

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of In the)
Matter of the Application of Duke Energy) Case No. 17-690-GA-RDR
Ohio, Inc. to Adjust Rider AU for 2016)
Grid Modernization Costs.)

**DIRECT TESTIMONY
OF
JAMES D. WILLIAMS**

**On Behalf of
The Office of the Ohio Consumers' Counsel**
*10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485*

August 18, 2017

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Attachment JDW-1	List of Previous Testimony Filed at the PUCO by James Williams
Attachment JDW-2	Case No. 14-2209-EL-ATA, Duke response to OCC INT-02-010
Attachment JDW-3	Case No. 17-032-EL-AIR, Duke response to OCC INT-08-170
Attachment JDW-4	Case No. 17-032-EL-AIR, Duke response to OCC INT-08-169

1 **I. INTRODUCTION**

2

3 ***Q1. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.***

4 ***A1.*** My name is James D. Williams. My business address is 10 West Broad Street,
5 18th Floor, Columbus, Ohio 43215-3485. I am employed by the Office of the
6 Ohio Consumers' Counsel ("OCC") as a Senior Utility Consumer Policy Analyst.

7

8 ***Q2. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATION AND***
9 ***PROFESSIONAL EXPERIENCE.***

10 ***A2.*** I am a 1994 graduate of Webster University, in St. Louis, Missouri, with a Master
11 of Business Administration, and a 1978 graduate of Franklin University, in
12 Columbus, Ohio, with a Bachelor of Science, Engineering Technology. My
13 professional experience includes a career in the United States Air Force and over
14 20 years of utility regulatory experience with the OCC.

15

16 Initially, I served as a compliance specialist with the OCC and my duties included
17 the development of compliance programs for electric, natural gas, and water
18 industries. Later, I was designated to manage all of the agency's specialists who
19 were developing compliance programs in each of the utility industries. My role
20 evolved into the management of OCC's consumer hotline, the direct service
21 provided to consumers to resolve complaints and inquiries that involved Ohio
22 utilities. More recently, following a stint as a Consumer Protection Research
23 Analyst, I was promoted to a Senior Utility Consumer Policy Analyst. In this

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1 role, I am responsible for developing and recommending policy positions on
2 utility issues that affect residential consumers.

3
4 I have been directly involved in the development of policy issues that impact
5 Ohio residential utility consumers involving natural gas, electric, water, and
6 telecommunications for many years. Specific to smart grid, I have been involved
7 in the review of smart grid deployments across Ohio and assessing the impact that
8 such programs have on residential consumers. Smart grid programs can be
9 extremely expensive. They also require extensive analysis to ensure that
10 customers are obtaining sufficient financial benefits over time to warrant the costs
11 and that customers have the protection of reviews according to regulatory
12 principles, such as whether the utility's practices are prudent and the facilities are
13 used and useful. My professional experience includes review of utility business
14 plans, annual compliance filings, assisting in the development of OCC comments,
15 and supporting testimony in numerous smart grid cases.

16

17 ***Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED***
18 ***BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO?***

19 ***A3.*** Yes. The cases in which I have submitted testimony and/or have testified before
20 the Public Utilities Commission of Ohio ("PUCO") can be found in Attachment
21 JDW-1.

1 **II. SUMMARY OF MY TESTIMONY**

2

3 ***Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS***
4 ***PROCEEDING?***

5 ***A4.*** My testimony recommends that the PUCO order an independent review of
6 Duke Energy Ohio's ("Duke") natural gas grid modernization program
7 and proposals for replacement of this program. This independent review
8 should be funded exclusively by Duke's shareholders. The purpose of the
9 review should be to examine the technology that Duke deployed for gas
10 meter reading and determine whether the technology can continue to be
11 used to serve customers into the future. In other words, there should be an
12 audit that looks at whether the gas meter reading technology is used and
13 useful, before charging customers any more for this program.

14

15 **III. DUKE'S ADVANCED UTILITY RIDER**

16

17 ***Q5. PLEASE DESCRIBE DUKE'S ADVANCED UTILITY RIDER.***

18 ***A5.*** Duke's advanced utility rider ("Rider AU") is the PUCO's regulatory
19 mechanism that permits Duke to collect money from customers for costs
20 related to the installation of an automated gas meter reading system. This
21 system has been deployed concurrently with Duke's deployment of smart
22 grid technology relative to its electric business. More specifically, the gas
23 meter reading system uses the communications technology and

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1 infrastructure that was deployed for the electric grid modernization
2 program.¹ The costs for the grid modernization program exceed \$200
3 million, which customers pay in part through Rider AU on their monthly
4 bill. These charges are not insignificant. The current requested revenue
5 requirement that Duke is seeking from customers for its advanced utility
6 gas meter reading system is \$4.1 million.² To date, Duke has collected
7 more than \$40 million from gas customers through Rider AU.

