

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

**VERIFIED PETITION OF NORTHERN INDIANA)
PUBLIC SERVICE COMPANY FOR (1) APPROVAL)
OF AND A CERTIFICATE OF PUBLIC)
CONVENIENCE AND NECESSITY FOR A)
FEDERALLY MANDATED NERC COMPLIANCE)
PROJECT; (2) AUTHORITY TO RECOVER)
FEDERALLY MANDATED COSTS INCURRED IN)
CONNECTION WITH THE NERC COMPLIANCE)
PROJECT; (3) APPROVAL OF THE ESTIMATED)
FEDERALLY MANDATED COSTS ASSOCIATED)
WITH THE NERC COMPLIANCE PROJECT; 4))
AUTHORITY FOR THE TIMELY RECOVERY OF)
80% OF THE FEDERALLY MANDATED COSTS)
THROUGH RIDER 787 – ADJUSTMENT OF)
FEDERALLY MANDATED COSTS AND APPENDIX I)
– FEDERALLY MANDATED COST ADJUSTMENT)
FACTOR; (5) AUTHORITY TO DEFER 20% OF THE)
FEDERALLY MANDATED COSTS FOR RECOVERY)
IN NIPSCO’S NEXT GENERAL RATE CASE; (6))
APPROVAL OF SPECIFIC RATEMAKING AND)
ACCOUNTING TREATMENT; (7) APPROVAL TO)
DEPRECIATE THE NERC COMPLIANCE PROJECT)
ACCORDING TO PREVIOUSLY APPROVED)
DEPRECIATION RATES; AND (8) APPROVAL OF)
ONGOING REVIEW OF THE NERC COMPLIANCE)
PROJECT; ALL PURSUANT TO IND. CODE §§ 8-1-8.4-)
1 ET SEQ., 8-1-2-19, 8-1-2-23 AND 8-1-2-42.)**

CAUSE NO. 44889

OUCC TESTIMONY

OF

RONALD L. KEEN – PUBLIC’S EXHIBIT #1

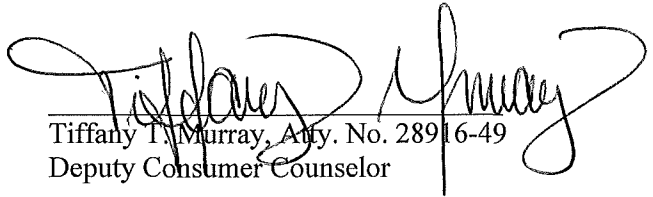
ON BEHALF OF THE

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

February 28, 2017

Respectfully submitted,

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

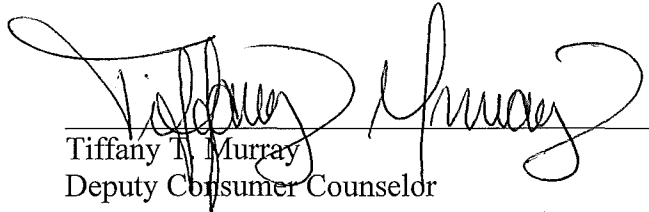


Tiffany T. Murray, Atty. No. 28916-49
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CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing *Office of Utility Consumer Counselor Testimony of Ronald L. Keen* has been served upon the following counsel of record in the captioned proceeding by electronic service on February 28, 2017.

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DIRECT TESTIMONY OF RONALD L. KEEN
CAUSE NO. 44889
NORTHERN INDIANA PUBLIC SERVICE COMPANY ("NIPSCO")

Q: Please state your name and your business address.

A: My name is Ronald L. Keen. My business address is 115 West Washington Street, Suite 1500 South, Indianapolis, Indiana 46204.

Q: Are you the same Ronald L. Keen who testified in IURC Cause Nos. 44340 and 44340 FMCA 1-6, which addressed Critical Infrastructure Protection ("CIP") Version 4 compliance projects as filed by Northern Indiana Public Service Company ("NIPSCO")?

A: Yes. For a summary of my educational and professional background, please see Appendix RLK-1 attached to my testimony.

Q: What have you done to identify and investigate issues presented in this Cause?

A: I reviewed the petition and direct testimony, including exhibits and workpapers, filed by NIPSCO in this Cause. I participated in a meeting on February 16, 2017 with NIPSCO representatives to discuss this filing and CIP issues in general. Additionally, as background research for this Cause and to stay well-informed on CIP-related issues, I also conducted independent research and contacted peers from other organizations and agencies, including but not limited to, the Regional Transmission Organizations ("RTO"), North American Electric Reliability Corporation ("NERC"), Federal Energy Regulatory Commission ("FERC"), Department of Homeland Security ("DHS"), Federal Emergency Management Agency ("FEMA"), the National Institute of Standards and Technology ("NIST"), and the Indiana Department of Homeland Security ("IDHS").

