

**DIRECT TESTIMONY OF GARTH W. WOODCOX
GENERAL MANAGER III, REGULATED FOSSIL STATIONS
ON BEHALF OF DUKE ENERGY INDIANA, LLC
CAUSE NO. 43114 IGCC-16 BEFORE THE
INDIANA UTILITY REGULATORY COMMISSION**

I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Garth W. Woodcox and my business address is 15424 East State Road 358,
3 Edwardsport, Indiana 47528.

4 **Q. PLEASE IDENTIFY YOUR EMPLOYER AND YOUR EMPLOYMENT
5 POSITION?**

6 A. I am employed by Duke Energy Business Services LLC, a service company affiliate of
7 Duke Energy Indiana, LLC (“Duke Energy Indiana” or “Company”) and subsidiary of
8 Duke Energy Corporation (together with its subsidiaries “Duke Energy”), as General
9 Manager III, Regulated Fossil Stations.

10 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL QUALIFICATIONS.**

11 A. I graduated from Indiana Vocational Technical College in 1983 with an AAS degree in
12 Industrial Electronics. In 1995, I received a B.S. in Business from Indiana Wesleyan
13 University and in 1998, I received a M.S. in Business Administration from Indiana
14 Wesleyan University.

15 **Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.**

16 A. I have worked for Duke Energy Indiana and its predecessor companies for just over thirty
17 years. While at Duke Energy Indiana, I have worked in a variety of roles at Wabash

1 River Generating Facility and the Wabash River IGCC Facility, as well as on several
2 special projects across the Duke Energy generation fleet. In 2014, I transferred to
3 Edwardsport Generating Facility as the Operations Manager. I also held the position of
4 the Technical and Organizational Manager at Edwardsport before being promoted to the
5 role of plant manager upon the retirement of Jack Stultz on December 31, 2015.

6 **Q. PLEASE DESCRIBE YOUR DUTIES AS PLANT MANAGER FOR THE**
7 **EDWARDSPORT STATION.**

8 A. My responsibilities currently include oversight of approximately 211 operations and
9 maintenance personnel for the Edwardsport Generating Facility (“Edwardsport,”
10 “Station” or “Plant”). I am involved with all aspects of the ongoing operation of the
11 station, including contract administration, personnel matters and other business needs to
12 provide for safe, efficient and reliable plant operations. I am involved with ensuring
13 compliance of my staff with the policies and procedures at the Company and more
14 specifically, Edwardsport. I am also responsible for development and management of
15 the budgets for the plant, both capital and operating and maintenance.

16 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS**
17 **PROCEEDING?**

18 A. The purpose of my testimony is to discuss the operations of Edwardsport from April 1,
19 2015 through December 31, 2016. I will also provide information on the Station’s
20 performance, operating and maintenance activities, the anticipated future operating and
21 maintenance expenses for the Plant, and the ongoing capitalized repairs and maintenance
22 expenditures included in this proceeding.

1 **II. EDWARDSPORT STATION OPERATIONS**

2 **Q. PLEASE PROVIDE A HIGH-LEVEL DESCRIPTION OF EDWARDSPORT'S**
3 **OPERATIONS BETWEEN APRIL 1, 2015 AND DECEMBER 31, 2016.**

4 A. At the beginning of this period (April 1, 2015), both gasifiers were operating but were
5 then brought down for the spring 2015 maintenance outage. Specifically, we began our
6 spring 2015 outage on gasifier unit 1 on April 4 and on gasifier unit 2 on April 7.
7 Following the spring 2015 outage, the full power block was available on May 15, 2015.
8 Gasifier 1 was returned to service May 28, 2015 and gasifier 2 was returned to service on
9 June 10, 2015. I will discuss the spring 2015 maintenance outage in more detail later in
10 my testimony.

11 The Station showed solid operations during the summer of 2015, with a new
12 record for generation set in July 2015 – 368,309 MWhs generated (net) – and a new
13 record net capacity factor of 80.10%. This net capacity factor record was quickly
14 surpassed in September 2015, when the Station demonstrated a net capacity factor of
15 81.16%.

16 Although my predecessor, Mr. Jack Stultz, stated in his June 2015 testimony that
17 Edwardsport was only planning to take one maintenance outage in 2015, we decided to
18 schedule a planned derate in the fall of 2015 in order to assess the condition of the
19 refractory brick in the gasifiers and to take care of necessary inspections and some winter
20 preparations. The wear of the refractory bricks led us to expand the planned derate into a
21 full station maintenance outage, which I will discuss in more detail later in my testimony.

1 Winter of 2016 brought a new record run for gasifier 1 of 98 days. Gasifier 2
2 remained on-line from January 11, 2016 through March 15, 2016. In addition, February
3 2016 showed 100% gasifier availability, and a new generation record was set of 376,695
4 MWhs produced (net).

5 Edwardsport alternated its outages/derates in 2016 from those performed in 2015
6 – the Station planned a spring derate and a fall 2016 outage. The spring derate began on
7 gasifier 2 on April 19, 2016 and on gasifier 1 on April 23, 2016. The work performed
8 largely related to preparation for summer operations – replacement of scrubber nozzles
9 and feed injectors, plus examination of all critical systems to attempt to ensure summer
10 availability. The power block was available on May 6, 2016, with gasifier 2 returning
11 May 29, 2016 and gasifier 1 on June 3, 2016.

12 The Station performed well during the warm summer months with another new
13 generation record being set in August 2016 of 385,398 MWhs produced (net). The fall
14 2016 maintenance outage began September 22, 2016, and was Edwardsport's most
15 extensive outage to date, with planned work including hot gas path inspections on the
16 combustion turbines, steam turbine valve work, OSHA-required Process Safety
17 Management projects, and lockhopper cone replacements. I will discuss this outage in
18 more detail later in my testimony.

19 **Q. PLEASE DESCRIBE THE STATION'S OPERATIONS SINCE THE 2016 FALL**
20 **OUTAGE.**

21 A. Edwardsport's combustion turbines returned to service from the 2016 fall maintenance
22 outage on November 27, 2016. Gasifier 1 returned from its fall outage on December 21,

1 2016 and gasifier 2 returned on January 11, 2017. Both gasifiers remain on as of the date
2 of this testimony. Other than a trip of the entire station on January 6, 2017 due to a
3 frozen transmitter on the steam turbine, the power block has been available since
4 returning to service in November. For January and February 2017, gasifier availability
5 has averaged 85% (with 100% in February 2017), and net capacity factor has averaged
6 77%.

7 **Q. WHAT WERE THE MAIN AREAS OF FOCUS FOR THE STATION FROM**
8 **APRIL 1, 2015 THROUGH DECEMBER 31, 2016?**

9 A. Looking back over this period of time, I want to highlight several areas our team has
10 focused on. First, we have focused and will continue to focus in 2017 on maintaining
11 safety and improving reliability of plant operations. Second, although the reliable
12 operation of the plant has improved, execution of planned maintenance outages has been
13 a challenge, both in terms of emergent work identified during an outage (which is
14 common) and planned work taking longer than anticipated. Together, these challenges
15 have led to each of our planned maintenance outages and derates being extended beyond
16 their planned end dates. Edwardsport is a complex and highly integrated plant and it will
17 take time to determine the best approach to maintenance at the plant. Third, due to the
18 presence of certain chemicals at Edwardsport, the station is governed by OSHA's Process
19 Safety Management ("PSM") program. As part of this program, reviews are performed
20 every five years and action items noted in the review must be addressed during the five
21 years between reviews. Edwardsport had a review in 2013 and has been diligently

1 addressing the noted items before our next review in 2018. There are additional
2 components of this program that I will also discuss in my testimony.

3 **A. MAINTENANCE OUTAGES**

4 **Q. MR. WOODCOX, THERE WERE FOUR MAINTENANCE OUTAGES DURING**
5 **THIS REPORTING PERIOD. PLEASE FIRST DISCUSS THE WORK**
6 **PERFORMED DURING THE 2015 OUTAGES.**

7 A. In the spring of 2015, Edwardsport brought down gasifier 1 on April 4 and gasifier 2 on
8 April 7 for the station's planned maintenance. During the 2015 spring outage, we
9 performed the combustion inspection on Combustion Turbine ("CT") 1, the first on this
10 CT.¹ This work will be performed approximately every 12,000 run hours and generally
11 entails an inspection of the CT and replacement of the fuel nozzles, combustion cans, fuel
12 liners and transition pieces. To the extent possible, the parts pulled out during this outage
13 will be fully refurbished and returned to inventory to be reused. The inspection revealed
14 normal and expected conditions. We also performed maintenance on the sulfur recovery
15 unit, the air separation unit, the black water system, the cooling tower and one of the
16 main air compressors. On gasifier 2, we replaced refractory brick on the side wall hot
17 face (the hot face is the innermost layer out of three total layers). We also performed
18 modifications in the air separation unit to the process liquid nitrogen systems to allow for
19 the long-planned swap out of the liquid nitrogen pumps, which was ultimately completed
20 in the spring 2016 outage.

¹ As discussed in IGCC-14 testimony, CT 2 underwent its combustion inspection in the fall 2014 maintenance outage.

1 There were two main emergent issues identified and repaired during the spring
2 2015 maintenance outage. First, leaking piping was discovered in the acid gas system
3 during outage testing and was repaired. Second, in the air separation unit, corrosion and
4 minor erosion were noted in the liquid oxygen system and repaired.

5 The power block returned to service May 15, 2015 with gasifier 1 back May 28,
6 2015 and gasifier 2 back June 10, 2015.

7 As I mentioned earlier in my testimony, the station scheduled a fall derate in 2015
8 in order to assess the condition of the refractory brick in the gasifiers and to take care of
9 necessary inspections and some winter preparations. Rather than a full station outage,
10 our plan had been for gasifier 1 to be down from October 17 through October 31,
11 followed by gasifier 2 from November 1 to November 16. After bringing down CT 1 and
12 gasifier 1 on October 17 as planned, we found the dome refractory bricks were thinner
13 than expected. Because of the condition of the gasifier 1 dome refractory bricks, the
14 station decided to bring down gasifier 2 earlier than planned to replace its dome
15 refractory bricks. Because we had already planned to replace the dome bricks in the
16 spring 2016 outage, we already had the refractory bricks on hand and were able to
17 complete the replacements on both gasifiers during the fall 2015 outage. Other than the
18 gasifier refractory replacement, planned inspections and winter preparations, the station
19 also resolved some emergent issues involving the liquid nitrogen back up pump piping,
20 the feed injector intermediate flange and a pipe leak in the circulating water system.

21 Once CT 1 returned to service on November 3, CT 2 was then shut down on
22 November 4 for its inspection and maintenance. CT 2 then returned to service November

1 28, and gasifier 1 returned to service December 8. Gasifier 2 was delayed returning by a
2 reheater failure in the sulfur recovery unit and a failure of a process safety valve in the
3 mercury guard drum. Once those were addressed, gasifier 2 returned to service on
4 January 11, 2016.

5 **Q. NEXT, PLEASE DISCUSS THE WORK PERFORMED IN THE STATION'S 2016**
6 **MAINTENANCE OUTAGES.**

7 A. In the spring of 2016, the station performed summer preparations. Specifically, we
8 replaced scrubber nozzles and feed injectors, as well as examined critical systems to help
9 ensure summer availability. In addition, we were able to complete the replacement of the
10 process liquid nitrogen pumps, which resolves an issue first noticed during the initial
11 commissioning on the station.² We brought down CT 1 and gasifier 1 on April 23, CT 2
12 on April 18, and gasifier 2 on April 19. The power block became available on May 6,
13 2016, with gasifier 1 returning to service June 3 and gasifier 2 returning on May 29. The
14 gasifiers were delayed due to repairs needed on the barometric condenser in the grey
15 water system, which was an emergent discovery identified during the outage as part of
16 our mechanical integrity program.

17 The 2016 fall maintenance outage was our most extensive outage to date. It
18 began on September 24, 2016 and was scheduled to end November 7, 2016. However, it
19 was extended through November 26, 2016 to complete the planned scope of work on the
20 power block. Specifically, the station completed hot gas path inspections on each of the

² Mr. Stultz repeatedly described the issues we experienced with the process liquid nitrogen (or "LIN") pumps. As he also mentioned in his testimony, the costs of the replacement LIN pumps were borne by Duke Energy shareholders under the terms of the 2012 Settlement Agreement.

1 CTs. The hot gas path inspection is the second phase of the cyclical maintenance
2 required on the CTs – the first is the combustion inspection, next is the hot gas path
3 inspection and third is the major inspection. The combustion inspection is completed
4 every 12,000 run hours, and then the station will alternate between either a hot gas path
5 or a major inspection every 24,000 hours. In addition to this important cyclical
6 maintenance on the CTs, the station also inspected the condition of the refractory brick in
7 the gasifiers, completed OSHA-required PSM action items and OSHA-required safety
8 instrumented systems (sometimes referred to as “SIS”) testing, performed maintenance
9 on both trains of the lockhoppers and replaced some of the flare piping due to corrosion.
10 While this planned work took longer than expected, the outage was also extended on the
11 gasifiers due to emergent repair work needed on the thermocouples on the flare system
12 and sour gas piping, as well as leaks in the lockhopper valves and a process safety valve.
13 During light off of a gasifier, the systems are pressure tested using water or nitrogen to
14 locate potential leaks. Following the resolution of these leaks and other relatively minor
15 issues, gasifier 1 returned to service on December 21, 2016. Gasifier 2 was unable to
16 return to service until January 11, 2017 because of issues with the saturator make up
17 water pump. It had limited output until it was repaired and could not support the
18 operations of both gasifiers, only one.