8

9 ***Q6. PLEASE EXPLAIN THE RELATIONSHIP BETWEEN DUKE'S***
10 ***CONTINUED COLLECTION OF MONEY FROM CUSTOMERS THROUGH***
11 ***ITS ADVANCED UTILITY RIDER AND OTHER PROCEEDINGS AT THE***
12 ***PUCO.***

13 ***A6.*** Duke filed a distribution rate increase application on March 2, 2017 in a
14 separate docket.³ In that application, Duke proposes to replace the precise
15 grid modernization infrastructure that natural gas customers have and are
16 continuing to pay for through Rider AU.⁴ As indicated in the rate increase
17 application, customers would be charged \$45 million to replace the meter
18 reading system installed as part of its grid modernization initiative.⁵

¹ Case No. 17-690-GA-RDR, Application (March 24, 2017).

² *Id.*, Testimony of Peggy Laub at PAL-1, page 2

³ *In the Matter of the Application of Duke Energy Ohio, Inc., for an Increase in Electric Distribution Rates*, Case No. 17-32-EL-AIR, Application (March 2, 2017).

⁴ Case No. 17-32-EL-AIR, Direct Testimony of Donald Schneider (March 16, 2017) (“Schneider Testimony”).

⁵ *Id.* at Attachment DLS-1.

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1 Remarkably, Duke's request for consumers to pay to replace its gas meter
2 reading system comes after less than two years of using the system.⁶

3
4 In addition, Duke filed an application on June 1, 2017 to establish an
5 electric security plan that also included an advanced metering
6 infrastructure ("AMI") transition plan to replace the very same meter
7 reading infrastructure that customers are paying for and will continue to
8 pay for through Rider AU.⁷ Duke's AMI transition plan also addresses
9 replacing the Energy Data Management System ("EDMS") that is used for
10 storing meter data for both electric and gas customers. The capabilities of
11 the EDMS are the subject of Case No. 14-2209-EL-ATA that is currently
12 pending before the PUCO.⁸

13
14 ***Q7. HAS DUKE ALLEGED THAT THERE IS NO RELATIONSHIP BETWEEN***
15 ***THE ADVANCED UTILITY RIDER AND THE OTHER PROCEEDINGS***
16 ***DISCUSSED ABOVE?***

17 ***A7. Yes.***

⁶ *In the Matter of the Application of Duke Energy Ohio, Inc. to Adjust Rider DR-IM and Rider AU for 2010 SmartGrid Costs and Mid-Deployment Review*, Case No. 10-2326-GE-RDR. Notice of Staff Determination Submitted on Behalf of the Public Utilities Commission of Ohio (October 22, 2015).

⁷ *In the Matter of the Application of Duke Energy Ohio, Inc. for Authority to Establish Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Accounting Modifications and Tariffs for Generation Service.*, Case No. 17-1263-EL-SSO, Application (June 1, 2017).

⁸ *In the Matter of the Application of Duke Energy Ohio, Inc. to File for Tariff Approval*, Case 14-2209-EL-ATA.

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1 ***Q8. PLEASE EXPLAIN.***

2 ***A8.*** In the reply comments that Duke filed in this proceeding, Duke claims it
3 has no proposal to replace the EDMS as part of the electric base rate case.⁹
4 Yet, the AMI transition plan filed in its electric security plan specifically
5 asks customers to pay more than \$6 million in transition costs related to
6 converting from EDMS to the newer generation meter data management
7 (“MDM”) system. Duke claims that it “merely plans to use a different
8 existing system so that EDMS can ultimately be retired.”¹⁰ But the EDMS
9 (identified as the first-generation MDM system) only has support through
10 2020.¹¹ Therefore, this system that has been fully deployed for under two
11 years has no support structure in place in a mere three years.

