OFFICIAL EXHIBITS

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

SUBDOCKET FOR REVIEW OF NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S R.M. SCHAHFER GENERATING STATION FIRE AND RELATED IMPACT ON FUEL PROCUREMENT AND FUEL COSTS.	)	**CAUSE NO. 38706 FAC 130 S1**

IURC
INTERVENOR'S -I6
EXHIBIT NO. 1
1-24-22 AT
DATE REPORTER

Verified Direct Testimony and Attachments of

Michael P. Gorman

On behalf of

The NIPSCO Industrial Group

REDACTED VERSION

November 12, 2021

BRUBAKER & ASSOCIATES, INC.

Project 11143

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

SUBDOCKET FOR REVIEW OF NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S R.M. SCHAHFER GENERATING STATION FIRE AND RELATED IMPACT ON FUEL PROCUREMENT AND FUEL COSTS.	**CAUSE NO. 38706 FAC 130 S1**

TABLE OF CONTENTS TO THE VERIFIED DIRECT TESTIMONY OF MICHAEL P. GORMAN

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

SUBDOCKET FOR REVIEW OF NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S R.M. SCHAHFER GENERATING STATION FIRE AND RELATED IMPACT ON FUEL PROCUREMENT AND FUEL COSTS.	**CAUSE NO. 38706 FAC 130 S1**

Verified Direct Testimony of Michael P. Gorman

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a consultant in the field of public utility regulation and a Managing Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A The NIPSCO Industrial Group ("Industrial Group"). Industrial Group members purchase substantial quantities of electric energy service from Northern Indiana Public Service Company ("NIPSCO" or "Company").

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A My testimony addresses the errors and mistaken assumptions in NIPSCO's position that it bears no responsibility for the fire that occurred at the R.M. Schahfer Generating Station on July 16, 2020, and that the unplanned loss of 900 MW of production capacity had no adverse impact whatsoever on NIPSCO's rising Fuel Adjustment Clause ("FAC") costs. I will analyze the material factors causing the fire that NIPSCO identified in its own internal investigation, but did not disclose to the Indiana Utility Regulatory Commission ("Commission") when reporting on the root causes. I will then explain the lost value to NIPSCO and its customers arising from the extended outages and premature retirements, particularly in relation to the higher Midcontinent Independent System Operator, Inc. ("MISO") market prices prevailing in 2021 and projected through 2023. I compute an appropriate refund for FAC savings that NIPSCO could have achieved had the affected units been available in calendar 2021, and propose a further credit to be computed and applied in future FAC periods through the planned retirement date of May 2023.

Q DOES THE FACT THAT YOU DID NOT ADDRESS EVERY ISSUE RAISED IN NIPSCO'S TESTIMONY MEAN THAT YOU AGREE WITH NIPSCO'S TESTIMONY ON THOSE ISSUES?

A No. It merely reflects that I chose not to address all those issues in my testimony. It should not be read as an endorsement of, or agreement with, NIPSCO's position on such issues.

I. OPERATING HISTORY FOR SCHAHFER UNITS 14 AND 15

Q PLEASE DESCRIBE NIPSCO'S R.M. SCHAHFER GENERATING STATION.

A The Schahfer station includes six generating units, two of which, Units 14 and 15, are at issue in this proceeding. Unit 14 is a coal-fired unit, with a capacity of 431 MW, that was placed in service in 1976. Unit 15 is also a coal-fired unit, with a capacity of 472 MW, that was placed in service in 1979. The Schahfer station also includes two more coal-fired generators, Units 17 and 18, both with 361 MW of capacity, that were placed in service in 1983 and 1986, respectively, as well as two smaller gas-fired units, 16A and 16B, that became operational in 1979.

Q AS OF JULY 15, 2020, PRIOR TO THE FIRE, HAD NIPSCO DETERMINED A PLANNED RETIREMENT DATE FOR SCHAHFER UNITS 14 AND 15?

A Yes. NIPSCO's 2018 Integrated Resource Plan ("IRP") identified a preferred portfolio that called for the retirement of the Company's remaining coal-fired generating units by 2028. Specifically, the Schahfer station was scheduled for retirement in May 2023,

followed by the Michigan City station in May 2028. See NIPSCO Ex. 1 (Talbot Direct) at 5.

Q WERE EXTENDED OUTAGES FOR SCHAHFER UNITS 14 AND 15 STARTING IN JULY 2020, FOLLOWED BY RETIREMENT OF THOSE UNITS IN OCTOBER 2021, CONSISTENT WITH THE ACTION PLAN IDENTIFIED IN NIPSCO'S 2018 IRP?

A No. As discussed in Mr. Andrew S. Campbell's direct testimony, NIPSCO planned to replace the capacity of the coal-fired units upon retirement with new renewable resources. In addition, NIPSCO had to complete necessary upgrades to its transmission system to accommodate the planned shift in capacity resources. See NIPSCO Ex. 3 (Campbell Direct) at pp. 6-7.

Q DID NIPSCO HAVE THE PLANNED REPLACEMENT CAPACITY IN SERVICE AS OF JULY 15, 2020?

A No. As further explained by Mr. Campbell at pages 8-9 of his direct testimony, the first of those planned facilities were two wind projects that did not go into operation until December 2020. Another wind project is expected to be operational in November 2021, and six additional solar projects are scheduled to be completed by mid-2023. Together, those nine projects involve 800 MW of wind capacity, 1,245 MW of solar capacity, and 30 MW of storage. The timing of those planned renewable resources correlates to the scheduled retirement date for the Schahfer units in May 2023, consistent with NIPSCO's 2018 IRP. However, none of that replacement capacity was available in

mid-2020 and only 500 MW of it was available prior to November 2021. See NIPSCO Ex. 3 (Campbell Direct) at 8-9.

Q HAS NIPSCO COMPLETED THE TRANSMISSION UPGRADES IDENTIFIED IN ITS 2018 IRP ACTION PLAN AS NECESSARY FOR THE PLANNED TRANSITION FROM RETIRED COAL-FIRED UNITS TO RENEWABLE RESOURCES?

A No. According to Mr. Campbell at pages 9-10 of his direct testimony, NIPSCO identified six different transmission upgrades that would be necessary to retire the coal-fired units at Schahfer. Only four of those six upgrades have been completed, and the other two are expected to be completed in late 2021 and 2022. Mr. Campbell stated that the necessary upgrades to retire only Schahfer Units 14 and 15 had been completed, however, as of his August 13, 2021 testimony.

Q WAS NIPSCO'S PLAN TO RETIRE THE SCHAHFER UNITS IN MAY 2023 ADDRESSED IN NIPSCO'S MOST RECENT RATE CASE, CAUSE NO. 45159?

A Yes. The results of the 2018 IRP were presented in the rate case by Mr. Patrick N. Augustine, who is also a witness in this proceeding. In his rate case testimony, he explained the reasons why NIPSCO's preferred portfolio called for the retirement of the coal-fired units at Schahfer in 2023 and Michigan City in 2028. He testified in support of that plan:

> From a reliability risk standpoint it provides enough time to reasonably erect the necessary transmission upgrades that are critical for system and

customer reliability. Additionally, the replacement resources can be reasonably secured and constructed by 2023.

See Cause No. 45159, NIPSCO Ex. 6 (Augustine Direct) at p. 17 (Attachment MPG-1).

Q ARE YOU AWARE OF ANY INDICATIONS THAT NIPSCO CONSIDERED, PRIOR TO THE JULY 2020 FIRE, THE POSSIBILITY OF TAKING SCHAHFER UNITS 14 AND 15 OUT OF SERVICE IN MID-2020 AND RETIRING BOTH UNITS IN 2021?

A No. As Mr. Augustine testified in his rate case testimony, "NIPSCO also considered whether 14/15 could be retired as early as 2021 but found that the same transmission system upgrades were required, making the earlier retirement infeasible." See Cause No. 45159, NIPSCO Ex. 6 (Augustine Direct) at p. 14 (Attachment MPG-1). In addition, another rate case witness, Mr. Michael Hooper, testified that NIPSCO invested some $86 million in environmental projects with an in-service date of December 16, 2018, specific to Schahfer Units 14 and 15, in addition to further capital projects in the 2017-19 period. See Cause No. 45159, NIPSCO Ex. 7 (Hooper Direct) at p. 8; see also id. at 6-12, provided in Attachment MPG-1. That level of investment reflected the expectation at the time that Schahfer Units 14 and 15 would continue in operation another five years or more, but would be a serious lapse in planning if NIPSCO expected the units to have limited or no availability starting in July 2020.

Q UP UNTIL THE FIRE ON JULY 16, 2020, WAS NIPSCO REGULARLY OPERATING SCHAHFER UNITS 14 AND 15 TO GENERATE ELECTRICITY FOR RETAIL CUSTOMERS?

A Yes. In discovery, NIPSCO provided an operating history for the Schahfer units over the five-year period prior to the fire. A copy of that response is included as Attachment MPG-2 [IG DR 5-008 and Att. A]. It shows that both Schahfer Units 14 and 15 were regularly and routinely placed in service by NIPSCO throughout that period, up to and including July 16, 2020. During that five-year period encompassing 43,848 hours, Unit 14 was in operation for a total of 14,342.4 hours or about a third of the time, and Unit 15 was operated for 23,869.12 hours, over half the time.

II. FACTORS LEADING TO THE FIRE

Q WHAT IS YOUR UNDERSTANDING OF THE CIRCUMSTANCES SURROUNDING THE FIRE AT THE SCHAHFER STATION ON JULY 16, 2020?

A Based on the information provided by NIPSCO, there was a failure in the oil cooling system for the main transformer for Unit 14. An alarm was activated in the Unit 14 Control Room at 7:56 a.m. indicating a high temperature in the transformer. Apparently, no action was taken in response to that alarm, and the temperature continued to increase progressively for the next five and a half hours. The circumstances relating to the disregarded alarm were further described by NIPSCO in a discovery response, a copy of which is included as Attachment MPG-3 [IG DR 1-006]. At about 1:25 p.m., the cooling oil in the transformer reached its boiling point, setting

off a sudden pressure alarm. Unit 14 tripped off-line but continued to discharge energy into the failed transformer for several seconds. An arc flash then ignited the gaseous oil from the transformer and caused a major fire. It was not extinguished until about 9 p.m. that day. Thankfully, there was no loss of life or serious injuries, but there was extensive fire damage affecting both Unit 14 and Unit 15. Both units were taken out of service for an extended outage. NIPSCO ultimately decided to repair Unit 15 and facilities shared with Unit 14, and then operated Unit 15 from December 2020 until the on-site coal inventory was exhausted. Unit 14 remained in extended outage, and has not been operated since the fire. Both units are being retired by NIPSCO as of October 2021.

Q GIVEN THAT A HIGH TEMPERATURE ALARM FOR THE TRANSFORMER WAS ACTIVATED IN THE UNIT 14 CONTROL ROOM AND NO CORRECTIVE ACTION WAS TAKEN UNTIL THE FIRE STARTED FIVE AND A HALF HOURS LATER, DOES NIPSCO CONCEDE THAT IT BEARS RESPONSIBILITY FOR THE FIRE?

A Apparently not. NIPSCO's witness on this subject is Mr. Kurt W. Sangster, who describes the failure to respond to the temperature alarm as a "contributing factor" causing the fire. See NIPSCO Ex. 2 (Sangster Public Direct) at pp. 17-18. He concedes the Control Room Operator ("CRO") failed to act in accordance with established procedures and training, which if followed "could have potentially stopped the fire from occurring." Id. Nevertheless, he asserts that NIPSCO's actions or inactions did not cause the fire. Id. at 18-19. He states that Unit 14 was operated and maintained in a reasonable manner, NIPSCO personnel were properly trained, but "equipment on older

units can fail." Even with that characterization, he admits to "human error" that "failed to mitigate the equipment failure, and as a result, the fire occurred." Id. at 19.

Q. DO YOU AGREE WITH MR. SANGSTER THAT THIS IS JUST A SITUATION WHERE "EQUIPMENT ON OLDER UNITS CAN FAIL," SUCH THAT NIPSCO SHOULD NOT BE HELD ACCOUNTABLE FOR THE CONSEQUENCES OF THE FIRE?

A No, I do not agree with Mr. Sangster's assessment of NIPSCO's role in the events leading to the fire. As a regulated public utility, NIPSCO is charged with a duty to provide safe, reliable service, and to devote the necessary resources to maintain and operate its system assets in sound operating condition. The CRO whose "human error" NIPSCO describes as a material factor causing the fire was a NIPSCO employee performing his assigned functions in the Unit 14 Control Room. NIPSCO seems to be suggesting it is not responsible for the acts and omissions of its own employee. Undisputedly, the high temperature alarm was activated in the Control Room at 7:56 a.m., and was noticed and acknowledged by the CRO, but there was no responsive action taken for five and a half hours while the temperature continued to rise and the transformer oil finally flashed and ignited. Had the transformer been inspected in a timely manner in response to the alarm, and if the rising temperature that set off the alarm had been properly monitored, the transformer and Unit 14 could have been shut down long before the transformer failed. The circumstance that caused the fire and made it so severe was that the transformer broke down while the generator was still in operation, because for several seconds Unit 14 continued to discharge energy into the

failed transformer that was leaking gaseous combustibles. Accordingly, the fire is directly attributable to the failure to take action in response to the high temperature alarm. Five and a half hours is plenty of time to respond to the alarm, monitor the rising temperature, and proceed with an orderly shutdown before the transformer oil reaches its flash point.

Q ARE THERE ADDITIONAL CIRCUMSTANCES SUPPORTING THE CONCLUSION THAT NIPSCO ACTED IMPRUDENTLY IN CONNECTION WITH THE FACTORS LEADING TO THE FIRE?

A Yes. In the weeks following the fire, NIPSCO conducted an internal investigation leading to a Root Cause Analysis report dated August 7, 2020. A copy of that document, which was produced in discovery by NIPSCO, is included as Confidential Attachment MPG-4 [FAC130 IG DR 2-001 Att. B]. That report discloses further circumstances that NIPSCO's investigators considered to be contributing factors.

Q IS THE AUGUST 7, 2020 ROOT CAUSE ANALYSIS THE SAME DOCUMENT THAT MR. SANGSTER REFERS TO AS AN "RCA" AT PAGE 15 OF HIS TESTIMONY?

A No. The document attached to Mr. Sangster's testimony as Confidential Attachment 4-B is a portion of a form Unit Trip/Load Loss report addressing the outages of Schahfer Units 14 and 15. The Unit 14 report is dated October 26, 2020, over three months after the fire. That document includes summary bullet points regarding the events leading to the fire, but omits key disclosures from the earlier August 7th Root Cause Analysis.

Q PLEASE PROVIDE AN EXAMPLE OF ADDITIONAL CONTRIBUTING FACTORS THAT ARE IDENTIFIED IN THE AUGUST 7TH ROOT CAUSE ANALYSIS.

A The final page of that report includes a listing of "***HPI – Error Precursors***," identifying contributing factors that led the CRO to disregard the high temperature alarm for five and a half hours. Most notable is ***"Fatigue," with the explanation that "Operator on 2nd half of a 24."*** See Confidential Attachment MPG-4 at p. 18. In other words, the CRO was nearing the end of a 24-hour shift when the fire occurred.

Q HAS NIPSCO PROVIDED ADDITIONAL INFORMATION REGARDING THE CRO'S 24-HOUR SHIFT ON THE DAY OF THE FIRE?

A Yes. In response to discovery requests, NIPSCO stated that the CRO worked two 12-hour shifts back to back, starting July 15th at 6 p.m. and ending at 6 p.m. on the 16th, the day of the fire. Both days had been scheduled as days off for the CRO, but he completed mandatory safety training during the first 12-hour shift, followed by a 12-hour overtime shift with Control Room duties for Unit 14. When the high temperature alarm was activated and acknowledged in the Control Room, the CRO had been working for 14 hours, and when the fire broke out he had been working for 19 and a half hours. NIPSCO did not take employment action against the CRO arising from the fire, but he voluntarily retired on September 1, 2020, about six weeks after the fire. NIPSCO's discovery responses in this regard are included as Attachment MPG-5 [IG DRs 1-004, 2-005, 4-001, 5-002].

REDACTED

Q DO YOU BELIEVE THOSE CIRCUMSTANCES ARE CONTRIBUTING FACTORS IN THE EVENTS LEADING TO THE FIRE?

A The August 7th Root Cause Analysis obviously reached that conclusion, as it was included in the identified ***"Error Precursors,"*** and I agree for the precise reason stated in that document: ***"Fatigue."*** See Confidential Attachment MPG-4 at p. 18. As the incident in this case illustrates, power plant operations involve severe safety hazards and require the attention and diligence of on-site personnel. In particular, the CRO in the Control Room for a 431 MW generator is in a position of substantial responsibility, for purposes of both safe operations as well as service reliability. A failure to act on a high temperature alarm for a critical piece of equipment for a period of five and a half hours is a dangerous lapse of attention, and the CRO's extended work hours, lack of sleep and fatigue undoubtedly contributed to that error.

Q ARE THERE OTHER NOTABLE CONTRIBUTING FACTORS IDENTIFIED IN THE AUGUST 7TH ROOT CAUSE ANALYSIS?