19 **B. PROCESS SAFETY MANAGEMENT**

20 **Q. PLEASE PROVIDE AN OVERVIEW OF THE OSHA PROCESS SAFETY**
21 **MANAGEMENT PROGRAM.**

1 A. In 1992, the Occupational Health and Safety Administration (“OSHA”) enacted
2 regulations governing the management of hazardous chemicals called the Process Safety
3 Management program. The PSM program ensures that facilities with certain chemicals
4 onsite engage in the proactive identification, evaluation and mitigation or prevention of
5 chemical releases that could occur as a result of failures in process, procedures or
6 equipment. There are several components of this program that apply to Duke Energy
7 Indiana’s Edwardsport Generating Facility, most notably the Process Hazard Analysis
8 (also referred to as the “PHA”). The process hazard analysis is required every five (5)
9 years and includes a systematic review of each process to identify, evaluate and control
10 the hazards of processes involving hazardous chemicals. The PSM program also includes
11 other requirements regarding written operating procedures, management of change, layer
12 of protection analysis, employee training, evaluation of the mechanical integrity of
13 critical equipment, emergency action plans and compliance audits.

14 Duke Energy Indiana conducted a detailed process hazard analysis in 2013 and
15 has been working to promptly address the findings and recommendations in the analysis
16 before the next process hazard analysis is performed in 2018. The action items from the
17 2013 process hazard analysis were extensive and Duke Energy Indiana also performed its
18 own safety audit to assess whether more could be done to protect its employees, the
19 community surrounding the plant and the environment. In addition to completing the
20 work prescribed by the process hazard analysis and Duke Energy’s own safety audit, my
21 team has expanded our in-house mechanical integrity capabilities. The mechanical
22 integrity program applies to the inspection and maintenance practices associated with

1 pressure and storage tanks, piping systems and valves, relief and vent systems and
2 devices, emergency shutdown systems and their associated computer controls and
3 mechanical equipment. Our mechanical integrity personnel currently monitor
4 approximately 10,000 different points at Edwardsport under the mechanical integrity
5 requirements.

6 **Q. PLEASE DESCRIBE THE WORK PERFORMED DURING THIS PERIOD**
7 **RELATING TO PSM COMPLIANCE OR TO HELP ENSURE SAFE**
8 **OPERATIONS.**

9 A. As both the OSHA PSM program and Duke Energy's safety audit are focused on
10 ensuring safe operations without escape of hazardous chemicals, the projects performed
11 at the station are targeted towards improving safety and completion of the action items
12 noted in the process hazard analysis under the PSM program. The types of projects
13 completed include adding layers of protection in the safety instrumented systems, adding
14 redundant field devices, such as pressure and level transmitters, to increase safety
15 margins and process reliability. In addition, through the expansion of our mechanical
16 integrity program, we have increased our ability to inspect, test and perform preventative
17 maintenance on process safety devices and heat exchangers.

18 **C. IMPROVING RELIABILITY**

19 **Q. HAS YOUR TEAM ALSO BEEN PLANNING AND PERFORMING WORK TO**
20 **IMPROVE EDWARDSPORT'S RELIABILITY?**

21 A. Yes. We have reviewed the systems and equipment that most frequently impact station
22 operations and have been working to develop a plan for potential improvements intended

1 to improve reliability and decrease repetitive maintenance projects. We have prioritized
2 maintenance projects to try to address the top operational issues with an eye toward
3 improved future operations. To that end and in addition to our other planned
4 maintenance, in the fall 2016 maintenance outage we replaced certain gasifier and
5 lockhopper valves, gasifier nozzle scrubbers, and grinding mill liner bolts. Work was
6 also done to improve the reliability of the air separation unit main air compressor coolers
7 and the HP/IP feed pumps. In addition, we are looking at potential improvements to the
8 slag drag conveyors, predictive projects to stay ahead of overall pipe wear in the flare,
9 acid gas systems, and saturator systems.

10 Improvements are also being evaluated for the slurry charge pump check valves,
11 with a redesign of those valves planned for 2017. Regarding process safety valves, we
12 are evaluating a strategy to improve our ability to perform preventative maintenance and
13 testing in a timely fashion, while also reducing outage durations. It is our intent that
14 these investments will pay off in the future with improved reliability and reduced
15 operating expenses.

16 **Q. PLEASE DESCRIBE THE EDWARDSPORT OPERATIONAL STATISTICS**
17 **PROVIDED IN PETITIONER'S EXHIBIT 1-C, AS ATTACHED TO YOUR**
18 **TESTIMONY.**

19 A. Included in this exhibit are the following performance metrics:

- 20 1) Net MWh by month (site-wide)
- 21 2) Availability by month (site-wide)
- 22 3) Coal / natural gas / syngas usage by month

- 1 4) Gasifier starts and run hours by month
2 5) Combustion turbine and steam turbine starts and run hours by month
3 6) Gasification availability by month
4 7) Net capacity factor by month (site-wide)
5 8) Equivalent availability by month (site-wide)
6 9) Equivalent forced outage rate by month (site-wide)

7 Although the performance of Edwardsport should be assessed over the long-term (rather
8 than one month at a time as is presented in my Exhibit 1-C), I want the Commission and
9 interested parties to have a transparent view into Edwardsport's operations.

10 **Q. HOW DO YOU JUDGE THE OPERATIONAL PERFORMANCE OF**
11 **EDWARDSPORT?**

- 12 A. I have been encouraged by Edwardsport's operations in between maintenance outages.
13 We are focused now on improving planning and execution of our maintenance outages,
14 completing the remaining action items from the station's process hazard analysis prior to
15 the next process hazard analysis that will start in 2018, and continuing to minimize the
16 effect on operations from the most impactful systems. While continued operational
17 improvement will be our focus in 2017, we will also be working to reduce Edwardsport's
18 operating expenses in 2018 and beyond. However, safety remains our first priority.

19 **III. 2016 SETTLEMENT AGREEMENT AND OPERATING COSTS**

20 **Q. PLEASE DESCRIBE PETITIONER'S EXHIBIT 1-A.**

- 21 A. Petitioner's Exhibit 1-A is a copy of the 2016 Edwardsport Settlement Agreement, which
22 was approved by the Commission on August 24, 2016.

1 **Q. ARE THERE PROVISIONS OF THAT AGREEMENT THAT IMPACT WHAT**
2 **OPERATING EXPENSES CAN BE RECOVERED THROUGH RATES?**

3 A. Yes. There are two caps in the Settlement – one on operating and maintenance (“O&M”)
4 expense and a second one on post-in-service ongoing capital expenditures. The O&M
5 cap for 2016 is \$73.3 million, which is the figure used to set the present level of O&M in
6 rates. Then, in this filing, Duke Energy Indiana is proposing to use \$76.8 million (the
7 \$73.3 million plus the \$3.5 million escalator agreed to in the Settlement) as the level of
8 O&M to be included in rates. The Settlement Agreement provides that Duke Energy
9 Indiana may recover the lower of its actual O&M and the cap levels. The Settlement also
10 provides for a reconciliation in order to ensure that customers pay only the lesser of
11 actual O&M or the cap.

12 In addition to a cap on O&M, the Settlement also provided for a cap on ongoing
13 capital expenditures of \$36.1 million for 2016 and \$16.9 million for 2017. In this filing,
14 Duke Energy Indiana is proposing rates based on the ongoing capital expenditure cap
15 amount of \$36.1 million added to the March 31, 2015 balance presently included in rates.
16 As I will describe below, Duke Energy Indiana has spent O&M and ongoing capital at
17 Edwardsport that exceeds both caps. Therefore, it is requesting that the cap levels be
18 included in rates in this proceeding.

19 **Q. PLEASE DESCRIBE THE TYPES OF EXPENSES DUKE ENERGY INDIANA**
20 **INCURRED WHILE OPERATING EDWARDSPORT STATION FROM APRIL**
21 **2015 THROUGH DECEMBER 2016.**

1 A. The types of expenses incurred are the same types of expenses all Duke Energy Indiana
2 power plants incur during operation and maintenance (“O&M”) activities, such as labor,
3 chemicals, maintenance and outage. Labor for operating the Plant includes the shift
4 employees and contractors that are required to operate the plant 24 hours a day, seven
5 days a week, as well as the management team, maintenance personnel, instrument
6 technicians, electricians, and mechanics. Another type of routine O&M is the chemicals
7 used to support the correct chemistry balance for the plant water and treatment systems.
8 Parts for maintenance work, such as motor, breaker, valve, and pump overhauls, worn
9 turbine components, bearings, seals, packing, safety instrumented system and computer
10 systems that allow proper control and protection of the integrated plant are also included
11 in the station’s O&M.

12 As I mentioned above, Edwardsport’s actual expenses exceeded the cap set in the
13 2016 Settlement. The primary reasons we exceeded the cap were the PSM and safety-
14 related projects, the station reliability improvement projects, and the emergent work
15 performed during the fall 2016 outage. I think it is important to mention that the station
16 was aware of the caps set as part of the Settlement, but believed it necessary to make the
17 investments in safety-related projects, reliability improvement projects and the outage
18 scope of work.

19 The projects identified during either the process hazard analysis or our internal
20 safety audit or otherwise necessary for PSM compliance will improve our management of
21 the risks inherent in handling hazardous chemicals in our processes to protect employees,
22 local communities and the environment. Even with the O&M and ongoing capital caps in

1 place, we did not believe it would be reasonable or prudent to put off this necessary work.
2 There will be additional safety-related projects performed in 2017 and we will likely
3 exceed the caps in the Settlement again this year. Some of these projects must be
4 completed before our next process hazard analysis in 2018, others we feel should not be
5 delayed in order to better ensure safe operations with no unwanted releases of hazardous
6 chemicals at the station. Of course there is no possible way to reduce the risk to our
7 operation of a release to zero, but our internal direction is for event-free operations and
8 my team is performing this additional work with that in mind.

9 In addition, we have proceeded with projects to improve reliability and reduce
10 future O&M expenses while knowing that the costs of those projects would be above
11 either the O&M or ongoing capital caps and would not be recoverable through rates.
12 Edwardsport personnel are serious about improving safety, equipment and system
13 reliability and cost. Therefore, we were willing to spend the extra money on projects in
14 2016 and will continue to do so in 2017 knowing that we will be able to go into 2018
15 with improvements on all fronts. We are investing resources in Edwardsport over and
16 above the cap amounts because we know our customers and stakeholders expect
17 continuous improvements in operational performance and expense levels.

18 **Q. WAS THE OPERATING AND MAINTENANCE AMOUNT INCLUDED IN**
19 **RATES (THE \$73.3 MILLION CAP) REASONABLE AND PRUDENTLY**
20 **INCURRED?**

21 A. Yes, it was. While our O&M was higher than the cap amount due to projects we believe
22 necessary and important, the station was operated during this period in a reasonable and

1 prudent manner. Therefore, the associated expenses were similarly reasonable and
2 prudent. Equipment failures and maintenance issues will happen at every generating
3 plant and we will continue to reasonably identify the issues and make needed repairs in a
4 cost effective manner. While the entire amount of O&M from 2016 was reasonably and
5 prudently incurred, Duke Energy Indiana's customers will see their rates set based only
6 on the cap amount because of the protections of the 2016 Settlement Agreement.

7 **Q. WHICH ONGOING CAPITALIZED REPAIRS AND MAINTENANCE**
8 **PROJECTS HAVE BEEN INCLUDED FOR RECOVERY IN THIS**
9 **PROCEEDING?**

10 A. As mentioned above, the recoverability of ongoing capitalized repairs and maintenance
11 projects at Edwardsport has been capped in a similar manner as the O&M. The 2016
12 Settlement Agreement provides that Duke Energy Indiana may recover \$36.1 million or
13 its actual capital additions, whichever is less, for the period of April 1, 2015 through
14 December 31, 2016. Duke Energy Indiana spent approximately \$45.1 million on ongoing
15 capitalized maintenance and additions, net of credits for the return of parts to inventory,
16 during this period. Therefore, as discussed further in the testimony of Ms. Diana L.
17 Douglas, Duke Energy Indiana is proposing to recover the cap amount of \$36.1 million.

18 During this period of time, the station worked on or planned and procured
19 materials for quite a few projects. I will just highlight the more extensive capital projects
20 in my testimony. There were modifications of the lockhopper circulating water pumps
21 and piping in order to improve reliability and reduce the frequent maintenance needs of
22 this system, typically involving solids clogging the piping and also impacting the pumps.

1 We redesigned the piping configuration to increase the velocity in the pipes and also
2 added high pressure flush water connections, which will allow us to flush the system if it
3 clogs, without needing to completely shut it down to address the clogging. We replaced a
4 portion of the ammonia acid gas flare header piping, changing the piping from carbon to
5 stainless steel to help address corrosion, and also replaced both of the backup multifluid
6 and liquid oxygen vaporizers in the ASU due to corrosion of the vessels. We performed
7 replacements of valves, some due to normal ongoing maintenance, but otherwise largely
8 related to either the station's PSM compliance or as part of our reliability improvement
9 program. The process hazard analysis also identified locations within the plant where we
10 needed to install additional check valves to help prevent a release of hazardous chemicals
11 on site. In addition, we began the installation of an equipment and process monitoring
12 system at Edwardsport that is intended to look for changes in equipment and systems that
13 may indicate a future, impending issue. For example, we will be able to know if there is
14 a step change in the vibration of a piece of rotating equipment or a change in temperature
15 of a system that could allow us to address an issue before it leads to a trip or equipment
16 damage.

17 In addition, the CT 2 combustion inspection was performed, as were both of the
18 CT hot gas path inspections. We also incurred costs associated with the gasifier
19 refractory brick replacements performed during the outages during the time period of this
20 proceeding.

21 Petitioner's Confidential Workpaper 2-E (DLD) includes the cost incurred for
22 each ongoing capital project as of December 31, 2016, before application of the cap and

1 before credits for parts returns to inventory, that Ms. Douglas included in rate
2 development.

3 **Q. DO YOU CONSIDER THESE PROJECTS TO BE PART OF ROUTINE**
4 **MAINTENANCE THAT WILL BE PERFORMED AT THE PLANT ON AN ON-**
5 **GOING BASIS?**

6 A. Yes, particularly the expenses up to the ongoing capital cap. As I explained previously,
7 there are certain expenditures that we do not anticipate being repetitive projects, such as
8 the process hazard analysis and safety audit projects. Although there will be an updated
9 process hazard analysis in 2018 and new eyes can certainly uncover additional items to
10 address, we expect that our 2013 analysis would have captured more areas of
11 improvement than will be identified in future analyses. Along those lines, the safety
12 audit and reliability improvement projects will not likely need repeated, although will
13 continue to be maintained in the normal course of business. Setting aside those more out
14 of the ordinary improvement projects that may be less likely to repeat, Edwardsport will
15 be adding and replacing equipment on a regular, routine basis. The CTs, the gasifier
16 refractory brick, piping and valves are the types of equipment that have and will
17 experience significant run times and must be replaced or repaired from time to time. That
18 this equipment requires upkeep and repairs from time to time is expected and will
19 continue. Whenever we identify a part that needs replaced, we examine whether to
20 replace in-kind or to try out a newly designed part in order to save on ongoing
21 maintenance. There is a balancing that takes place at any power plant between ongoing

1 O&M expenses and ongoing maintenance capital expenses and we seek to strike the right
2 balance for the continued efficient and reliable operation of the Plant.