12

13 Duke claims there is no recovery of costs from customers for new AMI
14 meters in the 2016 gas cost recovery case.¹² Duke’s parsing of words
15 should not be construed to mean that customers are not paying for failing
16 smart grid technology. In its AMI transition plan, Duke indicates that
17 communication nodes (that customers have paid for) are failing at a higher
18 rate than expected. In addition to customers having paid for the failing
19 communication nodes, there can be no doubt that the costs associated with
20 replacing these failed communication nodes are also being collected from

⁹ Case No. 17-690-GA-RDR, Reply Comments of Duke Energy Ohio, Inc. (August 11, 2017) at 2.

¹⁰ *Id.*

¹¹ Case No. 14-2209-EL-ATA, Duke response to OCC INT-02-010 (attached herein as JDW-2).

¹² Case No. 17-690-GA-RDR, Duke Reply Comments at 2.

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1 customers. And Duke claims that it plans to replace approximately 80,000
2 AMI Echelon meters (used to meter electric service) and 48,800 Badger
3 gas communication modules this year and next.¹³ Once again, there can
4 be no doubt these costs of undepreciated failing technology are being
5 borne by customers.

6
7 Duke claims that some of the gas modules and nodes were installed
8 beginning in 2009 and therefore customers have reaped the benefits for
9 longer than two years.¹⁴ While it may be true that some of the technology
10 has lasted longer than two years, customers should have a reasonable
11 expectation that the technology would be used and useful far beyond the
12 few years that the technology has functioned.

13
14 Yet in March 2017, a mere eighteen months after the gas meter reading
15 system was determined to be fully deployed, Duke disclosed that it was
16 planning on replacing it. Specific to the advanced utility rider, some of
17 the technology that Duke deployed for natural gas meter reading is already
18 fully depreciated. But there are other components, like the Badger gas
19 modules, that will end up being prematurely replaced even though they
20 should have a depreciable life of 15 years.¹⁵

¹³ Schneider Testimony at page 10.

¹⁴ Duke Reply Comments at 2.

¹⁵ Case No. 17-032-EL-AIR, Duke response to OCC INT-08-170 (attached herein as JDW-3).

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1 Duke claims in this proceeding that its current gas AMI infrastructure is
2 not currently obsolete.¹⁶ But as demonstrated above, this statement
3 conflicts with the proposals Duke has made to replace the infrastructure in
4 other PUCO cases. By Duke's own admission, the communication nodes
5 that are failing at a higher rate than expected are no longer being
6 manufactured.¹⁷ And according to Duke, this requires removal of
7 approximately 23,700 communication nodes that are currently in the field
8 to restore inventory levels.¹⁸ As these communication nodes are being
9 replaced, Duke is transitioning from an AMI node environment to an AMI
10 mesh environment. And Duke has also disclosed in the AMI transition
11 plan, the need to transition fully to a Verizon 4G cellular network by
12 2022.¹⁹ Again this adds to the complexity and costs of Duke's smart grid
13 program for which the utility will seek PUCO authority to charge to
14 customers.

¹⁶ *Id.* at 3.

¹⁷ Schneider Testimony at page 10.

¹⁸ *Id.*

¹⁹ *Id.* at pages 10-12.

***Q9. WHY SHOULD THE PUCO CONSIDER RIDER AU IN THE
CONTEXT OF THE OTHER PROCEEDINGS WHERE DUKE IS
PROPOSING TO CHARGE CUSTOMERS FOR THE
REPLACEMENT OF ITS GAS AND ELECTRIC AMI SYSTEM?***

A9. Duke's natural gas customers should not have to pay twice for essentially the same investment. As customers pay for grid modernization in this case, through Rider AU, and then pay for the replacement of this technology in the rate case, electric security plan, or wherever, there is the potential for paying twice. Duke is requesting that customers pay for obsolete technology that cannot sustain gas meter reading functions in the near future, as well as the replacement of this equipment with newer technology. Before the PUCO potentially authorizes Duke to charge consumers multiple times for this technology, the PUCO should take a holistic view of Duke's various proposals to determine if that new technology is even necessary.

The AMI upgrades that Duke proposes for electric meter reading may not be cost effective or necessary for natural gas customers. Presently, Duke obtains a daily meter read from its gas customers' meters. While Duke reads the gas AMI meter on a daily basis,²⁰ this practice is not required by the PUCO's Minimum Gas Service Standards. Actually, the PUCO rules require a gas utility to make reasonable attempts to obtain an actual meter

²⁰ Case No. 17-32-EL-AIR, Duke response to OCC INT-8-169 (attached herein as JDW-4).

