

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF NORTHERN INDIANA PUBLIC SERVICE)
COMPANY FOR AUTHORITY TO MODIFY ITS RATES)
AND CHARGES FOR ELECTRIC UTILITY SERVICE AND)
FOR APPROVAL OF: (1) CHANGES TO ITS ELECTRIC)
SERVICE TARIFF INCLUDING A NEW SCHEDULE OF)
RATES AND CHARGES AND CHANGES TO THE)
GENERAL RULES AND REGULATIONS AND CERTAIN)
RIDERS; (2) REVISED DEPRECIATION ACCRUAL)
RATES; (3) INCLUSION IN ITS BASIC RATES AND)
CHARGES OF THE COSTS ASSOCIATED WITH)
CERTAIN PREVIOUSLY APPROVED QUALIFIED)
POLLUTION CONTROL PROPERTY, CLEAN COAL)
TECHNOLOGY, CLEAN ENERGY PROJECTS AND)
FEDERALLY MANDATED COMPLIANCE PROJECTS;)
AND (4) ACCOUNTING RELIEF TO ALLOW NIPSCO TO)
DEFER, AS A REGULATORY ASSET OR LIABILITY,)
CERTAIN COSTS FOR RECOVERY IN A FUTURE)
PROCEEDING.)

CAUSE NO. 44688

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

REDACTED TESTIMONY OF

CYNTHIA M. ARMSTRONG – PUBLIC’S EXHIBIT NO. 7

JANUARY 22, 2015

Respectfully submitted,



Scott C. Franson
Attorney No. 27839
Deputy Consumer Counselor

CERTIFICATE OF SERVICE

This is to certify that a copy of the ***OUC*** ***REDACTED*** ***TESTIMONY OF CYNTHIA M. ARMSTRONG*** has been served upon the following parties of record in the captioned proceeding by electronic service on January 22, 2015.

NIPSCO

Claudia J. Earls
Frank A. Shambo
Timothy R. Caister
NiSource Corporate Services
150 West Market Street, Suite 600
Indianapolis, Indiana 46204
cjearls@nisource.com
fshamb@nisource.com
tcaister@nisource.com

Kay E. Pashos
Michael B. Cracraft
Philip B. McKiernan
Ice Miller, LLP
One American Square, Suite 2900
Indianapolis, Indiana 46282-0200
kay.pashos@icemiller.com
michael.cracraft@icemiller.com
philip.mckiernan@icemiller.com

LAPORTE COUNTY

Shaw R. Friedman
Friedman & Associates, P.C.
705 Lincolnway
LaPorte, IN 46350
sfriedman.associates@frontier.com

Reginald T. Badeaux IV
Deanna A Dean-Webster
Badeaux Dean-Webster LLP
310 North Alabama Street, Suite 305
Indianapolis, IN 46204
badeaux@bdwlegal.com
dean@bdwlegal.com

Keith L. Beall
Beall & Beall
13238 Snow Owl Dr., Ste. A
Carmel, IN 46033
Phone/fax: 317-810-9357
kbeall@indy.rr.com

NIPSCO INDUSTRIAL GROUP

Bette J. Dodd
Todd A. Richardson
Jennifer W. Terry
Tabitha L. Balzer
Lewis & Kappes, P.C.
One American Square, Suite 2500
Indianapolis, Indiana 46282
BDodd@Lewis-Kappes.com
TRichardson@Lewis-Kappes.com
JTerry@Lewis-Kappes.com
tbalzer@lewis-kappes.com

NLMK INDIANA

Anne E. Becker
Lewis & Kappes, P.C.
One American Square, Suite 2500
Indianapolis, Indiana 46282
abecker@lewis-kappes.com

James Brew
Stone, Mattheis, Xenopoulos and Brew
1025 Thomas Jefferson Street, NW
8th Floor, West Tower
Washington, D.C. 20007
jbrew@smxblaw.com

INDIANA MUNICIPAL UTILITY GROUP

Robert M. Glennon
Robert Glennon & Assoc., P.C.
3697 N. Co. Rd. 500 E.
Danville, Indiana 46122
glennon@iquest.net

U.S. STEEL

Nikki G. Shoultz
L. Parvin Price
Bose McKinney & Evans LLP
111 Monument Circle, Suite 2700
Indianapolis, IN 46204
nshoultz@boselaw.com
pprice@boselaw.com

WALMART

Eric E. Kinder

Spilman Thomas & Battle, PLLC

300 Kanawha Boulevard, East

P. O. Box 273

Charleston, WV 25321

ekinder@spilmanlaw.com

Barry A. Naum

Spilman Thomas & Battle, PLLC

1100 Bent Creek Boulevard

Suite 101

Mechanicsburg, PA 17050

bnaum@spilmanlaw.com

Carrie M. Harris

Spilman Thomas & Battle, PLLC

310 First Street, Suite 1100

P.O. Box 90

Roanoke, VA 24002-0090

charris@spilmanlaw.com

UNITED STEELWORKERS

Antonia Domingo

United Steelworkers

60 Boulevard of the Allies

8th Floor

Pittsburgh, PA 15208

adomingo@usw.org

CITIZENS ACTION COALITION

Jennifer A. Washburn

Citizens Action Coalition

603 East Washington Street, Suite 502

Indianapolis, Indiana 46204

jwashburn@citact.org

PRAXAIR

Timothy L. Stewart

Lewis & Kappes, P.C.