3 **IV. OPERATING AND MAINTENANCE EXPENSE EXPECTED IN 2017**

4 **Q. PLEASE GENERALLY DESCRIBE THE OPERATING AND MAINTENANCE**
5 **EXPENSES THE COMPANY EXPECTS TO INCUR IN 2017.**

6 A. Edwardsport will incur normal O&M expenses, just as our other generating plants do.
7 These costs include a combination of fixed and variable costs. Fixed cost examples
8 include full time Duke Energy employee labor costs and costs associated with air permit
9 testing, NPDES sampling and reporting. Variable costs are costs that are associated with
10 operation costs for the plant. Chemicals that are consumed during operation of the Plant
11 are considered variable, maintenance of equipment is variable and contractor costs are
12 variable. Overheads and allocations are also O&M budget expense items. The Plant's
13 budget is determined following an operating strategy for the coming years, reviewed by
14 the financial groups and ultimately adjusted and/or approved by Duke Energy executives.
15 Regular periodic reporting of budget compliance, including any changes, is done by local
16 management to Duke Energy financial and department executives to ensure compliance
17 with expectations.

18 **Q. DID THE COMPANY USE THE 2017 O&M CAP AMOUNT TO DEVELOP THE**
19 **IGCC RIDER RATES?**

20 A. Yes. As discussed further in the testimony of Ms. Douglas, under the terms of the 2016
21 Settlement Agreement, we have used the 2017 O&M cap amount of \$76.8 million for
22 developing the IGCC Rider rates. At this time, Duke Energy Indiana expects its O&M

1 expenses at Edwardsport to be above this cap amount. However, as required by the terms
2 of the Settlement, it will also perform a reconciliation in the 2018 rider filing to ensure
3 that customers pay the lesser of the cap amount or the Company's actual O&M expenses.

4 Generally speaking, O&M expenses will vary depending on the timing of
5 maintenance cycles, unexpected costs, operating characteristics and operating time of the
6 Plant. The Company's maintenance strategy will influence a variety of costs, such as the
7 use of contractors or use of Company employee labor, the purchase of original equipment
8 manufacturer parts or after-market parts suppliers, and the rent, lease or purchase of
9 certain equipment. In addition, it is important to understand the cyclical nature of the
10 maintenance required on major components of the station, such as the CTs and the
11 gasifier refractory brick. My team will be working to improve coordination of the
12 expected maintenance cycles on the various station components.

13 **V. OTHER UPDATES**

14 **Q. PLEASE DESCRIBE THE STATUS OF COAL PURCHASES AND DELIVERY**
15 **AT THE EDWARDSPORT PLANT.**

16 A. The coal handling system has been receiving train deliveries and performed as expected.
17 The IGCC Plant currently has approximately 312,000 tons of coal in inventory. Future
18 coal deliveries will be by train from Peabody's Bear Run Mine and will be planned to
19 match planned coal usage at the plant.

20 **Q. HAS THE COMPANY BEEN SUBMITTING MONTHLY COMPLIANCE**
21 **REPORTS IN COMPLIANCE WITH INDIANA CODE § 8-1-8.8-13 AND THE**
22 **COMMISSION'S NOVEMBER 20, 2007 CPCN ORDER?**

1 A. Yes. The Company continues to report coal receipt and usage, as required by Indiana
 2 Code § 8-1-8.8-13, to the Lieutenant Governor's Office and the Commission on or about
 3 the last day of each month. The following chart shows that information from April 2015
 4 through December 2016:
 5

| | Monthly amount of Illinois Basin coal purchased | Amount of generation using gasified coal |
|-------------|---|--|
| | (tons) | (gross MWs) |
| 2015 | | |
| April | 69,696 | 47,367 |
| May | 11,590 | 18,779 |
| June | 81,273 | 243,902 |
| July | 150,803 | 451,490 |
| August | 139,232 | 295,911 |
| September | 139,406 | 445,291 |
| October | 127,582 | 283,606 |
| November | 0 | 0 |
| December | 81,222 | 197,537 |
| 2016 | | |
| January | 138,334 | 360,546 |
| February | 184,194 | 496,962 |
| March | 127,818 | 340,634 |
| April | 116,345 | 255,775 |
| May | 0 | 10,007 |
| June | 151,280 | 394,048 |
| July | 116,203 | 322,475 |
| August | 174,575 | 477,399 |
| September | 127,969 | 337,258 |
| October | 0 | 0 |
| November | 0 | 0 |
| December | 11,607 | 57,446 |

Q. PLEASE DESCRIBE PETITIONER'S EXHIBITS 1-B AND 1-C.

1 A. Petitioner's Exhibit 1-B is Edwardsport's safety report for this period. Petitioner's
2 Exhibit 1-C provides the operational metrics from April 1, 2015 through December 2016.

3 **Q. CAN YOU PLEASE IDENTIFY PETITIONER'S EXHIBIT 1-D?**

4 A. Petitioner's Exhibit 1-D is a copy of the Petition that was filed with the Commission
5 initiating this Cause.

6 **Q. DOES THIS CONCLUDE YOUR PREPARED TESTIMONY?**

7 A. Yes.

VERIFICATION

I hereby verify under the penalties of perjury that the foregoing representations are true to the best of my knowledge, information and belief.

Signed: Garth W. Woodcox
Garth W. Woodcox

Dated: 3/27/17

2016 Edwardsport Settlement Agreement

1. Introduction

This Settlement Agreement (“Settlement” or “2016 Edwardsport Settlement”) is entered into by and between Duke Energy Indiana, LLC (and its successors), the Indiana Office of Utility Consumer Counselor (“OUCC”), the Duke Energy Indiana Industrial Group, Joint Intervenors (comprised of the Citizens Action Coalition of Indiana, Inc., Sierra Club, Save the Valley and Valley Watch), and Nucor Steel-Indiana (collectively, the “Settling Parties”) solely for purposes of compromise and settlement. The 2016 Edwardsport Settlement amends, supersedes and replaces in its entirety the 2015 Edwardsport Settlement entered into by Duke Energy Indiana, Inc., the OUCC, Duke Energy Indiana Industrial Group and Nucor Steel-Indiana dated September 18, 2015. The Settling Parties agree that this Settlement resolves all disputes, claims and issues from the following Indiana Utility Regulatory Commission (“Commission”) proceedings regarding Duke Energy Indiana’s Edwardsport IGCC Generating Facility: Commission Cause Nos. 43114 IGCC-11 through IGCC-15, the FAC subdocket (Cause No. 38707 FAC 99-S1) and the Duke Energy Indiana FAC cases for which rates were approved on an interim basis pending the outcome of Cause No. 43114 IGCC-12/IGCC-13 (specifically, Cause Nos. 38707 FAC 99, 100 and 101).

Included in this Settlement is an \$87.5 million reduction in recoverable previously incurred operating and maintenance expenses (as defined for purposes of the Settlement to include operating and maintenance expenses, payroll taxes, property taxes, property insurance and net of the credit for old Edwardsport operating expenses (but not fuel and depreciation), hereinafter referred to as “O&M”), a \$5.5 million shareholder funded commitment for attorney fees, trusts and programs, as detailed herein, a cap on recoverable O&M incurred through calendar year 2017, a cap on recoverable post-in-service ongoing capital expenditures incurred through calendar year 2017, and an extended amortization period for the regulatory asset established for post-in-service Edwardsport operating expenses under the terms of the 2012 Settlement Agreement¹ and the Commission’s Cause No. 43114 IGCC-4S1 Order (“Regulatory Asset”) from three years (as was agreed to in the 2012 Settlement Agreement) to eight years. The jurisdictional portion of the \$87.5 million reduction in O&M expenses will be credited to customers via a reduction of the Regulatory Asset. In consideration of the above commitments, the Settling Parties agree that the in-service date of the Edwardsport Generating Facility shall be June 7, 2013 for accounting and ratemaking purposes.

¹ The IURC Cause No. 43114 IGCC-4S1 Phase I and Phase II Settlement Agreement, approved by the Commission on December 27, 2012 – referred to herein as the “2012 Settlement Agreement.”

The Settling Parties desire to fully settle all disputes, claims and issues among them arising out of or relating to these proceedings, and do so, among other reasons, to avoid the continued time and expense of further proceedings and the inherent uncertainties and potential outcomes associated with such proceedings. The Settling Parties agree that the rates that will result from approval and implementation of this Settlement are just, reasonable and necessary. The Settling Parties further agree that this Settlement is a reasonable compromise and that each Settling Party that filed testimony previously in the resolved proceedings will file testimony with the Commission in support of this Settlement, and in such testimony, each such party will explain to the Commission how, in that Settling Party's view, the Settlement is just and reasonable and in the public interest, based on substantial evidence of record.

The Settling Parties agree to work together to achieve approval of this Settlement by April 1, 2016.

2. IGCC Rider Filing Schedule and Rate Implementation

Duke Energy Indiana will file its next IGCC Rider filing in the first quarter of 2017 and annually (*instead of every six months*) thereafter until the Commission issues an order in Duke Energy Indiana's next retail base rate case. Upon approval, the rates established pursuant to this Settlement will be implemented and will remain in effect until rates from the first subsequent annual filing (the 2017 filing) are implemented.

The annual filings will be made in the first quarter of each year beginning in 2017. The 2017 filing would address Edwardsport's operations from April 1, 2015 through December 31, 2016. Subsequent annual filings will cover Edwardsport's operations during the prior calendar year (*i.e.*, the filing made in the first quarter of 2018 would address Edwardsport's operations during calendar year 2017).

The actual kwh for the twelve months ended March 31, 2015, divided by two, will be used to develop the rates, as reflected on Petitioner's Exhibit B-2 page 10 in IGCC-14 and D-2 page 10 in IGCC-15. This reflects an annual period consistent with how the rates will be billed rather than the six month period originally used in IGCC-15. Subsequent filings will use the sales for the 12 months ended December 31 of the prior calendar year to develop rates and use twelve months of revenue requirements. IGCC Rider reconciliations will be performed pursuant to the IGCC Rider, as in previous IGCC Rider proceedings.

The investment on which a return is earned will be updated in each annual filing to include the most recent December 31 balance of plant (subject to the post-in-service ongoing capital cap provisions in Section 3. C.), and of accumulated depreciation.

If the Settlement order is not issued before July 1, 2016, the O&M cap will be effective on July 1, 2016 and will apply to expenses incurred after that date. The difference between O&M expenses that are included in rates and the lower of the O&M cap or actual O&M expenses will be deferred into the Regulatory Asset. In addition, in the event that an order from the Commission is not obtained in time for new IGCC Rider rates to go into effect by July 1, 2016, Duke Energy Indiana will reduce the Regulatory Asset account balance by the difference in the revenue requirement associated with the return under this Settlement and the currently-in-effect IGCC-10 return revenue requirement. This would be a reduction of approximately \$2.46 million/month (on a pro rata basis) until rates are in effect after an order approving this Settlement Agreement. This Regulatory Asset balance currently includes deferred O&M expenses and deferred depreciation expenses, and the Settlement proposes that the Regulatory Asset is to be amortized in the amount of \$20,000,000 per year over approximately eight years.

If Duke Energy Indiana's IGCC Rider filing in either 2017 or 2018 has a lower revenue requirement than in the rates currently in effect at that time, Duke Energy Indiana will file within a week of the 2017 or 2018 IGCC Rider filing with the Electricity Division of the Commission for its approval of an updated tariff to implement these lower rates. These rates, once approved, will be interim and subject to adjustment based on the Commission's final order in that proceeding. As part of this Settlement, the Settling Parties request that the Commission authorize the interim approval of these lower rates at the time of their filing.

3. IGCC Rider Recovery – Rates to be Established Pursuant to this Settlement

The basis for the rates to be approved under this Settlement are the revenue requirements included in Duke Energy Indiana's June 2015 IGCC-15 filing, as adjusted for:

- The lower Regulatory Asset amortization amount of \$20 million per year as set forth in this Settlement, including the impacts of the retail jurisdictional share of \$87.5 million shareholder funding of O&M expenses;
- A change in amortization schedule for the Regulatory Asset from three to approximately eight years;
- Implementing the capped level of O&M expenses by using the actual retail jurisdictional portion of Edwardsport O&M expenses for the twelve months ended March 31, 2015 and increasing it by \$3.5 million each year (approximately \$67.2 million (actual O&M expenses for the twelve months ended March 31, 2015) plus \$2.6 million (for the 9 months of 2015 following March 31, 2015) plus \$3.5 million (for calendar year 2016), resulting in a capped retail jurisdictional level of O&M expenses of \$73.3 million). For the period after the issuance of the Commission's order approving this Settlement, O&M expenses includable in the IGCC Rider are

- capped at the lower of Duke Energy Indiana's actual O&M expenses or the cap amount, as detailed below; and
- Post-in-service ongoing capital projects and retirements as of the March 31, 2015 cut off period in IGCC-15 will be included in the rates implemented under this Settlement (approximately \$25 million in such ongoing capital investments and accumulated depreciation). For the period of April 2015 through December 2017, post-in-service ongoing capital project amounts includable in the rider are capped at the lower of Duke Energy Indiana's actual post-in-service ongoing capital project amounts or the cap amounts, as detailed below.

A. Regulatory Asset. In resolution of these issues, Duke Energy Indiana agrees that Duke Energy shareholders will fully fund \$87.5 million of total Company O&M expenses it has incurred at Edwardsport from its June 7, 2013 in-service date through the implementation of new rates under the terms of this Settlement and will not seek recovery of those costs from its customers.