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1 read every other month.²¹ And meter reads can be performed using
2 Automated Meter Reading (“AMR”) equipment. My understanding is that
3 other gas utilities in the state have deployed AMR technology and as far as
4 I am aware, none are experiencing the technological obsolescence issues
5 that Duke seems to be having. Yet Duke has not considered any other
6 options, including AMR for gas meter reading, than the very expensive
7 AMI alternative proposed in the AMI transition plan.²²

8

9 ***Q10. WHAT ARE YOUR RECOMMENDATIONS?***

10 ***A10.*** Duke’s customers should be protected from being charged for new meters
11 to replace the meters that they recently also paid for. The PUCO should
12 conduct an independent review (including an audit) of Duke’s gas grid
13 modernization program. This independent review should be funded
14 exclusively by Duke shareholders. The review should comprehensively
15 examine the technology Duke deployed for gas meter reading, as well as
16 new technology Duke is proposing to deploy. And the PUCO’s review
17 should determine the sustainability of the current technology, and the
18 prudence of installing new technology (including the type of technology
19 proposed by Duke) in serving customers into the future. Some of the
20 specific questions that should be answered in the independent review
21 include:

²¹ Ohio Admin. Code 4901:1-13-04(G).

²² *Id.*

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- 1 • What outcomes for Duke and its customers would be consistent
- 2 with Ohio regulatory principles including used and useful (R.C.
- 3 4909.15) and prudence (R.C. 4909.154) to protect consumers
- 4 from being over-charged for meter reading technology by
- 5 Duke?
- 6 • What are the interrelationships and dependencies between the
- 7 gas and electric meter reading systems?
- 8 • Are there less expensive methods available to secure monthly
- 9 gas meter reads from customers?
- 10 • Are there other technologies available to obtain gas meter reads
- 11 that are not as susceptible to premature obsolescence?
- 12 • What are the costs associated with premature obsolescence of
- 13 the current gas meter reading system?
- 14 • What are the functional capability/specifications for a gas (or
- 15 combined gas and electric) meter reading systems?
- 16 • Do the benefits of the AMI transition plan (related to gas meter
- 17 reading) exceed the costs?

18

19 ***Q11. WHEN SHOULD THE INDEPENDENT REVIEW BE COMPLETED?***

20 ***A11.*** This review should be completed and the results known by the PUCO before any

21 additional funds are collected from customers in next year's Rider AU.

22 Furthermore, this review should be completed before the PUCO renders an order

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1 regarding the Duke AMI transition plan in either the Duke electric rate case (17-
2 032-EL-AIR) or the ESP (17-1263-EL-SSO).

3

4 **IV. CONCLUSION**

5

6 ***Q12. DOES THIS CONCLUDE YOUR TESTIMONY?***

7 ***A12.*** Yes. However, I reserve the right to incorporate new information that may
8 subsequently become available through outstanding discovery or otherwise.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing *Direct Testimony of James D. Williams on Behalf of the Office of the Ohio Consumers' Counsel* was served via electronic transmission to the persons listed below on this 18th day of August 2017.

/s/ Terry L. Etter
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Testimony of James D. Williams
Filed at the Public Utilities Commission of Ohio

1. *In the Matter of the Application of the Cincinnati Gas and Electric Company for an Increase in Its Rates for Gas Service to All Jurisdictional Customers*, Case No. 95-0656-GA-AIR (August 12, 1996).
2. *In the Matter of the Application of the Cincinnati Gas and Electric Company for an Increase in Its Rates for Gas Service to All Jurisdictional Customers*, Case No. 01-1228-GA-AIR (February 15, 2002).
3. *In the Matter of the Commission's Investigation into the Policies and Procedures of Ohio Power Company, Columbus Southern Power Company, The Cleveland Electric Illuminating Company, Ohio Edison Company, The Toledo Edison Company and Monongahela Power Company regarding installation of new line extensions*, Case No. 01-2708-EL-COI (May 30, 2002).
4. *In the Matter of the Application of The East Ohio Gas Company d/b/a Dominion East Ohio for an Increase in Its Rates for Gas Service to All Jurisdictional Customers*, Case No. 07-0829-GA-AIR (June 23, 2008).
5. *In the Matter of the Application of the Columbia Gas of Ohio, Inc. for Authority to Amend Filed Tariffs to Increase the Rates and Charges for Gas Distribution*, Case No. 08-072-GA-AIR (September 25, 2008).
6. *In the Matter of a Settlement Agreement Between the Staff of the Public Utilities Commission of Ohio, The Office of the Consumers' Counsel and Aqua Ohio, Inc. Relating to Compliance with Customer Service Terms and Conditions Outlined in the Stipulation and Recommendation in Case No. 07-564-WW-AIR and the Standards for Waterworks Companies and Disposal System Companies*, Case No. 08-1125-WW-UNC (February 17, 2009).
7. *In the Matter of the Application of the Ohio American Water Company to Increase its Rates for water and Sewer Services Provided to its Entire Service Area*, Case No. 09-391-WS-AIR (January 4, 2010).
8. *In the Matter of the Application of Aqua Ohio, Inc. for Authority to Increase its Rates and Charges in its Masury Division*, Case No. 09-560-WW-AIR (February 22, 2010).
9. *In the Matter of the Application of Aqua Ohio, Inc. for Authority to Increase its Rates and Charges in Its Lake Erie Division*, Case No. 09-1044-WW-AIR (June 21, 2010).