One American Square, Suite 2500

Indianapolis, Indiana 46282-0003

tstewart@lewis-kappes.com



Scott C. Franson

Deputy Consumer Counselor

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

PNC Center

115 West Washington Street, Suite 1500 South

Indianapolis, IN 46204

infomgt@oucc.in.gov

317/232-2494 – Telephone

317/232-5923 – Facsimile

TESTIMONY OF OUCC WITNESS CYNTHIA M. ARMSTRONG
CAUSE NO. 44688
NORTHERN INDIANA PUBLIC SERVICE COMPANY

I. INTRODUCTION

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

2 A: My name is Cynthia M. Armstrong, and my business address is 115 W.
3 Washington St., Suite 1500 South, Indianapolis, IN 46204.

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

5 A: I am employed as a Senior Utility Analyst in the Electric Division for the Indiana
6 Office of Utility Consumer Counselor ("OUCC"). A summary of my educational
7 and professional background as well as work experience are attached to my
8 testimony as Appendix A.

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

10 A: My testimony addresses three OUCC concerns: the premature retirement of Bailly
11 Unit 8 and the associated impact on depreciation rates; operating and maintenance
12 ("O&M") adjustments for environmental operating expenses for Bailly Units 7
13 and 8 and Schahfer Units 14 and 15; and NIPSCO's request to eliminate the
14 Environmental Expense Recovery Mechanism ("EERM") and track
15 environmental equipment O&M and depreciation expenses through the
16 Environmental Cost Recovery Mechanism ("ECRM") instead. My testimony
17 supports the testimony offered by OUCC Witnesses Rutter and Morgan.

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

19 A: I reviewed the Verified Petition, Direct Testimony, Exhibits, Workpapers, Data
20 Responses, and Confidential Documents submitted by the Petitioner in this Cause.
21 I also reviewed NIPSCO's 2014 Integrated Resource Plan ("IRP") and documents

1 submitted in Cause Nos. 44012 and 44311, involving NIPSCO's compliance
2 plans to control several pollutants.

II. BAILLY UNIT 8 EARLY RETIREMENT

3 **Q: What retirement date is identified for Bailly Unit 8 in NIPSCO's 2014**
4 **Integrated Resources Plan?**

5 A: The 2014 IRP long-term action plan identifies the potential retirement of Bailly
6 Unit 8 in 2029, and Bailly 8 is not identified as retiring before 2028 in any of the
7 resource plans considered.¹ In those plans, NIPSCO evaluated the impact of early
8 retirements of Bailly Unit 7, Bailly Unit 8, and Michigan City Unit 12, both
9 individually and in combination, and found that none of the early retirements
10 provided value to the NIPSCO portfolio.²

11 **Q: Why is NIPSCO now expecting to retire Bailly Unit 8 in 2023 instead of the**
12 **originally-planned retirement date of 2029?**

13 A: NIPSCO Witness Hooper states that Bailly Unit 8 will require significant
14 investment for general maintenance if it operates beyond 2023. Specifically,
15 NIPSCO estimates that it would need to spend over \$40 million in capital
16 expenses and an incremental \$40 million in maintenance expenses over the course
17 of two (2) years.³ After the OUCC inquired about these capital and O&M
18 expenses, NIPSCO provided supporting expense estimates of operating Bailly
19 Unit 8 until 2023 and 2025.⁴ NIPSCO states that it did not analyze the cost of
20 operating the facility to its original retirement date "because the unit was

¹ NIPSCO 2014 Integrated Resource Plan, Vol. I, pg. 111-117.

<https://www.nipsco.com/docs/default-source/about-nipsco-docs/2014-nipsco-irp.pdf>.

² *Id.* at 115.

³ Direct Testimony of Michael Hooper at 15 [5-13].

⁴ OUCC Confidential Attachment CMA-1, NIPSCO's Response to OUCC Data Request 5-5, Confidential Attachment A.

1 determined not to be cost-effective to run beyond 2025.”⁵ After reviewing the
2 materials provided, I have set forth the major differences in capital costs between
3 the two retirement scenarios, as shown in the table below.

Major Area	Reason for Increase between 2023 and 2025 Retirement Scenarios
[REDACTED]	[REDACTED]

Source: OUCC Confidential Attachment CMA-1

4 The major O&M increases are for [REDACTED]
5 [REDACTED]
6 [REDACTED] These expenses all appear to be a continuance
7 of normal annual O&M costs for the facility.

8 **Q: Are any of the significant investments that Mr. Hooper states would be**
9 **necessary for operating Bailly Unit 8 beyond 2023 related to compliance with**
10 **environmental regulations?**

11 **A:** Yes. The porous dike project mentioned in the chart below is related to
12 compliance with the Cooling Water Intake Structures (“CWIS” or the “Clean
13 Water Act 316(b)”) Rule.⁶ While other compliance costs were not specifically
14 named in the cost figures Mr. Hooper states in his testimony, NIPSCO also

⁵ OUCC Attachment CMA-2, NIPSCO’s Response to OUCC Data Requests 17-4 and 33-2.
⁶ OUCC Attachment CMA-2.

1 considered compliance costs associated with updates to the Steam Electric
2 Effluent Guideline Standards (“ELGs”), the Coal Combustion Residuals Rule
3 (“CCR”), and the Clean Power Plan (“CPP”) as part of its projected decision to
4 retire Bailly Unit 8 in 2023.⁷ While some of the typical compliance deadlines for
5 these rules would be due before the 2023 retirement date, NIPSCO is planning to
6 use the earlier retirement date as a way to avoid or delay compliance costs
7 through rule extensions.