Retail customers will be credited with the retail jurisdictional share of the shareholder funded \$87.5 million of O&M expenses (*i.e.*, \$80.3 million) by reducing the balance of deferred O&M expenses that have been accumulated in the Regulatory Asset. Reducing the balance of the Regulatory Asset will reduce the amounts retail customers will pay over time as the amortization of these deferred costs are included in rates.

Duke Energy Indiana will continue to defer in the Regulatory Asset actual O&M and depreciation not already in rates until the implementation of rates established pursuant to this Settlement (subject to Section 2 above). The Regulatory Asset balance as of the time of the Commission's order approving this Settlement will be amortized and recovered through rates over approximately eight years (rather than the three years originally agreed to under the 2012 Settlement Agreement). The actual amortization period may vary depending on factors such as the Commission's order date, the actual Regulatory Asset amount at the time rates are implemented pursuant to this Settlement, and actual sales.

The Settling Parties recognize Joint Intervenors' contribution to achieving the reduction in the Regulatory Asset in lieu of a later in-service date and interest on the Commission-ordered Regulatory Liability. The Settling Parties also recognize that because IGCC-10 rates have remained in effect for an extended period of time, the IGCC Rider's revenue requirements have not been put into effect to reflect accumulated depreciation and the related lower capital cost revenue requirements, as Duke Energy Indiana has proposed in its IGCC-11, 12, 13, 14 and 15 filings. The Settling Parties acknowledge that this matter was evaluated in concept and/or

quantitatively by each Party in arriving at the agreed-upon amount of reduction to the Regulatory Asset balance noted above.

Duke Energy Indiana will amortize the Commission-ordered Regulatory Liability² over two years and net it against the Regulatory Asset amortization. The Commission's Cause No. 43114 IGCC-4S1 order (modified in the Cause No. 43114 IGCC-10 order) has ordered a three year amortization. However, in lieu of the Joint Intervenors' request that the Commission order Duke Energy Indiana to add 8% interest to the Regulatory Liability amount, Duke Energy Indiana has agreed to shorten the amortization period from three to two years. No carrying costs will be added to either the Commission-ordered Regulatory Liability or the Regulatory Asset.

The Settling Parties agree that they will not challenge or otherwise oppose Duke Energy Indiana's amortization and recovery through rates of the actual balance of the recoverable Regulatory Asset as of the date of the Commission order approving this Settlement and the implementation of rates pursuant to the Settlement. The recoverable Regulatory Asset is net of the retail jurisdictional share of the shareholder funded \$87.5 million of O&M expenses (*i.e.*, \$80.3 million). As described in the above paragraph, the agreed upon two-year amortization of the Commission-ordered Regulatory Liability will be netted against the amortization of the Regulatory Asset.

B. O&M Cap. The beginning basis of the O&M cap is Edwardsport's actual O&M expenses for the twelve months ended March 31, 2015. It is the total of amounts reflected on Petitioner's Exhibit B-2 page 8 in IGCC-14 and D-2 page 8 in IGCC-15 (\$67.2 million), plus an escalator of \$3.5 million annually. The Settling Parties agree that Duke Energy Indiana shall be entitled to recover the lower of its actual O&M expenses or the applicable O&M cap from the date of the Commission order approving this Settlement Agreement through 2017. The specific cap amounts to be included in the subsequent annual IGCC Rider filings are as follows:

| Period | Base O&M Amount (Retail) | Cap Amount (Retail) | Amount to be Recovered (Retail) |
|--|-------------------------------------|-----------------------------|---|
| 12 Months Ended 3/31/15 | \$67.2 million | | |
| Calendar Year 2016 (beginning with the | | \$73.3 million ³ | Lower of retail portion of 2016 actual or cap |

² As ordered by the Commission in Cause No. 43114 IGCC-4S1 at p. 120.

³ The cap for 2016 will be prorated based on number of months remaining in 2016 after Commission approval of the Settlement Agreement and implementation of new revenue requirements. For example, if the Commission approves the Settlement on April 1, 2016, the 2016 cap would be approximately \$73.3 million/12 months x 9

| | | | |
|--|--|----------------|--|
| issuance of a Commission order approving the Settlement or July 1, 2016, whichever occurs earlier) | | | amount |
| Calendar Year 2017 | | \$76.8 million | Lower of retail portion of 2017 actual or cap amount |

Upon approval of this Settlement, Duke Energy Indiana will use the \$73.3 million O&M cap amount set forth above to set rates for the remainder of 2016. Duke Energy Indiana's first quarter 2017 IGCC Rider filing will use the 2017 cap amount from the table above (*i.e.*, \$76.8 million) to set rates. However, only actual O&M expenses up to the cap applicable to each calendar year are recoverable (*i.e.*, customers will not pay more than actual expenses). Differences between the calendar year cap amount used to set rates in the annual filings and the actual expenditures for the calendar year will be reconciled in a subsequent filing.

The O&M expense cap level increases in 2017 to the 2017 O&M cap amount, regardless of whether Duke Energy Indiana's actual O&M expenses are less than the capped amount in 2016 (as prorated).

To the extent that the Commission's order approving this Settlement is delayed beyond June 2016, the Settling Parties agree that regardless of whether an order has been issued or not, the O&M cap will be effective on July 1, 2016.

The Settling Parties agree that they will not challenge or otherwise oppose Duke Energy Indiana's recovery of O&M expenditures in 2016 and 2017 up to the applicable cap amount, as set forth in this Settlement. In consideration of this Settlement's imposition of O&M expense and post-in-service ongoing capital caps through calendar year 2017 and the reduction in the Regulatory Asset, the non-Duke Settling Parties agree that they will only challenge or raise issues with Edwardsport's operations through December 31, 2017 to the extent its performance is substantially different than the historical Edwardsport performance over the twelve months ended August 2015. However, the non-Duke Settling Parties have not waived their rights to raise issues concerning Edwardsport's operations for the period after December 31, 2017.

The Settling Parties agree the 2016 and 2017 agreed-upon cap amounts are for the term of this Settlement only and that Duke Energy Indiana may request recovery of actual reasonable and necessary O&M expenses in its 2018 IGCC Rider filing (and subsequent annual

months = approximately \$54.97 million, which would be compared to actual expenditures from April through December 2016.

IGCC Rider filings) and in its next general base rate case. Duke Energy Indiana will not seek recovery of O&M expenses above the Settlement cap amounts set forth herein. The non-Duke Settling Parties shall retain all rights to make arguments related to Duke Energy Indiana's recovery of Edwardsport O&M starting with the 2018 IGCC Rider filing and afterwards.

The only exceptions to application of these caps shall be for force majeure events beyond the control and without the fault or negligence of Duke Energy Indiana, such as, by way of example, the following: acts of God, the public enemy, or any governmental or military entity. In such case, Duke Energy Indiana may only propose to recover O&M expenditures above the caps set in this Settlement for the periods of time covered by this Settlement in the event of such a force majeure event. To the extent Duke Energy Indiana proposes to recover O&M expenditures over the caps due to a force majeure event, the non-Duke Settling Parties reserve all rights to make arguments in response to Duke Energy Indiana's request.

C. Post-In-Service Ongoing Capital Cap. Upon approval of this Settlement, Duke Energy Indiana will use its actual post-in-service ongoing capital project amounts and accumulated depreciation, as reflected on Petitioner's Exhibits D-2 page 5, as filed in IGCC-15, to set rates for 2016. For April 1, 2015 through December 31, 2015, calendar year 2016 and calendar year 2017, Duke Energy Indiana is entitled to recover the lower of its actual ongoing capital expenditures or the cap amounts. Assuming Duke Energy Indiana spends at or more than the applicable annual ongoing capital caps, the specific cap amounts for use in the 2017 and 2018 annual IGCC Rider filings would be as follows:

| Period | Cap Amount of Ongoing Capital Additions (Retail) | Incremental Ongoing Capital Additions to be Recovered (Retail) |
|--|---|--|
| Balance at 3/31/15 (to be implemented upon approval of the Settlement) | | \$24.6 million |
| 4/1/15 through Calendar Year 2016 | \$36.1 million ⁴ | Lower of retail portion of 2015/2016 actual expenditures or cap amount for 2017 filing |
| Calendar Year 2017 | \$16.9 million | Lower of retail portion of 2017 actual expenditures or cap amount for 2018 filing |

⁴ Note that this amount includes ongoing capital additions from April 1, 2015 through December 31, 2016.

Because Duke Energy Indiana's IGCC Rider does not use forecasted ongoing capital expenditures, in the 2017 annual IGCC Rider filing, Duke Energy Indiana will propose rates based on the actual ongoing capital expenditures from April 1, 2015 through December 31, 2016 (or the cap amount if lower) being added to the March 31, 2015 balance. In Duke Energy Indiana's 2018 annual IGCC Rider filing, Duke Energy Indiana will propose rates based on the actual ongoing capital expenditures from January 1, 2017 through December 31, 2017 (or the cap amount if lower) being added to the December 31, 2016 balance.

The Settling Parties agree that they will not challenge or otherwise oppose Duke Energy Indiana's recovery of ongoing capital expenditures incurred in 2016 and 2017 up to the applicable cap amount, as set forth in this Settlement. The Settling Parties agree the 2015, 2016 and 2017 agreed-upon cap amounts are for the term of this Settlement only and that Duke Energy Indiana may request recovery of actual reasonable and necessary ongoing capital expenditures from calendar year 2018 in its 2019 IGCC Rider filing (and subsequent annual IGCC Rider filings) and in its next general base rate case. Duke Energy Indiana will not seek recovery of ongoing capital expenses above the Settlement cap amounts set forth herein. The non-Duke Settling Parties shall retain all rights to make arguments related to Duke Energy Indiana's recovery of Edwardsport ongoing capital expenditures starting with the 2019 IGCC Rider filing and afterwards.

The only exceptions to application of these caps shall be for force majeure events beyond the control and without the fault or negligence of Duke Energy Indiana, such as, by way of example, the following: acts of God, the public enemy, or any governmental or military entity. In such case, Duke Energy Indiana may only propose to recover ongoing capital expenditures above the caps set in this Settlement for the term of this Settlement in event of such a force majeure event. To the extent Duke Energy Indiana proposes to recover ongoing capital expenditures over the caps due to a force majeure event, the non-Duke Settling Parties reserve all rights to make arguments in response to Duke Energy Indiana's request.

4. Notice of Payments. Duke Energy Indiana agrees to make the following payments, out of shareholders' funds, for attorneys' fees, litigation expenses, and other funding commitments, within 30 days of a Commission order approving this Settlement (unless this Settlement is voided in its entirety pursuant to section 5 below):

A. A payment to the attorneys representing the Duke Energy Indiana Industrial Group of attorneys' fees in the amount of \$2.5 million and expenses in the amount of \$41,000 incurred for the consolidated causes, with implementation details in a separate Attorneys' Fees and Expenses Implementation Agreement.

B. A payment to Nucor Steel-Indiana of \$100,000 for certain fees and expenses incurred for the consolidated causes, with implementation details in a separate Attorneys' Fees and Expenses Implementation Agreement.

C. The OUCC and Duke Energy Indiana will cooperate to use \$1.859 million as follows:

- \$1.009 million retail rate credit to Duke Energy Indiana residential customers to be reflected in Duke Energy Indiana's next regional transmission organization rider ("RTO") filed after the Commission's order approving this settlement.
- \$250,000 to fund OUCC staff development, consultants, and experts in the areas of power hedging and other matters of current interest in the industry.
- \$500,000 contribution to the Battery Innovation Center to further develop battery storage systems in Duke Energy Indiana's service territory. Details will be agreed upon by the OUCC and Duke Energy Indiana.
- \$100,000 contribution to the Indiana Low Income Home Energy Assistance Program ("LIHEAP") fund to be used solely for Duke Energy Indiana retail customers (*i.e.*, the Helping Hand Fund).

D. The Joint Intervenors and Duke Energy Indiana will cooperate to use \$1 million as follows:

- \$500,000 contribution to the Indiana LIHEAP fund to be used solely for Duke Energy Indiana retail customers (*i.e.*, the Helping Hand Fund).
- \$500,000 contribution to the SUN solar energy grant program to develop solar energy projects for Duke Energy Indiana customers in Duke Energy Indiana's service territory. Joint Intervenors will be the lead contact to the grant administrator, the Indiana Association for Community Economic Development, and will determine the guidelines for participation in the grant program in conjunction with Duke Energy Indiana. Generally, the guidelines will include solar grant funding for installations of less than 0.5 MW for community, educational, religious, and non-profit organizations and/or low income residential customers in Duke Energy Indiana's service territory.

The OUCC, Joint Intervenors and Duke Energy Indiana acknowledge that the programs and contributions identified in Term 4 (C) and (D) may take longer than thirty days to set up and fund.

5. Other.

A. Duke Energy Indiana agrees not to oppose and the OUCC, Industrial Group and Nucor agree to support Joint Intervenors' efforts to seek between \$750,000 and \$1.25 million in attorney fees and expenses from the common fund created by this Settlement Agreement. This includes all attorneys who represented Joint Intervenors in any of the subject proceedings, and precludes further requests for fees and expenses relating to the Settlement Agreement and subject proceedings. The fees and expense award will be in the form of a supplemental settlement between Joint Intervenors, their attorneys, the OUCC, Duke Energy Indiana Industrial Group and Nucor Steel-Indiana. \$500,000 of the fees and expense award will be provided to the Indiana Utility Ratepayer Trust, which would include any amounts owed by Joint Intervenors to reimburse the Indiana Utility Ratepayer Trust for grants received.

B. The Settling Parties agree that any subject to refund designations or similar language in the orders in Duke Energy Indiana's FAC proceedings (IURC Cause Nos. 38707 FAC 99, FAC 100, FAC 101) should be removed once this Settlement is approved and effective. The Settling Parties also agree that this Settlement Agreement resolves all issues reserved for consideration in the pending FAC subdocket, Cause No. 38707 FAC 99-S1.