10. *In the Matter of the Application of The Ohio American Water Company to Increase its Rates for Water Service and Sewer Service*, Case No. 11-4161-WS-AIR (March 1, 2012).
11. *In the Matter of Columbus Southern Power Company and Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Ohio Rev. Code, in the Form of an Electric Security Plan*, Case No. 11-346-EL-SSO, et al (May 4, 2012).
12. *In the Matter of the Application of The Dayton Power and Light Company for Approval of its Market Rate Offer*, Case No. 12-426-EL-SSO (June 13, 2012).
13. *In the Matter of the Application of Ohio Power Company to Establish Initial Storm Damage Recovery Rider Rates*, Case No. 12-3255-EL-RDR (December 27, 2013).
14. *In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Ohio Rev. Code, in the Form of an Electric Security Plan*, Case No. 13-2385-EL-SSO (May 6, 2014).
15. *In the Matter of the Application of Duke Energy Ohio for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Accounting Modifications and Tariffs for Generation Service*, Case 14-841-EL-SSO (May 29, 2014).
16. *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan*, Case No. 14-1297-EL-SSO (December 22, 2014).
17. *In the Matter of the Application of Duke Energy Ohio, Inc., to Adjust Rider DR-IM and Rider AU for 2013 Grid Modernization Costs*, Case No. 14-1051-EL-RDR (December 31, 2014) and (February 6, 2015).
18. *In the Matter of the Application Not for an Increase in Rates Pursuant to Section 4901:18, Revised Code, of Ohio Power Company to Establish Meter Opt Out Tariff*, Case No. 14-1158-EL-ATA (April 24, 2015).
19. *In the Matter of the Application of Duke Energy of Ohio, Inc., for Approval of a Grid Modernization Opt-out Tariff and for a Change in Accounting Procedures Including a Cost Recovery Mechanism.*, Case 14-1160-EL-UNC and 14-1161-EL-AAM (September 18, 2015).

20. *In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Alternative Rate Plan Pursuant to Section 4929.05, Revised Code, for an Accelerated Service Line Replacement Programs*, Case No. 14-1622-GA-ALT (November 6, 2015).
21. *In the Matter of the Complaint of Jeffrey Pitzer, Complainant, v. Duke Energy Ohio, Inc. Respondent.*, Case No. 15-298-GE-CSS (December 30, 2015).
22. *In the Matter of the Application of Ohio Power Company to Initiate Phase 2 of Its gridSMART Project and to Establish the gridSMART Phase 2 Rider.*, Case No. 13-1939-EL-RDR (July 22, 2016).
23. *In the Matter of the Application of Columbia Gas of Ohio, Inc. for Approval of Demand Side Management Program for its Residential and Commercial Customers.*, Case No. 16-1309-GA-UNC (September 13, 2016).
24. *In the Matter of the Application of the Dayton Power and Light Company for Approval of Its Electric Security Plan*, Case No. 16-0395-EL-SSO (November 21, 2016). Supplemental Testimony, (March 29, 2017).
25. *In the Matter of the Application of Aqua Ohio, Inc. to Increase Its Rates and Charges for Its Waterworks Service.*, Case No. 16-0907-WW-AIR (December 19, 2016).
26. *In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan*, Case No. 16-1852-EL-SSO, (May 2, 2017).
27. *In the Matter of the Application of the Ohio Development Services Agency for an Order Approving Adjustments to the Universal Service Fund Riders of Jurisdictional Ohio Electric Distribution Utilities*, Case No. 17-1377-EL-USF, (August 11, 2017).
28. *In the Matter of the Application of Duke Energy Ohio, Inc. to Adjust Rider AU for 2016 Grid Modernization Costs*, Case No. 17-690-GA-RDR, (August 18, 2017).