8 **Q: Please explain how the CWIS Rule will impact the cost of operating Bailly**
9 **Unit 8.**

10 A: The CWIS Rule addresses the death of aquatic species by cooling water intakes.
11 The rule addresses two ways in which aquatic species are killed by CWIS:
12 impingement and entrainment. Impingement occurs when fish and other
13 organisms are trapped against screens when water is drawn into a facility’s
14 cooling system, and entrainment occurs when organisms (usually very young
15 organisms at the egg or larvae stage) are drawn into the facility and are exposed to
16 pressure and high temperatures, which kill them. Several affordable technologies
17 exist to reduce impingement, but many generators are concerned about meeting
18 the entrainment standard. CWIS designates state environmental agencies to
19 decide on a case-by-case basis what technology will meet the entrainment
20 standard for a facility, and the state agency may consider cost in this decision.
21 Generators withdrawing large amounts of water are required to conduct site-
22 specific studies to identify which technologies can reduce the intake flow of the

⁷ OUCC Confidential Attachment CMA-3, NIPSCO Response to Industrials Data Request 5-8, Confidential Attachment A.

1 CWIS and prevent entrainment. The rule does not specify an ultimate compliance
2 date for the entrainment standard and allows state agencies and affected facilities
3 to establish a reasonable schedule for compliance.

4 NIPSCO projects that the CWIS Rule will require significant investment
5 for the Bailly Generating Station to meet the entrainment standard. NIPSCO
6 assumes that Bailly will be required to build a porous dike by 2024, which costs
7 [REDACTED]. NIPSCO believes that it can persuade IDEM to agree to the
8 construction timeline of the porous dike.⁸

9 **Q: Please explain how the ELGs will impact the cost of operating Bailly Unit 8.**

10 A: The utility ELGs, which have not been updated since 1982, set new guidelines for
11 wastewater discharges from coal-fired power plants. The state environmental
12 agencies are tasked with adopting and enforcing the guidelines by incorporating
13 them into National Pollutant Discharge Elimination System (“NPDES”) permits.
14 The requirements of the ELGs are supposed to begin with the 2018 permit review
15 cycle, with final compliance to occur no later than 2023.

16 The existing wastewater treatment plant (“WWTP”) at Bailly 8 will likely
17 have to be modified to allow for chemical and biological treatment of the FGD
18 wastewater. The implementation of such technology is to be no later than 2023,
19 and NIPSCO believes it can negotiate an NPDES permit to allow for operation
20 until the end of 2023 if it agrees to retire the facility in the beginning of 2024. The

⁸ OUCG Attachment CMA-2 and OUCG Attachment CMA-4, NIPSCO's Responses to OUCG Data Requests 17-5 and 17-6.

1 cost for WWTP modifications would impose more than [REDACTED] in capital
2 cost for the facility.⁹

3 **Q: Please explain how the CCR Rule impacts the cost of operating the Bailly**
4 **Generating Station.**

5 A: There may have to be modifications made at Bailly to its bottom ash handling
6 system to convert it to dry handling to comply with the CCR Rule. NIPSCO's
7 need to close or retrofit existing ash ponds with a liner would be triggered if
8 locational or safety factors are not met or if ground water is contaminated.¹⁰ The
9 timelines for compliance vary depending on the standard that is violated. If
10 NIPSCO were to initially determine that Bailly's ash ponds did not meet the
11 minimum safety factors, the ash ponds would have to cease receiving ash and
12 begin closure or retrofit by April 2017.¹¹ If NIPSCO determines that the Bailly
13 ash ponds do not meet location restrictions, closure would have to begin by April
14 2019.¹² However, NIPSCO could use the alternative closure requirements for
15 compliance.¹³ The alternative closure requirements allow NIPSCO to avoid these
16 investments if it commits to retiring the facility and closing the CCR
17 impoundment by October 17, 2023 for impoundments that are 40 acres or smaller,
18 and October 17, 2028, for impoundments larger than 40 acres.¹⁴

⁹ OUCC Confidential Attachment CMA-3.

¹⁰ 40 CFR §257.101-102. There are additional extensions for completing closure, depending on the size of the ash pond.

¹¹ 40 CFR §257.73 and §257.101-102.

¹² 40 CFR 257.60-64 and 257.101-102.

¹³ OUCC Attachment CMA-5, NIPSCO's Data Responses to OUCC Data Requests 17-12, 17-13, and 28-1.

¹⁴ 40 CFR §257.103.

1 The capital cost of CCR retrofits at Bailly could be several million
2 dollars.¹⁵ In addition to the retrofits, NIPSCO will incur O&M costs for
3 groundwater monitoring, ongoing inspections of the CCR units, and
4 recordkeeping requirements.

5 **Q: How could the CPP impact the future operation of Bailly Unit 8?**

6 A: The CPP sets guidelines for CO₂ emission rate limits for electric generating units.
7 States must file a state implementation plan (“SIP”) to implement these
8 guidelines.¹⁶ States have the choice to implement a rate-based or a mass-based
9 limit for CO₂ as the key compliance options.¹⁷ If a state does not submit a SIP by
10 the specified deadlines, the EPA will impose a federal implementation plan
11 (“FIP”) on the state to force compliance with the guidelines.¹⁸ Indiana has yet to
12 decide on a precise compliance path for implementing the CPP, (which could
13 include not submitting a SIP), but whatever compliance option the state chooses
14 will ultimately place a price on emitting CO₂. NIPSCO does not consider the CPP
15 a driving factor of the Bailly Unit 8 retirement. CO₂ emission compliance will
16 increase the cost to operate coal-fired power plants like Bailly Unit 8.¹⁹ It is

¹⁵ OUCC Confidential Attachment CMA-3.

¹⁶ *Clean Power Plan Fact Sheet, Overview of the Clean Power Plan*:

<http://www.epa.gov/cleanpowerplan/fact-sheet-overview-clean-power-plan>.

See also, *Federal Register*, October 23, 2015, Vol. 80, No. 205, pg. 64661-65120.

States must file an initial or final SIP by September 6, 2016, and a final SIP by September 8, 2018, for states that seek an extension with the initial SIP filing in 2016.

