

FILE

PUCO EXHIBIT FILING

Date of Hearing: 1/27/16

Case No. 15-883-GE-RDR

PUCO Case Caption: Duke Energy Ohio, Inc.

List of exhibits being filed:

JOINT Ex-1

STAFF Ex-1

OCC Ex-1 and 2

Reporter's Signature: Michael O. Jones
Date Submitted: 2/5/16

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.
Technician KN Date Processed FEB 05 2016

RECEIVED-DOCKETING DIV
2016 FEB -5 PM 2:55

PUCO

BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO

- - -

In the Matter of the :
Application of Duke Energy : Case No.
Ohio, Inc., to Adjust Rider : 15-883-GE-RDR
DR-IM and Rider AU for 2014 :
Grid Modernization Costs. :

- - -

PROCEEDINGS

Before Kerry Sheets, Attorney Examiner, held at
the Public Utilities Commission of Ohio, 180
East Broad Street, Hearing Room 11-D, Columbus,
Ohio, on Wednesday, January 27, 2016, at 10:00
A.M.

- - -

Armstrong & Okey, Inc.
222 East Town Street, 2nd Floor
Columbus, Ohio 43215
(614) 224-9481 - (800) 223-9481
Fax - (614) 224-5724

- - -

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application)	
of Duke Energy Ohio, Inc. to)	Case No. 15-883-GE-RDR
Adjust Rider DR-IM and Rider)	
AU for 2014 SmartGrid Costs.)	

STIPULATION AND RECOMMENDATION

Rule 4901-1-30, Ohio Administrative Code (O.A.C.), provides that any two or more parties to a proceeding may enter into a written stipulation covering the issues presented in such a proceeding. The purpose of this document is to set forth the understanding and agreement of the parties that have signed below (Signatory Parties or Parties) and to recommend that the Public Utilities Commission of Ohio (Commission) approve and adopt this Stipulation and Recommendation (Stipulation), which resolves all of the issues raised by the Parties in this case relative to Duke Energy Ohio, Inc.'s (Duke Energy Ohio or the Company) Application to Adjust Rider DR-IM and Rider AU for 2014 SmartGrid Costs (Application). This Stipulation is supported by adequate data and information including, but not limited to, Duke Energy Ohio's Application and testimony filed on June 4, 2015, and the Attachments filed therewith, and the testimony of James D. Williams filed by the Office of the Ohio Consumers' Counsel (OCC), on December 9, 2015.

The Stipulation represents a just and reasonable resolution of the issues raised in these proceedings, violates no regulatory principle or precedent, and is the product of lengthy, serious bargaining among knowledgeable and capable parties in a cooperative process, encouraged by this Commission and undertaken by the Parties representing a wide range of interests, including

the Commission's Staff (Staff), to resolve the aforementioned issues. Although this Stipulation is not binding on the Commission, it is entitled to careful consideration by the Commission. For purposes of resolving all issues raised by these proceedings, the Parties stipulate, agree, and recommend as set forth below.

This Stipulation is a reasonable compromise that balances diverse and competing interests and does not necessarily reflect the position that any one or more of the Parties would have taken had these issues been fully litigated. This Stipulation represents an agreement by all Parties to a package of provisions rather than an agreement to each of the individual provisions included within the Stipulation. The Signatory Parties' agreement to this Stipulation, in its entirety, shall not be interpreted in a future proceeding before this Commission as their agreement to only an isolated provision of this Stipulation.

This Stipulation is submitted for purposes of these proceedings only, and neither this Stipulation nor any Commission Order considering this Stipulation shall be deemed binding in any other proceeding nor shall this Stipulation or any such Order be offered or relied upon in any other proceedings, except as necessary to enforce the terms of this Stipulation, including, but not limited to terms that will affect future proceedings.

The Signatory Parties agree that the settlement and resulting Stipulation are a product of serious bargaining among capable, knowledgeable Parties. This Stipulation is the product of an open process in which all Parties were represented by able counsel and technical experts. The Stipulation represents a comprehensive compromise of issues raised by Parties with diverse interests. The Signatory Parties, including Duke Energy Ohio, Staff, OCC and Ohio Partners for Affordable Energy (OPAE),¹ have signed the Stipulation and adopted it as a reasonable

¹ The Staff of the Public Utilities Commission of Ohio will be considered a party for the purpose of entering into this Stipulation pursuant to Ohio Administrative Code Sections 4901-1-10(C) and 4901-1-30.

resolution of all issues. The Signatory Parties believe that the Stipulation that they are recommending for Commission adoption presents a fair and reasonable result.

The Signatory Parties agree that the settlement, as a package, benefits ratepayers, and is in the public interest. The Signatory Parties agree that the settlement package does not violate any important regulatory principle or practice.

This Stipulation is expressly conditioned upon its adoption by the Commission in its entirety and without material modification. If the Commission rejects or materially modifies all or any part of this Stipulation,² each and every Signatory Party shall have the right, within thirty days of issuance of the Commission's Order, to file an application for rehearing or to terminate and withdraw the Stipulation by filing a notice with the Commission. The Signatory Parties agree they will not oppose or argue against any other Signatory Party's notice of termination or application for rehearing that seeks to uphold the original, unmodified Stipulation. If, upon rehearing, the Commission does not adopt the Stipulation in its entirety and without material modification, any Signatory Party may terminate and withdraw from the Stipulation. Termination and withdrawal from the Stipulation shall be accomplished by filing a notice with the Commission, including service to all Signatory Parties in this proceeding, within thirty days of the Commission's Order or ruling on rehearing that does not adopt the Stipulation in its entirety and without material modification. Other Signatory Parties to this Stipulation agree to not oppose the termination and withdrawal of the Stipulation by any other Signatory Party. Upon the filing of a notice of termination and withdrawal, the Stipulation shall immediately become null and void.

² Any Signatory Party has the right, at its sole discretion, to determine what constitutes a "material" change for the purposes of that Party withdrawing from the Stipulation.

Prior to the filing of such a notice, the Signatory Party wishing to terminate agrees to work in good faith with the other Signatory Parties to achieve an outcome that substantially satisfies the intent of the Stipulation and, if a new agreement is reached that includes the Signatory Party wishing to terminate, then the new agreement shall be filed for Commission review and approval. If the discussions to achieve an outcome that substantially satisfies the intent of the Stipulation are unsuccessful in reaching a new agreement that includes all Signatory Parties to the present Stipulation, the Commission will convene an evidentiary hearing such that the Signatory Parties will be afforded the opportunity to present evidence through witnesses and cross-examination, present rebuttal testimony, and brief all issues that the Commission shall decide based upon the record and briefs as if this Stipulation had never been executed.

WHEREAS, all of the related issues and concerns raised by the Parties have been addressed in the substantive provisions of this Stipulation, and reflect, as a result of such discussions and compromises by the Parties, an overall reasonable resolution of all such issues;

WHEREAS, in the Company's first Electric Security Plan (ESP) proceeding, Case No. 08-920-EL-SSO, *et al.*, (ESP I), the Commission approved Duke Energy Ohio's proposal to deploy a SmartGrid program for electric and gas customers; and

WHEREAS, in ESP I, Duke Energy Ohio agreed that as part of the annual due process related to 2010 costs net of benefits, the Company would include a mid-deployment program summary and review with the second quarter 2011 filing, outlining its progress in deploying the SmartGrid program through 2010; and

WHEREAS, during the mid-deployment review of the Company's progress in deploying the SmartGrid program, the parties reached a Stipulation and Recommendation that was adopted and approved by the Commission in Case No. 10-2326-GE-RDR; and

WHEREAS, that stipulation resolved certain issues for future rider cases related to SmartGrid, including, *inter alia*, that Duke Energy Ohio shall reduce its revenue requirement by an amount equal to the value of operational benefits, levelized over four years, and for cost recovery associated with the year 2014, that amount is a reduction of \$6.24 million in the revenue requirement for Rider DR-IM that electric customers pay; and

WHEREAS, Duke Energy Ohio agreed, in Case No. 12-1685-GA-AIR, *et al.*, that it would continue recovering incremental costs associated with deployment of SmartGrid for its gas distribution business and that Duke Energy Ohio will include in its Rider AU revenue requirement and not in base rates, amounts related to deferred SmartGrid, operation and maintenance (O&M), carrying costs, incremental O&M savings, and gas furnace program incentive payments and administrative expense; and

NOW THEREFORE, it is agreed that:

I. FINANCIAL AND ACCOUNTING

- A. The Signatory Parties agree that Duke Energy Ohio should collect from customers \$55 million associated with the revenue requirement for Rider DR-IM and \$6.4 million associated with the revenue requirement for Rider AU for SmartGrid investments and associated expenses made through December 31, 2014.³ The revenue increases convert to a rate of \$6.28 per bill per month for residential electric customers and \$9.35 per bill per month for non-residential electric customers under Rider DR-IM.⁴ The revenue increase results in a rate of \$1.30

³ The Signatory Parties are not agreeing that Duke's SmartGrid, or any component thereof, is "used and useful," or that any related expenses are appropriate for ratemaking, for purposes of the rate case that Duke must file by October 22, 2016, per the stipulation and Commission Order in Case No. 10-2326-GE-RDR.

⁴ These figures assume that Rider DR-IM rates go into effect on April 1, 2016. If the effective date is different, rates would change accordingly.

per meter per month under Rider AU; gas-only customers will receive a \$1.14 credit per meter per month.

The following table summarizes the proposed rates as compared to the rates currently in place:

Rider DR-IM (Electric)		
Residential Current Rate	Residential Proposed Rate	Change
\$6.07	\$6.28	\$0.21
Non- Residential Current Rate	Non- Residential Proposed Rate	Change
\$9.01	\$9.35	\$0.34

Rider AU (Gas)		
Current Monthly Rate	Proposed Monthly Rate	Change
\$1.46	\$1.30	(\$0.16)
Current Credit	Proposed Credit	Change
(\$1.28)	(\$1.14)	\$0.14

- B. The Signatory Parties recognize and agree that the monthly charge per residential customer under Rider DR-IM revenue requirement for the applicable period is below the applicable cap established in the Stipulation and Recommendation approved by the Commission in Case No. 13-1141-GE-RDR.
- C. The Signatory Parties further agree that the revenue requirements are based upon rates of return of 7.73% (approved by the Commission in Case Nos. 12-1682-EL-AIR, *et al.* and 12-1685-GA-AIR, *et al.*). Duke Energy Ohio agrees to continue its commitment to include the electric distribution share of operational savings derived from the MetaVu Report. The total savings reduce the amount to be collected from customers by \$8.8 million.
- D. In order to mitigate the impact of the rate increases attributable to Rider DR-IM and to better balance the SmartGrid investment risk between Duke Energy Ohio

and its customers, the Company previously agreed to defer recovery of all or a portion of the following expenses, normally collected through Rider DR-IM, for 2011 and 2012: O&M, depreciation, and/or property taxes.⁵ Such deferrals are incremental to the normal deferral process used in the Rider DR-IM calculations. The amount of the incremental deferrals attributable to costs incurred in 2014 is \$4.43 million. Duke Energy Ohio shall be allowed to collect \$4.43 million from customers through Rider DR-IM for the deferred costs incurred in 2014 to recover the expenses deferred from the 2011 and 2012 recovery periods.

- E. The Company agrees to remove expenses for Allocated Supervision & Engineering (Allocated S&E) totaling \$62,253.41 from the amount to be collected from electric customers through Rider DR-IM and \$465.59 from the amount to be collected from gas customers through Rider AU, as recommended by Staff in its Review and Recommendation filed on November 13, 2015.
- F. The Company agrees to remove expenses for costs associated with Repairs Out of Warranty, as recommended by Staff, totaling \$152,950 from the amount to be collected from electric customers through Rider DR-IM.
- G. The Company agrees to remove expenses for various expense items, as recommended by Staff, totaling \$32,835.95 from the amount to be collected from electric customers through Rider DR-IM and \$8,583.74 from the amount to be collected from gas customers through Rider AU.

⁵ *In the Matter of the Application of Duke Energy Ohio, Inc. to Adjust and Set Its Gas and Electric Recovery Rate for 2010 SmartGrid Costs Under Riders AU and Rider DR-IM and Mid-deployment Review of AMI/SmartGrid Program*, Case No. 10-2326-GE-RDR, Stipulation and Recommendation, February 24, 2012, at 5, Section II.

II. SELF-HEALING TEAMS

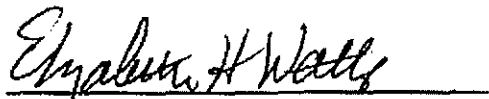
A. The Company will include the following in the SmartGrid Non-Financial Metrics report starting with the 2015 annual report, provided in accordance with the Stipulation and Recommendation approved by the Commission in Case No. 10-2326-GE-RDR:

- Number of successful self-healing team operations during Major Event Days (MEDs)
- Number of unsuccessful self-healing team operations during MEDs

B. For purposes of reporting self-healing team operational data in the SmartGrid Non-Financial Metrics report, a successful operation is defined as follows: when the self-healing team is called upon to operate, every device that comprises the team operates as designed. A failed operation is defined as follows: when the self-healing team is called upon to operate, any single device that comprises the team failed to operate as designed, even if some customer outages were still prevented (due to successful operation of other devices that comprise the team).

IN WITNESS THEREOF, the undersigned Parties agree to this Stipulation and Recommendation as of this 6th day of January, 2016. The undersigned Parties respectfully request the Commission to issue its Opinion and Order approving and adopting this Stipulation.

On Behalf of Duke Energy Ohio, Inc.



Amy B. Spiller
Elizabeth H. Watts
Duke Energy Business Services LLC
139 E. Fourth Street, 1303 Main
Cincinnati, Ohio 45202

On Behalf of Staff of the Public Utilities Commission of Ohio

Thomas W. McNamee / w / permission

Thomas W. McNamee
Assistant Attorney General
180 E. Broad Street
6th Floor
Columbus, Ohio 43215

On Behalf of the Office of the Ohio Consumers' Counsel

Terry L. Etter / w / permission

Terry L. Etter
Assistant Consumers' Counsel
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215-3485

On Behalf of Ohio Partners for Affordable Energy

Colleen L. Mooney / w / permission

Colleen L. Mooney
Ohio Partners for Affordable Energy
231 West Lima Street
Findlay, Ohio 45839

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

1/6/2016 4:38:18 PM

in

Case No(s). 15-0883-GE-RDR

**Summary: Stipulation Stipulation and Recommendation electronically filed by Carys Cochern
on behalf of Watts, Elizabeth H. Ms.**



**Public Utilities
Commission**

John R. Kasich, Governor
Andre T. Porter, Chairman

Commissioners

Asim Z. Haque
Lynn Slaby
M. Beth Trombold
Thomas W. Johnson

November 13, 2015

Docketing Division
Public Utilities Commission of Ohio
180 East Broad Street
Columbus OH 43215

RECEIVED-DOCKETING DIV
2015 NOV 13 AM 11:46
PUCO

RE: *In the Matter of the Application of Duke Energy Ohio, Inc., to Adjust Rider DR-IM and Rider AU for 2014 Grid Modernization Costs, Case No. 15-0883-GE-RDR*

Dear Docketing Division:

Enclosed please find the Staff's Review and Recommendations in regard to the application filed by Duke Energy Ohio, Inc., to adjust its Riders DR-IM and AU, in Case No. 15-883-GE-RDR.

Tamara S. Turkenton
Chief, Regulatory Services Division
Public Utilities Commission of Ohio

David Lipthrott
Chief, Research and Policy Division
Public Utilities Commission of Ohio

Enclosure

Cc: Parties of Record

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.
Technician SMO Date Processed NOV 13 2015

180 East Broad Street
Columbus, Ohio 43215-3793

(614) 466-3016
www.PUCO.ohio.gov

An equal opportunity employer and service provider

Duke Energy Ohio, Inc.
Case No. 15-0883-GE-RDR

SUMMARY

On June 4, 2015, Duke Energy Ohio, Inc. (Duke or the Company) filed an application to update its Grid Modernization riders in the above-captioned docket. This application includes updates for both Rider DR-IM and Rider AU, which are designed to recover approved costs incurred over a twelve month period, through a per-meter customer charge.

This filing includes documentation of capital investments and operation and maintenance expenses and calculates a return of and on capital expenditures that are considered as rate base. Subject to approval by the Commission, annually updated rider rates are intended to go into effect in the second quarter of each year.

STAFF REVIEW

In its review, Staff examined the as-filed schedules for consistency with the Commission's Opinion and Orders in previous grid modernization cases and to ensure proper accounting treatment was applied. The audit consisted of a review of the financial statement for completeness, occurrence, presentation, valuation, allocation, and accuracy. Staff conducted this audit through a combination of document review, interviews, and interrogatories. Staff requested documentation as needed to determine that the costs were substantiated or to conclude that an adjustment was warranted.

In its audit of the expenses charged to Riders DR-IM and Rider AU, Staff found transactions that it recommends should be deducted from the Company's revenue requirement. The following describes these adjustments:

Rider DR-IM

- A. Allocated Supervision & Engineering (Allocated S&E) - Allocated S&E in the amount of \$62,253.41 was included in this Rider. Staff believes these allocated labor expenses would have been incurred by Duke regardless of whether there was a Grid Modernization program and are not incremental to base rates. Therefore, Staff recommends removal of this amount from Rider DR-IM.
- B. Repairs - Several invoices from Ambient and Ericsson, totaling \$152,950, were for charges described as "Repair Out of Warranty." The Grid Modernization Rider was established to recover costs associated with the initial installation of the smart grid. "Repair out of warranty" charges are maintenance costs, not costs for the initial

installation of the smart grid. Maintenance costs are included in base rates. Therefore, Staff recommends a reduction to Rider DR-IM for this amount.

- C. Substation Camera - Staff discovered an invoice from Verizon for a substation camera that, as stated by Duke in a data request response¹, should not have been charged to the smart grid project. Staff recommends a reduction of \$557.14 to remove the cost of the camera from Rider DR-IM.
- D. Other Expenses - The Company's revenue requirement included \$2,867.44 in meals and entertainment expenses, \$16,197.98 in travel expenses, \$165.25 for overtime meals (non-travel), \$1,349.54 for personal vehicle mileage reimbursements, and \$12,255.74 in vehicle and equipment chargeback expenses. Many of these amounts were from allocations with no documentation or substantiation that they were directly related to Grid Modernization activities. In addition, Staff believes that there is an amount in base rates for these activities. Therefore, Staff recommends a reduction to Rider DR-IM in the amount of \$32,835.95.

Staff's recommended adjustments would result in a reduction of \$0.03 per month for residential customers and \$0.04 per month for non-residential customers from the Company's proposed rates. Attachment 1 shows the impact of Staff's recommended adjustments to Rider DR-IM compared to the Company's proposed rates.

Rider AU

- A. Allocated Supervision & Engineering (Allocated S&E) - Allocated S&E in the amount of \$465.59 was included in this Rider. Staff believes these allocated labor dollars are dollars that would have been incurred by Duke regardless of whether there was a Grid Modernization program and are not incremental to base rates. Therefore, Staff recommends removal of this amount from Rider AU.
- B. Substation Camera - Staff discovered an invoice from Verizon for a substation camera that, as stated by Duke in a data request response, should not have been charged to the smart grid project. Staff recommends a reduction of \$341.48 to remove the cost of the camera from Rider AU.
- C. Other Expenses - The Company's revenue requirement included \$1,179.04 in meals and entertainment expenses, \$6,271.94 in travel expenses, \$558.96 in vehicle and equipment chargeback expenses, and \$573.80 in personal vehicle mileage reimbursements. Many of these amounts were from allocations with no documentation or substantiation that they

¹ Response to Staff DR-13-001.

were directly related to Grid Modernization activities. In addition, Staff believes that there is an amount in base rates for these activities. Therefore, Staff recommends a reduction to Rider AU in the amount of \$8,583.74.

Staff's recommended adjustments applied to the Company's application would result in no change to the Company's proposed rates or the credit for gas-only customers. Attachment 2 shows the impact of Staff's recommended adjustments to Rider AU compared to the Company's proposed rates.

CONCLUSION

Staff recommends that Duke's application filed on June 4, 2015, be approved, subject to Staff's recommendation in this Letter, for rates effective on a bills-rendered basis beginning on April 1, 2016. The effect of Staff's recommended adjustments to Rider DR-IM would result in rates of \$6.28 per month for residential customers and \$9.35 for non-residential customers, which is an increase of \$0.21 and \$0.34 for residential and non-residential customers respectively from current rates.

The effect of Staff's adjustments to Rider AU would result in a rate of \$1.30 per month for all gas and electric customers, with a credit of \$1.14 per month for gas-only customers. This compares to a current rate of \$1.46 per month with a credit of \$1.28 per month for gas-only customers, a reduction of \$0.16 to the rate and a \$0.14 to the credit.

Duke Energy Ohio
Case No. 15-0883-GE-RDR
Rider DR-IM Revenue Requirement and Rate Comparison

Line No.	Description	Adjustment	Total Rev. Req. *	Residential Rev. Req.	Non-Residential Rev. Req.	Residential Rate	Non-Residential Rate	Residential Rate Change	Non-Residential Rate Change
1	Application as filed		\$55,249,525	\$46,962,096	\$8,287,429	\$6.31	\$9.39		
2	Allocated S&E	\$62,253	\$55,187,309	\$46,910,913	\$8,276,396	\$6.30	\$9.38	(\$0.01)	(\$0.01)
3	Out of warranty repairs	\$152,950	\$55,039,252	\$46,783,364	\$8,255,888	\$6.28	\$9.36	(\$0.02)	(\$0.02)
4	Remove Substation Camera Cost	\$557	\$55,038,704	\$46,782,898	\$8,255,806	\$6.28	\$9.36	\$0.00	\$0.00
5	Other Adjustments (wrecks, travel, equipment, vehicle mileage)	\$32,836	\$55,006,241	\$46,755,305	\$8,250,936	\$6.28	\$9.35	\$0.00	(\$0.01)

*Includes effect of adjustment to all schedules

Number of bills: Residential 7,444,188
Non-Residential 882,192

Duke Energy Ohio
Case No. 15-0883-GE-RDR
Rider AU Revenue Requirement and Rate Comparison

Line No.	Description	Adjustment	Revenue Requirement		Per Bill Rate	Revenue Requirement		Credit Rate
			SmartGrid*			Credit		
1	Application as filed		\$6,435,390		\$1.30	\$5,647,833		\$1.14
2	Adjustment for Allocated S&E	\$466	\$6,434,940		\$1.30	\$5,647,833		\$1.14
3	Remove Cost of Substation Camera	\$341	\$6,434,606		\$1.30	\$5,647,833		\$1.14
4	Other Adjustments (meals, travel, equipment, vehicle mileage)	\$8,584	\$6,426,139		\$1.30	\$5,647,833		\$1.14

* Includes effect of adjustment to all schedules

Total No. of bills	5,058,948
Gas only customers	106,440
Bills less gas-only	4,952,508

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application)	
of Duke Energy Ohio, Inc., to)	Case No. 15-883-GE-RDR
Adjust Rider DR-IM and Rider)	
AU for 2014 Grid Modernization)	
Costs.)	

**COMMENTS ON DUKE'S APPLICATION TO CHARGE OHIOANS FOR
SMARTGRID COSTS
BY
THE OFFICE OF THE OHIO CONSUMERS' COUNSEL**

I. INTRODUCTION

In this proceeding, Duke Energy Ohio, Inc. ("Duke") seeks to charge electric customers more than \$53.6 million and gas customers more than \$6 million.¹ The amounts represent Duke's claimed costs and return on rate base associated with grid modernization (also known as "SmartGrid") for 2014.

If the Public Utilities Commission of Ohio ("PUCO") approves Duke's Application as filed, then Duke's residential electric customers would pay \$6.31 per month for 2014 grid modernization costs,² an increase over current rates.³ In addition, most of Duke's residential gas customers would pay \$1.30 per month for 2014 grid modernization costs,⁴ an increase over current rates.⁵ Duke's gas-only customers in

¹ See Application (June 4, 2015) ("Application"), Direct Testimony of Peggy Laub ("Laub Testimony"), Attachment PAL-1, Schedule 1 and Attachment PAL-2, Schedule 1.

² See Laub Testimony at 9-10; Laub Revised Testimony (July 20, 2015).

³ See Duke Energy Ohio Tariff P.U.C.O. Electric No. 19, Sheet No. 104.7.

⁴ See Laub Testimony at 14-15; Laub Revised Testimony (July 20, 2015).

⁵ See Duke Energy Ohio Tariff P.U.C.O. Gas No. 10, Sheet No. 88.7.

Adams County, Georgetown, and Lebanon would receive a credit of \$1.06 per month,⁶ which is less than the credit under current rates.⁷ Thus, the bills of Duke's gas-only customers would also increase.

In these Comments,⁸ the Office of the Ohio Consumers' Counsel ("OCC") expresses its concerns about the performance of Duke's SmartGrid.⁹ Specifically, the program is not living up to expectations regarding the detection and restoration of outages through the SmartGrid self-healing teams. Duke's customers should not have to pay for costs associated with the failed operations of self-healing teams. Further, there should be specific reporting of the performance of Duke's self-healing teams during major events. Duke's Application should not be approved as filed, and the PUCO should adopt OCC's recommendations, discussed below, regarding these issues.

II. DISCUSSION

A. **Duke's self-healing teams – paid for by customers through their utility rates – have not minimized the impact of outages on customers as well as they should.**

Self-healing teams consist of sensors, automated controls, and software that use real-time outage data to detect and isolate faults and to reroute electricity via other feeder lines. The purpose of self-healing teams is to lessen the impact of outages on customers.

⁶ See Laub Testimony at 14-15. According to Ms. Laub, Duke provides only gas service in Adams County, Georgetown and Lebanon, which are outside of Duke's electric service territory. The customers are given a credit reflecting the common costs of the electric and gas SmartGrid programs and the allocable project management organization costs. See *id.* at 5.

⁷ The current credit is \$1.28. See Duke Energy Ohio Tariff P.U.C.O. Gas No. 10, Sheet No. 88.7.

⁸ OCC files in response to the Entry issued on October 8, 2015 in this proceeding. Among other things, the Entry (at 2) set November 13, 2015 as the deadline for filing comments and November 25, 2015 as the deadline for filing reply comments on the Application.

⁹ OCC is filing on behalf of all of Duke's 700,000 residential electricity customers and 420,000 residential gas customers. See Application at 1.

That is, self-healing teams are intended to reduce the number of customers who lose service because of an outage and to shorten the duration of outages. By isolating the location where an outage occurs, self-healing teams can be an effective tool to help expedite restoration efforts. Duke has installed self-healing teams on 64 distribution circuits in Ohio.¹⁰

In 2014, Duke's self-healing teams operated successfully 73.3 percent of the time (55 times out of 75 operations).¹¹ This percentage continues Duke's dismal performance regarding self-healing teams. In 2013, Duke's self-healing teams operated successfully only 64.3 percent of the time (27 out of 42 operations).¹² By comparison, in 2014 AEP Ohio's self-healing teams operated successfully 95.9 percent of the time (47 out of 49 operations).

The performance level for Duke's self-healing teams is well below the expectations the PUCO Staff has stated.¹³ While there are no specific benchmark standards for the performance of self-healing teams, the differential between AEP Ohio's performance level and Duke's performance level regarding self-healing teams raises serious concerns as to whether Duke's customers are getting what they've paid for. Cincinnati-area customers have paid more than \$100 million for Duke's SmartGrid

¹⁰ U.S. Department of Energy, *Integrated Smart Grid Provides Wide Range of Benefits in Ohio and the Carolina's* (September 2014) at 6.

¹¹ Application, Direct Testimony of Donald L. Schnieder, Jr. at 6.

¹² *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-GE-RDR, Direct Testimony of James D. Williams (December 31, 2014) ("Williams 14-1051 Testimony") at 5.

¹³ *In the Matter of the Application of Ohio Power Company to Update Its gridSMART Rider*, Case No. 13-345-EL-RDR, Comments Submitted on Behalf of the Staff of the Public Utilities Commission of Ohio (August 2, 2013) at 7.

program through their rates; the performance of Duke's SmartGrid in easing the impact of outages on customers does not justify the amounts customers pay for SmartGrid.

In last year's SmartGrid rider update proceeding, OCC noted the poor performance level of Duke's self-healing teams that customers are paying for. Based on that poor performance, OCC questioned the prudence of the costs associated with the failed self-healing team operations.¹⁴ OCC recommended that the PUCO disallow all costs associated with the self-healing teams that failed to function.¹⁵

In the Second Entry on Rehearing in the 14-1051 case, the PUCO deferred ruling on the cost effectiveness of the self-healing teams. The PUCO stated that it "believes it is prudent to wait for Duke's 2015 Non-Cost Metrics Report, which includes data regarding the failures and usage of self-healing teams, before making any decisions with respect to the cost effectiveness of Duke's self-healing teams' technology."¹⁶ That information, discussed above, is now available. The information shows that Duke's self-healing teams are not cost effective.

Duke's self-healing teams are continuing to perform at an unacceptable level. Requiring customers to continue to pay for imprudent costs that Duke has incurred to implement self-healing team technology is not just and reasonable. Duke should not be permitted to collect from customers the costs for its SmartGrid investments where the technology is not implemented in a used and useful manner. When self-healing teams operate successfully only 73.3 percent of the time, they are not used and useful.

¹⁴ Williams 14-1051 Testimony at 5.

¹⁵ Id., OCC Initial Brief (March 9, 2015) at 21.

¹⁶ Id., Second Entry on Rehearing (July 1, 2015) at 7.

The PUCO should find that Duke's implementation of self-healing teams is not cost effective. Accordingly, the PUCO should disallow cost collection associated with the 20 failed operations of Duke's self-healing teams in 2014. Furthermore, the PUCO should mandate that Duke achieve a minimum of 90 percent success for self-healing team performance, on an annual basis, before Duke can recover any additional costs related to self-healing teams.

B. The PUCO should require specific reporting of the performance of Duke's self-healing teams during major events.

Another concern with Duke's self-healing teams is their performance during major events. Major events occur when weather or other conditions result in an electric distribution system being stressed beyond the normal operations. Outages during major events can be significant because of the number of customers who can be without service for extended periods of time. The benefits of properly designed and operated self-healing teams could be realized the most during major events because more customers lose service during major events. By rerouting electricity around faults, self-healing teams can help expedite restoration efforts.

According to discovery responses, a major event occurred in Duke's Ohio service territory on November 24, 2014.¹⁷ Duke also reported two failures of the self-healing teams on that date.¹⁸ It is unclear if the failures of the self-healing teams were associated with the major event or if they were unrelated to the major event.¹⁹ It is important to know whether Duke's self-healing teams are working properly during major events, so

¹⁷ Duke Response to OCC-INT-02-025.

¹⁸ Duke Response to OCC-POD-01-016.

¹⁹ Duke claims that one of the failures was caused by an equipment failure and the other by a device configuration error. *Id.*

the benefit to customers (who are paying for Duke's SmartGrid through rates) can be properly gauged.

Duke is required to provide a Non-financial Metrics report to parties each year.²⁰ The PUCO should require Duke to specifically include reporting of self-healing team performance during major events in the Non-financial Metrics report. Furthermore, Duke should be required to provide additional details concerning the cause of self-healing team failures during major events.

III. CONCLUSION

Cincinnati-area customers have paid more than \$100 million for Duke's SmartGrid program through their rates. They deserve to have the promised benefit of faster response times to fixing outages, resulting in fewer affected customers and for shorter periods of time.

Duke should not be allowed to collect from customers the costs associated with the failed operations of its self-healing teams until the teams successfully perform 90 percent of the time. And, in order to properly gauge the benefits of Duke's SmartGrid to customers, the PUCO should require separate reporting of the performance of Duke's self-healing teams during major events. The PUCO should not approve Duke's Application as filed. The PUCO should adopt OCC's recommendations stated herein to ensure that customers receive the benefits from the equipment that they are investing in and paying for through rates.

²⁰ *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, Stipulation and Recommendation (February 24, 2012) at 9.

Respectfully submitted,

BRUCE J. WESTON (0016973)
OHIO CONSUMERS' COUNSEL

/s/ Terry L. Etter

Terry L. Etter (0067445), Counsel of Record
Kyle L. Kern (0084199)
Assistant Consumers' Counsel

Office of the Ohio Consumers' Counsel

10 West Broad Street, Suite 1800

Columbus, Ohio 43215-3485

Telephone: (614) 466-7964 (Etter direct)

Telephone: (614) 466-9585 (Kern direct)

terry.etter@occ.ohio.gov

(willing to accept email service)

Kyle.Kern@occ.ohio.gov

(willing to accept email service)

CERTIFICATE OF SERVICE

I hereby certify that a copy of these Comments was served on the persons stated below via electronic transmission, this 13th day of November 2015.

/s/ Terry L. Etter

Terry L. Etter

Assistant Consumers' Counsel

SERVICE LIST

Thomas McNamee
Natalia Messenger
Assistant Attorneys General
Public Utilities Section
Attorney General's Office
180 East Broad Street, 6th Floor
Columbus, Ohio 43215
Thomas.mcnamee@puc.state.oh.us
natalia.messenger@puc.state.oh.us

Amy B. Spiller
Elizabeth H. Watts
Duke Energy Ohio
139 E. Fourth Street, 1303-Main
P.O. Box 960
Cincinnati, Ohio 45201-0960
Amy.Spiller@duke-energy.com
Elizabeth.Watts@duke-energy.com

Colleen L. Mooney
Ohio Partners for Affordable Energy
231 West Lima Street
Findlay, Ohio 45839-1793
cmooney@ohiopartners.org

Jennifer L. Spinosi
Joseph M. Clark
Direct Energy Services, LLC
21 E. State St., Suite 1950
Columbus, OH 43215
Tel. (614) 220- 4369 ext. 221
jennifer.spinosi@directenergy.com
joseph.clark@directenergy.com

Attorney Examiner:

Kerry.sheets@puc.state.oh.us

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

11/13/2015 2:27:57 PM

In

Case No(s). 15-0883-GE-RDR

Summary: Comments Comments on Duke's Application to Charge Ohioans for SmartGrid Costs by the Office of the Ohio Consumers' Counsel electronically filed by Ms. Deb J. Bingham on behalf of Etter, Terry L.

OCC EXHIBIT NO. 2

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

**In the Matter of the Application of)
Duke Energy Ohio, Inc., to Adjust Rider) Case No. 15-883-GE-RDR
DR-IM and Rider AU for 2014 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

December 9, 2015

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. PURPOSE OF MY TESTIMONY	3
III. SELF-HEALING TEAM PERFORMANCE	4
IV. CONCLUSION.....	11

ATTACHMENTS

JDW-1	List of Previous Testimony Filed at the PUCO by James Williams
JDW-2	Duke Energy Ohio SmartGrid Non-Financial Metrics 2014 Annual Report
JDW-3	Duke Energy Response to OCC-POD-01-016 (2014 Missed Operations)
JDW-4	Duke Energy Response to OCC-INT-01-013
JDW-5	Duke Energy Response to OCC-INT-01-014
JDW-6	Duke Energy Response to OCC-INT-02-025

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 Consumer Protection Research
7 Analyst.

8

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

11 ***A2.*** I am a 1994 graduate of Webster University, in St. Louis, Missouri, with a Master
12 in Business Administration, and a 1978 graduate of Franklin University, in
13 Columbus, Ohio, with a Bachelor of Science, Engineering Technology. My
14 professional experience includes a career in the Air Force and over 18 years of
15 utility regulatory experience with the OCC.

16

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

*Direct Testimony of James D. Williams
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 15-883-GE-RDR*

1 Analyst, I am responsible for investigating and recommending policy positions on
2 issues that affect residential consumers.

3
4 My experience has allowed me to assist in the formulation of OCC positions in
5 rulemakings such as the Electric Service Safety Standards,¹ set forth in Ohio
6 Administrative Code 4901:1-10. As it relates to this proceeding, my experience
7 includes reviewing the reasonableness of reliability performance standards
8 proposed by Duke Energy Ohio ("Duke" or "Utility")² and other cases such as
9 grid modernization (also known as "SmartGrid") that potentially effect service
10 quality and reliability. I assisted in the preparation of OCC comments in this
11 proceeding.

12
13 ***Q3. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY OR TESTIFIED***
14 ***BEFORE THE PUCO?***

15 ***A3.*** Yes. The cases in which I have submitted testimony and/or have testified before
16 the PUCO can be found in Attachment JDW-1.

¹ *In the Matter of the Commission's Review of Chapters 4901:1-10 of the Ohio Administrative Code Regarding Electric Companies*, Case No. 12-2050-EL-ORD.

² *In the Matter of the Application of the Duke Energy Ohio, Inc. to Establish Minimum Reliability Performance Standards Pursuant to Chapter 4901:1-10, Ohio Administrative Code*, Case No. 09-757-EL-ESS and Case No. 13-1539-EL-ESS.

1 **II. PURPOSE OF MY TESTIMONY**

2

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

5 ***A4.*** The purpose of my testimony is to point out certain shortfalls of the Duke
6 SmartGrid program and make recommendations to improve the program
7 for the benefit of customers who continue to pay millions of dollars to
8 support it.³

9

10 The performance of the “self-healing teams” may not be providing all the
11 benefits that they should for customers. I am recommending that the
12 PUCO not require Duke’s customers to pay for any costs associated with
13 the 20 times Duke’s self-healing teams failed to operate as designed in
14 2014.

15

16 Furthermore, I urge the PUCO to mandate a minimum performance level
17 of a 90 percent success rate before Duke can collect any additional costs
18 related to self-healing teams from consumers. The performance of Duke’s
19 self-healing teams should be on par with AEP Ohio’s self-healing team
20 performance. And there should be specific reporting of self-healing team
21 operations during major events.

³ *In the Matter of the Application of Duke Energy Ohio, Inc., for Approval of an Electric Security Plan, Case No. 08-920-EL-SSO, Opinion and Order (December 17, 2008).*

1 **III. SELF-HEALING TEAM PERFORMANCE**

2

3 ***Q5. WHAT ARE "SELF-HEALING TEAMS"?***

4 ***A5.*** The term "self-healing teams" refers to a component of the Distribution
5 Automation ("DA") portion of Duke's SmartGrid, which involves a set of
6 automated switches, sensors, and controls that can reconfigure circuits to re-route
7 electricity around a fault to reduce the number of customers on a circuit who
8 would otherwise lose electricity. Self-healing teams were installed on the system
9 to more efficiently detect and isolate outages on distribution lines to benefit
10 consumers. Ultimately, the intent of the self-healing teams is to lessen the impact
11 of outages on consumers – not just to add more expensive sophistication to the
12 system that is not used and useful.

13

14 ***Q6. HOW MANY SELF-HEALING TEAMS HAVE BEEN INSTALLED BY***
15 ***DUKE AND HOW HAVE THEY PERFORMED?***

16 ***A6.*** Based upon Duke's SmartGrid reporting for 2014 (attached herein as Attachment
17 JDW-2), 30 self-healing teams have been installed.⁴ However, of the 75 times
18 that the self-healing teams operated in 2014, only 55 of the operations (73
19 percent) successfully kept customers from losing service by automatically
20 rerouting the electricity around the outage. The 20 unsuccessful operations of the
21 self-healing teams caused Duke's customers to endure outages that should have

⁴ Duke Energy Ohio SmartGrid Non-Financial Metrics 2014 Annual Report.

1 been avoided had the SmartGrid functioned properly. The 2014 performance of
2 Duke's self-healing teams was a little better than the results from the previous
3 year. In 2013, the self-healing teams operated successfully 27 of the 42 times that
4 they should have operated – a dismal 64 percent success rate. By comparison,
5 AEP Ohio self-healing teams operated successfully 47 of the 49 times they were
6 called up to operate – a 95.9 percent success rate.⁵ The AEP Ohio self-healing
7 team performance has consistently improved as the PUCO emphasized its
8 expectations concerning self-healing team performance.⁶ The lackluster
9 performance of Duke's self-healing teams in 2013 and 2014 and their impact on
10 consumers warrant reducing the amount of costs Duke may collect from
11 customers.

12
13 ***Q7. DID OCC ADDRESS THE ISSUES OF DUKE'S SELF-HEALING TEAM***
14 ***PERFORMANCE IN LAST YEAR'S GRID MODERNIZATION CASE?***

15 ***A7.*** Yes. In last year's proceeding, OCC raised the issue of the self-healing team
16 performance. OCC questioned at that time the prudence of the costs associated
17 with the failed self-healing teams and recommended that the PUCO disallow all
18 costs associated with self-healing teams that failed to operate.⁷ OCC
19 recommended that Duke not be allowed to charge customers for costs associated

⁵ *In the Matter of the Application of Ohio Power Company to Update Its gridSMART Rider Rates*, Case 15-240-EL-RDR.

⁶ See *In the Matter of the Application of Ohio Power Company to Update Its gridSMART Rider*, Case No. 13-345-EL-RDR, Comments Submitted on Behalf of the Staff of the Public Utilities Commission of Ohio (August 2, 2013) at 7 (Staff stated that a success rate of only 60% with regard to self-healing teams falls below Staff's expectations.).

⁷ Case 14-1051-GE-RDR, Testimony of OCC witness James Williams (December 31, 2014) at 5.

1 with self-healing teams until the Utility can demonstrate that the self-healing
2 teams operate successfully at least 90 percent of the time. Finally, OCC raised
3 concerns about the lack of transparency in the reporting of issues related to self-
4 healing team failures. Specifically, these concerns involved the need for more
5 fact-based information about the cause of each self-healing team failure and about
6 corrective measures.⁸ Further, OCC addressed the need for identifying self-
7 healing team performance specifically during major events when the distribution
8 system is stressed beyond normal parameters.⁹

9
10 ***Q8. HOW DID THE PUCO ADDRESS THE 2013 SELF-HEALING TEAM***
11 ***PERFORMANCE ISSUE?***

12 ***A8.*** The PUCO gave Duke an additional year to demonstrate the cost effectiveness of
13 the self-healing team technology. The PUCO ruled in the Second Entry on
14 Rehearing as follows:

15 As we stated in our Order, the Commission believes it is prudent to
16 wait for Duke's 2015 Non-Cost Metrics Report, which includes
17 data regarding the failures and usage of self-healing teams, before
18 making any decisions with respect to the cost effectiveness of
19 Duke's self-healing teams' technology.¹⁰

20

⁸ Id.

⁹ Id.

¹⁰ Case 14-1051-GE-RDR, Second Entry on Rehearing (July 1, 2015) at 7.

*Direct Testimony of James D. Williams
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 15-883-GE-RDR*

1 Duke has now had that additional year to collect even more money from
2 customers to implement its smart grid program. Yet, Duke's self-healing teams
3 continue to operate at unacceptable levels. Now, the PUCO should not allow
4 Duke to collect any costs associated with the 20 failed self-healing team
5 operations from consumers. Duke began installing self-healing teams in 2011 and
6 now has a full five years of experience in operationally using self-healing teams.
7 Duke must be held accountable for ensuring that its investments in self-healing
8 teams were prudently incurred and are used and useful in providing service to
9 customers.

10
11 ***Q9. HAS THE PUCO REQUIRED DUKE TO PROVIDE ADDITIONAL***
12 ***REPORTING ON THE PERFORMANCE OF THE SELF-HEALING***
13 ***TEAMS?***

14 ***A9.*** Yes. In Case No. 13-1141-GE-RDR, the PUCO approved a Stipulation that
15 among other things, required Duke to provide more detailed information about the
16 operations of the self-healing teams. The Opinion and Order ("O&O") in that
17 case states¹¹:

18 Duke shall track and provide a report on the following within its
19 non-cost metrics annual report that shall be filed in its SmartGrid
20 rider applications: the number of times when Duke's self-healing
21 teams were called upon in outages to operate; the number of

¹¹ *In the Matter of the Application of Duke Energy Ohio, Inc., to Adjust Rider DR-IM and Rider AU for 2013 SmartGrid Costs*, Case No. 13-1141-GE-RDR, Opinion and Order (April 9, 2014) at 9.

instances when such teams operated; and the number of instances when they failed to operate. *Further, Duke will identify causes of failures, to the extent feasible, and corrective action taken to correct the cause of failure to avoid future failure of self-healing teams.* (Emphasis added).

Q10. IS DUKE IN COMPLIANCE WITH THE O&O IN CASE NO. 13-1141-GE-RDR?

A10. No. As can be seen in JDW-2, Duke only reports the total number of self-healing team operations, the number of successful operations of self-healing teams, and the number of self-healing team failures. There is no reporting concerning the cause of failures and corrective action taken to avoid future failures of self-healing teams.

Even in the testimony of Duke's witness, only high-level summary information is provided concerning reasons why the self-healing teams failed to operate.¹² For example, Duke claims that telecommunications issues led to six of the missed operations in 2014.¹³ Five of the missed operations were due to equipment failures.¹⁴ Two of the missed operations were due to software logic issues.¹⁵

Two of the missed operations were due to device configuration issues and another

¹² Testimony of Duke witness Donald L. Schnieder (June 4, 2015) at 6-7.

¹³ Id. at 6.

¹⁴ Id.

¹⁵ Id.

1 two missed operations were due to system model issues.¹⁶ Finally, three of the
2 missed operations related to human performance.¹⁷ Even the responses to OCC
3 discovery requests (attached herein as JDW-3)¹⁸ include high-level information
4 making it difficult to determine the cause of the failure and to have any assurance
5 that the problem was adequately addressed. This is not sufficient content to
6 understand the cause of failure. Nor is this sufficient information to be assured
7 that the problems are addressed so that future failures of self-healing teams can be
8 avoided.

9
10 ***Q11. ARE THERE OTHER REPORTING ISSUES THAT YOU RECOMMEND***
11 ***THE PUCO ADDRESS?***

12 ***A11.*** Yes. In its response to OCC-INT-01-013 and OCC-INT-01-014 (attached herein
13 as JDW-4 and JDW-5), Duke claimed that it does not track operations of self-
14 healing teams during major events. Major events generally involve unusually
15 severe weather or other events that stress a utility's distribution system and cause
16 untypical outages.¹⁹ Customer outages that occur during major events are
17 excluded from the calculation of PUCO reliability standards. Because major
18 events can impact a large number of customers for an extended period of time, the

¹⁶ Id.

¹⁷ Id.

¹⁸ Duke Response to OCC-POD-01-016 (2014 PUCO Missed Operations Summary)

¹⁹ <http://www.puco.ohio.gov/puco/index.cfm/industry-information/statistical-reports/electric-reliability-performance-data/#sthash.fEVGhVbL.dpbs>.

*Direct Testimony of James D. Williams
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 15-883-GE-RDR*

1 contribution of the self-healing teams in reducing the total number of outages and
2 the duration of outages during these events is very important.

3
4 According to Duke's response to OCC-INT-02-025 (attached herein as JDW-6)
5 major event days occurred on January 25, June 16, and November 24, 2014.

6 According to JDW-3, there were two failed operations of self-healing teams on
7 November 24, 2014. One failure is attributed to an equipment failure and the
8 other to a device configuration failure. According to Duke's reliability report for
9 2014,²⁰ the cause of the outage on November 24, 2014 was wind.

10
11 There were 48,961 customers interrupted on this date for a total of 11,220,830
12 customer outage minutes. In this particular event, it appears as though the causes
13 for the two failures of the self-healing teams were independent of the major event.
14 Had the self-healing teams operated properly on November 24, 2014, fewer
15 customer outages would have occurred on a day when almost 50,000 Duke
16 customers were without service for approximately four hours on average.

²⁰ Case No. 15-581-EL-ESS <http://dis.puc.state.oh.us/TiffToPDF/A1001001A15D24B05722A15426.pdf>

1 ***Q12. DO YOU HAVE A SPECIFIC RECOMMENDATION CONCERNING HOW***
2 ***DUKE SHOULD REPORT SELF-HEALING TEAM PERFORMANCE***
3 ***DURING MAJOR EVENTS?***

4 ***A12.*** Yes. To assist in evaluating the Utility's SmartGrid program, Duke should
5 provide reporting on both the number of successful operations and failed
6 operations of self-healing teams during major events. This reporting should
7 provide additional insight on any relationship between the cause of a failed
8 operation of the self-healing team and the major event. Furthermore, this
9 reporting should include customer outages avoided because of the self-healing
10 teams.

11

12 **IV. CONCLUSION**

13

14 ***Q13. DOES THIS CONCLUDE YOUR TESTIMONY?***

15 ***A13.*** Yes. However, I reserve the right to incorporate new information that may
16 subsequently become available through outstanding discovery or otherwise.

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Direct Testimony of James D. Williams on Behalf of the Office of the Ohio Consumers' Counsel* has been served via electronic transmission this 9th day of December 2015.

/s/Terry L. Etter
Terry L. Etter
Assistant Consumers' Counsel

SERVICE LIST

Thomas McNamee
Natalia Messenger
Assistant Attorney General
Public Utilities Section
Attorney General's Office
180 East Broad Street, 6th Floor
Columbus, Ohio 43215
Thomas.mcnamee@puc.state.oh.us
Natalia.messenger@puc.state.oh.us

Amy B. Spiller
Elizabeth H. Watts
Duke Energy Ohio
139 E. Fourth Street, 1303-Main
P.O. Box 960
Cincinnati, Ohio 45201-0960
Amy.Spiller@duke-energy.com
Elizabeth.Watts@duke-energy.com

Jennifer L. Spinosi
Joseph M. Clark
Direct Energy Services, LLC
21 E. State St., Suite 1950
Columbus, Ohio 43215
Jennifer.spinosi@directenergy.com
Joseph.clark@directenergy.com

Colleen L. Mooney
Ohio Partners for Affordable Energy
231 West Lima Street
Findlay, Ohio 45839
cmooney@ohiopartners.org

Kimberly W. Bojko
Carpenter, Lipps & Leland LLC
280 Plaza, Suite 1300
280 N. High Street
Columbus, Ohio 43215
bojko@carpenterlipps.com

Attorney Examiner:

Kerry.sheets@puc.state.oh.us

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 Application of Duke Energy Ohio, Inc., to Adjust Rider DR-IM and Rider AU for 2014 Grid Modernization Costs, Case No. 15-883-EL-RDR (December 9, 2015).*



**Duke Energy Ohio
SmartGrid
Non-Financial Metrics
2014 Annual Report**

This 2014 Annual Report of non-financial metrics associated with the Advanced Metering Infrastructure (AMI) meter and SmartGrid deployment in Ohio, is submitted in accordance with the Stipulation and Recommendation that was approved by the Public Utilities Commission of Ohio, in the Opinion and Order in Case No. 10-2326-GE-RDR. The report compares Baseline with 2011 through 2014 performance.

Table of Contents

DE Ohio - 2014 Non-Financial Metrics Report.....3

Footnotes.....3

DE Ohio - 2014 Non-Financial Metrics Report

Metric	Baseline	2011	2012	2013	2014	Projected Steady State at 2015
# of Certified Gas Modules	0	205,579	318,982	387,034	440,394	440,000
# of Certified Electric Meters	0	294,494	477,965	623,909	706,593	720,000
# of Duke Energy Ohio employees - Gas Operations	210	135	129	134	142	135
# of Duke Energy Ohio employees - Power Delivery	643	409	278	276	235	585
Total delivered at Retail - Kwh	21,010,867,000	20,240,732,940	19,632,319,484	20,010,062,760	20,286,736,611	20,854,335,000 [1]
# of Installed & Certified Communication Nodes	0	71,036	116,802	139,849	139,983	138,000
Remote Order Fulfillments as % of Total Meter Orders [2]	0%	50.0%	66.3%	84.2%	93.9%	98.5%
# of Manual On-cycle Electric Meter Reads	8,585,006	6,230,211	4,020,651	2,115,646	775,985	25,000
# of Manual On-cycle Gas Meter Reads	5,374,353	3,883,758	2,506,380	1,296,687	475,604	220,000
# of Manual Off-cycle Electric Meter Reads	138,891	83,046	50,172	28,571	14,013	500
# of Manual Off-cycle Gas Meter Reads	85,120	50,899	30,750	17,511	8,588	3,000
# of Manual Electric Meter Reads	8,723,887	6,313,257	4,070,823	2,144,217	789,998	25,500
# of Manual Gas Meter Reads	5,459,473	3,934,657	2,537,130	1,314,198	484,192	223,000
# of Non-pay Disconnects - Electric [3]	65,841	70,328	81,451	82,369	86,345	[4]
# of Meter Readers (expressed in FTE)	135	103	74	80	48	10
Certified Meters as % of Planned Total Deployment	0.0%	43.1%	68.7%	87.2%	96.9%	98.5%
# of Meter Reading Routes	2,460	2,046	1,284	998	427	63
# of Handhelds Repaired	122	32	14	0	0	0
# of Handhelds Purchased	41	0	121	0	0	0
# of Non-AMI Meters Purchased	3,608	7,104	5,753	1,221	262	0
# of Meters Repaired - Mechanical	11,649	22,860	22,494	15,918	9,571	100
# of Meters Failed - Electric Smart Meter	0	118	800	1,850	275	2,200
# of Gas Modules Failed	73	183	58	516	101	550
# of Meter Reading Vehicles	117	115	106	82	78	12
Average Miles per Meter Reading Vehicle	10,619	10,153	3,684	9,562	7,080	[5]
# of Truck Rolls Avoided (Outage)	0	217	610	566	655	[2]
# of Truck Rolls Related to an Outage	19,877	30,601	42,952	38,383	45,166	[2]
# of Node-notified Storm Event Outages	0	0	148	102	163	[2]
# of Node-notified Outages	0	18	1,163	2,183	2,781	[2]
# of Self-Healing Teams Installed	0	17	24	30	30	30
# of Annual Customer Minutes Saved from Self-Healing	0	598,905	2,782,697	4,605,817	5,535,113	3,000,000
# of Successful Self-Healing Team Operations	-	8	10	27	55	[2]
# of Self-Healing Team Failures	-	-	-	15	20	[2]
Total # of SHT Operations	-	8	10	42	75	[2]
# of AMI Power Theft Cases Billed	0	839	1,198	1,288	876	1,250
% Capacitor Off-line	15.0%	5.2%	4.3%	2.2%	2.2%	[6]
# of Capacitor Banks Installed [7]	2,127	2,031	1,891	1,966	1,956	[6]

Footnotes

[1] Steady state represents the 2015 forecast per Duke's IRP filing in June 2012.

[2] Steady state is not applicable as numbers are dependent on factors outside of Duke Energy's control, including weather/storm activity.

[3] Baseline, 2011, and 2012 figures contain a small number of gas disconnects, as a specific breakout could not be determined. Data for 2013 and 2014 is electric only.

[4] Duke Energy Ohio is unable to forecast a steady state as the number of Non-Pay Disconnects is heavily influenced by economic conditions.

[5] Steady state cannot be determined until manual meter reading routes are defined at the conclusion of the deployment.

[6] Sufficient data does not yet exist to provide information on steady state.

[7] Numbers provided represent 3-phase distribution switched capacitors in the field.

As agreed in the meeting with Staff and OCC on Feb. 6, 2013, Duke Energy Ohio will submit a report titled Distribution System Efficiency Metrics with the annual cost recovery filing and as a result, "Line Loss & Unaccounted for Electric (Kwh)" and "Average System Voltage" have been removed from the Smart Grid Non-financial Metrics report.

2014 Duke Energy Ohio Self Healing Failed Operations Report

Ohio Self Healing Operations Summary	
Year	2014
Total Operations	75
Successful Operations	55
Failed Operations	20
% Successful	73%

Team	Date	Failure	Remediation Plan
23	1/4/2014	Telecommunications	Follow up to see if Cedarville RTU can be investigated and determine why there are frequent momentary communication issues. NOC and Telecom have confirmed issue is T1 dropping out and cell backup being activated. Telecom engineer working with T1 provider to find a solution. Ground connection was removed from position isolation device and a repeater was replaced on the T1 line.
23	1/13/2014	Telecommunications	Follow up to see if Cedarville RTU can be investigated and determine why there are frequent momentary communication issues. NOC and Telecom have confirmed issue is T1 dropping out and cell backup being activated. Telecom engineer working with T1 provider to find a solution. Ground connection was removed from position isolation device and a repeater was replaced on the T1 line.
32	1/21/2014	Software Logic	Follow up with Cooper to see if there is a work around or a future enhancement to eliminate a failed operation with upstream load < down stream load by a very small amount. Fixed in new Cooper Yukon release. Implemented March 2014.
24	1/27/2014	Software Logic	Failed due to target validity timer issue. Received new release from Cooper on 1/21/2014. Testing is in process. Fixed in new Cooper Yukon release. Implemented March 2014.
31	2/6/2014	System Modeling	Activate "Remote Enable" on CB 538 within EMS (this was done on 2/7/2014). EMS Support personnel verified the "Remote Enabled" flag was set for all other self-healing circuit breakers.
23	2/20/2014	Telecommunications	Follow up to see if Eastwood RTU can be investigated and determine why there are frequent momentary communication issues. NOC and Telecom have confirmed issue is T1 dropping out and cell backup being activated. Telecom engineer working with T1 provider to find a solution. Ground connection was removed from position isolation device and a repeater was replaced on the T1 line.
31	4/11/2014	Device Configuration	System protection issued new settings for the backup relay to ensure it does not operate before the primary relay. Test and Relay department implemented the new settings on the substation relays on 4/17/2014 and investigated the cause for watchdog alarm on both the Hillcrest 51 and the Hillcrest 52 circuits. New settings installed and watchdog alarms resolved.
2	4/28/2014	Equipment Failure	Working with ABB and field personnel to determine why ABB OVR electronic recloser failed to open. Based on an error code found it was determined a failed digital input/output card used to control the reclosers caused the problem. This card was replaced.
25	5/20/2014	Equipment Failure	Based on symptoms and an error code it was determined that the digital input output card used to control the recloser had failed. This card was replaced.
30	5/27/2014	Telecommunications	Historical communications performance was reviewed and communications performance was monitored after this event. This recloser communicates successfully over 99% of the time. Unfortunately during this event the cellular signal was weak, blocked, or interrupted momentarily in some manner. No further action is necessary.
24	6/2/2014	Human Performance	Identified communications issue can occur if user does not log out of the relay and data concentrator correctly. This event was reviewed by the test and relay department and the proper logout procedure was reinforced.
31	6/22/2014	System Modeling	Activate "Remote Enable" on Trip reset for CB 423 within DMS. Corrected by DMS Support on 6/24/2014. DMS Support queried all devices on system to ensure this flag was correct for all devices.
28	6/23/2014	Telecommunications	Telecom department determined there was an AC powered communications device which lost power during this event causing the communications failure. Telecom to initiate project to install a battery backup at this location.
1	7/1/2014	Human Performance	Field personnel inadvertently left the self-healing switch in "local" mode after line work in the area was completed. Local mode prevents any automated action from taking place. Field personnel placed device back into supervisory mode on 7/3/2014.
4	7/13/2014	Human Performance	Operator manually override self-healing team process prior to opportunity for operation. Additional training has taken place since this event to reinforce that self-healing operations can take up to five minutes and that automation should not be disabled within five minutes of an event (unless there are compelling reasons to disable the team sooner).
1	10/16/2014	Equipment Failure	Failed Battery on self-healing switch. There was not a battery alarm generated prior to this event. Battery replaced 10/20/2014.
30	11/17/2014	Equipment Failure	Dielectric failure on recloser's load side bushing resulted in sustained fault. Device was under warranty and was replaced.
23	11/24/2014	Equipment Failure	Failed board inside recloser control caused analog and binary data points to be reported incorrectly. Failed communications card was replaced.
31	11/24/2014	Device Configuration	Configuration of substation RTU caused incorrect status information to be returned. This was resolved by Test and Relay the week of December 1st, 2014.
3	11/30/2014	Telecommunications	Field visit was performed and communications between the recloser and SCADA was restored by rebooting the cellular modem.

Acronym
CB

Description
Circuit Breaker

DMS	Distribution Management System (Used to control electronic reclosers and switches)
EMS	Energy Management System (Used to control circuit breakers)
NOC	Network Operations Center (Telecommunications operating center)
RTU	Remote Terminal Unit (Used to collect and transmit data from substations to SCADA system)

**Duke Energy Ohio
Case No. 15-883-GE-RDR
OCC First Set Interrogatories
Date Received: July 2, 2015**

OCC-INT-01-013

REQUEST:

For the 55 successful operations of the self-healing teams referenced on page 6, line 13 of Mr. Schneider's testimony, how many of the successful operations occurred during major event days?

RESPONSE:

Duke Energy Ohio did not track this information.

PERSON RESPONSIBLE: Legal

**Duke Energy Ohio
Case No. 15-883-GE-RDR
OCC First Set Interrogatories
Date Received: July 2, 2015**

OCC-INT-01-014

REQUEST:

For the 20 times that the self-healing teams did not work properly during 2014 referenced in Mr. Schneider's testimony on page 6, line 15, how many of the failed events occurred during major event days?

RESPONSE:

Duke Energy Ohio did not track this information.

PERSON RESPONSIBLE:

Legal

**Duke Energy Ohio
Case No. 15-883-GE-RDR
OCC Second Set Interrogatories
Date Received: October 16, 2015**

OCC-INT-02-025

REQUEST:

What were the dates that Duke considered to "major event days," per the PUCO's rules, during 2014?

RESPONSE:

The major event days in 2014 were January 25th, June 16th and November 24th.

PERSON RESPONSIBLE: Peggy Laub

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/9/2015 5:17:01 PM

In

Case No(s). 15-0883-GE-RDR

Summary: Testimony Direct Testimony of James D. Williams on Behalf of the Office of the Ohio Consumers' Counsel electronically filed by Ms. Deb J. Bingham on behalf of Etter, Terry L.