Q: What is the purpose of your testimony?

A: I provide my opinion on the reasonableness of NIPSCO's request for approval of a Certificate of Public Convenience and Necessity ("CPCN") for its NERC Compliance

1 Project. Specifically NIPSCO's proposal to fund capital improvements in order to
2 upgrade and update NIPSCO's critical infrastructure to comply with the requirements of
3 NERC CIP Reliability Standards Version 6.0 (NERC CIP 6.0); and the request to recover
4 certain annual O&M expenditures intended to comply with the Interconnection
5 Reliability Operations/Transmission Operations ("IRO/TOP") Standards. Ultimately, I
6 recommend approval of NIPSCO's request.

7 **Q: Have you reviewed each of the eleven (11) CIP Reliability Standards, including the**
8 **seven (7) standards that were impacted by the development of CIP Version 6.0**
9 **("CIP Version 6") discussed in this Cause?**

10 A: Yes.

11 **Q: Have you reviewed the three individual Reliability Standards that comprise the**
12 **IRO/TOP Standards also discussed in this Cause?**

13 A: Yes. I have reviewed IRO-017-1 (Interconnection Reliability Operations and
14 Coordination – Outage Coordination); TOP-001-3 (Transmission Operations –
15 Transmission Operations); and TOP-002-4 (Transmission Operations – Operations
16 Planning).

17 **Q: Please generally describe NIPSCO's proposed CIP Version 6 Compliance Project.**

18 A: NIPSCO proposes to complete certain projects and ongoing activities at fifty-one (51)
19 different substations within its electric system. Generally speaking, NIPSCO plans to
20 install physical access controls (card readers, upgraded doors and hardware, and other
21 associated upgrades) to incorporate the 51 locations into NIPSCO's existing centralized
22 card reader system. NIPSCO also plans to install electronic access controls at each of the
23 51 substations to serve as a firewall to protect its microprocessor-based relays from
24 unapproved electronic traffic. The Schweitzer Engineering Laboratories 3620 at each
25 location will permit only approved inbound and outbound electronic traffic and will

1 require user authentication before access to NIPSCO's relays will be granted. Lastly,
2 NIPSCO will also either install communication system upgrades to its microwave
3 communication network or introduce network connections in areas where its microwave
4 communications network is not present or is lacking.

5 NIPSCO must comply with the physical security and electronic access control
6 requirements of CIP-003-06 by September 1, 2018; therefore, NIPSCO anticipates
7 completing 70% of its CIP Version 6 Compliance Project in 2017, with the remainder to
8 be completed in the first two quarters of 2018.

9 **Q: How did NIPSCO determine what activities it must complete in order to be**
10 **compliant with CIP Version 6?**

11 A: NIPSCO engaged a third-party, Network & Security Technologies, Inc. ("N&ST") to
12 analyze the changes in the CIP Version 6 Reliability Standards as well as review the
13 current state of all in-scope NIPSCO facilities. N&ST recommended changes/upgrades
14 that NIPSCO would need to complete in order to ensure compliance with CIP Version 6.
15 NIPSCO provided a confidential copy of N&ST's Impact Assessment for Facilities with
16 Low Impact BES Cyber Systems as Petitioner's Attachment 2-B (Confidential) to
17 witness Holtz's direct testimony. NIPSCO reports it applied N&ST's guidance to produce
18 the scope of the CIP Version 6 Compliance Project, and that it also surveyed all 51
19 substations, performed site evaluations with internal subject matter experts, and engaged
20 contractors to conduct scoping and cost estimates.

21 **Q: What projects are not included in NIPSCO's proposed CIP Version 6 Compliance**
22 **Project?**

23 A: N&ST's review of NIPSCO's electric system also included NIPSCO's generating
24 stations; however, NIPSCO and N&ST determined that, based on the location of the BES

1 Cyber Systems and Assets at each site, the existing protections already in place, and the
2 number of personnel who visit each site and the frequency of such visits, the existing
3 perimeter controls at the generating stations were adequate to achieve compliance with
4 the CIP Version 6 Standards. Therefore, NIPSCO's current CPCN request does not
5 include any compliance work at its generating stations.