¹⁷ *Clean Power Plan Fact Sheet: Overview of the Clean Power Plan*, and 80 FR 64611-65120.

States also have the choice to implement state measures to meet CO₂ emission guidelines, but these measures must have a “backstop” of federally-enforceable standards to ensure that the emission standards are met.

¹⁸ *Id.*

¹⁹ OUCC Confidential Attachment CMA-3 and OUCC Attachment CMA-6, NIPSCO’s Response to OUCC Data Request 28-5.

1 premature at this time to reach a conclusion on how the CPP will impact the
2 optimal retirement date of Bailly Unit 8.

3 **Q: Did NIPSCO's 2014 IRP incorporate costs of the environmental regulations**
4 **you described above?**

5 A: Yes, with the exception of the CPP, which as previously stated, NIPSCO does not
6 consider to be a driving factor of the Bailly Unit 8 retirement. NIPSCO's 2014
7 IRP included cost estimates for the CWIS Rule, ELGs, and the CCR Rule for each
8 of its generating assets.²⁰ NIPSCO's long-term plan as laid out in the 2014 IRP
9 does not identify Bailly Unit 8 retiring earlier than 2029.²¹

10 **Q: Does the evidence in this case suggest that the 2014 IRP is incorrect such that**
11 **Bailly Unit 8 should be retired in 2023?**

12 A: No. Again, the 2014 IRP considered the environmental challenges facing the
13 unit, and it does not conclude that early retirement is warranted. NIPSCO has not
14 presented an analysis of all the costs and benefits of the premature retirement of
15 the unit, including, for example, the cost of replacement capacity. The 2014 IRP
16 provides the most comprehensive analysis and the best guidance regarding a
17 reasonable retirement date for Bailly Unit 8. NIPSCO has not completed an
18 updated IRP or other economic analysis to support a premature retirement of
19 Bailly Unit 8 for the purposes of altering depreciation rates in this case.²² Please
20 see OUCC Witness Ed Rutter's testimony for further discussion of the OUCC's
21 position on the matter of Bailly Unit 8's early retirement and its impact on
22 depreciation.

²⁰ NIPSCO 2014 Integrated Resource Plan, Vol. I, pg. 107.

²¹ *Id.* at 134.

²² OUCC Attachment CMA-7, NIPSCO's Response to OUCC Data Request 17-1.

III. ENVIRONMENTAL O&M ADJUSTMENTS

1 **Q: What adjustment is NIPSCO proposing for environmental O&M expense**
2 **and why?**

3 A: NIPSCO is proposing Adjustment OM-3 to reflect an increase of \$9,492,866 to
4 generation O&M to account for a normalization of operating expenses for the
5 Unit 14 FGD, annualization of operating expenses associated with the Unit 15
6 FGD, and annualization of Activated Carbon Injection (“ACI”) expenses for
7 Units 7, 8, and 15.²³

8 Although the Unit 14 FGD was in service for the entire test year, NIPSCO
9 states it is necessary to normalize the O&M expenses because the unit was not
10 dispatched as often as it was in the past. This is because the cost of the FGD
11 made Unit 14 more expensive to operate than NIPSCO’s other generation assets
12 during the test year, making the unit “out of the money” as far as dispatch from
13 the MISO market. The company anticipates Unit 14’s dispatch will increase as
14 market prices increase due to other generators in the MISO footprint retiring or
15 incurring increased production costs due to environmental regulations.²⁴

16 **Q: Does the OUCC agree with NIPSCO’s proposed adjustment?**

17 A: No. NIPSCO proposes to use a five-year historical period to calculate its
18 normalization adjustment. The OUCC believes that a three-year historical average
19 unit capacity factor is more appropriate and should be used. The OUCC
20 understands that the ACI Systems for Units 7, 8, and 15 did not go into service
21 until towards the end of the test year. The Schahfer Unit 15 FGD system also
22 went into service in November 2014. As such, the full annual expense of these

²³Witness Hooper Direct at 22 [7-12].

²⁴*Id.* at 22-23.

1 pollution control projects would not have been realized during the test year, but
2 this equipment will be required to operate continuously to comply with
3 environmental regulations going forward.

4 The OUCC also does not agree with NIPSCO's adjustment to Schahfer
5 Unit 14's FGD O&M expense. Here again, the OUCC recommends that the
6 three-year (rather than five-year) historical average capacity factors should be
7 used to calculate Schahfer Unit 14's FGD expenses.

8 **Q: Why does the OUCC believe that a three-year historical average capacity**
9 **factor is more appropriate to use for adjusting environmental O&M**
10 **expenses?**

11 A: Since 2011, NIPSCO's generating assets have been operating differently. In
12 2011, NIPSCO became subject to a Consent Decree it entered into with the EPA
13 to settle alleged New Source Review ("NSR") violations ("NSR Consent
14 Decree"). The NSR Consent Decree imposed stringent emission limits on
15 NIPSCO's generating facilities, and required Units 14 and 15 to install FGD
16 systems by the end of 2013 and 2015, respectively.²⁵ Bailly Units 7 and 8's SO₂
17 emission limits began in 2011 and may be the reason for Bailly Units 7 and 8's
18 decreased operation in 2012. Unit 14's SO₂ emission limitation began at the end
19 of 2013, and Unit 15's SO₂ emission limitation began at the end of 2015. These
20 more stringent emission limits will result in more expensive unit operations going
21 forward, so these units may not be dispatched as often as they were prior to 2011.
22 As such, the OUCC does not think it was appropriate for NIPSCO to include
23 generation data before 2011 in calculating Adjustment OM-3.

²⁵ <http://www.epa.gov/sites/production/files/documents/nipSCO-cd.pdf>.