C. Duke Energy Indiana agrees to retire or cease burning coal at Gallagher Station Units 2 and 4 by December 31, 2022. Ratemaking for the retirement of Gallagher Station Units 2 and 4 will be consistent with normal retirement accounting. Non-Duke Settling Parties may take any position regarding the Gallagher Station Units 2 and 4 retirement accounting in Duke Energy Indiana's next retail base rate case or other proceeding that addresses such retirement to the extent one is filed. The Non-Duke Settling Parties also reserve the right to take any position regarding any issues associated with a decision to convert Gallagher Station Units 2 and 4 from coal to gas-fired. The obligations outlined in this provision shall be subject to the force majeure provisions attached hereto as Exhibit A.

D. Starting in March 2016, Duke Energy Indiana agrees to provide to the Settling Parties information related to Gallagher Units 2 and 4, including plant balances, accumulated depreciation, depreciation expense, tons of coal burned, and expected capital expenditures at Gallagher Station annually through the date that Gallagher Station Units 2 and/or 4 retire or cease burning coal. To the extent confidential information is reviewed, it would be provided only under a non-disclosure agreement.

E. Duke Energy Indiana agrees to provide the following information in its annual IGCC Rider proceedings: (1) planned outage O&M and ongoing capital expenditures; (2) information on causes and costs for major forced outages /derates.

F. Duke Energy Indiana agrees to report the non-confidential monthly low income and residential customers' aggregated data set forth in Exhibit B to this Settlement on an annual basis to the Settling Parties and to the public, in readily accessible spreadsheet format.

G. The Settling Parties agree to work collaboratively for the two years following the date of a final order from the Commission approving the Settlement to consider programs or options to assist low income customers and for increasing solar-powered generating facilities in Duke Energy Indiana's service territory. The Settling Parties will meet at least quarterly to discuss these issues. An attendee shall take detailed minutes at any meeting. The minutes will be provided within two weeks of any meeting to all Settling Parties.

H. The Settling Parties agree that the evidence to be submitted in support of this Settlement, along with the evidence of record previously submitted in Cause Nos. 43114 IGCC-11 through IGCC-15 and the applicable FAC dockets, together constitute substantial evidence to support this Settlement and provide a sufficient evidentiary basis upon which the Commission can make any findings of fact and conclusions of law necessary for the approval of this Settlement. The Settling Parties shall prepare and file with the Commission as soon as reasonably possible, testimony and proposed order(s) in support of and consistent with this Settlement. The Settling Parties agree that all pending motions before the Commission related to the relevant proceedings are hereby withdrawn and resolved by this Settlement.

I. This Settlement is a complete and interrelated package that is intended to resolve all issues related to Edwardsport's operations from April 1, 2013 through March 31, 2015 that were or could have been raised, including Duke Energy Indiana's determination of Edwardsport's In-Service date of June 7, 2013. The Settling Parties agree to oppose or not support any attempt to create additional proceedings or phases of Commission proceedings to further examine Edwardsport operations from April 1, 2013 through March 31, 2015 and related expenditures.

J. The Settling Parties will not appeal or seek rehearing, reconsideration or a stay of a Final Order approving this Settlement in its entirety or without change or condition(s) unacceptable to any adversely affected Party (or related orders to the extent such orders are specifically implementing the provisions of this Settlement).

K. The Settling Parties agree to support in good faith the terms of this Settlement before the Commission and further agree not to take any positions adverse to or inconsistent with the Settlement or any adverse positions against each other with respect to the Settlement before any appellate courts, or on rehearing, reconsideration, remand or subsequent or additional related proceedings before the Commission.

L. The Settling Parties also agree to support or not oppose this Settlement in the

event of any request for a stay by a person not a party to this Settlement or if this Settlement is the subject matter of any other state proceeding.

M. The Settling Parties shall remain bound by the terms of this Settlement Agreement and shall continue to support or not oppose all the terms of the Settlement on appeal, remand, reconsideration, etc., even if the Commission rejects the Settlement. However, in the event that the Settlement is rejected by the Commission and such rejection is ultimately upheld on rehearing, reconsideration, and/or appeal, at the point when all such proceedings and appeals are complete, this Settlement Agreement shall become void and of no further effect (except for provisions which have already been fully implemented or which are explicitly stated herein to survive termination/voiding).

N. If the Commission approves the Settlement in its entirety, or approves the Settlement with modifications that are not unacceptable to affected Settling Parties, and such Commission approval is ultimately vacated or reversed on appeal, the Settling Parties agree to support or not oppose the terms of this Settlement in any additional proceedings before the Commission (as well as any subsequent appeals). In such situation, the Settling Parties agree not to take any positions adverse to or inconsistent with the Settlement or any adverse positions against each other with respect to the Settlement or the subject matters herein, on remand or in additional related proceedings before the Commission. To the extent that the Commission and/or appellate courts ultimately and finally reject this Settlement, any provisions of this Settlement that remain to be implemented will then become void and of no further effect, unless explicitly stated herein.

O. The positions taken by the Settling Parties in this Settlement shall not be deemed to be admissions by any of the Settling Parties and shall not be used as precedent, except as necessary to implement the terms of this Settlement. This provision shall survive termination/voiding of this Agreement.

P. It is understood that this Settlement is reflective of a good faith negotiated settlement and neither the making of the Settlement nor any of its provisions shall constitute an admission by any Settling Party in this or any other litigation or proceeding except as necessary to implement or enforce this Settlement Agreement. It is also understood that each and every term of the Settlement Agreement is in consideration and support of each and every other term.

Q. The Settling Parties will support this Settlement before the Commission and request that the Commission expeditiously accept and approve the Settlement. This Settlement is a complete, interrelated package and is not severable, and shall be accepted or rejected in its entirety without modification or further condition(s) that may be unacceptable to

any Settling Party.

R. The Settling Parties will file this Settlement and testimony in support of this Settlement. Such supportive testimony will be agreed-upon by the Settling Parties and offered into evidence without objection by any Settling Party and the Settling Parties hereby waive cross-examination of each other's witnesses. The Settling Parties propose to submit this Settlement and evidence conditionally, and if the Commission fails to approve this Settlement in its entirety without any change or with condition(s) unacceptable to any adversely affected Settling Party, the Settlement and supporting evidence may be withdrawn and the Commission will continue to proceed to decision in the affected proceedings, without regard to the filing of this Settlement.

S. The communications and discussions during the negotiations and conferences and any materials produced and exchanged concerning this Settlement all relate to offers of settlement and shall be privileged and confidential, without prejudice to the position of any Settling Party, and are not to be used in any manner in connection with any other proceeding or otherwise. This provision shall survive termination/voiding of this Agreement.

T. The undersigned Settling Parties have represented and agreed that they are fully authorized to execute the Settlement on behalf of their designated clients, and their successors and assigns, who will be bound thereby.

U. The provisions of this Settlement shall be enforceable by any Settling Party before the Commission and thereafter in any state court of competent jurisdiction as necessary. The obligations outlined in this Settlement shall be subject to the Remedies provision attached hereto in Exhibit A.

V. This Settlement may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

ACCEPTED AND AGREED TO THIS 14th DAY of JANUARY 2016:

[signature pages to follow]

For Duke Energy Indiana, LLC

A handwritten signature in cursive script, reading "Melody Birmingham-Byrd", written over a horizontal line.

Melody Birmingham-Byrd, President
Duke Energy Indiana, LLC

A handwritten signature in cursive script, reading "Kelley A. Karn", written over a horizontal line.

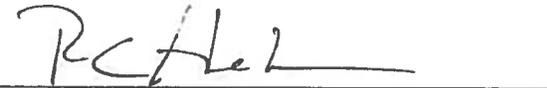
Kelley A. Karn, Deputy General Counsel
Attorney for Duke Energy Indiana

[This is a signature page for the 2016 Edwardsport Settlement before the Indiana Utility
Regulatory Commission. Remainder of page intentionally left blank.]

For the Indiana Office of Utility Consumer Counselor:



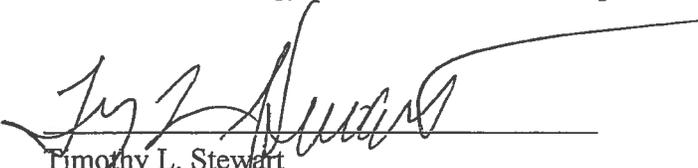
A. David Stippler, Consumer Counselor
Indiana Office of Utility Consumer Counselor



Randall C. Helmen, Chief Deputy Consumer Counselor
Indiana Office of Utility Consumer Counselor

[This is a signature page for the 2016 Edwardsport Settlement before the Indiana Utility
Regulatory Commission. Remainder of page intentionally left blank.]

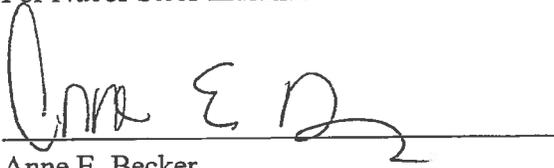
For the Duke Energy Indiana Industrial Group:



Timothy L. Stewart
Attorney for Duke Energy Indiana Industrial Group

[This is a signature page for the 2016 Edwardsport Settlement before the Indiana Utility
Regulatory Commission. Remainder of page intentionally left blank.]

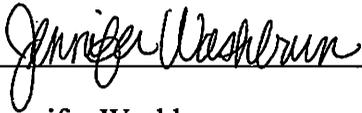
For Nucor Steel-Indiana:

A handwritten signature in black ink, appearing to read "Anne E. Becker", is written over a horizontal line.

Anne E. Becker
Attorney for Nucor Steel-Indiana

[This is a signature page for the 2016 Edwardsport Settlement before the Indiana Utility
Regulatory Commission. Remainder of page intentionally left blank.]

For Joint Intervenors:



Jennifer Washburn

Attorney for Joint Intervenors

[This is a signature page for the 2016 Edwardsport Settlement before the Indiana Utility
Regulatory Commission. Remainder of page intentionally left blank.]

EXHIBIT A

Remedies

1. The Settling Parties agree that any obligation(s) to support or not oppose an approval or other action referred to in this Settlement is limited to the specified proceedings before the Commission, except that, in addition, the Settling Parties have also agreed that no Party will appeal or oppose this Settlement on any appeal of a final Commission order that approves this Settlement to Indiana state court.
2. The Settling Parties acknowledge and agree that specific performance (including the payments required under this Settlement) and injunction are the only appropriate remedies for any alleged breach of any obligation in this Settlement, and under no circumstances shall monetary damages be allowed for any breach of any obligation in this Settlement. In addition, no legal action for specific performance or injunction related to any obligation in this Settlement shall be brought or maintained until: (a) the non-breaching Party provides written notice to the breaching Party which explains with particularity the nature of the claimed breach; and (b) within thirty (30) days after receipt of said notice, the breaching Party fails to cure the claimed breach or, in the case of a claimed breach which cannot be reasonably remedied within a thirty (30) day period, the breaching Party fails to commence to cure the claimed breach within such thirty (30) day period, and thereafter diligently complete the activities necessary to remedy the claimed breach. Acceptance of cure shall not be unreasonably withheld. In the event any action should be necessary to enforce the terms and conditions of this Settlement, each Party shall bear their own attorneys' fees and costs, including the fees and costs of enforcing any judgment.

Force Majeure

3. Definition. For purposes of Term 5(C) of this Settlement, a "Force Majeure Event" shall mean an event that has been or will be caused by circumstances beyond the control Duke Energy of one or more of its contractors, or any entity controlled by Duke Energy, that delays or prevents the performance of any obligation under Term 5(C) or otherwise causes a violation of Term 5(C) despite Duke Energy's best efforts to fulfill the obligation. "Best efforts to fulfill the obligation" include using best efforts to anticipate any potential Force Majeure Event and to address the effects of any such event: (a) as it is occurring; and (b) after it has occurred, such that the delay and/or violation are minimized to the greatest extent possible and the emissions during such event are minimized to the greatest extent possible.
4. Notice of Force Majeure Events. If any event occurs or has occurred that may delay or prevent compliance with or otherwise cause a violation of Duke Energy's obligation under Term 5(C), as to which Duke Energy intends to assert a claim of Force Majeure, Duke Energy shall notify the Settling Parties in writing as soon as practicable, but in no event later than fourteen (14) business days following the date Duke Energy first knew, or by the exercise of due diligence should have known, that the event caused or may cause such delay or violation. In this notice, Duke Energy shall reference

this exhibit of the Settlement and describe the anticipated length of time that the delay or violation may persist, the cause or causes of the Force Majeure Event, all measures taken or to be taken by Duke Energy to prevent or minimize the delay or violation, the schedule by which Duke Energy proposes to implement those measures, and Duke Energy's rationale for attributing the failure, delay or violation to a Force Majeure Event. A copy of this Notice shall be sent electronically, as soon as practicable, to the Settling Parties. Duke Energy shall adopt all reasonable measures to avoid or minimize such failures, delays, or violations. Duke Energy shall be deemed to know of any circumstance which it, its contractors, or any entity controlled by Duke Energy, knew or should have known.

5. Failure to Give Notice. If Duke Energy fails to comply with the notice requirements of this Exhibit, the Settling Parties may seek to void such claim for Force Majeure as to the specific event for which Duke Energy failed to comply with such notice requirement.

6. Settling Parties' Response. The Settling Parties shall notify Duke Energy in writing of their response regarding any claim of Force Majeure as soon as reasonably practicable. If Settling Parties agree that a delay in performance has been or will be caused by a Force Majeure Event, the Settling Parties and Duke Energy shall stipulate to an extension of deadline(s) for performance of Term 5(C) by a period equal to the delay actually caused by the event, in which case the delay at issue shall be deemed not to be a violation of Term 5(C) of this Settlement. In such circumstances, an appropriate modification shall be made in a written document that is signed by all Parties and that makes specific reference to this Settlement.

7. Disagreement. If the Settling Parties do not agree with Duke Energy's claim of Force Majeure, or if the Settling Parties and Duke Energy cannot agree on the length of the delay actually caused by the Force Majeure Event, the matter shall be resolved in accordance with Paragraph 2 of this Exhibit.