A Yes. The Root Cause Analysis report includes data regarding the condition of the cooling oil in the main transformer for Unit 14. In particular, there is a ***[redacted]*** See Confidential Attachment MPG-4 at p. 16. That test report noted ***[redacted]***

REDACTED

Q WHAT ACTION DID NIPSCO TAKE IN RESPONSE TO THE APRIL 2020 DISSOLVED GAS ANALYSIS?

A Apparently no responsive actions or special precautions at all were taken by NIPSCO. In a discovery response that is included as Attachment MPG-6 [IG DR 1-008], when asked what steps or actions were taken in response, NIPSCO stated: "The report did not recommend any action to be taken." The purpose of the report was to convey the test results on the condition of the transformer oil. It was NIPSCO's responsibility to determine appropriate actions and precautions to take in order to maintain safe operation of its production assets. As NIPSCO further confirmed, the oil sample from the Unit 14 main transformer was collected on April 1, 2020, and the report was received by NIPSCO on April 13th, three months before the fire.

Q AFTER THE FIRE, DID NIPSCO INVESTIGATE THE SIGNIFICANCE OF THE APRIL 2020 DISSOLVED GAS ANALYSIS?

A Yes. NIPSCO produced in discovery several post-fire internal communications regarding the pre-fire Dissolved Gas Analysis, and the most pertinent document is included as Confidential Attachment MPG-7 [doc. 57-60]. That written report is dated July 27, 2020, eleven days after the fire, discussing "the possible causes that led to the failure." ***[redacted]

REDACTED

[redacted]

REDACTED

[redacted]***

Q WHAT CONCLUSIONS DO YOU DRAW FROM THE DOCUMENTS CONCERNING THE APRIL 2020 DISSOLVED GAS ANALYSIS?

A The NIPSCO investigators clearly considered that test report to be significant, because it was included in the August 7th Root Cause Analysis. The earlier July 27th report ***[redacted]*** With that status, a high temperature alarm ought to be recognized as a potentially dangerous condition. NIPSCO, however, did not take any steps to address the warning signs from the April 2020 Dissolved Gas Analysis during the three-month period leading to the fire. See Attachment MPG-6 [IG DR 1-008]. ***[redacted]*** See Confidential Attachment MPG-7 [doc. 57-60]. Longstanding problems with a critical power production component, known to be

poor condition, should be expected to warrant added care and attention, not less, when a test report warns of potentially hazardous dissolved gas levels.

Q ARE YOU AWARE OF ANY OTHER FACTORS IDENTIFIED BY NIPSCO PERSONNEL IN THE AFTERMATH OF THE FIRE?

A Yes. NIPSCO produced in discovery an email chain concerning ongoing lapses in the completion of operator rounds. A copy is included as Confidential Attachment MPG-8 [doc. 61]. On June 15, 2020, a month before the fire, NIPSCO's Operations Superintendent noted there had been no operator rounds sheets submitted in weeks. He stated, ***"The primary job of an operator is to complete rounds of running equipment." He followed up a month later on July 15th, the day before the fire, indicating the previous week there were only 9 rounds sheets for 22 shifts. Then, on July 23rd, one week after the fire, he focused on the lack of rounds sheets for July 15th and 16th, stating:

> You will see in the emails below that I have stressed the importance of your operators completing rounds. We have now had a catastrophe at the plant due to the unit 14 main power transformer failure. The RCA team is now requesting the rounds for the outside operators for July 15th and 16th days and nights. These rounds contain the info that is needed to see what if anything we observed while competing the rounds. As of this time there are no round sheets or electronic rounds shown to be completed on these days. So we have no evidence that we completed any rounds. Therefore by not completing the paperwork or electronic rounds it shows complete disregard for our primary job and the emails I sent went unheeded. All of us will have to answer for our failure in ensuring these rounds were completed.***

REDACTED

Q IN LIGHT OF ALL THOSE FACTORS, DO YOU BELIEVE NIPSCO BEARS SUBSTANTIAL RESPONSIBILITY FOR THE EVENTS LEADING TO THE FIRE?

A Yes, clearly. Undisputedly, a high temperature alarm was activated and acknowledged in the Control Room, but the CRO did not take any responsive action for the five and a half hours leading to the fire. At the time, the CRO was working the second half of a 24-hour shift. ***[redacted]*** but NIPSCO took no steps to address those conditions. Attachment MPG-7 [doc. 57-60]; Attachment MPG-6 [IG DR 1-008]. NIPSCO was aware that the transformer had ***[redacted]*** Attachment MPG-7 [doc. 57-60]. Not only was an operator not dispatched to inspect the transformer in response to the high temperature alarm, but apparently ***NIPSCO operating personnel were failing to make routine rounds altogether.*** Attachment MPG-8 [doc. 61]. Taken together, those circumstances indicate a serious lapse in safety precautions and sound operating practices on the part of NIPSCO.

III. NIPSCO'S REPORT TO THE COMMISSION

Q DID NIPSCO SUBMIT A REPORT TO THE COMMISSION REGARDING THE FIRE AND THE RESULTING EXTENDED OUTAGES FOR SCHAHFER UNITS 14 AND 15?

A Yes. NIPSCO provided the Commission with a Unit Trip/Load Loss form report, relevant portions of which were included with Mr. Sangster's testimony as Confidential Attachment 2-A. That document was previously presented by NIPSCO in its FAC-129 proceeding on November 16, 2020, as an attachment to the testimony of David Saffran in that case. As noted in that prior testimony, NIPSCO is under an obligation pursuant to two FAC settlements to submit reports on major forced outages impacting its generating units. In addition, the Commission directed NIPSCO in 2019 to include a root cause analysis for forced outages in its FAC filings. See October 29, 2019 Order in Cause No. 38706-FAC-124 at p. 20 ¶6.

Q DID NIPSCO PROVIDE THE COMMISSION WITH A COPY OF THE AUGUST 7TH ROOT CAUSE ANALYSIS, CONFIDENTIAL ATTACHMENT MPG-4?

A No. NIPSCO confirmed in a discovery response that the August 7th Root Cause Analysis "has not been submitted to the Commission." A copy of that response is included as Attachment MPG-9 [IG DR 5-005].

REDACTED

Q WHAT INFORMATION WAS INCLUDED IN THE UNIT TRIP/LOAD LOSS REPORT THAT NIPSCO PROVIDED TO THE COMMISSION ON NOVEMBER 16, 2020?

A The document consists of separate reports for Schahfer Units 14 and 15. The Unit 15 portion (39481) is dated July 17, 2020, and simply cross-references the Unit 14 report for the root cause analysis. The Unit 14 portion (39608) is dated October 26, 2020, more than three months later. It summarizes the circumstances in bullet-point form:

[redacted] See NIPSCO Confidential Attachment 2-A (Confidential Attachment to Sangster Direct Testimony).

REDACTED

Q ARE THERE SIGNIFICANT OMISSIONS IN THE REPORT PROVIDED BY NIPSCO TO THE COMMISSION?

A Yes. Most notably, the submitted Unit Trip/Load Loss Report failed to disclose that a high temperature alarm for the Unit 14 main transformer was activated five and a half hours before the fire, and was acknowledged in the Control Room, but no investigation or corrective action was taken as the oil temperature continued to climb. Compare NIPSCO Confidential Attachment 2-A (Confidential Attachment to Sangster Direct Testimony) with Attachment MPG-3 [IG DR 1-006]. The Unit Trip/Load Loss Report specifically references ***[redacted]*** but not the high temperature alarm five and a half hours earlier. Id. Furthermore, Unit Trip/Load Loss Report did not indicate that the CRO who failed to act on the high temperature alarm was nearing the end of a 24-hour shift when the fire occurred. Compare NIPSCO Confidential Attachment 2-A (Confidential Attachment to Sangster Direct Testimony) with Attachment MPG-5 [at IG DRs 2-005, 4-001]. Likewise, there was no mention of the ***[redacted]*** nor that NIPSCO operating personnel had stopped completing routine rounds of running equipment. Compare NIPSCO Confidential Attachment 2-A (Confidential Attachment to Sangster Direct Testimony) with Attachment MPG-7 [doc. 57-60]. NIPSCO was fully aware of all those circumstances before the October 26, 2020 Unit Trip/Load Loss Report was presented to the Commission, as shown by the materials and data included in

Attachments MPG-3 through MPG-9. NIPSCO's report to the Commission nevertheless implied the transformer failure was a spontaneous and unexpected event, while failing to disclose material information regarding NIPSCO's lapses and missteps. The document NIPSCO submitted pursuant to the Commission order requiring a root cause analysis stands in stark contrast to NIPSCO's internal assessment of the factors that caused the fire, particularly as summarized in the August 7th Root Cause Analysis. Confidential Attachment MPG-4 [FAC130 IG DR 2-001 Att. B].

IV. IMPACT ON NIPSCO FAC COSTS DUE TO LOSS OF SCHAHFER UNITS 14 AND 15

Q HOW HAVE NIPSCO'S FAC CHARGES CHANGED SINCE THE FIRE AT SCHAHFER ON JULY 16, 2020?

A There has been a steep increase in NIPSCO's FAC factors since that time. The last FAC proceeding completed prior to the fire was Cause No. 38706-FAC-127, in which the approved factor was a negative $0.005732 per kWh, or a negative 5.732 mills. The next petition, FAC-128, was filed by NIPSCO on August 14, 2020, one month after the fire, and the approved factor in that case rose by 5.597 mills. As of the most recently completed proceeding, FAC-132, which spans the period November 2021 to January 2022, the approved factor has increased to a positive 9.761 mills, which is 15.493 mills higher than the level approved in FAC-127, or an increase to NIPSCO customers of $13.5 million per month. To the extent the physical energy hedge's value of Schahfer Units 14 and 15 could have reduced this increase in energy costs, the increase in this

REDACTED

FAC charge is higher than it otherwise would have been. Table 1 below shows the drastic increase in the FAC charge.

TABLE 1

NIPSCO Historical FAC Factors

	Petition Date	Rates in Effect Start	Rates in Effect End	FAC ($/kWh)	Increase since FAC-127
FAC-127	5/14/2020	Aug-20	Oct-20	($0.005732)	
FAC-128	8/14/2020	Nov-20	Jan-21	($0.000135)	$0.005597
FAC-129	11/16/2020	Feb-21	Apr-21	$0.001985	$0.007717
FAC-130	2/16/2021	May-21	Jul-21	$0.003066	$0.008798
FAC-131	5/14/2021	Aug-21	Oct-21	$0.001971	$0.007703
FAC-132	8/16/2021	Nov-21	Jan-22	$0.009761	$0.015493

Multiple Filings

The increase in the FAC charges clearly illustrates the potential benefits to NIPSCO and its customers that can be realized through a physical energy hedge such as that provided by Schahfer Units 14 and 15.

Q HAS NIPSCO IDENTIFIED THE BENEFITS SCHAHFER UNITS 14 AND 15 PROVIDED TO ITS RETAIL CUSTOMERS?

A Yes. The Company outlines several benefits to the system through operation of Schahfer Units 14 and 15. The Company notes that each of these facilities provides capacity resource benefits that help maintain service reliability. But, ***[redacted]*** and furthermore ***[redacted]*** NIPSCO's Confidential Ex. 3 (Campbell Confidential Direct), p. 14, lines 3-8.

The operating benefits of Schahfer Units 14 and 15 include cost savings from producing energy for either system support and/or for economic dispatch. Energy savings occur when the dispatch cost is lower than the alternative resource dispatch cost or the MISO market purchase energy price. The Company outlines its coal, gas, water and wind resources available for operations in Table 1 at page 11 of NIPSCO witness Campbell's testimony. A cost comparison of the coal-fired units is shown on my Confidential Attachment MPG-10. This shows that for system support purposes, there is an economic advantage of using Schahfer Units 14 and 15 relative to other NIPSCO coal-fired resources for power quality purposes. Mr. Campbell offers a discussion of how NIPSCO offers its coal units into MISO in his testimony. See NIPSCO Confidential Ex. 3 (Campbell Confidential Direct) at 11-14.

From an economic dispatch savings basis, Schahfer Units 14 and 15 have been able to produce savings for customers to the extent that the dispatch cost is below that of alternative higher dispatch cost coal units and/or MISO market energy purchases. As shown on my Attachment MPG-11, in calendar years 2015-2019, the units' dispatch costs were generally above the market clearing price, and thus did not typically produce economic dispatch benefits. That is, the prevailing hourly day-ahead energy price for the wholesale market within MISO was below the dispatch cost of Schahfer Units 14 and 15. In these years, these units were seldom dispatched for economic purposes, and generally did not produce energy savings.

However, market data shows that in 2021, had Schahfer Unit 14 been available, it could have produced significant energy savings relative to the 2021 MISO energy market prices (Confidential Attachment MPG-12). That is, MISO market prices

increased in 2021 and were above the dispatch cost of the Schahfer units. Further, forward MISO energy prices indicate that Schahfer Units 14 and 15 would have continued to provide economic savings to NIPSCO if they were available to be dispatched through the proposed retirement date of May 2023 and no fire had occurred. (Confidential Attachments MPG-12 and MPG-13).

Q DID NIPSCO DESCRIBE THE BENEFITS ITS CUSTOMERS COULD HAVE DERIVED IF SCHAHFER UNITS 14 AND 15 HAD BEEN AVAILABLE TO OPERATE THROUGH THE PLANNED RETIREMENT DATE OF MAY 2023?

A Only partially, and largely only due to economic dispatch operations that existed in calendar year 2020.[1] From this six-month time period, NIPSCO witness Mr. Campbell outlined the potential benefits and detriments to NIPSCO from losing Schahfer Units 14 and 15. One of the primary operating benefits noted by Mr. Campbell is that these units could be used as physical hedges to protect customers from potential volatility in the energy market. For the second half of 2020, it is this hedge value which largely represents the loss to customers through the extended outages and early retirement of these units. See, e.g., NIPSCO Ex. 3 (Campbell Public Direct) at p. 25. Starting in 2021, the energy hedge value of these units increased significantly, compared to earlier periods, as discussed below.

[1] In Industrials Request 7-003, NIPSCO was asked to perform a production cost run for the period July 2020 – December 2023 using NIPSCO's "Reference Case" from its 2018 IRP for all input assumptions (which would not include the impact of the effects of the fire). However, NIPSCO objected to performing this analysis. Please see Attachment MPG-17 (NIPSCO's response to IG DR 7-003).

Q PLEASE EXPLAIN THE HISTORICAL OPERATION OF SCHAHFER UNITS 14 AND 15, AND DESCRIBE WHY YOU BELIEVE THEY WERE OPERATED EVEN THOUGH THEY WERE NOT PRODUCING ECONOMIC SAVINGS.

A As shown on my Attachment MPG-11, the average historical operation of Schahfer Units 14 and 15 on both an on-peak and off-peak basis is illustrated. These units were largely used to produce energy savings during the on-peak period but also operated during the off-peak period. Generally, as shown on this same schedule, the on-peak/off-peak and all-hours MISO market prices for these historical periods were largely lower than the dispatch cost of Schahfer Units 14 and 15. Hence, the actual output of Units 14 and 15 during this time period was limited for economic purposes because the MISO market clearing price limited the economic dispatch of these units.

Q IS NIPSCO'S ABILITY TO ECONOMICALLY OPERATE UNITS 14 AND 15 FOR ECONOMIC PURPOSES THE SAME GOING FORWARD AS IT WAS OVER THIS HISTORICAL TIME PERIOD?

A No. During the historical period 2015-2020, the off-peak/on-peak MISO day-ahead energy prices averaged $24.60 per MWh and $33.17 per MWh, respectively, and the around-the-clock ("ATC") price averaged $28.60 per MWh. See Attachment MPG-11, page 4. However, going forward, particularly since early 2021, MISO market energy prices have increased dramatically.

As shown on Attachment MPG-11, page 4, indeed, through most of 2021, MISO day-ahead energy prices increased by approximately $5 to $10 per MWh, and have averaged $42.53 per MWh for on-peak and $29.04 per MWh for off-peak. These market

clearing prices are above the estimated dispatch costs[2] for Schahfer Units 14 and 15 of approximately ***[redacted]***, respectively, in the absence of a fire. See Confidential Attachment MPG-12, page 1, and MPG-13, page 1. As such, the loss of Schahfer Units 14 and 15 after the fire in 2020 had the effect of losing physical energy resources that would have provided energy savings versus MISO market energy prices in 2021. That status is expected to continue through the previously planned retirement date for those units in May 2023. See Attachment MPG-14.

Q DO FORWARD-LOOKING MISO PRICES IN 2022 AND 2023 INDICATE THAT SCHAHFER UNITS 14 AND 15 COULD PRODUCE ENERGY SAVINGS?

A Yes. This is shown on my Confidential Attachments MPG-12 and MPG-13, pages 2 and 3. On these schedules, the forward MISO price and dispatch cost for Units 14 and 15 are shown. The forward MISO price for all hours is approximately $48.16 per MWh in 2022 and $43.54 per MWh through May 2023. Again, just like in 2021, the projections indicate that Schahfer Units 14 and 15 would have produced economic benefits to NIPSCO and its retail customers if they were available to be economically dispatched during these time periods.

[2] For 2021 dispatch prices, I utilized an estimate of what those prices would have been in the absence of a fire. See Confidential Attachment MPG-16 (NIPSCO's response to IG DR 11-1).