1 **Q: What is the OUCC's concern with the adjustment for the Schahfer Unit 14**
2 **FGD?**

3 A: The OUCC does not agree with NIPSCO's assumption that Schahfer Unit 14's
4 dispatch will improve in the near future. For one, Schahfer Units 14 and 15
5 appear to have the most stringent SO₂ limits as a result of the NSR Consent
6 Decree.²⁶ Control of SO₂ to this level will continue to be an added operating cost
7 for Unit 14. Many, if not most, of the units Schahfer Unit 14 was competing with
8 in the MISO market during the test year were also fully controlled for SO₂ and
9 NO_x emissions. These units needed few modifications to comply with the
10 Mercury and Air Toxics Standards ("MATS"), and many of these modifications
11 are the same as those needed by Schahfer Unit 14. Since units with costs similar
12 to those of Schahfer Unit 14 competed better in the market during the test year,
13 the OUCC doubts that the other units will fall behind Unit 14 in the dispatch order
14 due to increased costs for MATS. NIPSCO states that the dispatch of Schahfer
15 Unit 14 has not improved since the end of the test year due to recent decreases in
16 MISO market prices.²⁷ For this reason, the OUCC did not consider it necessary or
17 appropriate to use a five-year historical operating average for the purposes of
18 calculating Unit 14's FGD expense. Please see the testimony of OUCC witness
19 Morgan for the details of the OUCC's adjustment based on a three-year historical
20 average.

²⁶ It is difficult to tell whether Bailly Units 7 and 8 and Schahfer Units 17 and 18 actually have more stringent emission limits, as their emission rate is represented in terms of an expected FGD removal efficiency. However, these units have been required to abide by the Consent Decree's standards since 2011 and 2014, so the units were operating under these constraints during the test year.

²⁷ OUCC Attachment CMA-8, NIPSCO's Response to OUCC Data Request 28-10.

IV. EERM AND ECRM TRACKERS

1 **Q: What is NIPSCO proposing for the EERM?**

2 A: NIPSCO is proposing to combine the EERM, currently Rider 673, with the
3 ECRM (Rider 772) and to continue filing Rider 772 on a semi-annual basis.²⁸

4 **Q: Does the OUCC have any issue with NIPSCO's proposal for the EERM?**

5 A: No. Other utilities also track their O&M expenses as part of one rider on a six-
6 month basis, and the OUCC does not have an issue with NIPSCO doing so.
7 However, the OUCC would propose that NIPSCO cease the tracking of both
8 capital and O&M costs of equipment embedded in rate base. NIPSCO has been
9 tracking the replacement of Selective Catalytic Reduction ("SCR") catalyst layers
10 in its ECR, even though SCRs were included in rate base in its last rate cases,
11 Cause Nos. 43526 and 43969. Typically, any capital costs, additions, and
12 operating expenses for projects do not continue to be tracked once they are
13 included in base rates.

14 **Q: Are there any other electric investor-owned utilities that have been allowed
15 to track the costs of replacement parts for pollution control equipment once
16 the pollution control projects have been included in rate base?**

17 A: No. Vectren South Electric ("VSE") has gone through this process twice since the
18 Clean Coal Technology Statute (Ind. Code § 8-1-8.7) was implemented. VSE
19 received approval to construct SCRs on Brown Units 1 and 2, Culley Unit 3, and
20 Warrick Unit 4 in Cause Nos. 41864 and 42248 Phase II. The cost for this
21 equipment was eventually tracked through Cause No. 42340. When VSE filed a
22 general rate case in October 2006, the projects were rolled into rate base and their

²⁸ Petitioner Witness Westerhausen's Direct Testimony at 21 [6-16].

1 costs were no longer tracked.²⁹ Earlier in 2006, VSE received approval to install
2 a fabric filter on Culley Unit 3 and a FGD system on Warrick Unit 4 in Cause No.
3 42861. Since VSE did not incur costs on the Culley fabric filter and Warrick FGD
4 projects until after it filed its rate case in Cause No. 43111, the company began a
5 new tracking mechanism under Cause No. 42861.³⁰ In Cause No. 43839, VSE
6 rolled the Warrick Unit 4 FGD into rate base. Since all of VSE's pollution
7 control project costs were embedded in base rates once the Commission issued its
8 final order in Cause No. 43839, Vectren's ECR tracker ceased.

9 **Q: What does the OUCC recommend with regards to NIPSCO's ECRM?**

10 A: The EERM can be included in the ECRM. For the pollution control equipment
11 included in rate base and base rates, the tracking of replacement components, such
12 as catalyst layers and other additions to pollution control equipment, should stop.
13 When NIPSCO files another ECRM after the final decision in this rate case, the
14 underlying cause number should be changed to the last case where equipment
15 continuing to be tracked was approved. In NIPSCO's case, this would be Cause
16 No. 44311, so NIPSCO's future ECR trackers should be labeled Cause No. 44311
17 ECR XXX.

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

19 A: Yes, it does.

²⁹ Cause No. 43111, Petitioner's Exhibit WSD-16 and Petitioner's Exhibit MSH-2.

³⁰ The Culley Unit 3 Fabric Filter was completed before the final evidentiary hearing in Cause No. 43111 and was rolled into rate base in Cause No. 43111. See Cause No. 43111, Final Order at 33.