8. Burden of Proof. In any dispute regarding Force Majeure, Duke Energy shall bear the burden of proving by a preponderance of the evidence that any delay in performance, or any other violation of Term 5(C) of this Settlement, was caused by or will be caused by a Force Majeure Event. Duke Energy shall also bear the burden of proving by a preponderance of the evidence that it gave the notice required by this Exhibit and the anticipated duration and extent of any failure, delay, or violation(s) attributable to a Force Majeure Event. An extension of one compliance date may, but will not necessarily, result in an extension of a subsequent compliance date.

9. Events Excluded. Unanticipated or increased costs or expenses associated with the performance of Duke Energy's obligations under Term 5(C) shall not constitute a Force Majeure Event.

10. Potential Force Majeure Events. The Parties agree that, depending upon the circumstances related to an event and Duke Energy's response to such circumstances, the kinds of events listed below are among those that could qualify as Force Majeure Events within the meaning of this Exhibit: construction, labor, or equipment delays; acts of God; acts of war or

terrorism; and orders by a government official, government agency, other regulatory authority, or a regional transmission organization (*e.g.*, the MISO), acting under and authorized by applicable law or tariff as accepted by the Federal Energy Regulatory Commission, that directs Duke Energy to supply electricity so long as such order is a response to a state-wide or regional emergency or is necessary to preserve the reliability of the bulk power system. Depending upon the circumstances and Duke Energy's response to such circumstances, failure of a permitting authority or the Indiana Utility Regulatory Commission to issue any necessary permit or order with sufficient time for Duke Energy to achieve compliance with Term 5(C) of this Settlement may constitute a Force Majeure Event where the failure of the authority to act is beyond the control of Duke Energy and Duke Energy has taken all reasonable steps available to it to obtain the necessary permit or order, including, but not limited to: submitting a complete permit application or request; responding to requests for additional information by the authority in a timely fashion; and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal terms and conditions imposed by the authority.

EXHIBIT B

Duke Energy Indiana Residential and Low Income Eligible Customer Reporting

The report will be run annually in the month of July. First report to be provided to the Settling Parties by July 31, 2016 or 30 days after an IURC order in this proceeding, whichever occurs first.

Report will include monthly, aggregated low income eligible and residential customer data for the prior 12 months beginning March (*i.e.*, the first report will cover the twelve months ended March 31, 2016). Report will be made available to the public, in readily accessible spreadsheet format.

IEAP customers are those customers eligible for winter disconnect moratorium as provided to Duke Energy Indiana by Community Action Agencies (*e.g.*, Indiana Energy Assistance Program (IEAP) coded customers).

Reporting Metrics:

General Residential Customers

1. Total Number of Accounts
2. Total Number of Customers Receiving Assistance from Helping Hand
3. Number of Accounts Sent Notice of Disconnection for Nonpayment
4. Number of Service Disconnections for Nonpayment
5. Number of Service Restorations after Disconnection for Nonpayment
6. Number of New Payment Agreements (deferred payment arrangements)
7. Number of Defaulted Payment Agreements (deferred payment agreements)
8. Number of Accounts Written Off as Uncollectible
9. Number of New Budget Billing Plans
10. Number of unpaid accounts 60 days plus in arrears
11. Dollar value of unpaid accounts 60 days plus in arrears

IEAP Customers

1. Total Number of Accounts
2. Total Number of Customers Receiving Assistance from Helping Hand
3. Number of Accounts Sent Notice of Disconnection for Nonpayment
4. Number of Service Disconnections for Nonpayment
5. Number of Service Restorations after Disconnection for Nonpayment
6. Number of New Payment Agreements (deferred payment agreements)
7. Number of Defaulted Payment Agreements (deferred payment agreements)

8. Number of Accounts Written Off as Uncollectible
9. Number of New Budget Billing Plans
10. Number of unpaid accounts 60 days plus in arrears
11. Dollar value of unpaid accounts 60 days plus in arrears

OSHA's Form 300A Summary of Work-Related Injuries and Illnesses

Year 2015



U.S. Department of Labor
 Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees, former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

| Total number of deaths | Total number of cases with days away from work | Total number of cases with job transfer or restriction | Total number of other recordable cases |
|------------------------|--|--|--|
| <u>0</u> (G) | <u>1</u> (H) | <u>0</u> (I) | <u>1</u> (J) |

Number of Days

| Total number of days away from work | Total number of days of job transfer or restriction |
|-------------------------------------|---|
| <u>138</u> (K) | <u>0</u> (L) |

Injury and Illness Types

| Total number of... (M) | (1) Injuries | (2) Skin disorders | (3) Respiratory conditions | (4) Poisonings | (5) Hearing loss | (6) All other illnesses |
|---------------------------|--------------|--------------------|----------------------------|----------------|------------------|-------------------------|
| | <u>2</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |

Post this Summary page from February 1 to April 30 of the year following the year covered by the form.

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave. NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name Edwardsport IGCC

Street 15424 E St Rd 358

City Edwardsport State Indiana Zip 47528

Industry description (e.g., Manufacture of motor truck trailers)
Electric Utility

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
4 9 1 1

OR

North American Industrial Classification (NAICS), if known (e.g., 336212)
2 2 1 1

Employment information

Annual average number of employees 180

Total hours worked by all employees last year 443,992.00

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Spink Woodson STATION MANAGER
 Company executive Title
812-735-8626 1-18-16
 Phone Date

OSHA's Form 300A Summary of Work-Related Injuries and Illnesses

Year 2016



U.S. Department of Labor
 Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

| Number of Cases | | | |
|------------------------|--|--|--|
| Total number of deaths | Total number of cases with days away from work | Total number of cases with job transfer or restriction | Total number of other recordable cases |
| <u>0</u> | <u>1</u> | <u>2</u> | <u>0</u> |
| (G) | (H) | (I) | (J) |

| Number of Days | |
|-------------------------------------|---|
| Total number of days away from work | Total number of days of job transfer or restriction |
| <u>85</u> | <u>85</u> |
| (K) | (L) |

| Injury and Illness Types | | | |
|----------------------------|----------|-------------------------|----------|
| Total number of... | | | |
| (M) | | | |
| (1) Injuries | <u>3</u> | (4) Poisonings | <u>0</u> |
| (2) Skin disorders | <u>0</u> | (5) Hearing loss | <u>0</u> |
| (3) Respiratory conditions | <u>0</u> | (6) All other illnesses | <u>0</u> |

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

| Establishment information | |
|---|--|
| Your establishment name | <u>Edwardsport IGCC</u> |
| Street | <u>15424 E. St. Rd. 358</u> |
| City | <u>Edwardsport</u> State <u>Indiana</u> Zip <u>47528</u> |
| Industry description (e.g., Manufacture of motor truck trailers) | <u>Electric Utility</u> |
| Standard Industrial Classification (SIC), if known (e.g., SIC 3715) | <u>4 9 1 1</u> |
| OR | |
| North American Industrial Classification (NAICS), if known (e.g., 336212) | <u>2 2 1 1 1 2</u> |
| Employment information | |
| Annual average number of employees | <u>180</u> |
| Total hours worked by all employees last year | <u>567,609.00</u> |
| Sign here | |
| Knowingly falsifying this document may result in a fine. | |
| I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete. | |
| <u>Cecil J. Anderson</u> Company executive | <u>JP</u> Title |
| <u>812-735-8577</u> Phone | <u>1-25-2017</u> Date |

Power Generation Events and Run Times

| CT1 | | |
|----------------------------|---------------------|----------------------------|
| Close Breaker | Open Breaker | On-Line Time, hours |
| 4/1/2015 0:00 ¹ | 4/9/2015 20:20 | 212.33 |
| 5/14/2015 21:17 | 5/22/2015 2:55 | 173.63 |
| 5/25/2015 20:50 | 6/1/2015 0:00 | 147.17 |
| 6/1/2015 0:00 | 6/17/2015 22:49 | 406.82 |
| 6/18/2015 3:27 | 6/18/2015 3:33 | 0.10 |
| 6/18/2015 7:15 | 6/29/2015 21:48 | 278.55 |
| 6/30/2015 1:38 | 7/1/2015 0:00 | 22.37 |
| 7/1/2015 0:00 | 8/1/2015 0:00 | 744.00 |
| 8/1/2015 0:00 | 8/12/2015 1:44 | 265.73 |
| 8/14/2015 7:08 | 8/23/2015 1:44 | 210.60 |
| 8/31/2015 0:57 | 9/1/2015 0:00 | 23.05 |
| 9/1/2015 0:00 | 10/1/2015 0:00 | 720.00 |
| 10/1/2015 0:00 | 10/17/2015 1:49 | 385.82 |
| 11/3/2015 22:13 | 11/12/2015 23:15 | 217.03 |
| 11/29/2015 3:34 | 11/29/2015 3:35 | 0.02 |
| 11/29/2015 5:18 | 11/29/2015 5:18 | 0.00 |
| 11/29/2015 15:47 | 12/1/2015 0:00 | 32.22 |
| 12/1/2015 0:00 | 12/25/2015 21:30 | 597.50 |
| 12/28/2015 0:07 | 1/1/2016 0:00 | 95.88 |
| 1/1/2016 0:00 | 1/4/2016 4:59 | 76.98 |
| 1/5/2016 8:11 | 1/16/2016 7:05 | 262.90 |
| 1/17/2016 17:06 | 2/1/2016 0:00 | 342.90 |
| 2/1/2016 0:00 | 2/8/2016 12:41 | 180.68 |
| 2/9/2016 11:34 | 3/1/2016 0:00 | 492.43 |
| 3/1/2016 0:00 | 3/7/2016 16:57 | 160.95 |
| 3/8/2016 10:09 | 3/8/2016 14:34 | 4.42 |
| 3/10/2016 5:46 | 3/10/2016 12:47 | 7.02 |
| 3/10/2016 21:29 | 4/1/2016 0:00 | 506.52 |
| 4/1/2016 0:00 | 4/23/2016 17:10 | 545.17 |
| 5/12/2016 2:56 | 6/1/2016 0:00 | 477.07 |
| 6/1/2016 0:00 | 6/18/2016 16:57 | 424.95 |
| 6/18/2016 22:08 | 7/1/2016 0:00 | 289.87 |
| 7/1/2016 0:00 | 8/1/2016 0:00 | 744.00 |
| 8/1/2016 0:00 | 8/27/2016 0:24 | 624.40 |
| 8/27/2016 10:41 | 9/1/2016 0:00 | 109.32 |

¹ Please note that when these charts state "0:00", this is indicating the beginning of a new month, not a new start of the CT, Steam Turbine or Gasifier.

| | | |
|------------------|------------------|--------|
| 9/1/2016 0:00 | 9/23/2016 23:41 | 551.68 |
| 11/27/2016 14:20 | 11/30/2016 2:53 | 60.55 |
| 11/30/2016 16:56 | 12/1/2016 0:00 | 7.07 |
| 12/1/2016 0:00 | 12/10/2016 14:06 | 230.10 |
| 12/11/2016 12:55 | 12/17/2016 1:15 | 132.33 |
| 12/17/2016 7:58 | 12/22/2016 20:05 | 132.12 |
| 12/24/2016 23:33 | 12/25/2016 0:34 | 1.02 |
| 12/27/2016 18:51 | 1/1/2017 0:00 | 101.15 |

| CT2 | | |
|----------------------|---------------------|----------------------------|
| Close Breaker | Open Breaker | On-Line Time, hours |
| 4/1/2015 0:00 | 4/9/2015 20:22 | 212.37 |
| 5/15/2015 10:35 | 5/22/2015 1:52 | 159.28 |
| 5/25/2015 22:47 | 6/1/2015 0:00 | 145.22 |
| 6/1/2015 0:00 | 7/1/2015 0:00 | 720.00 |
| 7/1/2015 0:00 | 8/1/2015 0:00 | 744.00 |
| 8/1/2015 0:00 | 9/1/2015 0:00 | 744.00 |
| 9/1/2015 0:00 | 10/1/2015 0:00 | 720.00 |
| 10/1/2015 0:00 | 10/6/2015 6:49 | 126.82 |
| 10/9/2015 23:18 | 11/1/2015 0:00 | 528.70 |
| 11/1/2015 0:00 | 11/4/2015 9:31 | 81.52 |
| 11/28/2015 20:57 | 12/1/2015 0:00 | 51.05 |
| 12/1/2015 0:00 | 12/24/2015 1:34 | 553.57 |
| 12/24/2015 9:59 | 1/1/2016 0:00 | 182.02 |
| 1/1/2016 0:00 | 1/14/2016 4:43 | 316.72 |
| 1/15/2016 19:54 | 1/15/2016 21:47 | 1.88 |
| 1/15/2016 23:02 | 2/1/2016 0:00 | 384.97 |
| 2/1/2016 0:00 | 3/1/2016 0:00 | 696.00 |
| 3/1/2016 0:00 | 4/1/2016 0:00 | 744.00 |
| 4/1/2016 0:00 | 4/17/2016 18:53 | 402.88 |
| 5/6/2016 4:35 | 5/6/2016 5:53 | 1.30 |
| 5/12/2016 4:24 | 5/12/2016 4:52 | 0.47 |
| 5/13/2016 22:22 | 5/27/2016 6:26 | 320.07 |
| 5/27/2016 7:30 | 5/30/2016 12:57 | 77.45 |
| 6/1/2016 0:13 | 7/1/2016 0:00 | 719.78 |
| 7/1/2016 0:00 | 7/16/2016 0:30 | 360.50 |
| 7/17/2016 17:27 | 7/19/2016 9:05 | 39.63 |
| 7/20/2016 6:50 | 8/1/2016 0:00 | 281.17 |
| 8/1/2016 0:00 | 9/1/2016 0:00 | 744.00 |
| 9/1/2016 0:00 | 9/24/2016 8:04 | 560.07 |
| 11/27/2016 16:32 | 12/1/2016 0:00 | 79.47 |
| 12/1/2016 0:00 | 12/19/2016 19:06 | 451.10 |
| 12/20/2016 1:51 | 12/28/2016 3:38 | 193.78 |
| 12/30/2016 14:31 | 1/1/2017 0:00 | 33.48 |

| Steam Turbine | | |
|----------------------|---------------------|----------------------------|
| Close Breaker | Open Breaker | On-Line Time, hours |
| 4/1/2015 0:00 | 4/9/2015 20:27 | 212.45 |
| 5/15/2015 18:13 | 5/22/2015 2:48 | 152.58 |
| 5/26/2015 4:05 | 6/1/2015 0:00 | 139.92 |
| 6/1/2015 0:00 | 7/1/2015 0:00 | 720.00 |
| 7/1/2015 0:00 | 8/1/2015 0:00 | 744.00 |
| 8/1/2015 0:00 | 9/1/2015 0:00 | 744.00 |
| 9/1/2015 0:00 | 10/1/2015 0:00 | 720.00 |
| 10/1/2015 0:00 | 10/26/2015 17:05 | 617.08 |
| 10/26/2015 20:15 | 11/1/2015 0:00 | 123.75 |
| 11/1/2015 0:00 | 11/12/2015 23:18 | 287.30 |
| 11/29/2015 18:42 | 12/1/2015 0:00 | 29.30 |
| 12/1/2015 0:00 | 1/1/2016 0:00 | 744.00 |
| 1/1/2016 0:00 | 1/18/2016 12:30 | 420.50 |
| 1/18/2016 13:52 | 2/1/2016 0:00 | 322.13 |
| 2/1/2016 0:00 | 2/8/2016 13:07 | 181.12 |
| 2/9/2016 19:19 | 3/1/2016 0:00 | 484.68 |
| 3/1/2016 0:00 | 4/1/2016 0:00 | 744.00 |
| 4/1/2016 0:00 | 4/23/2016 17:10 | 545.17 |
| 5/14/2016 16:46 | 6/1/2016 0:00 | 415.23 |
| 6/1/2016 0:00 | 7/1/2016 0:00 | 720.00 |
| 7/1/2016 0:00 | 8/1/2016 0:00 | 744.00 |
| 8/1/2016 0:00 | 9/1/2016 0:00 | 744.00 |
| 9/1/2016 0:00 | 9/24/2016 8:04 | 560.07 |
| 11/28/2016 11:55 | 12/1/2016 0:00 | 60.08 |
| 12/1/2016 0:00 | 12/21/2016 7:24 | 487.40 |
| 12/22/2016 1:16 | 1/1/2017 0:00 | 238.73 |