REDACTED

Q HAD UNIT 14 BEEN AVAILABLE TO OPERATE IN 2021, COULD IT HAVE PRODUCED DISPATCHED ENERGY SAVINGS TO NIPSCO?

A Yes. The question is would Unit 14 have operated at a historical level where it was largely run for system support, or would the increase in the wholesale market prices have allowed NIPSCO to economically dispatch Unit 14? Hence, in estimating the potential energy savings had Unit 14 been available, I produced a range of operation. The low-end of the range reflects a capacity factor of ***[redacted]***,[3] which is largely aligned with what it actually did operate under in calendar years 2015 through 2019. The high-end of the range assumed that Unit 14 would be operated on an economic dispatch basis, and would have operated at a higher capacity factor estimated to be ***[redacted]***, which is based on the increase in capacity factor for Unit 15 in 2021. See Attachment MPG-11, page 2.

As developed on Confidential Attachment MPG-12, using the low-end capacity factor assumption, the amount of energy savings Unit 14 could have produced by operating in calendar year 2021 is estimated to be $17.0 million. This reflects Unit 14 operating at a capacity factor of ***[redacted]***.

For the high-end output, assuming a capacity factor operation of ***[redacted]***, the amount of energy savings Unit 14 could have produced by offsetting MISO purchases would have been approximately $34.0 million.

[3] I have labeled the assumed capacity factors as confidential so that I can publicly identify the amount of my recommended refunds. If I did not redact the assumed capacity factors but identified the refund amount, then the unit-specific dispatch costs (which NIPSCO contends are confidential) could be ascertained mathematically.

REDACTED

Q IN YOUR OPINION, HAS THE LOSS OF UNIT 14 AFFECTED THE COSTS SUBJECT TO RECOVERY THROUGH THE FAC RIDER THAT WERE INCURRED BY NIPSCO IN 2021?

A If Schahfer Unit 14 had been available to operate during 2021, I believe that NIPSCO's FAC costs would have been lower. The prevailing level of MISO day-ahead prices in 2021 would have supported economic dispatch of Unit 14, thereby displacing more expensive MISO purchases by NIPSCO.

Q IN YOUR VIEW, DID THE RETIREMENT OF UNIT 15 IN OCTOBER 2021 HAVE A SIMILAR IMPACT ON NIPSCO'S FAC COSTS THROUGH THE END OF 2021?

A Yes. The same circumstances applicable to Unit 14 in 2021 also apply to Unit 15 in November and December of 2021. That is, the dispatch cost for Unit 15 would be below the prevailing MISO day-ahead prices, supporting economic dispatch of that unit. At the low end, using the ***[redacted]*** capacity factor, the amount of the energy savings Unit 15 could have produced in November and December of 2021 is estimated at $5.8 million. Using a ***[redacted]*** capacity factor reflecting more recent operation of Unit 15 since the rise in MISO prices, the lost savings from November to December are about $11.5 million See Confidential Attachment MPG-13, page 1.

REDACTED

Q WHAT IS YOUR RECOMMENDATION FOR THE APPROPRIATE RATE RELIEF IN THIS PROCEEDING?

A I recommend that the Commission direct NIPSCO to provide a rate refund to its customers in the next available FAC proceeding, in the amount of $45.5 million ($34.0 million for Unit 14 and $11.5 million for Unit 15). That total reflects the lost savings from reduced MISO purchases if Unit 14 had been available for economic dispatch throughout 2021, combined with the corresponding savings for Unit 15 after it was retired early and was not available to operate in November and December, 2021. Because economic dispatch of other units was possible in 2021, I assumed both units would have been operated at a ***[redacted]*** capacity factor. Even if Units 14 and 15 were operated at only a ***[redacted]*** capacity factor, consistent with historical operations prior to the recent increase in MISO day-ahead prices, the amount of the refund would be $22.8 million ($17.0 million for Unit 14 and $5.8 million for Unit 15).

In addition, the status in 2021 where Unit 14 and 15 dispatch costs were consistently below prevailing MISO day-ahead prices, is expected to continue in 2022 and through May 2023, the pre-fire planned retirement date. The Commission therefore should direct NIPSCO to provide a credit in successive FAC proceedings, computed on the same basis as presented here for 2021, until FAC costs through May 2023 have been reconciled.

REDACTED

Q CAN YOU ESTIMATE THE POTENTIAL ECONOMIC HEDGE VALUE TO NIPSCO AND ITS CUSTOMERS IF SCHAHFER UNITS 14 AND 15 WOULD HAVE BEEN AVAILABLE TO BE ECONOMICALLY DISPATCHED IN 2022 AND 2023?

A Yes. Based on forward MISO energy prices, and assuming a range of capacity factor output for Schahfer Units 14 and 15, the total losses to customers in 2022 and 2023 are estimated to be $60.9 million to $121.8 million.[4]

The low-end of the range assumes a capacity factor operation for Schahfer Units 14 and 15 of ***[redacted]***. The low-end estimate of the avoided energy cost is shown below in Table 2, both for 2021 and based on forward-looking MISO prices for 2022 and 2023.

The high-end of the range assumed that the units would be economically dispatched and operated at a capacity factor of ***[redacted]***. The estimate of the high-end avoided cost energy savings by operating Schahfer Units 14 and 15 is also shown below in Table 2.

[4] For calendar year 2022, the low-end of the range for Units 14 and 15 were $23.649 million and $22.99 million, or $46.63 million, and for the five-month period ending May 2023, the low-end estimates were $7.28 million and $7.00 million, or $14.28 million. This combines to a low-end estimate of $60.9 million. On the high-end, Units 14 and 15 for calendar year 2022 potential savings are $47.28 million and $45.99 million, respectively, or $93.26 million in 2022. Through May 2023, the savings estimate on the high-end for Units 14 and 15 is $14.57 million and $14.00 million, or $28.56 million. The total on the high-end then is $121.8 million.

TABLE 2

Schahfer Unit 14 and 15 Energy Savings

Dates	Low Estimate Savings Unit 14	Low Estimate Savings Unit 15	High Estimate Savings Unit 14	High Estimate Savings Unit 15
October-December 2021		$5,770,156		$11,540,312
Calendar Year 2021	$17,023,765		$34,047,529	
Calendar Year 2022	$23,638,398	$22,992,681	$47,276,796	$45,985,361
January-May 2023	$7,284,611	$6,997,368	$14,569,222	$13,994,737
Subtotal	$47,946,774	$35,760,205	$95,893,547	$71,520,410
Unit 14 & 15 Total	**$83,706,979**		**$167,413,957**	

Sources: Confidential Attachments MPG-12 & MPG-13

Q DID THE LOSS OF THE ENERGY HEDGE VALUE OF SCHAHFER UNITS 14 AND 15 HAVE A DETRIMENTAL IMPACT ON NIPSCO IN 2021?

A Yes. There were several events in 2021 that would have allowed NIPSCO to have relied on both of these units had they been available to provide energy throughout 2021. These events include the following:

1. The specific winter event occurring between February 12, 2021 and February 17, 2021, where wholesale market prices increased dramatically relative to historical levels. In February 2021, the ATC price increased $58.27. During this time period, all physical hedge or system generation resources would have been useful to NIPSCO to provide energy savings for its customers.

2. General wholesale market prices increased after the winter event for many reasons, including a dramatic increase in natural gas prices. As shown on my Attachment MPG-14, page 1, ATC power prices increased from a March 2021 price of $24.59 to a projected December 2021 ATC price of $61.89.

REDACTED

Q NIPSCO STATES THAT IT HAS IMPLEMENTED A HEDGING PROGRAM. WILL THIS HEDGING PROGRAM PROTECT CUSTOMERS FROM THE LOSS OF THE SCHAHFER UNITS 14 AND 15 PHYSICAL HEDGE?

A No. The hedge program implemented by NIPSCO had the effect of ensuring it has access to market power at MISO market prices. These hedges do not limit its price of energy based on the energy hedge value of Schahfer Units 14 and 15. The hedge plan ties to market power prices in MISO, or to a specific gas price and a stated heat rate to replace the Sugar Creek output. Cause 38706 FAC 130 Order at 16-17 (summarizing NIPSCO witness Campbell's testimony). But importantly, the hedge price does not produce the same physical energy price protection to NIPSCO and its customers that had previously been provided by Schahfer Units 14 and 15 had they been available to operate in 2021 and through the planned end of their operating lives.

Q IN MEASURING THE IMPACT ON FAC COSTS ARISING FROM THE LOSS OF SCHAHFER UNITS 14 AND 15, IS IT REASONABLE TO ASSUME A RANGE OF CAPACITY FACTOR OPERATION OF THESE UNITS?

A Yes. ***[redacted]*** NIPSCO Confidential Ex. 3 (Campbell Confidential Direct) at 11-14. However, because of the increase in wholesale market energy prices, these units could have been economically dispatched starting in this year and continuing on through at least calendar year 2023. For these reasons, I am including a conservative measure of the adverse impact on FAC costs using a low capacity factor assumption, which is based on the actual dispatch operation of these units historically,

REDACTED

when they were operating more on just a system integrity dispatch basis. But I also assumed that these units could be operated at a much higher capacity factor on an economic dispatch basis where the wholesale market energy price is above their actual dispatch cost. For this high capacity output assumption, I am assuming these units can be operated at a capacity factor of ***[redacted]*** when available for economic dispatch.

Q DO YOU HAVE ANY COMMENTS ON NIPSCO WITNESS MR. AUGUSTINE'S FINDING THAT IT IS ECONOMICALLY JUSTIFIED TO RETIRE SCHAHFER UNITS 14 AND 15 IN 2021?

A Yes. My primary comment deals with his projection of the market energy prices in MISO used in his economic studies. These energy prices may have been reasonable at the time of his analysis, however, they substantially understate actual MISO energy prices in 2021, and the forward prices through 2023. A comparison of the energy prices included in Mr. Augustine's workpapers, compared to the actual and forward prices in 2021 and forward prices in 2022 and 2023, is shown on my Confidential Attachment MPG-15. In each of these instances, Mr. Augustine's system resource economic studies were based on market prices that were substantially lower than the current market prices.

The significance of understating market energy prices means that Mr. Augustine's economic studies understated the economic benefits to NIPSCO and its customers of operating Schahfer Units 14 and 15 in lieu of making market purchases over this time period. As discussed above, the dispatch costs for Schahfer Units 14 and 15 were estimated to have been ***[redacted]***, (Confidential Attachments MPG-12, page 1, and MPG-13, page 1) respectively, in 2021

if there had been no fire. Both of these units could be economically dispatched under current MISO energy prices, and through 2022 and 2023. Under the market energy prices included in Mr. Augustine's economic projections, economic dispatch of these units would not have been possible because the forecasted market prices were less than the dispatch cost of these units. This change in market circumstances renders Mr. Augustine's economic conclusions concerning the early retirement of Schahfer Units 14 and 15 unreliable and inconsistent with current data.

Q PLEASE SUMMARIZE YOUR ESTIMATE OF THE IMPACT ON NIPSCO'S FAC COSTS ARISING FROM THE LOSS OF SCHAHFER UNITS 14 AND 15 ECONOMIC HEDGE VALUES THROUGH MAY 2023.

A As outlined above, the operation of Schahfer Unit 14 in 2021, and based on forward MISO price curves in 2022 and 2023, would have allowed this facility to produce significant economic benefits to NIPSCO and its customers. As outlined in my Table 2, the estimated cost savings to NIPSCO even under lower capacity operation of this unit would been approximately $47.9 million through May 2023. However, if Schahfer Unit 14's capacity factor would have increased because it was available for economic dispatch during this time period, and had this unit operated at a ***[redacted]*** capacity factor, the impact on NIPSCO's FAC costs through loss of this facility would have been $95.9 million over this time period.

For Schahfer Unit 15, the retirement in October 2021, and unavailability in 2022 and 2023, also result in increased energy costs to NIPSCO. Loss of the physical energy hedge for this facility from November 2021 through May 2023, based on the forward

price curve for MISO in these years, ranges from $35.8 million under a low dispatch option, to $71.5 million, under a higher capacity factor reflecting economic dispatch during this time period.

In total, the estimated cost impact to NIPSCO customers due to the fire at Schahfer Units 14 and 15 is $83.7 million on the low end and $167.4 million on the high end.

Q WHAT IS YOUR RECOMMENDATION?

A I recommend that the Commission order NIPSCO to provide a refund to ratepayers, with accrued interest, in the next FAC proceeding, in the amount of $45.5 million, reflecting FAC savings NIPSCO could have achieved through the end of 2021 if Units 14 and 15 had been available. Alternatively, under a more conservative assumption using a lower capacity figure, the refund amount should be no less than $22.8 million. In addition, for the period from the beginning of 2022 through May 2023, each NIPSCO FAC filing should reflect an additional credit, if applicable in the given FAC period, computed in the same manner as the 2021 refund amount.

Q DOES THAT CONCLUDE YOUR TESTIMONY?

A Yes.

Qualifications of Michael P. Gorman

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Michael P. Gorman. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am a consultant in the field of public utility regulation and a Managing Principal with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A In 1983 I received a Bachelor of Science Degree in Electrical Engineering from Southern Illinois University, and in 1986, I received a Master's Degree in Business Administration with a concentration in Finance from the University of Illinois at Springfield. I have also completed several graduate level economics courses.

In August of 1983, I accepted an analyst position with the Illinois Commerce Commission ("ICC"). In this position, I performed a variety of analyses for both formal and informal investigations before the ICC, including: marginal cost of energy, central dispatch, avoided cost of energy, annual system production costs, and working capital. In October of 1986, I was promoted to the position of Senior Analyst. In this position, I assumed the additional responsibilities of technical leader on projects, and my areas

of responsibility were expanded to include utility financial modeling and financial analyses.

In 1987, I was promoted to Director of the Financial Analysis Department. In this position, I was responsible for all financial analyses conducted by the Staff. Among other things, I conducted analyses and sponsored testimony before the ICC on rate of return, financial integrity, financial modeling and related issues. I also supervised the development of all Staff analyses and testimony on these same issues. In addition, I supervised the Staff's review and recommendations to the Commission concerning utility plans to issue debt and equity securities.

In August of 1989, I accepted a position with Merrill-Lynch as a financial consultant. After receiving all required securities licenses, I worked with individual investors and small businesses in evaluating and selecting investments suitable to their requirements.

In September of 1990, I accepted a position with Drazen-Brubaker & Associates, Inc. ("DBA"). In April 1995, the firm of Brubaker & Associates, Inc. was formed. It includes most of the former DBA principals and Staff. Since 1990, I have performed various analyses and sponsored testimony on cost of capital, cost/benefits of utility mergers and acquisitions, utility reorganizations, level of operating expenses and rate base, cost of service studies, and analyses relating to industrial jobs and economic development. I also participated in a study used to revise the financial policy for the municipal utility in Kansas City, Kansas.

At BAI, I also have extensive experience working with large energy users to distribute and critically evaluate responses to requests for proposals ("RFPs") for

electric, steam, and gas energy supply from competitive energy suppliers. These analyses include the evaluation of gas supply and delivery charges, cogeneration and/or combined cycle unit feasibility studies, and the evaluation of third-party asset/supply management agreements. I have participated in rate cases on rate design and class cost of service for electric, natural gas, water and wastewater utilities. I have also analyzed commodity pricing indices and forward pricing methods for third party supply agreements, and have also conducted regional electric market price forecasts.

In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

A Yes. I have sponsored testimony on cost of capital, revenue requirements, cost of service and other issues before the Federal Energy Regulatory Commission and numerous state regulatory commissions including: Alaska, Arkansas, Arizona, California, Colorado, Delaware, the District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and before the provincial regulatory boards in Alberta, Nova Scotia, and Quebec, Canada. I have also sponsored testimony before the Board of Public Utilities in Kansas City, Kansas; presented rate setting position reports to the regulatory board of the municipal utility in Austin, Texas, and

Salt River Project, Arizona, on behalf of industrial customers; and negotiated rate disputes for industrial customers of the Municipal Electric Authority of Georgia in the LaGrange, Georgia district.

Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR ORGANIZATIONS TO WHICH YOU BELONG.

A I earned the designation of Chartered Financial Analyst ("CFA") from the CFA Institute. The CFA charter was awarded after successfully completing three examinations which covered the subject areas of financial accounting, economics, fixed income and equity valuation and professional and ethical conduct. I am a member of the CFA Institute's Financial Analyst Society.

422767

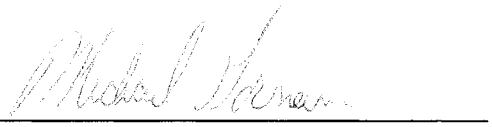
STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

SUBDOCKET FOR REVIEW OF NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC'S R.M. SCHAHFER GENERATING STATION FIRE AND RELATED IMPACT ON FUEL PROCUREMENT AND FUEL COSTS.	)	**CAUSE NO. 38706 FAC 130 S1**

Verification

I, Michael P. Gorman, a Managing Principal of Brubaker & Associates, Inc., affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.



Michael P. Gorman
November 12, 2021

Attachment MPG-1 includes relevant portions of both of the following witnesses' testimony:

- **Cause No. 45159, Petitioner's Exhibit No. 6, Verified Direct Testimony of Patrick N. Augustine, Pages 2-10**

- **Cause No. 45159, Petitioner's Exhibit No. 7, Verified Direct Testimony of Michael Hooper Pages 11-19**

45159

Petitioner's Exhibit No. 6
Northern Indiana Public Service Company LLC
Page 1

VERIFIED DIRECT TESTIMONY OF PATRICK N. AUGUSTINE

Q1. Please state your name, professional position, and business address.