APPENDIX A

1 **Q: Summarize your professional background and experience.**

2 A: I graduated from the University of Evansville in 2004 with a Bachelor of Science
3 degree in Environmental Administration. I graduated from Indiana University,
4 Bloomington in May 2007 with a Master of Public Affairs degree and a Master of
5 Science degree in Environmental Science. I have also completed internships with
6 the Environmental Affairs Department at Vectren in the spring of 2004, with the
7 U.S. Environmental Protection Agency in the summer of 2005, and with the U.S.
8 Department of the Interior in the summer of 2006. During my final year at
9 Indiana University, I served as a research and teaching assistant for a Capstone
10 course offered at the School of Public and Environmental Affairs. I also have
11 obtained my OSHA Hazardous Operations and Emergency Response
12 (“HAZWOPER”) Certification. I have been employed by the OUCC since May
13 2007. As part of my continuing education at the OUCC, I have attended the
14 National Association of Regulatory Utility Commissioners’ (“NARUC”) week-
15 long seminar in East Lansing, Michigan, as well as completed two 8-hour OSHA
16 HAZWOPER refresher courses to maintain my certification.

17 **Q: Describe some of your duties at the OUCC.**

18 A: I review and analyze utilities’ requests and file recommendations on behalf of
19 consumers in utility proceedings. Depending on the case at hand, my duties may
20 also include analyzing state and federal regulations, evaluating rate design and
21 tariffs, examining books and records, inspecting facilities, and preparing various

1 studies. Since my expertise lies in environmental science and policy, I assist in
2 many cases where environmental compliance is an issue.

3 **Q: Have you previously provided testimony to the Indiana Utility Regulatory**
4 **Commission ("Commission")?**

5 **A: Yes.**

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

CYNTHIA M. ARMSTRONG – PUBLIC’S EXHIBIT NO. 7

CONFIDENTIAL ATTACHMENT CMA-1

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OUCC Request 17-004:

Refer to NIPSCO's Response to OUCC Data Request 5-5 Attachment A.

- a. Please explain why NIPSCO presented retirement dates of 2023 and 2025 in this analysis and did not evaluate a retirement date of 2029?
- b. Are there other expected major capital expenses that would occur for Bailly Unit 8 between 2025 and 2029? Please list the projects and the estimated costs.
- c. Do Bailly Units 7 and 8 share a precipitator?
- d. Please explain why it is necessary to do a complete precipitator replacement, as opposed to only the front-field replacement, if Bailly Unit 8 operates beyond 2023?
- e. Are the precipitator replacement costs a part of NIPSCO's MATS compliance plan presented in Cause No. 43311?
- f. If the response to (e) is affirmative, do the MATS compliance costs include only front-field replacements or entire precipitator replacements?
- g. Do the Bailly Generating Units have or expect any additional requirements for controlling particulate matter beyond the level currently expected for MATS compliance?
- h. If the response to (g) is affirmative, please provide the regulatory reference and emission rate of such requirement.
- i. Is the porous dike installation in 2024 due to compliance with the Cooling Water Intake Structures (CWIS) Rule also referred to as the 316(b) Rule?
- j. Please explain why NIPSCO has assumed Bailly will have to install the porous dike in 2024?
- k. Please explain why NIPSCO has assumed the porous dike will not have to be installed before 2024?

Objections:

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Response:

- a. A 2029 analysis did not occur due to the amount of additional funding required to run the station past 2025. Because the unit was determined not to be cost-effective to run beyond 2025, no additional analysis was performed to identify additional costs beyond that period.
- b. Please see response to subpart a.
- c. c. Unit 7 and Unit 8 each have their own precipitator.
- d. d. Precipitator Availability through 2023:

The majority of the particulate collection occurs within the inlet row of the precipitator. Based on NIPSCO's assessment of the precipitator, the inlet row will need to be replaced at a minimum to ensure required regulatory performance.

The drivers causing the need to replace this inlet row are as follows:

1. Structural integrity issues and component failure due to corrosion, mechanical wear and fatigue are increasing due to the age of the equipment. The industry standard for operation between major rebuilds or replacement of precipitators is 25-30 years. The U8 precipitator has been in service since 1980 without a major structural and mechanical overhaul. Major structural and component failures are requiring maintenance each planned outage. These failures are cumulative and repairs that have been made cannot guarantee the long term availability, reliability and efficient operation of the precipitator. At some point in the near future if these larger components are not replaced the structure could have a significant failure. A major overhaul is required to ensure its reliability.
2. The efficiency of the precipitator is decreasing. Due to the condition of the equipment and for reasons mentioned in factor #1, the operation of the precipitator be guaranteed to meet environmental permitted limits for emissions. The most cost effective method to improve collection efficiency and address a portion of the structural concerns is to replace the inlet fields.

Based on this information, NIPSCO has decided that these repairs are the minimum needed to ensure precipitator reliability.

Precipitator Availability through 2025:

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To clarify, an entire replacement of the precipitator is not the intent. The outside structure and foundation would stay as is. This portion of the structure is not compromised by the corrosion and wear of operation.

To ensure precipitator reliability and performance requirements through 2025 a more balanced approach would be to plan for an entire rebuild of the precipitator (not just the inlet row stated above). Even with new inlet fields installed the remaining fields past the inlet row will continue to decline making it very difficult to ensure performance requirements. As a result the remaining fields and boxes will need to be replaced.

- e. No. Precipitator replacement costs were not included for Bailly in Cause No. 44311.
- f. N/A
- g. No, both MATS and the NIPSCO Consent Decree require the Bailly Generating Units to achieve a 0.030 lb-PM/mmatsu emission limitation. NIPSCO does not presently expect any additional requirements for controlling particulate matter beyond the level mentioned above unless new requirements are imposed by EPA or IDEM that NIPSCO is unaware of at this time.
- h. N/A
- i. Yes, the porous dike is one of the possible options to meet compliance that could meet BTA to comply with the 316 (b) rule. Any such BTA determination would require IDEM approval before proceeding.
- j. In reference to NIPSCO's Response to OUCC Data Request 5-5 Attachment A, the zero cost associated with the porous dike reflects an assumption that IDEM will not require the capital expenditure if the plant is retired in or before 2023. The 2024 capital expenditure assumes that Bailly Unit 8 continues to operate after 2023 and a porous dike would be required. It is likely that IDEM would require the installation of BTA if Bailly Unit 8 were to continue to operate past 2023.
- k. See subpart j.

