appears in Row 444 of the Model tab. Operational Benefits directly derived from remote meter reading and reduced truck rolls, though not part of the reference in Mr. Kiergan's direct testimony at page 11, lines 3-8, are quantified in the CBA and appear in Rows 379-386 of the Model tab.

- b. See NIPSCO's response to sub-part a. above.
- c. See NIPSCO's response to sub-part a. above.
- d. See NIPSCO's response to sub-part a. above.

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OUCC 3-008:

Please refer to Petitioner's Exhibit No. 4, Direct Testimony of Mr. Matthew G. Holtz, response A8, p. 4, which states "NIPSCO currently uses Advanced Meter Reading ("AMR") metering technology." In this regard, please respond to the following and provide support to your response.

- a. How many AMR electric meters does NIPSCO currently have within its service territory? Please provide the AMR electric meter count for each customer class.
- b. Please identify the different types, makes and models of the AMR electric meters NIPSCO deployed. Please provide the manufacturer's brochure or technical specification for each type of AMR electric meter deployed.
- c. What is NIPSCO's current installed cost, in dollars, for each type of AMR electric meter? Please state and explain if the installed cost is an average cost and provide support to your response.
- d. What is NIPSCO's current AMR electric meter installed cost, in dollars, for each customer class? Please state and explain if the installed cost is an average cost and provide support to your response.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

Response:

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

- a. NIPSCO currently has 481,338 electric AMR meters. During the AMR conversion project, approximately 407,121 meters were replaced. The

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additional AMR meters were installed outside of the formal conversion project (some were not able to be replaced by the contractor and were "returned to utility" and NIPSCO replaced the meter).

b. NIPSCO has installed 20 different types of AMR meters.

Residential Meters

The most common meter type for residential customers is with a 200 amp feed is an Itron, OpenWay CENTRON & CENTRON® Bridge Meter (Residential/Singlephase), C2SO Form 2S, CL200, 240V.

A less common meter type for residential customers with a 320 amp feed is an Itron, OpenWay CENTRON & CENTRON® Bridge Meter (C&I/Polyphase), CP3SOA Form 2S, CL320, 120V-480V.

Additional types of residential meters include: (1) CP3SOA Form 12S, CL200, 120V-480V; (2) CP3SOA Form 16S (14S, 15S, 17S), CL200, 120V-480V; and (3) CP3SOA Form 16S (14S, 15S, 17S), CL320, 120V-480V, Multi-Function.

Meters for Larger Customers

For larger customers, the following types of meters may be used:

- (1) CP3SOA Form 3S, CL20, 120V-480V
- (2) CP3SOA Form 4S, CL20, 120V-480V
- (3) CP3SOA Form 45S (5S), CL20, 120V-480V
- (4) CP3SOA Form 9S (8S), CL20, 120V-480V
- (5) CP3SOA Form 45S (5S), CL20, 120V-480V, Bridge Multi Function
- (6) CP3SOA Form 9S/36S, 120V-480V

The manufacturer brochures that cover all 20 types of AMR meters that were originally installed are attached as OUCC Request 3-008 Attachment A and OUCC Request 3-008 Attachment B.

c. The table depicts the 2021 average installation cost per type of AMR meter NIPSCO currently uses. The 20 types are identified by the NIPSCO internal stores item number.

STORES ITEM NO.	Meter Type	INSTALL COST
234118	Form 1S CL100 120V	\$163.15
234020	Form 1S CL100 120V with load profile and demand	\$248.38

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234164	Form 2S CL200 240V	\$119.66
234021	Form 2S CL200 240V with load profile and demand	\$206.37
234156	Form 12S CL200 240V	\$160.30
234139	Form 16S CL200 120V 3 wire config	\$284.59
234022	Form 16S CL200 120V 3 wire config with load profile and demand	\$314.51
234140	Form 16S CL200 120V 4 wire config	\$294.19
234023	Form 16S CL200 120V 4 wire config with load profile and demand	\$348.38
234182	Form 2S CL320 240V	\$163.15
234024	Form 2S CL320 240V with load profile and demand	\$245.49
234141	Form 16S CL320 120V	\$307.74
234025	Form 16S CL320 120V with load profile and demand	\$389.04
234030	Form 3S CL20 120V with load profile and demand	\$397.67
234143	Form 4S CL20 240V	\$316.66
234031	Form 4S CL20 240V with load profile and demand	\$466.23
234032	Form 9S CL20 120V 3 wire config with load profile and demand	\$644.00
234034	Form 9S CL20 120V 3 wire config with load profile and demand	\$797.56
234033	Form 9S CL20 120V 4 wire config with load profile and demand	\$781.14
234035	Form 9S CL20 120V 4 wire config with load profile and demand	\$916.63

d. Non-weighted Average cost by Customer type:

- Residential / small commercial (Self-contained metering): \$249.61
- Medium commercial / large commercial / industrial (Transformer-rated metering): \$617.13

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OUCC 3-009:

In reference to the deployment of NIPSCO's current AMR electric meters, please state the number of AMR electric meters NIPSCO originally planned to install and respond to the following. Please provide support to your response.