A1. My name is Patrick N. Augustine. I am a Principal in Charles River Associates' Energy Practice. My business address is 1201 F Street, NW, Washington, DC 20004.

Q2. On whose behalf are you submitting this direct testimony?

A2. I am submitting this testimony on behalf of Northern Indiana Public Service Company LLC ("NIPSCO").

Q3. Please briefly describe your educational and business experience.

A3. I received a Bachelor of Arts degree from Harvard University and received a Master of Environmental Management degree from the Nicholas School of the Environment at Duke University. I have been employed by Charles River Associates (CRA) for three years and have worked in the energy consulting industry for over twelve years. Prior to joining CRA, I worked at Pace Global Energy Services, now a Siemens business, for over nine years, performing the roles of analyst, project manager, and director. At CRA, in my role as Principal I oversee

discrete variables based on the scenario development process. The Monte Carlo engine ultimately developed 500 iterations of daily price paths for natural gas and 500 iterations of daily and hourly price paths for power.

IRP ECONOMIC ANALYSIS RESULTS

Q16. Please describe the results of the IRP analyses with regard to the cost to customer and cost risk metrics.

A16. The detailed modeling results for all of the scenarios are presented in Attachment 6-A. The eight (8) portfolios described earlier were evaluated across all scenarios used in the 2018 IRP. In the Base Case, Retirement Combination 8 (where 100% of the coal portfolio is retired by 2023) is the lowest cost option, and Retirement Combination 1 (where all coal units run to 60 years of service) is the highest cost option. In the Base scenario, Retirement Combination 6 (which retires Schahfer Units 14, 15, 17 and 18 in 2023, and Michigan City Unit 12 in 2028) is the third lowest cost option.

The cost to customer ranking remains broadly consistent across the four (4) scenarios analyzed. Generally, portfolios that retain more coal perform relatively better in the scenario without a carbon price (Challenged Economy) and relatively worse when carbon prices are higher (Aggressive Environmental Regulation). However, in all four (4) of the scenarios, retirement of all coal units (Retirement

Combination 8) and replacement with a model-optimized selection of RFP alternatives is the least cost portfolio. In all four (4) of the scenarios, Retirement Combination 6, is the third-least expensive option. Overall, the analysis concludes that the all-in costs of the replacements evaluated from the RFP are lower than the ongoing costs associated with maintaining the existing coal fleet.

The results in Attachment 6-A also show the cost certainty and cost risk metrics from the stochastic analysis. Cost Certainty measures the certainty that the net present value of revenue requirements falls within the most likely range of the distribution of outcomes and is quantified by the 75th percentile of cost to customer in the stochastic analysis. Retirement Combination 8 has the lowest cost certainty. Retirement Combination 6 has the third-lowest cost certainty.

Cost Risk measures the risk of unacceptable, high-cost outcomes and is quantified by the by 95th percentile of cost to customer in the stochastic analysis. Retirement Combination 8 has the lowest cost risk. Retirement Combination 6 has the third-lowest cost risk.

Q17. Please describe the results of the IRP analyses with regard to the other, non-cost metrics.

A17. Reliability Risk assesses NIPSCO's ability to confidently transition the resources and maintain customer and system reliability. Reliability Risk is a qualitative assessment made by NIPSCO of how orderly the transition would be from its current portfolio. It considers NIPSCO's ability to analyze, plan for and execute any transmission system and/or other equipment upgrades needed to ensure that customer needs are reliability met.

From a Reliability Risk perspective, retirement combinations 1 through 6 are acceptable and combinations 7 and 8 are unacceptable. Combination 7 is unacceptable and simply not executable in the time allotted. Specifically, the retirement of 17/18 in 2021, as tested in combination 7, requires multiple transmission upgrades to maintain system reliability. The transmission upgrades will, in the optimistic case, take until 2022 to complete, due to a need to work with MISO on scheduling coordination and due to the required environmental wetland permitting that must occur. As a result, a 2021 retirement of 17/18 is not physically possible. NIPSCO also considered whether 14/15 could be retired as early as 2021 but found that the same transmission system upgrades were required, making the earlier retirement infeasible.

Retirement combination 8 would require NIPSCO to retire and replace 1,800 MWs at one time in 2023. This equates to over 75% of NIPSCO's physical generation. While the RFP revealed that enough capacity is available for this transition, this level of changeover at one time creates reliability and execution risk for NIPSCO's customers that the NIPSCO and NiSource management team has deemed unacceptable and not conducive to an orderly transition. Additionally, NIPSCO management believes there to be benefits to staggering the transition, including gaining access to better information on technology change, including potential future declines of solar and storage costs, and an updated perspective of customer demand.

As previously discussed, NIPSCO also considered the impacts of coal unit retirement decisions on surrounding communities. These impacts include the loss of work for NIPSCO employees, as well as reductions to the property tax base. While these factors do not directly impact power supply costs for customers, NIPSCO believes that they are important considerations in the selection of its preferred retirement decision.

The NIPSCO employees impacted by the retirements increase as you move from retirement combination 1 to retirement combination 8. Retiring all of Schahfer

impacts ~275 employees and retiring Michigan City impacts another ~150 employees.

The local economy criteria is measured by the change in expected local property tax payments associated with the coal plants relative to 2016's retirement plan, which is combination 2, and therefore is zero. Keeping coal longer, as in combination 1, provides more property taxes to the communities, while retiring coal earlier, as in combinations 3 through 8, reduces property tax payments to the local communities.

Q18. How did NIPSCO integrate the results of these analyses to arrive at a decision regarding coal retirements?

A18. Based on the above criteria, NIPSCO created a scorecard to explore relative differences between the portfolios using a number of quantitative and qualitative measures. This scorecard is summarized below.

						Preferred Retirement Path		
	❶	❷	❸	❹	❺	❻	❼	❽
Portfolio Transition Target:	**65% Coal through 2035**	**40% Coal in 2023**	**15% Coal by 2028 w/ ELG**	**15% Coal by 2028 w/o ELG**	**15% Coal in 2023** (Mich City 2035)	**15% Coal in 2023** (Mich City 2028)	**15% Coal by 2023** (Schf 17/18 2021)	**0% Coal in 2023**
Retire:	None	Schf 17 18 (2023)	Schf 17 18 (2023); Schf 14 15 (2023)	Schf 17 18 (2023); Schf 14 15 (2023)	Schf 17 18 (2023); Schf 14 15 (2023)	Mich City 12 (2028); Schf 17 18 (2023); Schf 14 15 (2023)	Mich City 12 (2028); Schf 17 18 (2021); Schf 14 15 (2023)	Mich City 12 (2023); Schf 17 18 (2023); Schf 14 15 (2023)
Retain beyond 2023:	Mich City 12 Schf 14 15 17 18	Mich City 12 Schf 14 15	Mich City 12 Schf 14 15	Mich City 12 Schf 14 15	Mich City 12 (2035)	Mich City 12 (2028)	Mich City 12 (2028)	None
Env. Compliance	CCR ELG non-ZLD	CCR ELG non-ZLD	CCR ELG non-ZLD	CCR ELG Extended Retirement	CCR ELG Retirement	CCR ELG Retirement	CCR ELG Retirement	CCR ELG Retirement
Cost To Customer	$15,400	$12,911	$12,455	$12,336	$11,454	$11,343	$11,187	$10,974
Cost Certainty	$15,840	$13,158	$12,622	$12,502	$11,634	$11,504	$11,295	$11,132
Cost Risk	$17,406	$14,123	$13,225	$13,105	$12,252	$12,045	$11,750	$11,656
Reliability Risk	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Unacceptable	Unacceptable
Employees	0	125	125	125	276	276	276	426
Local Economy	+$118M	$0M	($23M)	($31M)	($65M)	($74M)	($74M)	($94M)

Ultimately, NIPSCSO selected retirement combination 6 as the preferred retirement path. This path would retire all of the Schahfer units by the end of 2023 and Michigan City by the end of 2028. Combination 6 was selected because it was the lowest cost option that held acceptable reliability risk for the customer and the system. The analysis shows that Combination 6 saves customers $1.5 billion relative to NIPSCO's 2016 IRP preferred plan. From a reliability risk standpoint it provides enough time to reasonably erect the necessary transmission upgrades that are critical for system and customer reliability. Additionally, the replacement resources can be reasonably secured and constructed by 2023. While the transition still encompasses roughly 60% of NIPSCO's physical generation, it maintains

Michigan City through 2028 and Sugar Creek, a combined cycle gas turbine ("CCGT"), even longer. Both are dispatchable units that can be used to support the transition while NIPSCO implements the replacement path. Another benefit of staggering the retirements is that it allows NIPSCO to continue to assess customer, technology and market changes over the next decade and adjust as appropriate rather than locking the entire transition in at once.

CONCLUSION

Q19. Please summarize NIPSCO's evaluation of the modeling results for the retirement options.

A19. NIPSCO evaluated its generation portfolio under four (4) separate fundamental market scenarios as well as with advanced risk treatment using stochastics. Retirement Combination 6 was selected as the preferred retirement portfolio combination. In this option, NIPSCO has balanced customer cost and cost risk with portfolio flexibility and the ability to successfully and reliably transform its supply resources to meet its customers needs. Although not the least expensive solution, in all modeling analyses, the preferred portfolio results in savings to customers, greater cost certainty and lower cost risk over alternatives that preserve more coal capacity for longer. This option balances other non-economic considerations such as portfolio flexibility, employees, and local property tax

impacts. The preferred portfolio, Retirement Combination 6, is consistent with the plan that will be presented in NIPSCO's 2018 IRP.

Q20. Does this conclude your prefiled direct testimony?

A20. Yes.

VERIFIED DIRECT TESTIMONY OF MICHAEL HOOPER

Q1. Please state your name, business address and title.

A1. My name is Michael Hooper and my business address is 801 East 86th Avenue, Merrillville, Indiana 46410. I am Senior Vice President of Regulatory, Legislative Affairs and Strategy for Northern Indiana Public Service Company LLC ("NIPSCO" or "Company").

Q2. Please describe your educational background.

A2. I received a Bachelor of Science in Mechanical Engineering with Honors in 1995 from the West Virginia Institute of Technology. I am a licensed Project Management Professional (PMP), a graduate of the Strategic Leadership program from The Ohio State University Fisher College of Business.

Q3. Please provide a summary of your professional experience.

A3. I began my career at American Electric Power ("AEP") in 1995 as a Project Engineer. I served at AEP for 16 years, where I held multiple positions, including Manager of Major Projects Commissioning and Acceptance, Manager of Project Scheduling, Estimating and Controls, Manager of Outage Planning and Scheduling, and Supervisor of Outage and Planning

management, each manager is responsible for monitoring their budget and ensuring the costs are spent within approved limits. The budgets and actual expenditure variances are reviewed throughout the year to ensure that funds are being spent appropriately and in accordance with approved levels. This process ensures that controls are in place to identify, monitor and control costs.

NIPSCO's Generation Fleet

Q9. Are you generally familiar with NIPSCO's generating facilities?

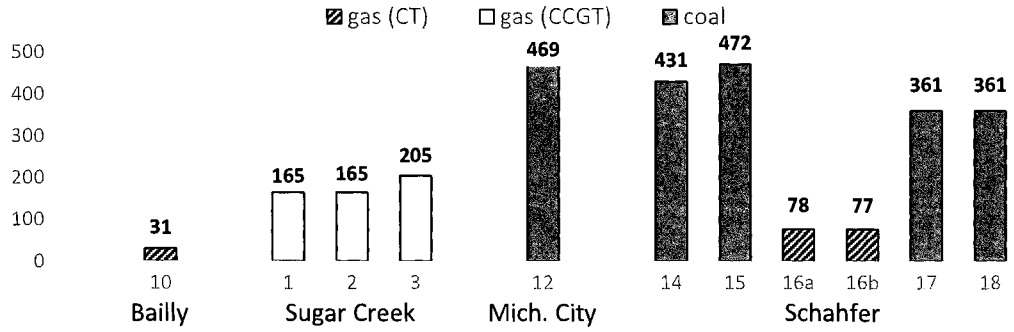
A9. Yes.

Q10. Please generally describe NIPSCO's generation fleet.

A10. The NIPSCO generating facilities have a total installed capacity of 2,825 megawatts ("MW") and consist of six (6) separate generation sites, including the R.M. Schahfer Generating Station ("Schahfer") (Units 14, 15, 16A, 16B, 17 and 18), Michigan City Generating Station ("Michigan City") (Unit 12), Bailly Generating Station ("Bailly") (Unit 10), Sugar Creek Generating Station ("Sugar Creek") (SC1, SC2, and SS1) and two (2) hydroelectric generating sites near Monticello, Indiana. Of the total capacity, 73.3% is from coal-fired units, 26.3% is from natural gas-fired units and 0.4% is from hydroelectric units. Figure 1 illustrates the installed

capacity and plant locations of NIPSCO's coal and gas-fired generation units.

Figure 1. Installed capacity of non-hydro generating units (MW)



Q11. What changes has NIPSCO made to its generation fleet since its last electric rate case in Cause No. 44688 ("44688 Electric Rate Case")?

A11. In its 44688 Electric Rate Case, NIPSCO advised the Commission of its plan to retire Bailly Units 7 and 8, with the Unit 10 combustion turbine remaining in operation. Bailly Units 7 and 8 were retired on May 31, 2018.

Q12. What investments has NIPSCO made to its generation fleet since the 44688 Electric Rate Case?

A12. NIPSCO has made significant investments to its generation fleet to comply with federal environmental regulations since the 44688 Electric Rate Case. By its December 13, 2017 Order in Cause No. 44872, the Commission

granted NIPSCO a Certificate of Public Convenience and Necessity ("CPCN") for its Environmental Compliance Project on December 13, 2017 in Cause No. 44872. The Environmental Compliance Plan consists of the following capital projects currently being recovered through the Federally Mandated Cost Adjustment ("FMCA") tracker filings in Cause No. 44340-FMCA-XX ("FMCA Tracker"):

Environmental Compliance Project[1]		
Project	**In-Service Date (* Actual)**	**Direct Capital**
Bailly Generating Station		
Ground Water Monitoring	10/19/2017*	$350,000
Michigan City Generating Station		
Ground Water Monitoring	10/19/2017*	$350,000
Remote Ash Conveying	11/19/2018	$60,671,378
Material Management Area	11/19/2018	$1,500,000
R. M. Schahfer Generating Station		
Ground Water Monitoring	10/19/2017*	$750,000
Remote Ash Conveying (U14 & U15)	12/16/2018	$85,815,727
Material Management Area	11/30/2018	$3,500,000
Process and Storm Water Pond	6/30/2022	$5,400,000
Landfill-Pond Closure	12/30/2018	$3,704,855

At the end of the Forward Test Year, with the exception of the Process and Storm Water Pond project at Schahfer, all of the Environmental Compliance Projects will have been placed in-service as shown in the table above.

By its October 10, 2013 Order in Cause No. 44311, the Commission granted NIPSCO a CPCN for its Mercury and Air Toxics Standards ("MATS") Compliance Plan. The MATS Compliance Plan includes the following capital projects currently being recovered through the Environmental Cost Recovery Mechanism ("ECR") tracker filing in Cause No. 42150-ECR-XX

[1] Pursuant to First Progress Report (Attachment CCR-PR-1) approved in the Commission's July 25, 2018 Order in Cause No. 44340-FMCA-9.

("ECR Tracker"):[2]

MATS Capital Projects			
Unit	Project	Actual In service Date	Direct Capital[3]
7	Fuel additives	12/8/2015	$483,240
8	Fuel additives	12/8/2015	$797,760
12	ACI	4/8/2016	$4,301,155
12	Fuel additives	12/20/2015	$734,850
14	ACI	7/31/2015	$4,192,019
14	Fuel additives	12/10/2015	$672,068
15	Fuel additives	12/10/2015	$621,567
7/8	Permeation Source	7/30/2015	$13,333
12	Permeation Source	7/31/2015	$13,333
14	Permeation Source	7/30/2015	$13,333
15	Permeation Source	7/30/2015	$13,333
18	Permeation Source	8/13/2015	$13,333

All of the MATS Compliance Projects have been placed in-service as shown in the table above.

By its January 4, 2002 Order in Cause No. 42150, the Commission granted NIPSCO a CPCN for its NOx Compliance Plan. The NOx Compliance Plan includes the following capital projects currently being recovered through the ECR Tracker:[4]

---

2 The Permeation Source projects were approved in Cause No. 42150-ECR-26.

3 Approved capital costs in Cause No. 42150-ECR-31.

4 The Unit 7 3rd SCR Catalyst Layer, Unit 12 SCR Catalyst 1st Layer, and Unit 14 SCR

NOx Compliance Plan			
Unit	**Project**	**In service Date (* Actual)**	**Direct Capital[5]**
7	SCR Catalyst 3rd Layer	4/30/2016*	$591,188
12	SCR Catalyst 1st Layer	8/23/2017*	$2,635,000
14	SCR Catalyst 1st Layer	9/12/2016*	$1,431,360
12	SCR Catalyst 2nd Layer	8/23/2017*	$2,300,000
12	SCR Catalyst 3rd Layer	5/27/2019	$2,300,000
14	SCR Catalyst 2nd Layer	11/19/2018	$2,700,000

At the end of the Forward Test Year, all of the NOx Compliance Projects will have been placed in-service as shown in the table above.