Gasifier Events and Run Times

| Gasifier 1 | | |
|---------------------|--------------------|--------------------------|
| Start Slurry | Stop Slurry | On-Line Time, hrs |
| 4/1/2015 0:00 | 4/4/2015 1:11 | 73.18 |
| 5/28/2015 22:43 | 6/1/2015 0:00 | 73.28 |
| 6/1/2015 0:00 | 6/8/2015 13:59 | 181.98 |
| 6/20/2015 17:16 | 6/26/2015 23:19 | 150.05 |
| 7/8/2015 22:44 | 8/1/2015 0:00 | 553.27 |
| 8/1/2015 0:00 | 8/14/2015 10:40 | 322.67 |
| 9/2/2015 22:08 | 9/3/2015 21:35 | 23.45 |
| 9/6/2015 18:06 | 10/1/2015 0:00 | 581.90 |
| 10/1/2015 0:00 | 10/16/2015 23:30 | 383.50 |
| 12/8/2015 19:32 | 1/1/2016 0:00 | 556.47 |
| 1/1/16 0:00 | 2/1/2016 0:00 | 744.00 |
| 2/1/2016 0:00 | 3/1/2016 0:00 | 696.00 |
| 3/1/2016 0:00 | 3/15/2016 15:04 | 351.07 |
| 3/24/2016 11:02 | 3/28/2016 23:29 | 108.45 |
| 4/3/2016 21:28 | 4/10/2016 18:15 | 164.78 |
| 4/13/2016 14:46 | 4/23/2016 0:05 | 225.32 |
| 6/3/2016 4:45 | 6/8/2016 21:19 | 136.57 |
| 6/15/2016 6:23 | 7/1/2016 0:00 | 377.62 |
| 7/1/2016 0:00 | 7/12/2016 3:13 | 267.22 |
| 8/3/2016 14:52 | 9/1/2016 0:00 | 681.13 |
| 9/1/2016 0:00 | 9/23/2016 15:14 | 543.23 |
| 12/21/2016 1:19 | 1/1/2017 0:00 | 262.68 |

| Gasifier 2 | | |
|---------------------|--------------------|--------------------------|
| Start Slurry | Stop Slurry | On-Line Time, hrs |
| 4/1/2015 0:00 | 4/2/2015 5:52 | 29.87 |
| 4/5/2015 10:34 | 4/7/2015 12:55 | 50.35 |
| 6/10/2015 16:12 | 7/1/2015 0:00 | 487.80 |
| 7/1/2015 0:00 | 8/1/2015 0:00 | 744.00 |
| 8/1/2015 0:00 | 8/9/2015 18:40 | 210.67 |
| 8/15/2015 10:24 | 8/27/2015 9:41 | 287.28 |
| 8/30/2015 14:55 | 9/1/2015 0:00 | 33.08 |
| 9/1/2015 0:00 | 10/1/2015 0:00 | 720.00 |
| 10/1/2015 0:00 | 10/23/2015 22:07 | 550.12 |
| 12/31/2015 18:46 | 12/31/2015 19:40 | 0.90 |
| 1/11/16 19:43 | 2/1/2016 0:00 | 484.28 |
| 2/1/2016 0:00 | 3/1/2016 0:00 | 696.00 |
| 3/1/2016 0:00 | 3/15/2016 15:06 | 351.10 |
| 3/22/2016 16:12 | 4/1/2016 0:00 | 223.80 |
| 4/1/2016 0:00 | 4/19/2016 0:16 | 432.27 |
| 5/29/2016 16:05 | 6/1/2016 0:00 | 55.92 |
| 6/1/2016 0:00 | 6/13/2016 11:54 | 299.90 |
| 6/18/2016 12:12 | 7/1/2016 0:00 | 299.80 |
| 7/1/2016 0:00 | 7/23/2016 4:04 | 532.07 |
| 7/27/2016 20:56 | 8/1/2016 0:00 | 99.07 |
| 8/1/2016 0:00 | 8/28/2016 12:40 | 660.67 |
| 9/6/16 10:42 | 9/22/2016 17:38 | 390.93 |

Summary of Net Generation and Operational Metrics

| 2015-2016 | Net Generation MWH | Net Capacity Factor | Availability Factor | Gasifier Availability Factor | Equivalent Availability Factor | Equivalent Forced Outage Rate |
|-------------------------|-----------------------------------|--------------------------------|--------------------------------|---|---|--|
| April 2015 | 85,979 | 19.32 | 40.00 | 10.65 | 26.49 | 12.68 |
| May | 116,476 | 25.33 | 77.28 | 4.92 | 47.36 | 41.70 |
| June | 307,236 | 69.05 | 100.00 | 56.93 | 76.30 | 16.09 |
| July | 368,309 | 80.10 | 100.00 | 87.18 | 83.67 | 8.39 |
| August | 278,768 | 60.63 | 100.00 | 57.37 | 70.13 | 19.37 |
| September | 361,116 | 81.16 | 100.00 | 92.04 | 85.37 | 7.02 |
| October | 242,372 | 52.71 | 100.00 | 62.74 | 64.37 | 16.16 |
| November | 61,803 | 13.89 | 87.96 | 0.00 | 42.25 | 46.95 |
| December | 341,566 | 74.29 | 100.00 | 37.46 | 78.61 | 21.39 |
| January 2016 | 342,873 | 74.57 | 100.00 | 82.55 | 82.92 | 17.08 |
| February | 376,695 | 87.58 | 100.00 | 100.00 | 90.13 | 9.87 |
| March | 351,127 | 76.37 | 100.00 | 69.52 | 78.29 | 21.50 |
| April | 230,299 | 51.76 | 75.72 | 57.11 | 51.48 | 37.77 |
| May | 152,651 | 33.20 | 83.25 | 3.76 | 34.73 | 31.67 |
| June | 361,110 | 81.16 | 100.00 | 77.35 | 83.76 | 12.58 |
| July | 347,328 | 75.54 | 100.00 | 60.37 | 77.55 | 16.46 |
| August | 385,398 | 83.82 | 100.00 | 90.17 | 85.91 | 10.37 |
| September | 276,943 | 62.24 | 77.79 | 64.87 | 66.63 | 8.84 |
| October | -6,819 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| November | 19,815 | 4.45 | 11.34 | 0.00 | 6.74 | 38.26 |
| December | 255,127 | 55.49 | 100.00 | 19.54 | 57.78 | 34.28 |

Summary of Gasifier Run Time

| 2015/2016 | G1 | | G2 | |
|--------------|--------|-----------|--------|-----------|
| | Starts | Run Hours | Starts | Run Hours |
| April 2015 | 0 | 73.18 | 2(a) | 80.22 |
| May | 1 | 73.28 | 0 | 0 |
| June | 1 | 332.03 | 1 | 487.80 |
| July | 2(a) | 553.27 | 0 | 744.00 |
| August | 0 | 322.67 | 2 | 531.03 |
| September | 2 | 605.35 | 0 | 720.00 |
| October | 0 | 383.50 | 0 | 550.12 |
| November | 0 | 0 | 0 | 0 |
| December | 2(a) | 556.47 | 1 | 0.90 |
| January 2016 | 0 | 744.00 | 1 | 484.28 |
| February | 0 | 696.00 | 0 | 696.00 |
| March | 2(a) | 459.52 | 1 | 574.90 |
| April | 2 | 390.10 | 0 | 432.27 |
| May | 1(a) | 0.00 | 1 | 55.92 |
| June | 3(a) | 514.18 | 1 | 599.70 |
| July | 0 | 267.22 | 1 | 631.13 |
| August | 1 | 681.13 | 0 | 660.67 |
| September | 0 | 543.23 | 2(a) | 390.93 |
| October | 0 | 0.00 | 0 | 0.00 |
| November | 0 | 0.00 | 0 | 0.00 |
| December | 1 | 262.68 | 0 | 0.00 |

(a)-Includes an attempted start that had no run hours

Summary of Power Generated, Power Consumed, Net Power Generated and Run Time by Month

| 2015/2016 | GROSS MWH | AUXILIARY MWH | Net MWH |
|---------------------|----------------------|--------------------------|--------------------|
| April 2015 | 119,468 | 33,489 | 85,979 |
| May | 143,165 | 26,689 | 116,476 |
| June | 412,847 | 105,611 | 307,236 |
| July | 500,996 | 132,687 | 368,309 |
| August | 397,720 | 118,952 | 278,768 |
| September | 481,919 | 120,803 | 361,116 |
| October | 335,108 | 92,736 | 242,372 |
| November | 85,402 | 23,599 | 61,803 |
| December | 433,104 | 91,538 | 341,566 |
| January 2016 | 469,121 | 126,248 | 342,873 |
| February | 499,819 | 123,124 | 376,695 |
| March | 475,371 | 124,244 | 351,127 |
| April | 318,216 | 87,917 | 230,299 |
| May | 206,371 | 53,720 | 152,651 |
| June | 486,624 | 125,514 | 361,110 |
| July | 453,763 | 106,435 | 347,328 |
| August | 516,247 | 130,849 | 385,398 |
| September | 386,369 | 109,426 | 276,943 |
| October | 0 | 6,819 | (6,819) |
| November | 25,806 | 5,991 | 19,815 |
| December | 329,705 | 74,578 | 255,127 |

| 2015/2016 | CT1 | | CT2 | | Steam Turbine | |
|--------------|--------|-----------|--------|-----------|---------------|-----------|
| | Starts | Run Hours | Starts | Run Hours | Starts | Run Hours |
| April 2015 | 0 | 212.33 | 0 | 212.37 | 0 | 212.45 |
| May | 2 | 320.80 | 2 | 304.50 | 2 | 292.50 |
| June | 3 | 707.83 | 0 | 720.00 | 0 | 720.00 |
| July | 0 | 744.00 | 0 | 744.00 | 0 | 744.00 |
| August | 2 | 499.38 | 0 | 744.00 | 0 | 744.00 |
| September | 0 | 720.00 | 0 | 720.00 | 0 | 720.00 |
| October | 0 | 385.82 | 1 | 655.52 | 1 | 740.83 |
| November | 4(a) | 249.27 | 1 | 132.57 | 1 | 316.60 |
| December | 1 | 693.38 | 1 | 735.58 | 0 | 744.00 |
| January 2016 | 2 | 682.78 | 2 | 703.57 | 1 | 742.63 |
| February | 1 | 673.12 | 0 | 696.00 | 1 | 665.80 |
| March | 7(b) | 678.90 | 0 | 744.00 | 0 | 744.00 |
| April | 0 | 545.17 | 1(a) | 402.88 | 0 | 545.23 |
| May | 1 | 477.07 | 4 | 399.28 | 1 | 415.23 |
| June | 1 | 714.82 | 1 | 719.78 | 0 | 720.00 |
| July | 0 | 744.00 | 2 | 681.30 | 0 | 744.00 |
| August | 1 | 733.72 | 0 | 744.00 | 0 | 744.00 |
| September | 0 | 551.68 | 0 | 560.07 | 0 | 560.07 |
| October | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| November | 2 | 67.62 | 1 | 79.47 | 1 | 60.08 |
| December | 4 | 596.72 | 2 | 678.37 | 1 | 726.13 |