6 **Q: Do you object to the scope of NIPSCO's proposed CIP Version 6 Compliance**
7 **Project?**

8 A: No. I reviewed N&ST's guidance to NIPSCO in Petitioner's Confidential Attachment 2-
9 B and believe N&ST's recommendations are sound. NIPSCO and N&ST considered
10 alternative plans in developing the scope of the CIP Version 6 Compliance Project, and
11 determined a reasonable and necessary portfolio of projects in order to achieve
12 compliance with the NERC CIP Version 6 Reliability Standards.

13 **Q: How did NIPSCO determine the total cost for its CIP Version 6 Compliance**
14 **Project?**

15 A: NIPSCO estimates an \$11.4 million capital expenditure to complete its CIP Version 6
16 Compliance Project, as well as annual O&M of: \$745,000 for 2018; \$819,000 for 2019,
17 and; \$901,000 for 2020 and beyond. These estimates are shown in Petitioner's
18 Attachment 2-A. Petitioner's witness Holtz states at page 34 of his testimony that
19 NIPSCO secured quotes from vendors in October and November 2016, which were used
20 to form the basis for the cost of materials. Several NIPSCO groups provided labor
21 estimates based on the use of contractors and outside consultants, and for internal
22 NIPSCO staff, where available.

23 NIPSCO's cost estimates are set at class levels based on the American
24 Association of Cost Engineers ("AACE") Cost Estimate Classification system. 66%

1 (\$7,530,014) of NIPSCO's total cost estimate for the CIP Version 6 Compliance Project
2 is a Class 2 estimate, meaning it has an accuracy range of -15% to +20%. 10%
3 (\$1,154,323) of NIPSCO's total cost estimate for the CIP Version 6 Compliance Project
4 is a Class 3 estimate, with an accuracy range of -20% to +30%. Finally, 24%
5 (\$2,756,913) of NIPSCO's total cost estimate for the CIP Version 6 Compliance Project
6 is a Class 5 estimate, with an accuracy range of -50% to +100%.

7 To account for the some of the uncertainty with its cost estimates, NIPSCO has
8 included contingency dollars in each estimate as shown in Petitioner's Attachment 2-A.
9 Each estimate includes a 10% labor contingency and a 20% materials contingency.

10 **Q: Did NIPSCO explain the basis for the 10% labor contingency and 20% materials**
11 **contingency?**

12 A: In response to OUCC Data Request No. 3-001, yes. NIPSCO stated "the basis for the
13 contingency factors used is NIPSCO's experience with the CIP V4 project." NIPSCO
14 went on to explain that from its prior experience with similar projects, estimates for labor
15 expense are generally much more accurate than those for materials. Additionally,
16 NIPSCO explained, based on the scope of the project at each site, there is a "greater
17 potential for larger variances due to material changes based on unknown site-specific
18 risks so NIPSCO applied a 20% contingency." NIPSCO's response indicates that labor
19 risks are still present at each site due to the level of scoping and unknowns, but, based on
20 the overall scope at each site, NIPSCO used a contingency of 10%.

21 **Q: Are you concerned with NIPSCO's cost estimation methodology for its proposed**
22 **CIP Version 6 Compliance Project?**

23 A: No. NIPSCO used a reasonable and logical methodology to estimate its costs in this case,
24 including recent vendor quotes and acceptable sources for labor estimates. NIPSCO's

1 additional explanation as to how it determined it would use a 20% material contingency
2 and 10% labor contingency is reasonable. NIPSCO has committed to conduct further
3 refinement of its cost estimates as the CIP Version 6 Compliance Project is implemented,
4 and certain unknowns become known. The OUCC expects that NIPSCO will not exceed
5 its estimated \$11.4 million total cost estimate (excluding AFUDC and carrying costs),
6 and will review any refinements to individual cost estimates when NIPSCO files its
7 FMCA cost recovery mechanism for this Project.

8 **Q: Please generally describe NIPSCO's proposed Interconnection Reliability**
9 **Operations ("IRO")/Transmission Operations ("TOP") Compliance Project,**
10 **including its estimated costs.**