By its September 5, 2012 Phase III Order in Cause No. 44012, the Commission granted NIPSCO a CPCN for its Multi-Pollutant Compliance Plan ("MPCP Compliance Plan"). The MPCP Compliance Plan includes the following capital project currently being recovered through the ECR Tracker:[6]

Catalyst 1st Layer were approved in Cause No. 42150-ECR-24. The Unit 12 SCR Catalyst 2nd Layer was approved in Cause No. 42150-ECR-28. Unit 12 SCR Catalyst 3rd layer and Unit 14 SCR Catalyst 2nd Layer were approved in Cause No. 42150-ECR-29.

[5] Approved capital costs in Cause No. 42150-ECR-31.

[6] The Unit 7 3rd SCR Catalyst Layer, Unit 12 SCR Catalyst 1st Layer, and Unit 14 SCR Catalyst 1st Layer were approved in Cause No. 42150-ECR-24. The Unit 12 SCR Catalyst 2nd Layer was approved in Cause No. 42150-ECR-28. Unit 12 SCR Catalyst 3rd layer and Unit 14 SCR Catalyst 2nd Layer were approved in Cause No. 42150-ECR-29.

MPCP Compliance Plan			
Unit	**Project**	**In service Date (* Actual)**	**Direct Capital[7]**
12	FGD Facility Addition	12/15/2015*	$255,000,000

All of the MPCP Compliance Projects have been placed in-service as shown in the table above.

In addition to the environmental investments made to its generation fleet, NIPSCO made the following significant investments since the 44688 Electric Rate Case:

2016 In Service		
		Capital
Schahfer	Unit 18 Turbine, Valves, Generator and Auxiliaries	$7.2M
2017 In Service		
		Capital
Schahfer	Unit 15 Turbine, Valves, and Auxiliaries Overhaul	$21.7M
Schahfer	Unit 15 Finishing Super Heat Superheat Replacement	$9.2M
Schahfer	Unit 15 Economizer Header Replacement	$1.1M
Schahfer	Unit 17 Turbine Valve and Auxiliaries Overhaul	$2.8M
2018 In Service / Forecast		
		Capital
Bailly	Unit 8 Conversion to Synchronous Condenser	$16.6M
Schahfer	Unit 18 Turbine Overhaul	$3.8M
2019 Forecast		
		Capital
Schahfer	Unit 14 West TDBFP Overhaul	$2.79M
Schahfer	Unit 14 Reheat Lower Loop Replacement	$3.05M

[7] Approved capital costs in Cause No. 42150-ECR-31.

	2019 Forecast (Continued)	
Mich. City	Unit 12 Turbine, Valves and Auxiliaries	$15.3M
Mich. City	Unit 12 #3, #4, and #6 Heater Replacements	$1.98M
Mich. City	Unit 12 Convection Pass Front Walls and Intermediate Headers	$1.79M
Mich. City	Unit 12 Convection Pass Side Walls	$1.28M
Mich. City	Unit 12 Secondary Superheat Outlet Header Replacement	$4.42M
Mich. City	Unit 12 Economizer Hoppers Replacement	$4.88M

Q13. In your opinion, is all of NIPSCO's environmental compliance equipment used and useful in the generation of electricity to NIPSCO's retail electric customers?

A13. Yes. All of NIPSCO's generating units were operated during 2017. The environmental equipment added as discussed above (all of which have been preapproved by the Commission) has or will assist NIPSCO in meeting increasingly stringent air emissions requirements.

Q14. Please describe the improvements that have been made at the Sugar Creek Generating facility and the subsequent impact to the customer.

A14. In the fourth quarter of 2018, Sugar Creek will complete the Dry Low-NOx 2.6+ upgrade to the two gas turbines (SC1 and SC2), as well as the upgrade to the control system that includes optiflex and auto-tune controls. These upgrades will complete the upgrades to the entire plant control system.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 5

Industrials Request 5-008:
Please provide the following information. a. Please identify all of the days when Schahfer Unit 14 was in service between July 16, 2015 and July 16, 2020. b. Please identify all of the days when Schahfer Unit 15 was in service between July 16, 2015 and July 16, 2020. c. Please identify all of the days when Schahfer Unit 17 was in service between July 16, 2015 and July 16, 2020. d. Please identify all of the days when Schahfer Unit 18 was in service between July 16, 2015 and July 16, 2020.
Objections:
Response:
Please refer to Industrials Request 5-008 Attachment A for the in-service dates for units 14, 15, 17, and 18 between July 16, 2015 and July 16, 2020.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC
Industrial Group Request 5-008 Attachment A

Unit 14 In-Service Dates		
Hours on Line	Run Start	Run Stop
1,285.43	7/20/15 7:02	9/11/15 20:28
684.50	4/20/16 9:48	5/18/16 22:18
2.10	7/21/16 13:23	7/21/16 15:29
6.88	9/13/16 4:50	9/13/16 11:43
902.32	9/14/16 6:51	10/21/16 21:10
22.53	3/14/17 9:24	3/15/17 7:56
1.18	3/21/17 15:13	3/21/17 16:24
1,422.30	3/22/17 18:10	5/21/17 0:28
541.12	7/19/17 12:42	8/11/17 1:49
55.07	9/25/17 12:05	9/27/17 19:09
1.67	12/11/17 1:11	12/11/17 2:51
4.83	12/12/17 6:12	12/12/17 11:02
46.28	12/17/17 18:07	12/19/17 16:24
449.13	12/31/17 15:37	1/19/18 8:45
203.10	2/6/18 2:30	2/14/18 13:36
2.67	2/14/18 19:57	2/14/18 22:37
142.55	2/15/18 4:31	2/21/18 3:04
10.37	3/27/18 0:25	3/27/18 10:47
0.03	3/27/18 13:27	3/27/18 13:29
0.03	3/27/18 14:23	3/27/18 14:25
215.45	3/27/18 19:36	4/5/18 19:03
184.92	4/6/18 8:48	4/14/18 1:43
1.42	4/19/18 1:03	4/19/18 2:28
34.22	4/19/18 18:20	4/21/18 4:33
1,149.28	5/5/18 16:14	6/22/18 13:31
2.33	6/27/18 21:27	6/27/18 23:47
667.75	6/28/18 2:15	7/25/18 22:00
1,050.73	8/1/18 20:38	9/14/18 15:22
0.02	11/18/18 3:21	11/18/18 3:22
0.02	11/18/18 3:48	11/18/18 3:49
114.18	11/18/18 4:36	11/22/18 22:47
332.05	11/24/18 3:56	12/7/18 23:59
51.90	1/16/19 4:33	1/18/19 8:27
61.87	1/20/19 7:01	1/22/19 20:53
4.68	1/24/19 7:45	1/24/19 12:26
11.33	1/31/19 3:45	1/31/19 15:05
265.53	1/31/19 18:12	2/11/19 19:44
2.30	2/18/19 4:34	2/18/19 6:52
929.22	2/18/19 11:23	3/29/19 4:36
80.58	4/3/19 12:31	4/6/19 21:06
512.07	4/22/19 7:14	5/13/19 15:18
320.78	6/7/19 13:24	6/20/19 22:11
4.07	6/27/19 15:05	6/27/19 19:09
3.98	6/27/19 22:01	6/28/19 2:00
558.27	6/28/19 7:18	7/21/19 13:34
1,290.72	8/5/19 0:46	9/27/19 19:29
5.78	1/19/20 15:03	1/19/20 20:50
2.00	1/19/20 23:05	1/20/20 1:05
1.17	1/20/20 1:32	1/20/20 2:42
2.77	1/20/20 2:45	1/20/20 5:31
257.65	1/21/20 7:54	2/1/20 1:33
29.55	2/1/20 13:46	2/2/20 19:19
409.72	6/29/20 10:53	7/16/20 12:36
14,342.40		

Unit 15 In-Service Dates		
Hours on Line	Run Start	Run Stop
842.07	7/16/15 22:31	8/21/15 0:35
20.50	8/26/15 22:50	8/27/15 19:20
0.38	8/29/15 9:13	8/29/15 9:36
2,315.95	8/29/15 11:28	12/3/15 23:25
638.83	1/10/16 9:09	2/5/16 23:59
522.12	3/7/16 14:43	3/29/16 8:50
654.33	4/28/16 15:51	5/25/16 22:11
661.33	6/17/16 8:37	7/14/16 21:57
252.13	7/18/16 8:01	7/28/16 20:09
255.27	8/4/16 7:38	8/14/16 22:54
61.87	9/5/16 14:47	9/8/16 4:39
374.37	9/8/16 9:31	9/23/16 23:53
556.25	1/17/17 21:02	2/10/17 1:17
70.38	2/14/17 14:33	2/17/17 12:56
1.90	6/9/17 16:21	6/9/17 18:15
2.52	6/9/17 20:56	6/9/17 23:27
10.87	6/13/17 21:24	6/14/17 8:16
1.70	6/14/17 20:43	6/14/17 22:25
71.42	6/15/17 20:30	6/18/17 19:55
430.30	7/5/17 14:27	7/23/17 12:45
5.07	7/26/17 14:16	7/26/17 19:20
911.57	8/14/17 20:13	9/21/17 19:47
83.30	9/23/17 18:34	9/27/17 5:52
54.30	11/2/17 1:31	11/4/17 7:49
703.83	11/7/17 14:52	12/6/17 22:42
545.42	12/30/17 18:19	1/22/18 11:44
1.30	3/2/18 20:55	3/2/18 22:13
129.92	3/2/18 23:30	3/8/18 9:25
1.12	3/8/18 13:35	3/8/18 14:42
471.05	3/10/18 8:55	3/29/18 23:58
1,143.72	4/16/18 0:36	6/2/18 16:19
1.97	6/12/18 9:01	6/12/18 10:59
215.93	6/12/18 19:53	6/21/18 19:49
102.63	6/29/18 12:20	7/3/18 18:58
33.50	7/8/18 23:14	7/10/18 8:44
37.17	7/15/18 8:42	7/16/18 21:52
1.28	7/18/18 8:48	7/18/18 10:05
1,209.43	7/18/18 18:05	9/7/18 3:31
817.95	9/12/18 8:55	10/16/18 10:52
4.35	10/16/18 23:11	10/17/18 3:32
498.38	10/17/18 12:49	11/7/18 7:12
1,060.78	11/7/18 17:59	12/21/18 22:46
85.03	12/22/18 2:48	12/25/18 15:50
551.55	1/4/19 8:23	1/27/19 7:56
313.28	1/27/19 12:03	2/9/19 13:20
368.03	3/13/19 14:55	3/28/19 22:57
481.72	4/2/19 2:12	4/22/19 3:55
4.73	4/29/19 23:40	4/30/19 4:24
1,472.03	5/7/19 20:07	7/8/19 4:09
359.97	7/16/19 5:43	7/31/19 5:41
0.92	8/12/19 8:24	8/12/19 9:19
42.85	8/12/19 9:49	8/14/19 4:40
4.83	8/18/19 22:55	8/19/19 3:45
1.62	8/19/19 5:20	8/19/19 6:57
1.35	8/19/19 9:17	8/19/19 10:38
188.02	8/19/19 11:33	8/27/19 7:34
25.70	8/27/19 10:02	8/28/19 11:44
108.93	9/17/19 12:32	9/22/19 1:28
171.65	9/27/19 11:30	10/4/19 15:09
42.57	11/22/19 8:11	11/24/19 2:45
1,183.78	11/25/19 9:49	1/13/20 17:36
54.20	2/6/20 4:45	2/8/20 10:57
79.38	2/8/20 12:35	2/11/20 19:58
1,206.67	2/13/20 2:50	4/3/20 9:30
669.03	4/3/20 12:13	5/1/20 9:15
672.82	6/18/20 11:47	7/16/20 12:36
23,869.12		

Unit 17 In-Service Dates		
Hours on Line	Run Start	Run Stop
2,334.25	6/4/16 17:15	9/9/16 23:30
9.18	10/17/16 13:19	10/17/16 22:30
6.07	10/17/16 23:52	10/18/16 5:56
1,401.73	10/18/16 18:31	12/16/16 4:15
8.05	12/31/16 2:36	12/31/16 10:39
2,192.97	1/1/17 14:13	4/2/17 23:11
409.40	4/15/17 2:50	5/2/17 4:14
347.10	6/10/17 15:07	6/25/17 2:13
1,279.43	6/25/17 4:02	8/17/17 11:28
301.50	9/10/17 7:06	9/22/17 20:36
84.32	9/23/17 18:46	9/27/17 7:05
59.78	12/11/17 23:18	12/14/17 11:05
11.88	12/20/17 8:21	12/20/17 20:14
303.52	12/28/17 12:27	1/10/18 3:58
680.52	1/10/18 15:49	2/8/18 0:20
15.55	2/28/18 19:14	3/1/18 10:47
8.25	3/16/18 2:41	3/16/18 10:56
390.12	3/16/18 15:55	4/1/18 22:02
845.93	4/2/18 19:47	5/8/18 1:43
1,904.27	5/23/18 13:31	8/10/18 21:47
1,410.67	8/15/18 15:50	10/13/18 10:30
265.53	10/13/18 14:50	10/24/18 16:22
1,545.22	11/3/18 8:53	1/6/19 18:06
0.02	1/6/19 20:02	1/6/19 20:03
0.02	1/6/19 21:02	1/6/19 21:03
861.52	1/6/19 22:12	2/11/19 19:43
128.38	2/20/19 1:25	2/25/19 9:48
226.70	3/2/19 15:53	3/12/19 2:35
2,035.82	3/12/19 3:55	6/4/19 23:44
1,060.15	6/25/19 19:51	8/9/19 0:00
89.90	8/19/19 5:35	8/22/19 23:29
1,916.10	9/11/19 3:26	11/29/19 23:32
1,030.63	1/14/20 20:37	2/26/20 19:15
62.53	2/27/20 1:35	2/29/20 16:07
1,114.52	5/8/20 12:36	6/23/20 23:07
443.58	6/28/20 21:39	7/17/20 9:14
24,785.10		

Unit 18 In-Service Dates		
Hours on Line	Run Start	Run Stop
232.20	7/11/15 17:23	7/21/15 9:35
495.05	7/24/15 9:00	8/14/15 0:03
7.35	8/18/15 8:08	8/18/15 15:29
908.62	8/19/15 1:55	9/25/15 22:32
490.55	10/14/15 12:01	11/3/15 22:34
177.80	11/8/15 14:04	11/15/15 23:52
207.58	11/16/15 8:40	11/25/15 0:15
2,119.88	11/30/15 15:05	2/26/16 22:58
41.33	6/13/16 3:56	6/14/16 21:16
146.10	6/25/16 19:54	7/1/16 22:00
250.70	7/6/16 12:46	7/16/16 23:28
5.55	7/17/16 1:26	7/17/16 6:59
3.03	7/17/16 15:27	7/17/16 18:29
1.40	7/17/16 22:07	7/17/16 23:31
295.98	7/19/16 9:14	7/31/16 17:13
5.40	8/5/16 10:22	8/5/16 15:46
258.15	8/13/16 5:54	8/24/16 0:03
47.10	8/24/16 1:28	8/26/16 0:34
3,279.22	9/5/16 9:10	1/20/17 0:23
1,507.22	1/30/17 16:20	4/3/17 11:33
263.20	4/12/17 3:40	4/23/17 2:52
997.78	4/23/17 9:57	6/3/17 23:44
340.65	6/9/17 19:36	6/24/17 0:15
1,767.58	6/27/17 8:26	9/9/17 0:01
2,727.10	9/17/17 18:19	1/9/18 9:25
0.08	1/24/18 8:59	1/24/18 9:04
26.63	1/24/18 11:34	1/25/18 14:12
733.90	2/1/18 9:32	3/3/18 23:26
0.63	5/21/18 9:54	5/21/18 10:32
118.38	5/21/18 15:37	5/26/18 14:00
152.58	5/26/18 15:21	6/1/18 23:56
1,015.93	6/7/18 15:18	7/19/18 23:14
508.45	7/23/18 16:09	8/13/18 20:36
1,079.28	8/15/18 7:03	9/29/18 6:20
152.73	9/29/18 7:28	10/5/18 16:12
724.87	10/6/18 2:40	11/5/18 7:32
390.68	11/8/18 19:00	11/25/18 1:41
1,875.97	11/25/18 15:45	2/11/19 19:43
1,207.22	2/14/19 16:52	4/6/19 0:05
1.55	4/16/19 6:13	4/16/19 7:46
0.63	4/16/19 9:27	4/16/19 10:05
1,453.63	4/16/19 10:55	6/16/19 0:33
17.65	6/27/19 6:33	6/28/19 0:12
68.73	7/2/19 20:27	7/5/19 17:11
1,676.35	7/13/19 3:37	9/20/19 23:58
1,236.32	9/30/19 6:41	11/20/19 19:00
263.25	11/27/19 14:14	12/8/19 13:29
767.17	12/12/19 12:45	1/13/20 11:55
0.37	3/3/20 7:23	3/3/20 7:45
53.10	3/3/20 11:24	3/5/20 16:30
1,538.92	3/5/20 18:24	5/8/20 21:19
280.88	6/3/20 5:12	6/14/20 22:05
753.83	6/15/20 11:05	7/16/20 20:55
32,676.27		

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

Industrial Group Request 1-006:

Regarding the statement at page 2 of the Root Cause Analysis that "At approximately 07:56 on July 16, Foxboro high temperature alarm activated in the Unit 14 control room," please provide the following information and documents:

a. Please identify the make and model of the referenced Foxboro high temperature alarm;
b. Please describe how the alarm is used to alert personnel to the high temperature event, i.e., whether there is a light signal, an auditory signal, both, or some other signal, and whether human action is required to clear the signal;
c. Please identify all NIPSCO personnel who were aware at any point between 7:56 a.m. and 1:25 p.m. on July 16, 2020 that the high temperature alarm had been activated;
d. Please describe in detail all actions taken by NIPSCO personnel in response to the activation of the high temperature alarm;
e. Please explain in detail whether and to what extent the actions taken by NIPSCO personnel in response to the activation of the high temperature alarm were or were not in accordance with NIPSCO training, instructions and operating practices and procedures;
f. Please identify the steps that are prescribed or required by NIPSCO training, instructions and operating practices and procedures in the event that a high temperature alarm is activated in connection with a transformer; and
g. Please provide all documents and communications addressing the manner in which NIPSCO personnel responded or failed to act in response to the activation of the high temperature alarm.