- a. Please provide the dates NIPSCO initiated and completed its AMR deployment or AMR deployment period.
- b. How many AMR electric meters did NIPSCO install at the end of deployment period? Please provide the number of AMR electric meters installed on an annual basis throughout the deployment period.
- c. Did NIPSCO create or assemble a formal project management team to oversee, management and have full responsibility of its AMR deployment?
- d. Please provide the timeline of activities associated with NIPSCO's AMR deployment.
- e. From start (AMR pre-planning stage) to finish, how many years did it take for NIPSCO to fully complete its AMR deployment?
- f. Did NIPSCO encounter any major delay in its AMR deployment? If yes, please explain the cause of the delay and provide support to your response.
- g. Did NIPSCO complete its AMR deployment ahead of schedule, within schedule or beyond its target completion date? If NIPSCO completed its AMR deployment beyond its scheduled target completion date, please explain why and provide support to your response.
- h. What was the original project cost estimate, in dollars, internally approved by NIPSCO management for acquisition and deployment of AMR electric meters?
- i. Did NIPSCO incur any project cost escalations related to the deployment of AMR electric meters? If yes, please explain and provide support to your response.
- j. Throughout the entire AMR project execution and deployment period, did the project management team re-baseline the project? If yes, please explain why and provide support to your response.

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k. Please state the number of times the AMR deployment project management re-baselined the project.

l. For each time project management re-baselined the AMR deployment project, please state and explain the reason why and provide support to your response.

m. What was the total or final capital cost of NIPSCO's AMR deployment? Please explain and provide support to your response.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request is unduly burdensome and calls for the compilation and production of voluminous materials.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request solicits an analysis, calculation, or compilation which has not already been performed and which NIPSCO objects to performing.

NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request seeks documents or information that are beyond the scope of this proceeding and are not relevant to the subject matter of this proceeding and are therefore not reasonably calculated to lead to the discovery of admissible evidence.

Response:

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

a. Construction started February 25, 2013 and was substantially complete on September 4, 2015. The scheduled completion date was December 30, 2015.

b. Total meters installed during the project was 407,121. By year: 2013 = 118,955; 2014 = 188,852; 2015 = 99,314.

c. Yes. There was a Project Manager, Assistant Project Manager/Supervisor, Construction Managers, Quality Assurance/Quality Control personnel, Project Scheduler, Project Cost Technician, and Safety Lead who were all NIPSCO resources. In addition, Tru-Check, the installation contractor, provided management and scheduling staff and Continental was the electrical repair company.

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d.

Task	Date
Project Study and Scope Creation	June 22, 2011
Charter Approved	November 30, 2012
Pilot Start	February 25, 2013
Pilot Complete	April 12, 2013
Project Start	March 14, 2013
Project Finish	December 30, 2015

e. The project took four years and three months.

f. The only delay was that the initial contractor for the project, Metadigm, went bankrupt one week into the pilot phase. The project team initiated a new contract and contractor within seven calendar days and continued the project immediately, causing very little delay to the overall project.

g. The project schedule went to December 30, 2015, and the project was substantially complete by September 4, 2015. The remaining return to utility (RTUs), or hard to reach meters (1,154 meters) were tracked and completed at various rates through the remainder of 2015 and the following years. At this point, all meters have either been converted, or the customer is paying the AMR opt out charge. All new meters are currently AMR meters.

h. The total estimate was \$28.8 million, including direct and indirect costs.

i. There were minimal project cost escalations related to this deployment (about 3.7%). While the exact source is unknown, there were unexpected costs related to meter jaw and base replacements. More jaws were replaced than expected for safety reasons.

j. No. The project was never re-baselined outside of minor adjustments in customer meter counts per Local Operating Area based on current turn on for non-payment (TONPs), shut off for non-payment (SONPs), new installations of service, and customers moving in and out of the current meter routes during the installation periods.

k. Not applicable, as the project was never re-baselined.

Cause No. 45557
Northern Indiana Public Service Company LLC's
Objections and Responses to
Indiana Office of Utility Consumer Counselor's Third Set of Data Requests

l. Not applicable, as the project was never re-baselined.

m. The final installed costs were \$29.95 million, including direct and indirect costs.

CERTIFICATE OF SERVICE

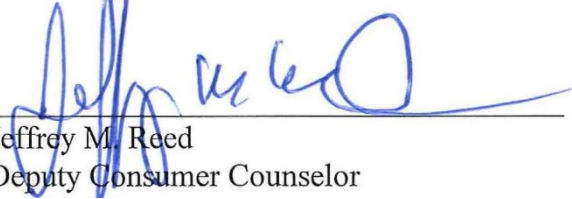
This is to certify that a copy of the foregoing *Indiana Office of Utility Consumer Counselor Public's Exhibit No. 1 Testimony of OUCC Witness Anthony A. Alvarez* has been served upon the following counsel of record in the captioned proceeding by electronic service on August 30, 2021.

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