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OUCC Request 33-002:

In response to OUCC Data Request 17-4 (a) and (b), NIPSCO stated:

"A 2029 analysis did not occur due to the amount of additional funding required to run the station past 2025. Because the unit was determined not to be cost-effective to run beyond 2025, no additional analysis was performed to identify additional costs beyond that period."

- a. Please state who determined the unit was not cost-effective to run beyond 2025?
- b. Please explain how the unit was determined not to be cost-effective to run beyond 2025? If the decision relied on a preliminary analysis, please provide the analysis.
- c. What specific costs were assumed to make the determination that Bailly Unit 8 was not cost-effective to run beyond 2025? Please provide each cost by line item and estimated amount.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request seeks information protected from disclosure by the attorney/client privilege and the work product privilege.

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

Response:

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

- a. The determination was made by NIPSCO's leadership team after consultation with the NIPSCO Strategy Council and staffs of the respective members of the NIPSCO leadership team.
- b. That determination was based on the analysis previously provided in response to Industrials Request 5-008.
- c. Please see NIPSCO's response to Industrials Request 5-008.

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OUCC Request 17-005:
Would the Bailly Generating Station be able to meet the impingement standard under the final 316(b) rule requirements without the porous dike? Please explain.
Objections: NIPSCO objects to this request to the extent it requires NIPSCO to speculate as to the timing of an action by another governmental agency or seeks information possessed by that agency outside of NIPSCO's dominion or control.
Response:
Alternative technologies potentially exist for IDEM consideration at the Bailly Generating Station. However, IDEM has indicated to NIPSCO that a porous dike is likely an acceptable option to provide the best probability of compliance. In order for a formal IDEM BTA determination to take place, Clean Water Act 316(b) § 125.98(f) studies and reports must be completed under § 122.21(r) subsections (7), (9), (10), (11), (12), and (13), which is submitted as part of the renewal packet for our NPDES permit.
NIPSCO is exploring the option to forgo the capital expenditure if Bailly retires in or before 2023. Please see response to OUCC Request 17-004.

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OUCC Request 17-006:
Would the Bailly Generating Station be able to meet the entrainment standard under the final 316(b) rule requirements without the porous dike? Please explain.
Objections: NIPSCO objects to this request to the extent it requires NIPSCO to speculate as to the timing of an action by another governmental agency or seeks information possessed by that agency outside of NIPSCO's dominion or control.
Response:
While a porous dike is not considered an effective technology for compliance with the entrainment standard, NIPSCO believes that the combination of the porous dike technology coupled with other technologies, such as variable speed pumps, is anticipated to provide compliance with the combined impingement and entrainment standards of the final 316(b) rule. In order for a BTA determination to take place, the 122.21 (r) studies and reports would first need to occur. Please also see response to OUCC Request 17-005.

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OUCC Request 17-012:
Is compliance with the CCR rule driving the need to retire Bailly Unit 8 in 2023?
Objections:
Response:
No. Compliance options exist to allow Bailly to continue to operate. However, if Bailly retires in or before 2023, then NIPSCO could potentially forego capital costs, associated with CCR (and potentially ELG) compliance. The CCR rule provides an "Alternative closure requirements" option in § 257.101 of rule that allows for continued receipt of CCR if the 'unit' meets certain criteria (no alternative disposal capacity) and the 'unit' ceases operation and the surface impoundments are closed no later than October 17, 2023.:
<i>The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to § 257.101(a), (b)(1), or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of either paragraph (a) or (b) of this section.....(b)(1) Permanent cessation of a coal-fired boiler(s) by a date certain. Notwithstanding the provisions of § 257.101(a), (b)(1), and (d), a CCR unit may continue to receive CCR if the owner or operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in paragraphs (b)(2) through (b)(4) of this section, but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR unit due to the absence of alternative disposal capacity both on-site and off-site of the facility..... b(2) For a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler must cease operation and the CCR surface impoundment must have completed closure no later than October 17, 2023.</i>

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OUCC Request 17-013:
When does NIPSCO expect the Bailly Generating Station to have to fully comply with the CCR rule?
Objections:
NIPSCO objects to this Request on the grounds and to the extent that this Request is vague and ambiguous as the term "fully comply" is undefined.
Response:
<p>Subject to and without waiver of the foregoing general and specific objections, NIPSCO is providing the following response:</p> <p>The Bailly Generating Station has been in compliance with applicable requirements of the CCR rule as of the October 19, 2015 effective date, and NIPSCO expects Bailly to continue to be in compliance as future compliance dates arise. The CCR rule requires compliance with technical requirements for CCR units during the life of a unit and closure within prescribed time frames if technical requirements are not met or after a unit ceases receipt of CCRs. Determination of compliance with technical requirements at Bailly will be due in 2018 and ongoing compliance obligations would continue to apply thereafter. If a CCR Unit at Bailly fails certain technical requirements, then NIPSCO would have to initiate closure no earlier than 2018 and no later than 2023, including possible utilization of extensions available under the CCR rule. If NIPSCO chooses to cease operation of the boilers in or before 2023 then NIPSCO expects to utilize the "Alternative closure requirements" option. See NIPSCO response 17-12.</p>