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 seeks information protected from disclosure by the attorney/client privilege, the work product privilege, or other applicable privilege.

With respect to sub-part g., NIPSCO further objects to this Request on the separate and independent grounds and to the extent that such Request is overly broad an unduly burdensome in that it seeks "all documents and communications" and is inconsistent

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

with the informal and expedited nature of discovery in this and other proceedings before the Indiana Utility Regulatory Commission ("IURC"). The expedited nature of IURC proceedings does not afford time for extensive e-discovery searches, and NIPSCO objects to doing so.

Response:

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

a. The make/model of the Foxboro system is a Foxboro System Manager/ 2.12.24.0.

b. When the alarm is activated, an alarm appears on the "alarm screen" monitored by the Control Room Operator ("CRO"). It appears on the alarm screen as an unacknowledged alarm. The alarm will remain on the alarm screen as an unacknowledged alarm until one of two things happen: (1) it is affirmatively acknowledged by the CRO, which is done by manually clicking on the alarm to acknowledge it, or (2) the condition that activated the alarm resolves itself, thereby removing the alarm.

c. To the best of NIPSCO's knowledge, the only person who was aware of the high temperature alarm between 7:56 a.m. and 1:25 p.m. on July 16, 2020 was the Unit 14 CRO.

d. The Unit 14 CRO indicated that he noticed the high temperature alarm and that, as a result, he had it pulled up to actively monitor the temperature for the Unit 14 main transformer.

e. CROs, such as the Unit 14 CRO, are actively monitoring the operations of all aspects of a particular generating unit. The action that will be taken with respect to any particular alarm is dependent on numerous factors, including, but not limited to, the type of alarm, the criticality of an alarm, prioritization of other alarms and unit-specific conditions. With respect to the high temperature alarm for the Unit 14 main transformer, the CRO on shift noticed the high temperate alarm and kept it pulled up to monitor the temperature for the Unit 14 main transformer, as explained in sub-part d. above.

Ordinarily, the Unit 14 CRO should have dispatched a Station Operator to investigate the transformer and verify temperature locally, as well as confirm the cooling systems were operating correctly. At a minimum, when the Unit 14 CRO became aware of the situation, if the above actions could not be taken, the Unit 14 CRO should have notified his supervisor of the situation so further

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

	action/response/reassignment of personnel could be evaluated. However, the Unit 14 CRO did not take either of these actions.
f.	According to NIPSCO procedures, the Unit 14 CRO should have dispatched a Station Operator to investigate locally. The Station Operator would have checked the transformer temperature locally and verified the cooling systems were working. If the abnormal conditions could not be resolved, a discussion between the Station Operator, CRO, and supervisor should have taken place. At that point, a determination would have been made whether to remove the unit from service in accordance with the unit operating procedures.
g.	Please see NIPSCO's objections.

Cause No. 38706-FAC-130
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 2

Industrial Group Request 2-001:

Regarding the direct testimony of Andrew Campbell associated with the viability of Schahfer Units 14 1nd 15 please provide the following information:

a) Provide all reports, analyses, correspondence and documentation regarding the cause of the outage and damage to the units.

b) Provide all reports, analyses, correspondence and documentation showing the damage at each unit and the estimated cost to repair each unit.

c) Provide all reports, analyses, correspondence and documentation associated with the remedy required to fix the systems that allowed the damage to occur.

d) Provide the evaluation, repair costs, and economics referred to in Question and answer no. 13 of Mr. Campbell's direct testimony.

e) Provide all model runs associated with evaluation and analyses.

f) Provide the forecast of fuel supply and the expected end of operation of unit 15 by end of summer/early fall of 2021.

g) Provide all reports, analyses, correspondence and documentation associated with the decision to retire the units by the end of 2021.

h) Provide the impact on NIPSCO's generation capacity and required replacement capacity to serve current and forecast load (include all plans in that regard).

Objections:

NIPSCO objects to subpart (a), (b), (c), (d), (e), (g), and (h) of 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 subparts (a), (b), (c) and (d) on the separate and independent grounds that they seek information that was prepared for counsel and is privileged

Cause No. 38706-FAC-130
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 2

work product. Analysis done at the instruction of and for the benefit of NIPSCO's outside counsel was done in anticipation of potential litigation and would reveal the thoughts and mental impressions of NIPSCO's attorneys.

NIPSCO objects to subparts (c), (e) and (f) of this Request on the separate and independent grounds and to the extent that this Request is vague and ambiguous in that it is written in a way that is unclear as to what is being requested.

NIPSCO objects to subpart (g) and (h) of this Request on the 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 note that some of the information provided could apply to multiple subparts of this Request. NIPSCO has attempted to identify the attachment where it seems most appropriate.

(a) See Industrials Request 2-001 Confidential Attachment A and Industrials Request 2-001 Confidential Attachment B.

(b), (c), (d) See Industrials Request 2-001 Confidential Attachment C showing estimates and actual costs that support the restoration efforts of common systems (which support primary power distribution to both Unit 14 and Unit 15), as well as key systems on Unit 15 and Unit 14 that were affected by the fire. Some of the key restoration activities associated with the common systems include replacement of the damaged 13.8kV switchgear and associated overhead power lines that feed the 13.8kV switchgear, providing temporary power to critical systems, and the environmental response to the Unit 14 main power transformer fire. On Unit 15 and Unit 14 some of the key restoration activities included repairs to reserve and unit auxiliary transformers (excluding the Unit 14 main power transformer) affected by the fire to allow permanent power to be restored. Activities that are not included in the Unit 14 estimate relate to inspection, testing, and potential repair efforts on the Unit 14 generator.

(e) NIPSCO used its Integrated Resource Plan ("IRP") modeling framework to evaluate five alternative portfolio strategies associated with future operations at Units14 and 15. These alternatives included:

Cause No. 38706-FAC-130
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 2

- Portfolio 1 – Repair both Unit 14 and 15 and operate through May 31, 2023
- Portfolio 2 – Shut down both Units 14 and 15 as of June 30, 2020
- Portfolio 2a – Shut down Unit14 as of June 30, 2020 and operate Unit 15 through mid-year 2021
- Portfolio 2b – Repair both Units 14 and15 and operate both through mid-year 2021
- Portfolio 2c – Shut down Unit 14 immediately and operate Unit 15 through May 31, 2023

NIPSCO and Charles River Associates ("CRA") performed modeling analysis in the Aurora portfolio dispatch tool and accompanying financial model to assess the net present value of revenue requirements (NPVRR) for these five portfolio strategies. This analysis included assumptions for the following key inputs, which are documented in Industrials Request 2-001 Confidential Attachment D:

- Unit data on NIPSCO's existing fleet, consistent with the latest IRP model assumptions at the time of the analysis, and expectations for new renewable projects;
- NIPSCO's load forecast at the time of the analysis;
- Commodity prices based on CRA's commodity price outlook at the time of the analysis and NIPSCO's specific contract information;
- Operations and maintenance and capital projections, which varied across the five portfolios based on the potential activities at the Schahfer site.

The expected monthly NIPSCO portfolio energy outlook for each of the five portfolios from the analysis is summarized in Industrials Request 2-001 Confidential Attachment E. This file shows monthly projections of NIPSCO's demand, monthly generation projections for categories of resources in the portfolio, and the net market purchases or sales position.

The NPVRR results from the analysis are summarized in Industrials Request 2-001 Confidential Attachment F. This file shows that Portfolio 2a (shutting down Unit 14 immediately and operating Unit 15 through mid-year 2021) was found to be lowest cost for customers. See Industrials Request 2-001 Confidential Attachment E and Industrials Request 2-001 Confidential Attachment F.

NIPSCO also performed an indicative stochastic power price analysis to evaluate the exposure of the different portfolio options to uncertainty in Midcontinent Independent System Operator, Inc. ("MISO") market prices prior to accounting for any hedging

Cause No. 38706-FAC-130
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 2

activity that NIPSCO will undertake to mitigate exposure. This stochastic analysis varied MISO market power prices through 2025 beyond the single "base case" assessment noted above. The stochastic analysis found that portfolios that brought Unit 15 back in service for a period of time reduced the range of uncertainty and mitigated against both high price risk (versus the portfolio that retired both units immediately) and low price risk (versus the portfolio that brought both units back online). The results of the short-term stochastic analysis are summarized in Industrials Request 2-001 Confidential Attachment G, noting that these summaries provided unhedged variable portfolio cost perspectives and do not include full revenue requirement analysis with associated fixed and capital cost requirements for the various portfolio options. See Industrials Request 2-001 Confidential Attachment H and Industrials Request 2-001 Confidential Attachment G. This analysis was consistent with the 2018 IRP analysis that showed that retirement of the units at the earliest possible date resulted in the most cost effective portfolio based on NPV.

(f) See Industrials Request 2-001 Attachment I. As NIPSCO stated in the February 17, 2021 press release (Industrials Request 2-001 Attachment J, Unit 15 will operate until the remaining coal inventory is utilized by the end of this year, while Unit 14 will remain offline. See Industrials Request 2-001 Attachment I for the forecast of fuel supply and the expected end of operation of Unit 15 by end of summer/early fall of 2021.

(g) See Industrials Request 2-001 Confidential Attachment K, Industrials Request 2-001 Confidential Attachment L, Industrials Request 2-001 Confidential Attachment M, Industrials Request 2-001 Confidential Attachment N showing analyses presented to management regarding the decision to retire the units by the end of 2021. See also response to subpart (e).

(h) See objection. Recovery of any capacity costs would occur in the Resource Adequacy Tracker (Cause No. 44155-RA-XX); however NIPSCO does not intend to seek recovery of any capacity costs associated with the retirement of Unit 14 and Unit 15.

ATTACHMENT MPG-4

PAGES 5-18

CONFIDENTIAL

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

Industrial Group Request 1-004:
Did NIPSCO take any employment action or impose any employee discipline arising from the July 16, 2020 fire incident? If so, please provide all documents and communications relating to such employment action or employee discipline.
Objections:
Response:
No.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 2

Industrials Request 2-005:
With respect to the CRO referenced in Mr. Sangster's Direct Testimony at page 10, lines 3-8, please identify the specific hours that CRO worked between July 15, 2020 and July 17, 2020.
Objections:
Response:
The Control Room Operator referenced worked (all times CST): July 15, 2021 6 pm – July 16, 2021 6 am July 16, 2021 6 am – 6 pm July 17, 2021 6 am – 6 pm

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 4

Industrials Request 4-001:
Please refer to NIPSCO's response to IG DR 2-005. a. Prior to the breakout of the fire, what hours was the CRO at U14 scheduled to work between July 15, 2020 and July 17, 2020? b. Why did the CRO at U14 work a 24-hour shift between July 15, 2020 and July 16, 2020? Please provide a detailed answer, including reasons for the length of the shift prior to the breakout of the fire.
Objections:
Response:
a. July 15 through 17, 2020 were regularly scheduled days off for the CRO. He was working overtime from July 15 1800 hours to July 16 1800 hours and then July 17 0600 hours to 1800 hours. b. The CRO was not assigned to monitor any generating unit during his shift from July 15 1800 hours to July 16 0600 hours but was completing mandatory, computer based-safety training. He was assigned to work as the CRO for Unit 14 from 0600 hours – 1800 hours on July 16. Unit vacancies are filled in accordance with the collective bargaining agreement between NIPSCO and United Steel Workers (USW) 12775 utilizing the call-out procedures defined within. See also NIPSCO's response to Industrials Request 4-002.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 5

Industrials Request 5-002:
With respect to the CRO who was in charge of U14 on July 16, 2020, please provide the following information. a. Is the individual still employed at NIPSCO in any capacity? If not, please state the last date of employment. b. Is the individual still a full-time CRO? If not, please identify any changes in title or responsibilities of the individual.
Objections:
Response:
a. No. The Unit 14 CRO voluntarily retired on September 1, 2020. b. N/A.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

Industrial Group Request 1-008:

With reference to the April 2020 Doble DGA Result Excerpts at page 12 of the Root Cause Analysis, please provide the following information and documents:

a. Please confirm that the document presents the results of a Dissolved Gas Analysis that was conducted on a sample taken from the Unit 14 main transformer on April 1, 2020, and if that is not the case please identify the analysis reflected in the document;
b. Please explain whether and why samples from the Unit 14 main transformer were taken for analysis on April 1, 2020, February 27, 2020, February 13, 2020, January 2, 2020, and December 10, 2019, and whether any further samples from that transformer were analyzed between April 1, 2020 and July 16, 2020;
c. Please identify who conducted the analysis, including whether the report was prepared by NIPSCO personnel or an outside provider;
d. Please state when NIPSCO received the report of the Dissolved Gas Analysis, identify the NIPSCO personnel who received or reviewed that report, and describe what steps or actions, if any, NIPSCO took in response to the report;
e. Please explain NIPSCO's understanding of the terms "Level warn," "Level alarm" and "Level alert" as used in the Dissolved Gas Analysis Summary;
f. Please explain in detail whether and to what extent the actions taken by NIPSCO personnel in response to the Dissolved Gas Analysis report were or were not in accordance with NIPSCO training, instructions and operating practices and procedures; and
g. Please provide all documents and communications that refer or relate to the Dissolved Gas Analysis report.

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 the Request on the separate and independent grounds and to the extent that such Request is overly broad an unduly burdensome in that it seeks "all documents and communications" and is inconsistent with the informal and expedited nature of discovery in this and other proceedings before the Indiana Utility Regulatory Commission ("IURC"). The expedited nature of IURC proceedings does not afford time for extensive e-discovery searches, and NIPSCO objects to doing so.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

Response:

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

a. Confirmed. The sample was taken on April 1, 2020 and was received by NIPSCO on April 13, 2020.

b. Samples from the Unit 14 main transformer were taken for analysis on April 1, 2020; February 27, 2020; February 13, 2020; January 2, 2020; and December 10, 2019. Samples from transformers are generally taken annually, but the Unit 14 main transformer was being sampled more often because it was on the "transformer watch list," under NIPSCO's "DGA Result Handling – Best Practice" procedure. A copy of this procedure is attached hereto as Industrials Request 1-008 Attachment A. This transformer had been a "level 4" since 1989 and was on NIPSCO's "transformer watch list" since it was implemented a few years ago.

One additional sample was taken between April 1, 2020 and July 16, 2020. That sample was taken on June 20, 2020 and was received by NIPSCO on August 3, 2020, which was after the fire incident on July 16, 2020. A copy of that report is attached hereto as Industrials Request 1-008 Confidential Attachment B.

c. The sample on April 1, 2020 was collected by NIPSCO Substation Operations personnel and sent to Doble for analysis. The results of Doble's analysis were input into Delta-X Research's program "TOA4," which interprets the DGA data and provides the actual report. Doble and Delta-X Research are outside providers.

d. The sample that was taken on April 1, 2020 was received by NIPSCO on April 13, 2020. Under the terms of the "DGA Result Handling – Best Practice" procedure (Industrials Request 1-008 Attachment A), Doble would have provided the report to the Power Equipment Principal Engineer, Local Supervisor, Local Power Equipment Engineer, Region Superintendent, and Power Equipment Superintendent. The report did not recommend any action to be taken. However, because the DGA result was scored as a "4," the transformer remained on the "transformer watch list."

e. NIPSCO understands the terms "Level warn," "Level alarm" and "Level alert" as used in the Dissolved Gas Analysis Summary to be general warning

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 1

indicators that may indicate an elevated level of some kind. However, NIPSCO relies upon IEEE guidelines (IEEE C57.104-2019 - IEEE Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers) when evaluating levels of gases and determining what actions may be appropriate.

f. NIPSCO's actions taken in response to the DGA report were in accordance with NIPSCO's procedures. See NIPSCO's response to sub-part d. above.

g. NIPSCO has provided the Root Cause Analysis included as Attachment B to NIPSCO's response to Industrial Group Request 2-001 in FAC-130, which discusses the DGA report. NIPSCO objects to performing a search for "all documents and communications that refer or relate to the Dissolved Gas Analysis report."

ATTACHMENT MPG-7

CONFIDENTIAL

From: JeffACampbell@nisource.com
To: jmitchen@nisource.com
Subject: Operator rounds
Date: Thu, 23 Jul 2020 07:21:08 -0500
Inline-Images: pic36169.gif; ecblank.gif

All,
You will see in the emails below that I have stressed the importance of your operators completing rounds. We have now had a catastrophe at the plant due to the unit 14 main power transformer failure. The RCA team is now requesting the rounds for the outside operators for July 15th and 16th days and nights. These rounds contain the info that is needed to see what if anything we observed while competing the rounds. As of this time there are no round sheets or electronic rounds shown to be completed on these days. So we have no evidence that we completed any rounds. Therefore by not completing the paperwork or electronic rounds it shows complete disregard for our primary job and the emails I sent went unheeded. All of us will have to answer for our failure in ensuring these rounds were completed.

CCR rounds not being completed.

Jeffery Campbell to: Andrew Caputo, Joseph Kasper, Robert Poncsak, Eddie Decker, William Falls 07/15/2020 07:44 AM

All,
Looking through my paper work after being gone for a week I received 9 CCR rounds sheets for 22 shifts. I have made it clear that we are to complete the rounds or if we can't you are to let me know why. Rounds are to be completed every shift for the CCR system. I will no longer address this as a group and will start addressing the issue of rounds not being completed individually from here on out. Please ensure compliance.

Operator rounds

Jeffery Campbell to: Andrew Caputo, Joseph Kasper, Robert Poncsak, Eddie Decker, William Falls 06/15/2020 08:56 AM

All,
While going through my paperwork today I noticed that there are no operator rounds sheets. Looking online there have not been any done in weeks and the weekly updates I get on operator alerts have information from 17/18 only because there is no data from our side. I'd ask why we stopped completing rounds but I already know that answer.

The primary job of an operator is to complete rounds of running equipment. I am to see either the electronic round or paper rounds done every shift. You are to look over the rounds and verify that they are completed. There is little to nothing else going on right now and the last thing I was is to find something during a start up that bites us for no reason other then we just decided that rounds were no longer important.

I will be checking the status of the rounds from here on out to verify completion. I do not want to address this again but I will if it is warranted.

Please ensure compliance from your operators. This is not optional.

Jeff A Campbell
Operations Superintendent
JeffACampbell@Nisource.com
Office 219-956-5360
Cell 219-204-2612

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 5

Industrials Request 5-005:
Please refer to NIPSCO's response to IG DR 2-1 Confidential Attachment B, titled "Root Cause Analysis Unit 14 Main Transformer Incident." Has NIPSCO ever provided this document to the IURC?
Objections:
NIPSCO objects to this Request on the grounds and to the extent that this Request is vague and ambiguous as the term "IG DR 2-1 Confidential Attachment B" is unclear. In this proceeding (Cause No. 38706-FAC-130-S1), NIPSCO responded to the Industrial Group's second set of discovery requests, and that response did not include any attachments. For purposes of this response, NIPSCO has assumed the Industrial Group is referring to discovery from Cause No. 38706-FAC-130 and a document attached to the Industrial Group's second set of discovery in that proceeding. NIPSCO further objects to this Request on the grounds and to the extent that this Request is vague and ambiguous as the phrase "provided to the IURC" is not defined.
Response:
Subject to and without waiver of the foregoing general and specific objections, NIPSCO is providing the following response: To the best of NIPSCO's knowledge, the document titled "Root Cause Analysis Unit 14 Main Transformer Incident" attached as "Confidential Attachment B" to NIPSCO's response to the Industrial Group's second set of discovery in Cause No. 38706-FAC-130 has not been submitted to the Commission. NIPSCO, nor any other party, offered this document into the record in Cause No. 38706-FAC-130. Consistent with Commission directives in prior FAC proceedings, NIPSCO files a root cause analysis for each generation outage with the Commission in each FAC proceeding. In Cause No. 38706-FAC-129 (where outages in July, August, and September of 2020 were addressed), NIPSCO filed "Confidential Attachment 4-B" to the verified direct testimony of David Saffran. This document (at pp. 4-9) addressed the forced outage and related cause for Units 14 and 15 on July 16, 2020.

ATTACHMENT MPG-10

CONFIDENTIAL

Northern Indiana Public Service Company

Schahfer Unit 14 and 15 Historical Generation

5-Year Averages (2015-2019)

	Unit 14 Generation (MWh)			Unit 15 Generation (MWh)			Market Price
	On-Peak	Off-Peak	All Hours	On-Peak	Off-Peak	Total	All Hours
January	21,894	19,532	41,426	93,071	83,533	176,604	$30.90
February	35,633	35,075	70,708	33,702	27,193	60,895	$28.29
March	38,562	39,772	78,334	70,688	67,741	138,429	$26.95
April	61,896	58,306	120,202	36,529	32,777	69,306	$28.45
May	68,394	67,292	135,686	88,982	79,317	168,300	$32.22
June	39,534	43,173	82,707	74,086	68,451	142,537	$29.20
July	60,831	58,838	119,669	87,822	77,109	164,931	$30.31
August	80,944	81,166	162,110	79,067	73,301	152,369	$29.55
September	59,880	52,509	112,388	95,400	87,816	183,216	$32.27
October	20,996	18,263	39,260	63,367	51,967	115,334	$30.57
November	11,299	9,329	20,627	73,144	69,587	142,731	$28.43
December	8,555	8,361	16,916	59,339	54,961	114,300	$27.44
Min	8,555	8,361	16,916	33,702	27,193	60,895	$26.95
Max	80,944	81,166	162,110	95,400	87,816	183,216	$32.27
Average	42,368	40,968	83,336	71,266	64,480	135,746	$29.55

	Unit 14 Capacity Factor			Unit 15 Capacity Factor			Market Price
	On-Peak	Off-Peak	All Hours	On-Peak	Off-Peak	Total	All Hours
January	11.0%	9.6%	10.3%	46.9%	38.7%	42.7%	$30.90
February	20.6%	18.5%	19.5%	18.8%	13.9%	16.2%	$28.29
March	20.7%	18.4%	19.5%	36.1%	31.1%	33.4%	$26.95
April	34.5%	27.8%	30.9%	19.1%	15.7%	17.3%	$28.45
May	34.7%	32.8%	33.8%	44.6%	37.0%	40.7%	$32.22
June	22.0%	20.6%	21.3%	39.3%	32.4%	35.6%	$29.20
July	31.6%	28.1%	29.8%	45.1%	35.3%	39.8%	$30.31
August	42.4%	38.5%	40.4%	39.7%	34.2%	36.8%	$29.55
September	32.6%	25.5%	28.9%	50.5%	41.4%	45.7%	$32.27
October	11.6%	8.3%	9.8%	31.6%	24.4%	27.9%	$30.57
November	5.9%	4.7%	5.3%	38.1%	33.4%	35.6%	$28.43
December	4.7%	3.8%	4.2%	30.9%	24.7%	27.6%	$27.44
Min	4.7%	3.8%	4.2%	18.8%	13.9%	16.2%	$26.95
Max	42.4%	38.5%	40.4%	50.5%	41.4%	45.7%	$32.27
Average	22.7%	19.7%	21.1%	36.7%	30.2%	33.3%	$29.55

Source: Downloaded from S&P MI 10/26/2021.

Northern Indiana Public Service Company

Schahfer Units 14 and 15 Historical Generation

	Unit 15 Generation (MWh)			Unit 15 Capacity Factor		
	On-Peak	Off-Peak	Total	On-Peak	Off-Peak	All-Hours
1/1/2021	46,781	51,763	98,544	25.0%	22.8%	23.8%
2/1/2021	86,737	83,594	170,331	48.7%	42.7%	45.6%
3/1/2021	79,449	76,017	155,466	38.8%	36.3%	37.6%
4/1/2021	90,698	85,540	176,238	46.3%	41.8%	44.0%
5/1/2021	95,866	91,953	187,819	51.3%	40.5%	45.4%
6/1/2021	44,158	38,197	82,355	22.5%	18.7%	20.6%
Min	44,158	38,197	82,355	22.5%	18.7%	20.6%
Max	95,866	91,953	187,819	51.3%	42.7%	45.6%
Average	73,948	71,177	145,126	38.8%	33.8%	36.1%
Median	83,093	79,806	162,899	42.6%	38.4%	40.8%

Source: Downloaded from S&P MI 10/26/2021.

Northern Indiana Public Service Company

Schahfer Units 14 and 15 Historical Generation

	Unit 14 Generation (MWh)			Unit 15 Generation (MWh)			NIPS.NIPS Day-Ahead Market Prices		
	On-Peak	Off-Peak	All Hours	On-Peak	Off-Peak	Total	On-Peak	Off-Peak	All-Hours
1/1/2015	590	0	590	111,339	100,178	211,517	$33.71	$25.69	$29.32
2/1/2015	30,769	24,446	55,215	61,765	58,081	119,846	$44.87	$31.09	$37.65
3/1/2015	0	4,580	4,580	115,942	105,718	221,660	$33.15	$26.45	$29.62
4/1/2015	0	0	0	0	0	0	$29.86	$23.43	$26.57
5/1/2015	0	0	0	80,247	76,502	156,749	$37.18	$25.12	$30.31
6/1/2015	26,437	28,416	54,853	134,862	111,328	246,190	$32.13	$21.18	$26.53
7/1/2015	60,232	44,025	104,257	78,075	62,166	140,241	$33.23	$24.20	$28.67
8/1/2015	128,680	147,679	276,359	94,300	98,743	193,043	$31.80	$23.09	$27.02
9/1/2015	60,395	40,321	100,716	142,593	110,518	253,111	$33.51	$22.50	$27.64
10/1/2015	0	0	0	138,522	114,662	253,184	$30.86	$23.63	$27.05
11/1/2015	0	0	0	115,547	112,072	227,619	$28.17	$23.32	$25.47
12/1/2015	0	0	0	15,260	6,442	21,702	$26.14	$20.49	$23.16
Unit 14 Weighted Avg.							$33.76	$23.72	$28.37
Unit 15 Weighted Avg.							$33.06	$24.24	$28.34
1/1/2016	0	0	0	77,719	79,920	157,639	$28.07	$25.28	$26.48
2/1/2016	0	0	0	23,362	10,946	34,308	$27.21	$24.03	$25.57
3/1/2016	0	0	0	75,398	77,121	152,519	$26.41	$21.97	$24.16
4/1/2016	41,671	42,963	84,634	7,960	11,853	19,813	$31.26	$26.22	$28.57
5/1/2016	71,918	73,557	145,475	97,258	90,599	187,857	$28.61	$20.41	$24.12
6/1/2016	0	0	0	61,169	56,419	117,588	$32.02	$22.03	$26.92
7/1/2016	83	0	83	118,019	93,793	211,812	$42.83	$25.16	$32.76
8/1/2016	0	0	0	37,617	44,592	82,209	$42.76	$26.25	$34.42
9/1/2016	75,222	65,546	140,768	92,096	69,175	161,271	$39.44	$23.71	$31.05
10/1/2016	104,981	91,317	196,298	0	0	0	$39.01	$25.98	$31.86
11/1/2016	0	0	0	0	0	0	$29.69	$22.94	$26.09
12/1/2016	0	0	0	0	0	0	$35.43	$25.39	$29.92
Unit 14 Weighted Avg.							$35.48	$23.97	$29.18
Unit 15 Weighted Avg.							$34.02	$23.49	$28.24
1/1/2017	0	0	0	60,740	52,510	113,250	$32.30	$25.66	$28.80
2/1/2017	0	0	0	58,375	39,184	97,559	$28.64	$23.57	$25.98
3/1/2017	48,519	39,173	87,692	0	0	0	$30.84	$23.92	$27.34
4/1/2017	134,742	136,467	271,209	0	0	0	$32.38	$25.57	$28.60
5/1/2017	89,442	83,655	173,097	0	0	0	$46.30	$35.07	$40.38
6/1/2017	0	0	0	5,408	16,263	21,671	$43.62	$31.90	$37.63
7/1/2017	46,530	49,822	96,352	77,352	76,639	153,991	$38.26	$25.25	$30.85
8/1/2017	47,929	37,403	85,332	73,973	61,215	135,188	$32.72	$23.60	$28.11
9/1/2017	10,830	4,958	15,788	93,314	94,530	187,844	$36.74	$30.69	$33.38
10/1/2017	0	0	0	0	0	0	$32.48	$24.61	$28.34
11/1/2017	0	0	0	97,510	89,099	186,609	$31.97	$25.13	$28.33
12/1/2017	9,182	5,292	14,474	18,480	29,737	48,217	$30.41	$25.81	$27.79
Unit 14 Weighted Avg.							$36.23	$27.44	$31.51
Unit 15 Weighted Avg.							$33.72	$26.30	$29.71
1/1/2018	83,928	80,139	164,067	83,997	89,666	173,663	$44.57	$33.39	$38.68
2/1/2018	53,026	49,990	103,016	0	0	0	$27.76	$22.63	$25.07
3/1/2018	14,575	12,766	27,341	87,037	91,963	179,000	$27.86	$21.40	$24.46
4/1/2018	71,310	56,094	127,404	78,323	65,418	143,741	$35.22	$26.07	$30.34
5/1/2018	122,132	119,994	242,126	150,197	136,553	286,750	$43.80	$35.71	$39.53
6/1/2018	107,438	112,269	219,707	49,173	45,616	94,789	$35.50	$25.78	$30.31
7/1/2018	113,938	123,934	237,872	83,679	78,654	162,333	$37.63	$24.59	$30.48
8/1/2018	140,162	132,468	272,630	145,594	132,310	277,904	$36.84	$25.91	$31.31
9/1/2018	55,285	56,607	111,892	117,279	126,313	243,592	$43.58	$31.54	$36.63
10/1/2018	0	0	0	153,868	136,131	289,999	$42.64	$30.87	$36.69
11/1/2018	56,494	46,643	103,137	119,443	118,315	237,758	$39.57	$27.76	$33.27
12/1/2018	33,593	36,512	70,105	118,339	115,667	234,006	$38.34	$29.49	$33.30
Unit 14 Weighted Avg.							$38.36	$28.23	$32.96
Unit 15 Weighted Avg.							$39.34	$29.00	$33.82

Northern Indiana Public Service Company

Schahfer Units 14 and 15 Historical Generation

	Unit 14 Generation (MWh)			Unit 15 Generation (MWh)			NIPS.NIPS Day-Ahead Market Prices		
	On-Peak	Off-Peak	All Hours	On-Peak	Off-Peak	Total	On-Peak	Off-Peak	All-Hours
1/1/2019	24,952	17,520	42,472	131,560	95,393	226,953	$36.34	$26.64	$31.23
2/1/2019	94,370	100,940	195,310	25,008	27,753	52,761	$29.48	$25.12	$27.19
3/1/2019	129,718	142,341	272,059	75,062	63,902	138,964	$32.79	$26.23	$29.19
4/1/2019	61,757	56,005	117,762	96,360	86,615	182,975	$30.51	$25.96	$28.18
5/1/2019	58,477	59,255	117,732	117,209	92,933	210,142	$30.41	$23.51	$26.77
6/1/2019	63,793	75,180	138,973	119,819	112,628	232,447	$28.09	$21.80	$24.60
7/1/2019	83,371	76,408	159,779	81,984	74,295	156,279	$33.85	$24.28	$28.81
8/1/2019	87,948	88,282	176,230	43,853	29,647	73,500	$30.83	$23.37	$26.90
9/1/2019	97,666	95,111	192,777	31,716	38,544	70,260	$36.91	$29.29	$32.68
10/1/2019	0	0	0	24,444	9,043	33,487	$30.93	$26.96	$28.92
11/1/2019	0	0	0	33,220	28,449	61,669	$32.73	$26.04	$29.01
12/1/2019	0	0	0	144,618	122,957	267,575	$26.19	$20.39	$23.01
Unit 14 Weighted Avg.							$32.10	$25.21	$28.38
Unit 15 Weighted Avg.							$31.12	$24.19	$27.40
1/1/2020	51,026	34,814	85,840	53,431	48,141	101,572	$25.81	$20.52	$23.02
2/1/2020	0	7,222	7,222	85,266	73,734	159,000	$24.18	$19.32	$21.56
3/1/2020	0	0	0	103,180	86,604	189,784	$22.03	$17.61	$19.70
4/1/2020	0	0	0	91,799	79,589	171,388	$20.33	$15.92	$18.08
5/1/2020	0	0	0	660	1,662	2,322	$21.60	$14.45	$17.52
6/1/2020	6,708	2,859	9,567	27,456	29,508	56,964	$25.73	$16.18	$20.85
7/1/2020	67,273	60,673	127,946	34,836	33,040	67,876	$31.58	$20.59	$26.03
8/1/2020	N/A	N/A	N/A	0	0	0	$30.42	$19.72	$24.55
9/1/2020	N/A	N/A	N/A	0	0	0	$24.36	$17.13	$20.50
10/1/2020	N/A	N/A	N/A	0	0	0	$28.13	$20.58	$24.15
11/1/2020	N/A	N/A	N/A	0	0	0	$26.26	$19.39	$22.45
12/1/2020	N/A	N/A	N/A	46,393	39,338	85,731	$26.64	$21.83	$24.10
Unit 14 Weighted Avg.							$28.91	$20.36	$24.55
Unit 15 Weighted Avg.							$24.01	$18.50	$21.16
1/1/2021	N/A	N/A	N/A	46,781	51,763	98,544	$26.90	$22.04	$24.13
2/1/2021	N/A	N/A	N/A	86,737	83,594	170,331	$75.19	$42.89	$58.27
3/1/2021	N/A	N/A	N/A	79,449	76,017	155,466	$27.40	$21.84	$24.59
4/1/2021	N/A	N/A	N/A	90,698	85,540	176,238	$30.80	$23.58	$27.11
5/1/2021	N/A	N/A	N/A	95,866	91,953	187,819	$31.65	$23.02	$26.73
6/1/2021	N/A	N/A	N/A	44,158	38,197	82,355	$41.66	$27.29	$34.32
7/1/2021	N/A	N/A	N/A	N/A	N/A	N/A	$45.85	$30.66	$37.52
8/1/2021	N/A	N/A	N/A	N/A	N/A	N/A	$52.13	$33.65	$42.39
9/1/2021	N/A	N/A	N/A	N/A	N/A	N/A	$51.22	$36.36	$43.29
Unit 14 Weighted Avg.							N/A	N/A	N/A
Unit 15 Weighted Avg.							$39.72	$27.07	$33.02
Jan.-Sep. 2021 Avg.							$42.53	$29.04	$35.37
Average (2015-2020)							$33.17	$24.60	$28.60

Source: Downloaded from S&P MI 10/26/2021.

ATTACHMENT MPG-12

CONFIDENTIAL

ATTACHMENT MPG-13

CONFIDENTIAL

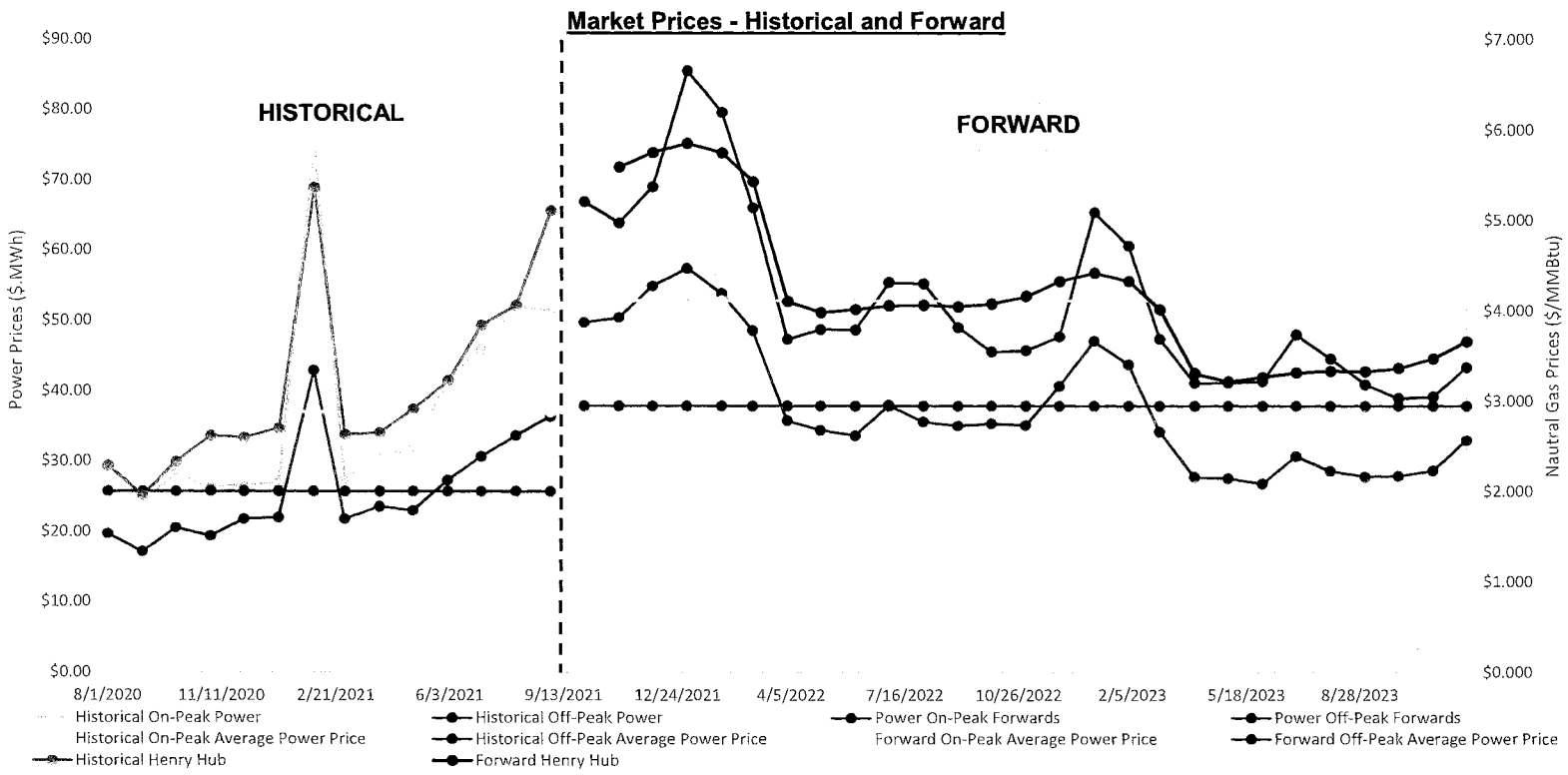
Northern Indiana Public Service Company

Market Prices - Historical and Forward

		Gas Price Henry Hub ($/MMBtu)	Day-Ahead Market Price ($/MWh) On-Peak	Off-Peak	All-Hours
Historical Pricing[1,2]	8/1/2020	$2.279	$30.42	$19.72	$24.55
	9/1/2020	$1.953	$24.36	$17.13	$20.50
	10/1/2020	$2.327	$28.13	$20.58	$24.15
	11/1/2020	$2.614	$26.26	$19.39	$22.45
	12/1/2020	$2.591	$26.64	$21.83	$24.10
	1/1/2021	$2.697	$26.90	$22.04	$24.13
	2/1/2021	$5.354	$75.19	$42.89	$58.27
	3/1/2021	$2.624	$27.40	$21.84	$24.59
	4/1/2021	$2.647	$30.80	$23.58	$27.11
	5/1/2021	$2.909	$31.65	$23.02	$26.73
	6/1/2021	$3.218	$41.66	$27.29	$34.32
	7/1/2021	$3.832	$45.85	$30.66	$37.52
	8/1/2021	$4.056	$52.13	$33.65	$42.39
	9/1/2021	$5.101	$51.22	$36.36	$43.29
Forward Pricing[3,4]	10/1/2021	N/A	$66.89	$49.72	$57.84
	11/1/2021	$5.590	$63.87	$50.42	$57.29
	12/1/2021	$5.753	$69.06	$54.88	$61.89
	1/1/2022	$5.854	$85.54	$57.39	$70.71
	2/1/2022	$5.750	$79.65	$53.86	$66.75
	3/1/2022	$5.429	$66.06	$48.64	$57.63
	4/1/2022	$4.098	$47.34	$35.82	$41.20
	5/1/2022	$3.977	$48.76	$34.47	$41.54
	6/1/2022	$4.011	$48.70	$33.69	$41.36
	7/1/2022	$4.052	$55.40	$38.00	$46.23
	8/1/2022	$4.058	$55.23	$35.65	$45.75
	9/1/2022	$4.042	$49.07	$35.09	$41.92
	10/1/2022	$4.072	$45.57	$35.39	$40.21
	11/1/2022	$4.157	$45.76	$35.17	$40.58
	12/1/2022	$4.320	$47.74	$40.73	$44.04
	1/1/2023	$4.412	$65.37	$47.09	$56.13
	2/1/2023	$4.321	$60.61	$43.78	$52.19
	3/1/2023	$4.009	$47.38	$34.25	$40.74
	4/1/2023	$3.305	$41.15	$27.77	$34.01
	5/1/2023	$3.215	$41.19	$27.60	$34.62
	6/1/2023	$3.262	$41.38	$26.81	$33.93
	7/1/2023	$3.314	$48.03	$30.73	$38.91
	8/1/2023	$3.331	$44.61	$28.63	$36.88
	9/1/2023	$3.326	$40.96	$27.84	$33.97
	10/1/2023	$3.363	$38.98	$27.91	$33.39
	11/1/2023	$3.468	$39.22	$28.69	$34.07
	12/1/2023	$3.658	$43.37	$33.02	$37.92
	Historical Average	$3.157	$37.04	$25.71	$31.01
	Forward Average	$4.160	$52.85	$37.89	$45.25
	Increase	$1.002	$15.80	$12.18	$14.24

Sources:
[1] Spot Natural Gas Index Monthly Average Price
[2] NIPS.NIPS Monthly Average Day-Ahead LMP.
[3] NYMEX Henry Hub Futures.
[4] OTCGH MISO Indiana Forwards.

Northern Indiana Public Service Company



Source: Attachment MPG-14, Page 1

ATTACHMENT MPG-15

CONFIDENTIAL

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 11

Industrials Request 11-001:

Concerning the outage of Schahfer Unit 15 in 2020, please provide the following:

a. Please confirm that Unit 15 was forced out of service due to the fire at Unit 14 in 2020.

b. Please confirm that the Company brought Unit 15 back online in December of 2020, and then planned to run it up until it consumed the coal inventory levels at the Schahfer facility, but not beyond that date. If NIPSCO does not confirm, please explain its planned operation of Unit 15 from December 2020 up to its October 2021 retirement date.

c. After the return to service in December 2020, please confirm that the Company made capital investments and incurred operating expenses at Schahfer Unit 15 with the anticipation that it would retire Unit 15 in October of 2021. If the Company does not confirm, please explain the basis underlying its incurrence of operation and maintenance ("O&M") expenses and capital improvements for this unit after its outage in 2020 was completed up to its anticipated retirement date.

d. Please describe the rail transportation and fuel contract status for Unit 15 before the unit was forced out of service in 2020, and explain how these coal deliveries and coal pricing changed as a result of NIPSCO's decision to retire this unit in October of 2021. For example, were any existing contracts terminated early, or terminated outright? Please explain. Please also outline coal volumes and coal pricing impacts of the proposed change.

e. Please identify the dispatch costs for Unit 15 based on 2020 costs, excluding the effects of the prolonged outage, and identify what the dispatch costs of Schahfer Unit 15 would have been through its planned retirement date as reflected in the Company's Integrated Resource Plan. Please state this dispatch cost on the basis of fuel costs and variable O&M.

f. Please provide the same dispatch information requested for Unit 15 in item e., but for Schahfer Unit 14.

g. Please identify any periods of planned or forced outage of Unit 15 during the period December 2020 through October 2021. With respect to any planned or forced outages, please explain the outage, the duration of the outage and the limitation on dispatching Unit 15 for economic purposes during this time period.

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 11

h. Please identify if any changes to Schahfer Unit 15's maximum operating capacity occurred as a result of the fire and subsequent repairs.

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 sub-part d. of this Request on the separate and independent grounds and to the extent that this Request is vague and ambiguous as the term "status" is undefined and unclear.

NIPSCO further objects to sub-parts e. and f. of 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:

a. Confirm

b. Deny. NIPSCO did repair Unit 15 for more than the need to exhaust the coal supplies. NIPSCO also utilized Unit 15 as a bridge for the summer months as Indiana Crossroads Wind I was not expected to enter service until the end of the year.

c. Confirm. NIPSCO incurred capital expenses related to the repairs as a result of fire and incurred operating expenses thereafter as a result of the unit's operations.

d. NIPSCO had a portion of the Powder River Basin coal supply under contract and adequate rail transportation for 2020 before Unit 15 was forced out of service in 2020. There were no rail transportation and/or fuel cost impacts concerning the outage of Schahfer Unit 15 in 2020 since this outage was consider an event of Force Majeure. No existing contracts were terminated early or terminated outright because of this event.

e. NIPSCO has not prepared the requested analysis and objects to doing so. However, NIPSCO is providing in Industrials Request 11-001 Confidential Attachment A information about the estimated dispatch

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 11

costs from the 2018 IRP and from CRA's analysis performed following the fire at Unit 14. This file contains the variable dispatch cost projections for Schahfer Unit 15 used in the Aurora dispatch model deployed by CRA and NIPSCO for IRP purposes, consistent with the analysis provided in Mr. Augustine's direct testimony. Projections are provided for fuel, variable operations and maintenance ("VOM"), emission costs, and start-up costs on a $/MWh basis and in total dollars based on the market simulation that was performed for the portfolio where both units return to service. The dispatch cost projections used in NIPSCO's 2018 IRP analysis were provided in Confidential Appendix D to the 2018 IRP. Within that file, the "Unit VOM" tab provides VOM on a $/MWh basis, and the "Delivered Coal Prices" tab (with coal prices on a $/MMBtu basis) and the "Existing Fleet Parameters" tab (with unit heat rates on a Btu/kWh basis) can be used to calculate fuel costs on a $/MWh basis. NIPSCO has attached Confidential Appendix D from the 2018 IRP hereto as Industrials Request 11-001 Confidential Attachment B.

f. See response to sub-part e., which contains the same information for Unit 14.

g. Please see Industrials Request 11-001 Attachment C.

h. There were no changes to Schahfer Unit 15's maximum operating capacity occurred as a result of the fire and subsequent repairs.

ATTACHMENT MPG-16

PAGE 4

CONFIDENTIAL

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 7

Industrials Request 7-003:

Please provide a production cost run for the period July 2020 – December 31, 2023 for the following two scenarios using NIPSCO's "Reference Case" for all input assumptions. In addition to providing all inputs and outputs of the production cost model, please provide the following values on a monthly basis for the entire modeling period: (1) Total System Production Cost; (2) Fuel Cost by Fuel Source; (3) Net Generation; (4) Variable O&M Expense; (5) Market Purchases (Cost and MWh); and (6) Market Sales (Cost and MWh):

a. Schahfer Units 14 and 15 are forced out of service following the fire in July 2020 and remain unavailable for service through December 31, 2023.

b. Schahfer Units 14 and 15 are operating during the full study period from July 2020 through the current retirement date of December 31, 2023.

Objections:

NIPSCO objects to this Request on the grounds and to the extent that this Request is overly broad and unduly burdensome in that this Request seeks information through December 31, 2023, which is after the original expected retirement date of May 31, 2023. NIPSCO is providing the analysis it has performed, which evaluated a time period ending on May 31, 2023.

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:

As explained in the verified direct testimony of Patrick Augustine (at Question / Answer 13), NIPSCO evaluated various alternative portfolios that considered different timings for returning Unit 14 and/or Unit 15 back to service. As further explained below, NIPSCO is providing the data and information it has available based on the analysis performed by Mr. Augustine and CRA on behalf of NIPSCO. Portfolio 1 most closely resembles part b. of the Request, and Portfolio 2 is consistent with part a. of the

Cause No. 38706-FAC-130-S1
Northern Indiana Public Service Company LLC's
Objections and Responses to
NIPSCO Industrial Group Data Request Set No. 7

Request. In order to most closely provide information in the requested six categories, NIPSCO has disaggregated and organized the available data to the extent feasible. Note that this production cost run was performed in the Aurora model CRA and NIPSCO use for planning purposes. NIPSCO objects to performing any additional analysis.

NIPSCO has provided all inputs associated with this analysis in the workpapers filed with Mr. Augustine's testimony, particularly in the Excel spreadsheet labeled "Schahfer_Portfolio_Analysis_Assumptions Book.xlsx." NIPSCO has also provided aggregated annual production cost run outputs as part of the overall revenue requirement analysis presented in the workpapers filed with Mr. Augustine's testimony, particularly in the Excel spreadsheets labeled "FM Results.xlsx" and "FM Results_detailed.xlsx." See NIPSCO's response to Industrials Request 7-005 for additional detail regarding the specific line items associated with production cost.

Monthly values for the requested categories are provided for Portfolio 1 and Portfolio 2 in "Industrials Request 7-003 Confidential Attachment A.xlsx" as follows:

1) Total Portfolio Costs are most representative of Total System Production Cost, noting that contract costs are included (see (4) below for more detail).
2) Fuel Cost has been aggregated at the portfolio level, and NIPSCO has reported specific detail for Schahfer Units 14/15 to show the impact of these units.
3) Note that Owned Resource and Contract Generation are provided separately.
4) Variable O&M Expense is provided at the portfolio level and for Schahfer Units 14/15. Emission costs and costs associated with plant startups are separately reported at the portfolio level and for Schahfer Units 14/15. Contract costs are also reported separately, as these costs contribute to Total Portfolio Costs. Contract costs include Power Purchase Agreements and capacity purchases. Note that incremental costs associated with replacement capacity for Schahfer Units 14 and 15 are removed from the overall revenue requirement calculation in the *separate* revenue requirement accounting summarized in the "FM Results.xlsx" spreadsheet but are included here in the Total Portfolio Costs.
5) Market Purchases are shown in MWh with associated costs.
6) Market Sales are shown in MWh with associated costs. These are reported as negative numbers.