**Duke Energy Ohio
Case No. 14-2209-EL-ATA
OCC Second Set of Interrogatories
Date Received: February 12, 2015**

OCC-INT-02-010

REQUEST:

What is the projected life expectancy of the first generation MDM system?

RESPONSE:

Projected life expectancy is based on vendor support of the product. This product currently has support through 2020.

PERSON RESPONSIBLE:

Joseph R Thomas

**Duke Energy Ohio
Case No. 17-0032-EL-AIR
OCC Eighth Set of Interrogatories
Date Received: June 30, 2017**

OCC-INT-08-170

REQUEST:

Referring to the testimony of Mr. Schneider at page 9:

- a. What is the projected life of the Badger gas modules?
- b. What is the projected life of the Badger Read Center?
- c. What is the projected life of the Oracle EDMS?

RESPONSE:

- a. Duke Energy Ohio's Badger gas modules have a depreciable life of 15 years.
- b. Duke Energy Ohio's Badger Read Center had a depreciable life of 5 years.
- c. Duke Energy Ohio's Oracle EDMS had a depreciable life of 5 years.

PERSON RESPONSIBLE: Cindy Lee

Duke Energy Ohio
Case No. 17-0032-EL-AIR
OCC Eighth Set of Interrogatories
Date Received: June 30, 2017

OCC-INT-08-169

REQUEST:

Referring to the testimony of Mr. Schneider at page 5:

- a. Please explain how gas usage information is collected and recorded from meters on a monthly basis for billing purposes in both the Node and Mesh AMI metering environment.
- b. How frequently are customer gas meter reads performed?
- c. What is the estimated cost per meter per month to obtain natural gas usage meter reads in the Node AMI Metering Environment? Please provide all supporting data, assumptions, methodologies, projections, and calculations for such estimate.
- d. What is the estimated cost per meter per month to obtain natural gas usage meter reads in the Mesh AMI Metering Environment? Please provide all supporting data, assumptions, methodologies, projections, and calculations for such estimate.
- e. What was the cost per meter per month to obtain natural gas usage meter reads on a manual basis before Duke's smart grid deployment? Please provide all supporting data, assumptions, methodologies, projections, and calculations.
- f. Did Duke consider Automated Meter Reading (AMR) as an option to obtain monthly gas meter reads as opposed to upgrading the node AMI environment, and if so, please list the reasons why this alternative is not being pursued?

RESPONSE:

Referring to Mr. Schneider's testimony describing Duke Energy Ohio's overall AMI network architecture at page 5:

- a. In the node environment, gas usage information is recorded by a gas AMI module, sent to its node, and collected from node. In mesh environment, gas usage information is recorded by a gas AMI module, sent to its paired electric meter, and collected from electric meter.
- b. Gas AMI modules perform meter reads on a daily basis.
- c. Duke Energy Ohio has not estimated the cost per meter per month to obtain natural gas usage meter reads. However, the Gas Costs Only section of OCC-INT-02-009(a) shows that the total ongoing Monthly Cellular Costs would be higher under the Continue Node Environment scenario than the Transition to Mesh Environment scenario. Those Monthly Cellular Costs reflect the costs to transmit usage data from meters to the company for monthly billing, rather than getting the usage data through manual meter reading.
- d. See response to OCC-INT-08-169(c).

- e. The Company does not have any data on the cost per meter per month to obtain gas usage meter reads on an annual basis.
- f. Duke Energy does not agree with the assumption that AMR for gas customers is an alternative to upgrading the entire AMI environment. Notwithstanding the objection, changing gas AMI modules to gas AMR modules would create new meter reading costs to be borne exclusively by gas customers due to reduced efficiencies of a shared AMI solution.

PERSON RESPONSIBLE: Donald L. Schneider

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in

Case No(s). 17-0690-GA-RDR

Summary: Testimony Direct Testimony of James D. Williams on Behalf of The Office of the Ohio Consumers' Counsel electronically filed by Ms. Jamie Williams on behalf of Etter, Terry Mr.