(a)-Includes an attempted start that had no run hours

(b)-Includes 4 attempted starts that had no run hours

Coal Received and Consumed (tons)

| 2015/2016 | Beginning Inventory | Received | Consumed in Generation | Consumed in Light Off | Ending Inventory |
|---------------------|----------------------------|-----------------|-------------------------------|------------------------------|-------------------------|
| April 2015 | 336,501.05 | 69,696.39 | 19,967.72 | 153.78 | 386,075.94 |
| May | 386,075.94 | 11,589.70 | 8,245.74 | 398.68 | 389,021.22 |
| June | 389,021.22 | 81,273.29 | 92,856.51 | 329.07 | 377,108.93 |
| July | 377,108.93 | 150,802.75 | 164,286.46 | 178.04 | 363,447.18 |
| August | 363,447.18 | 139,231.59 | 106,260.78 | 330.02 | 396,087.97 |
| September | 396,087.97 | 139,405.60 | 159,862.32 | 255.88 | 375,375.37 |
| October | 375,375.37 | 127,582.39 | 111,898.50 | 0.00 | 391,059.26 |
| November | 391,059.26 | 0.00 | 0.00 | 0.00 | 391,059.26 |
| December | 391,059.26 | 81,221.74 | 75,057.86 | 130.81 | 370,287.72** |
| January 2016 | 370,287.72 | 138,333.70 | 145,115.25 | 175.58 | 363,330.59 |
| February | 363,330.59 | 184,193.91 | 182,600.00 | 0.00 | 364,924.50 |
| March | 364,924.50 | 127,818.42 | 126,830.36 | 428.64 | 365,483.92 |
| April | 365,483.92 | 116,345.34 | 97,006.74 | 541.76 | 384,280.76 |
| May | 384,280.76 | 0.00 | 5,203.09 | 410.69 | 378,666.98 |
| June | 378,666.98 | 151,280.44 | 148,588.06 | 1,129.56 | 380,229.80 |
| July | 380,229.80 | 116,202.89 | 119,391.63 | 111.97 | 376,929.09 |
| August | 376,929.09 | 174,575.39 | 168,449.86 | 214.64 | 382,839.98 |
| September | 382,839.98 | 127,968.67 | 124,417.72 | 129.78 | 386,261.15 |
| October | 386,261.15 | 0.00 | 0.00 | 0.00 | 386,261.15 |
| November | 386,261.15 | 0.00 | 0.00 | 0.00 | 386,261.15 |
| December | 386,261.15 | 11,607.25 | 26,396.37 | 940.22 | 370,531.81 |

** Includes a (26,804.61) ton adjustment from the annual flyover inventory.

Natural Gas Purchased and Consumed (dekatherms)

| 2015/2016 | CTs Consumed in Generation | CTs Consumed in Light Off | Consumed in Balance of Plant | Total Consumed by All Sources |
|-------------------------|---|--|---|--|
| April 2015 | 496,155 | 0 | 61,559 | 557,714 |
| May | 897,438 | 594 | 78,098 | 976,130 |
| June | 1,250,722 | 108 | 41,816 | 1,292,646 |
| July | 365,420 | 0 | 10,808 | 376,227 |
| August | 659,207 | 474 | 64,368 | 724,050 |
| September | 243,356 | 0 | 20,704 | 264,060 |
| October | 370,911 | 226 | 127,631 | 498,768 |
| November | 632,775 | 680 | 83,210 | 716,665 |
| December | 1,658,880 | 146 | 73,007 | 1,732,033 |
| January 2016 | 811,933 | 767 | 22,092 | 834,792 |
| February | 20,556 | 51 | 4,220 | 24,827 |
| March | 882,438 | 198 | 67,291 | 949,927 |
| April | 427,027 | 0 | 155,353 | 582,380 |
| May | 1,399,309 | 534 | 85,844 | 1,485,687 |
| June | 593,978 | 87 | 75,565 | 669,630 |
| July | 909,258 | 90 | 110,320 | 1,019,668 |
| August | 285,477 | 32 | 179,011 | 464,520 |
| September | 322,495 | - | 222,060 | 544,555 |
| October | - | - | 78,040 | 78,040 |
| November | 206,495 | 456 | 20,348 | 227,299 |
| December | 1,969,798 | 1,736 | 249,579 | 2,221,113 |

Syngas Consumed (dekatherms)

| 2015/2016 | CTs Consumed in Generation | CTs Consumed in Light Off | Total Consumed by All Sources |
|------------------|---|--|--|
| April | 287,749 | 2,233 | 289,982 |
| May | 119,082 | 5,761 | 124,843 |
| June | 1,330,279 | 4,793 | 1,335,073 |
| July | 2,483,069 | 2,618 | 2,485,687 |
| August | 1,695,624 | 4,916 | 1,700,540 |
| September | 2,469,043 | 3,834 | 2,472,878 |
| October | 1,600,216 | 0 | 1,600,216 |
| November | 0 | 0 | 0 |
| December | 1,091,198 | 1,902 | 1,093,099 |
| January | 1,887,162 | 2,561 | 1,889,723 |
| February | 2,718,133 | 0 | 2,718,133 |
| March | 1,860,343 | 6,279 | 1,866,622 |
| April | 1,386,913 | 8,032 | 1,394,945 |
| May | 84,424 | 5,971 | 90,395 |
| June | 2,158,893 | 16,716 | 2,175,609 |
| July | 1,751,128 | 1,671 | 1,752,799 |
| August | 2,510,532 | 3,193 | 2,513,725 |
| September | 1,788,644 | 1,926 | 1,790,570 |
| October | 0 | 0 | 0 |
| November | 0 | 0 | 0 |
| December | 320,869 | 13,463 | 334,332 |

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF DUKE ENERGY INDIANA, LLC)
SEEKING APPROVAL TO REFLECT COSTS)
INCURRED FOR THE EDWARDSPOINT)
INTEGRATED GASIFICATION COMBINED CYCLE)
GENERATING FACILITY PROPERTY, INCLUDING)
POST-IN-SERVICE ONGOING CAPITAL)
EXPENDITURES, IN ITS RATES AND TO REFLECT)
APPLICABLE RELATED COSTS AND CREDITS,) CAUSE NO. 43114 IGCC-16
INCLUDING OPERATING EXPENSES,)
DEPRECIATION, TAX CREDITS, A CUMULATIVE)
RECONCILIATION THROUGH DECEMBER 31,)
2016, AND CERTAIN 2016 SETTLEMENT)
AGREEMENT PROVISIONS, THROUGH ITS)
STANDARD CONTRACT RIDER NO. 61 PURSUANT)
TO INDIANA CODE §§ 8-1-8.8-11 AND -12)

PETITION

TO THE INDIANA UTILITY REGULATORY COMMISSION:

Duke Energy Indiana, LLC (“Petitioner,” “Company” or “Duke Energy Indiana”) respectfully represents and shows to the Indiana Utility Regulatory Commission (“Commission”) that:

1. **Petitioner’s Corporate and Regulated Status.** Petitioner is an Indiana corporation with its principal office in the Town of Plainfield, Hendricks County, Indiana. Its address is 1000 East Main Street, Plainfield, Indiana 46168. It has the corporate power and authority, among others, to engage, and it is engaged, in the business of supplying electric utility service to the public in the State of Indiana. Accordingly, Petitioner is a “public utility” within the meaning of that term as used in the Indiana Public Service Commission Act, as amended,

Indiana Code § 8-1-2-1, and is subject to the jurisdiction of the Commission in the manner and to the extent provided by the laws of the State of Indiana.

2. Petitioner's Electric Utility Service. Petitioner owns, operates, manages and controls plants, properties and equipment used and useful for the production, transmission, distribution and furnishing of electric utility service to the public in the State of Indiana. Duke Energy Indiana directly supplies electric energy to more than 817,000 customers located in 69 counties in the central, north central and southern parts of the State of Indiana. Petitioner also sells electric energy for resale to municipal utilities, Wabash Valley Power Association, Inc., Indiana Municipal Power Agency and to other public utilities that in turn supply electric utility service to numerous customers in areas not served directly by Petitioner.

3. Petitioner's Electric Generating Properties. As of the date of this Petition, Petitioner's electric generating properties consist of: (1) two syngas/natural gas-fired combustion turbines and one steam turbine; (2) steam capacity located at three stations comprised of nine coal-fired generating units; (3) combined cycle capacity located at one station comprised of three natural gas-fired combustion turbines and two steam turbine-generators; (4) a run-of-river hydroelectric generation facility comprised of three units; (5) peaking capacity consisting of four oil-fired diesels located at one station, seven oil-fired CT units located at two stations, and twenty-four natural gas-fired combustion turbines, one of which has oil back-up; and (6) one solar powered generating facility located at NSA Crane.

4. Purpose of this Proceeding. In its November 20, 2007 Order in Cause Nos. 43114 and 43114-S1 (the "CPCN Order"), the Commission issued certificates of public convenience and necessity and clean coal technology ("CPCNs") authorizing Petitioner to

construct an integrated gasification combined cycle plant in Knox County, Indiana (“IGCC Project” or “Project”). The CPCN Order approved Petitioner’s proposed IGCC Project and Standard Contract Rider No. 61 (“IGCC Rider”), which provides for the timely recovery of costs in connection with the IGCC Project. The Commission also directed Petitioner to file semi-annual IGCC Rider and ongoing review progress report proceedings.

On April 30, 2012, Petitioner, the Indiana Office of Utility Consumer Counselor (“OUCC”), Nucor Steel-Indiana, a division of Nucor Corporation (“Nucor”), and the Duke Energy Indiana Industrial Group (“Industrial Group”) entered into a Settlement Agreement (“2012 Settlement Agreement”) resolving all issues among them related to the construction of the IGCC Project. The 2012 Settlement Agreement provides a hard cost cap on the Project of \$2.595 billion, among its other provisions. The Commission issued its Order on December 27, 2012 approving the 2012 Settlement Agreement with two modifications.

On October 14, 2015, the Commission consolidated Cause Nos. IGCC-11 through IGCC-15, and Cause No. 38707 FAC 99 S1 for purposes of establishing a new procedural schedule for taking additional evidence related to a settlement agreement reached in the consolidated cause. On January 18, 2016, Petitioner, the Industrial Group, OUCC, Nucor, and Joint Intervenors submitted to the Commission for approval the 2016 Settlement Agreement (“2016 Settlement Agreement”) resolving all issues among them in the consolidated cause numbers. After further proceedings, on August 24, 2016, the Commission issued an order approving the 2016 Settlement Agreement. The 2016 Settlement Agreement provides a cap on recoverable O&M incurred through 2017, a cap on recoverable post-in-service ongoing capital expenditures incurred through 2017, and an extended amortization period for the regulatory asset established

for post-in-service Edwardsport operating expenses, among its other provisions. The Commission also approved the ongoing progress reports and implementation of IGCC-15 rates as adjusted by the 2016 Settlement Agreement.

5. Specific Relief Sought By This Petition in This Proceeding. Petitioner is requesting that the Commission approve the following: (1) the value of the Edwardsport Generating Facility, including the value of related ongoing capital project expenditures, upon which the Company is requesting authorization to earn a return, incorporating the 2016 Settlement Agreement's \$36.1 million (retail) cap on additional investment in ongoing capital projects during the April 2015 through December 2016 period; (2) the amount of Duke Energy Indiana's expenditures and depreciation for Edwardsport, including related Ongoing Capital Projects, incurred through December 31, 2016, for which cost recovery is requested, incorporating the aforementioned 2016 Settlement Agreement cap on additional Ongoing Capital Project expenditures and the prorated \$36.65 million (retail) cap on O&M expenditures incurred from July through December 2016; (3) recovery of the estimated operating expenses (including O&M, fringe benefits, payroll taxes and property insurance), net of the annual credit of \$5,756,000 approved in the Commission's CPCN Order, and property tax expense that are expected to be incurred from January through December 2017, using the 2016 Settlement Agreement's \$76.8 million (retail) cap approved for calendar year 2017; (4) recovery of the estimated depreciation that will be incurred from January through December 2017, including depreciation of in-service ongoing capital projects, subject to the aforementioned cap on additional expenditures; (5) the inclusion of a \$35.175 million annual credit to retail customers in Rider 61 to reflect the jurisdictional impact of a change in depreciation rates for non-

Edwardsport in-service plant, which was approved by the Commission in its December 27, 2012 Order; (6) the inclusion of a credit for the retail portion of the \$15 million annual Indiana Coal Gasification Technology Investment Tax Credit; (7) pursuant to the terms of the 2016 Settlement Agreement, the inclusion of a \$20 million annual charge for amortization of the Regulatory Asset and a credit of \$13,358,572 for the Regulatory Liability; (8) the inclusion of \$2,448,808 for the amortization of post-in-service allowance for funds used during construction; and (9) the inclusion of amounts related to the cumulative reconciliation through December 31, 2016 for items to be reconciled per the terms of the Rider 61 tariff (*i.e.* operating expenses, amortizations and related costs and credits) to amounts collected from customers through December 31, 2016.

6. Applicable Statutes and Regulations. Petitioner considers that Indiana Code §§ 8-1-2-42(a), 8-1-2-6.1(c), 8-1-2-19, 8-1-2-21, Indiana Code 8-1-8.5 *et seq.*, Indiana Code 8-1-8.7 *et seq.* and Indiana Code 8-1-8.8 *et seq.*, 170 IAC § 4-6-1 *et seq.* among others, are or may be applicable to the subject matter of this proceeding.

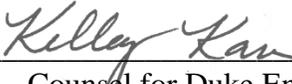
7. Petitioner's Counsel. Elizabeth A. Herriman and Kelley A. Karn at 1000 East Main Street, Plainfield, Indiana 46168 are counsel for Petitioner in this matter, and are duly authorized to accept service of papers in this Cause on behalf of Petitioner.

WHEREFORE, Petitioner respectfully requests that the Commission make such investigation and hold such hearings as it may deem necessary and advisable in this Cause, and thereafter make and enter an Order: (a) approving the value of the Edwardsport Generating Facility, including the value of related ongoing capital project expenditures, upon which the Company is requesting authorization to earn a return, incorporating the 2016 Settlement Agreement's \$36.1 million (retail) cap on additional investment in ongoing capital projects

during the April 2015 through December 2016 period; (b) approving recovery of the estimated operating expenses (including O&M, fringe benefits, payroll taxes and property insurance), net of the annual credit of \$5,756,000 approved in the Commission's CPCN Order, and property tax expense that are expected to be incurred from January through December 2017, using the 2016 Settlement Agreement's \$76.8 million (retail) cap approved for calendar year 2017; and (c) approving the recovery of the estimated depreciation that will be incurred from January through December 2017, including depreciation of in-service ongoing capital projects, subject to the aforementioned cap on additional expenditures; and (d) granting Petitioner such other and further relief in the premises as may be appropriate and proper.

Dated as of the 27 day of March, 2017.

DUKE ENERGY INDIANA, LLC

By:  _____
Counsel for Duke Energy Indiana, LLC

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that copies of the foregoing Petition were electronically delivered this 27th day of March, 2017, to the following:

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