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<p><u>OUCC Request 28-001:</u></p>
<p>The "alternative closure requirements" for Coal Combustion Residuals ("CCR"), found at 40 CFR §257.103, requires an owner or operator to show that there is an absence of alternative disposal capacity both on-site or off-site of the facility. How does NIPSCO intend to show this with the Bailly facility?</p>
<p><u>Objections:</u></p>
<p>NIPSCO objects to this Request on the grounds and to the extent that this Request asks for analysis that NIPSCO has not yet completed and is not required to have completed at this time.</p> <p>NIPSCO further objects to this Request on the separate and independent grounds and to the extent that this Request calls for legal conclusion, not admission of fact.</p> <p>NIPSCO further objects to this Request on the separate and independent grounds and to the extent that such Request seeks information protected from disclosure by the attorney/client privilege and the work product privilege.</p> <p>NIPSCO further objects to this Request on the separate and independent grounds and to the extent the Request is vague and ambiguous as to the cite to "40 CFR §157.103". For purposes of responding to this Request, NIPSCO assumes the Requests intends to cite to 40 CFR §257.103.</p>
<p><u>Response:</u></p>
<p>Subject to and without waiver of the foregoing general and specific objections, NIPSCO is providing the following response:</p> <p>As noted in NIPSCO's response to OUCC Request 17-013, final determination of conformance with the CCR Rule technical requirements is not required to be completed until 2018. If a CCR Unit at Bailly fails certain technical requirements, then NIPSCO would be required to initiate closure no earlier than 2018 and no later than 2023, including possible utilization of the "alternative closure requirements" extensions available under the CCR rule. Once the final determination is completed, NIPSCO will then evaluate alternative disposal capacity both on-site and off-site and the potential utilization of the "alternative closure requirements" in the CCR rule.</p> <p>If NIPSCO, at that time, elects to utilize an extension available under the CCR rule, the absence of alternative disposal capacity both on-site and off-site of the facility would most likely be shown by illustrating the need to use existing CCR surface</p>

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impoundments at Bailly. Since wastewater management is essential for Bailly operation and must occur within close proximity to the boiler island, off-site disposal is likely not a viable option. Possible replacement of CCR management units on existing Bailly property is also not feasible due to the constraints of available acreage.

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OUCC Request 28-005:
Have the estimated costs of the final Clean Power Plan been factored into NIPSCO's decision or analysis to retire Bailly 8 earlier than originally expected? Please explain.
Objections:
Response:
Clean Power Plan costs were not explicitly factored into the analysis as they are currently unknown, but any additional compliance costs would add pressure to continued Bailly 8 operations, supporting the earlier retirement decision.

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OUCC Request 17-001:
Please provide the updated integrated resource planning study or economic analysis, including any studies conducted internally by NIPSCO that supports NIPSCO's assertion that it will retire Bailly Unit 8 by 2023. Please include all assumptions made for the study or analysis.
Objections:
NIPSCO objects to this Request on the grounds and to the extent that such Request seeks information protected from disclosure by the attorney/client privilege and the work product privilege.
Response:
Subject to and without waiver of the foregoing general and specific objections, NIPSCO is providing the following response: Please see NIPSCO's response to Industrial Group Request 5-008 and OUCC Request 5-005. No updated integrated resource planning study or associated economic analysis has been performed.

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OUCC Request 28-010:

On page 23, lines 2-6, of Mr. Hooper's testimony, he states that NIPSCO is anticipating an increased dispatch of Schahfer Unit 14 due to other generators either retiring or incurring increased operating costs due to environmental regulations.

- a. What analysis has NIPSCO performed or relied on to make this assertion? Please provide such analyses.
- b. What units have generally been dispatched before Schahfer 14 and are these units being retired or retrofitted?
- c. Has Schahfer Unit 14's dispatch level improved since March 31, 2015? Please provide support.

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 information.

Response:

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

- a. Mr. Hooper, on page 22, lines 15-17, states that Schahfer Unit 14 was in economic reserve for a significant portion of the test year due to market conditions during the test year. On page 23, lines 8-9, Mr. Hooper's testimony states that the 2014 IRP reflects a capacity factor of approximately 52% between 2016 and 2024 for Schahfer Unit 14. This information was provided in NIPSCO's 2014 IRP Confidential Appendix J, NIPSCO Base Case and Sensitivity Reports, on pages 1,327 and 1,333. These pages are provided herein for convenience as OUCC Set 28-010 Confidential Attachment A.
- b. As of December 2015, Schahfer Unit 14 is generally the last NIPSCO generating unit to be dispatched. This is primarily due to the unit's higher cost of fuel in relation to NIPSCO's other generating units. Please see NIPSCO's response to OUCC Request 9-012. For generators outside the NIPSCO footprint, NIPSCO relies on forward price curves that would have the influence of unit retirements, retrofits, and other market drives built in.

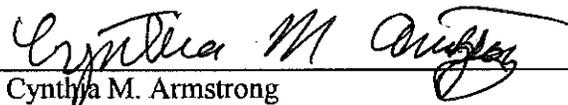
In 2015, NIPSCO retrofitted Michigan City 12 with an FGD system and placed Activated Carbon Injection systems at Units 7, 8, 14, and 15 into service. In 2016, the Company is also planning to retrofit Unit 12 with an ACI system.

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c. Due to recent decreases in MISO market prices, dispatch levels have not improved since the end of the test-year. On a going-forward basis NIPSCO expects higher levels of dispatch for Schahfer Unit 14 due to retirements and retrofits of other generation within the MISO footprint. These developments will cause MISO market prices to increase over the coming years. Also, NIPSCO is expecting to realize a decrease in the coal costs for Schahfer Unit 14 as downward pressure is applied to coal producers due to decreased natural gas prices. This would aid in making Schahfer Unit 14 more economic in the market.

AFFIRMATION

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



Cynthia M. Armstrong
Senior Utility Analyst
Indiana Office of Utility Consumer Counselor

January 22, 2016

Date

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NIPSCO