11 A: NIPSCO seeks to recover costs associated with its compliance with changes to three
12 Reliability Standards, IRO-017-1, TOP-001-3, and TOP-002-4 (collectively, the
13 "IRO/TOP Standards"), which become effective in 2017. Generally speaking, the
14 IRO/TOP Standards will require NIPSCO to conduct assessments of its transmission
15 system conditions on a more frequent basis than was previously required, and in a more
16 proactive and robust manner. The new requirements under TOP-001-3 are the most
17 significant, in that NIPSCO will now be required to perform a Real-time Assessment
18 using its Energy Management System at least once every thirty (30) minutes (24 hours a
19 day and 7 days a week or 24x7) and to undertake responsive action to maintain its
20 system, prevent degradation, and respond to mitigate any degradation or failure of EMS
21 network analysis tools necessary within the 30 minute time limit. NIPSCO has
22 determined that this change, along with the other changes to the IRO/TOP Standards,
23 require NIPSCO to employ additional Operations Support Personnel on a 24x7 basis to
24 ensure compliance. Accordingly, when evaluating these new compliance requirements,

1 NIPSCO made the decision to hire six (6) Real-Time Operations Engineers ("RTOEs")
2 who will be directly responsible for supporting NIPSCO's Real-time operations.

3 There are no capital costs associated with NIPSCO's request for cost recovery for
4 the IRO/TOP Compliance Project. To comply with the IRO/TOP Standards, NIPSCO
5 proposes to recover \$654,000 (including indirect, overhead, and benefits expenses) per
6 year in O&M expenses associated with the base salaries, taxes, and benefits of six (6)
7 Real-Time Operations Engineers. OUCC witness Stacie Gruca discusses the salaries and
8 benefits associated with these six positions, which have been filled as of mid-October
9 2016, as well as the job description for each.

10 **Q: Do you have any objection to NIPSCO's proposed IRO/TOP Compliance Project or**
11 **the related cost estimates?**

12 A: No. NIPSCO appears to have a sound understanding of the changes to the IRO/TOP
13 Standards. The hiring of the six RTOEs is an adjustment NIPSCO needs to make in order
14 to comply with these new, robust real-time requirements, and the costs associated with
15 retaining these employees are reasonable and supported by the evidence.

16 **Q: Please summarize your findings and recommendation.**

17 A: NIPSCO's proposed NERC Compliance Project is both a reasonable and necessary
18 means of complying with the NERC CIP Version 6 Standards and the changes to the
19 IRO/TOP Standards. The information provided to the OUCC in briefings, in response to
20 discovery requests, and within NIPSCO's filing itself has assured me that the NIPSCO
21 team is maintaining effective and efficient operations in light of a rapidly changing threat
22 environment and ongoing changes in regulations and requirements. The NIPSCO team
23 continues to work to maintain compliance with all previous and current CIP standards

1 and I am assured that NIPSCO is already looking to the upcoming release of NERC CIP
2 Reliability Standard 7.0.

3 I conclude that the public convenience and necessity is served by approval of
4 NIPSCO's request in this Cause through these necessary compliance projects in order to
5 continue to protect both NIPSCO's critical assets and the provision of energy to the
6 ratepaying customer. I recommend the Commission approve NIPSCO's request for
7 approval of a CPCN for its NERC Compliance Project.

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

9 **A:** Yes.

APPENDIX RLK-1

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

2 A: Hired by the OUCC in December 2001, I have a Masters in Aeronautical Science
3 and have completed the regulatory studies program at Michigan State University
4 sponsored by the National Association of Regulatory Utility Commissioners
5 ("NARUC"). Prior to working at the OUCC, I retired from the United States Air
6 Force after a distinguished career in which I gained extensive experience as an
7 expert in project management, telecommunications, critical infrastructure
8 protection, systems analysis and renewable energy generation systems. After
9 retiring from the Air Force, I briefly worked as a Project Manager for ARINC¹,
10 developing training programs, policy, and operations concepts for the
11 Department of Defense in advanced satellite operations and communications
12 planning.

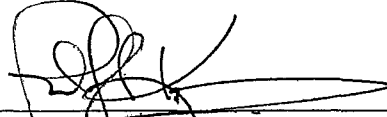
13 **Q: Have you previously testified before the Indiana Utility Regulatory**
14 **Commission or other regulatory bodies?**

15 A: Yes. I have testified in over one hundred dockets before the Indiana Utility
16 Regulatory Commission and before federal agencies, such as the Federal Energy
17 Regulatory Commission and the Federal Communications Commission (FCC),
18 on a variety of issues in the telecommunications and energy arenas, including
19 Critical Infrastructure Protection issues.

¹ ARINC was, at one time, known as Aeronautical Radio, Inc. The company is now known only as ARINC and is headquartered in Annapolis, Maryland.

AFFIRMATION

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

A handwritten signature in black ink, appearing to be 'RLK', written over a horizontal line.

By: Ronald L. Keen
Indiana Office of
Utility Consumer Counselor

2/27/2017
Date: