

FILE

DE-OHIO Exhibit \_\_\_\_\_

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke	)	
Energy Ohio to Adjust and Set Its Gas and	)	
Electric Recovery Rate for SmartGrid	)	Case No. 09-543-GE-UNC
Deployment Under Riders AU and	)	
Rider DR-IM	)	
In the Matter of the Application of	)	Case No. 09-544 -GE-ATA
Duke Energy Ohio for Tariff Approval	)	
In the Matter of the Application of	)	
Duke Energy Ohio to Change its	)	Case No. 09-545 -GE-AAM
Accounting Methods	)	

---

DIRECT TESTIMONY OF

DONALD H. DENTON, III

ON BEHALF OF

DUKE ENERGY OHIO

---

PUCCO

2009 JUN 30 PM 5:21

RECEIVED-DOCKETING DIV

June 30, 2009

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        Date Processed 06/30/09

## **TABLE OF CONTENTS**

<b><u>DESCRIPTION OF TESTIMONY</u></b>	<b><u>TESTIMONY PAGES</u></b>
I. INTRODUCTION AND PURPOSE.....	1
II. DISCUSSION OF SMARTGRID DESIGN.....	2
III. CONSLUSION.....	6

1                                   **I. INTRODUCTION AND PURPOSE**

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

3   A. My name is Donald H. Denton, III. My business address is 400 South Tryon  
4       Street, Charlotte, North Carolina 28285.

5   **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6   A. I am employed by the Duke Energy Business Services LLC, a service company  
7       affiliate of Duke Energy Ohio (DE-Ohio or the Company) as the General  
8       Manager for SmartGrid Implementation, Strategy and Planning.

9   **Q. PLEASE BRIEFLY DESCRIBE YOUR JOB DUTIES AS GENERAL**  
10       **MANAGER FOR SMARTGRID IMPLEMENTATION, STRATEGY AND**  
11       **PLANNING.**

12   A. As General Manager, my role is to oversee the development and operation of  
13       Duke Energy's SmartGrid strategy and planning group, which includes the  
14       development and management of design basis, vendor relationships and our  
15       program management office.

16   **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND**  
17       **AND PROFESSIONAL QUALIFICATIONS.**

18   A. I received a Bachelor of Science Degree in Aerospace Engineering from the  
19       Georgia Institute of Technology in 1992, and an Executive Master's Degree in  
20       Business Administration from Queens University in Charlotte, North Carolina in  
21       2007. I am a licensed Professional Engineer in North and South Carolina, and a  
22       licensed General Contractor in North Carolina.

**DONALD H. DENTON, III DIRECT**

1     **Q.     PLEASE SUMMARIZE YOUR WORK EXPERIENCE.**

2     A.     I began my career with Duke Energy in 1992 as an Engineer. I then progressed  
3           through a variety of project management and leadership roles with various Duke  
4           Energy subsidiaries, including management of multiple industrial energy  
5           optimization projects for large Fortune 500 customers, including major chemical  
6           and oil companies. I also led the business development, design, construction and  
7           startup efforts of a greenfield natural gas-fired steam plant for a textile company  
8           in South Carolina. I was eventually named to lead the project I was hired to  
9           support, the development of an Integrated Gasification Combined Cycle facility  
10          that had received a Department of Energy Clean Coal Round V grant. In 2002, I  
11          managed a strategic and business planning effort which resulted in an integrated  
12          ten-year strategic plan. In 2004, I moved into Duke Power's major projects group  
13          as a project director managing multiple projects, including the design and  
14          construction of a one-of-a-kind natural gas-fired combustion turbine facility.  
15          Most recently, I served as director of deal structuring and valuation where I  
16          managed a group responsible for developing financial models and deal structures  
17          for large retail and wholesale opportunities. I was named to my current position  
18          in September of 2008.

19    **Q.     WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
20    **PROCEEDING?**

21    A.     The purpose of my testimony is to describe the design and deployment of Duke  
22           Energy Ohio's SmartGrid.

23                           **DISCUSSION OF SMARTGRID DESIGN**

24    **Q.     DID DE-OHIO CREATE A DOCUMENT WHICH DETAILS THE**

1           **OVERALL DESIGN OF DUKE ENERGY OHIO'S SMARTGRID**  
2           **STRUCTURE?**

3    A.    Yes. That document, which is attached to my testimony as Attachment DHD-1,  
4           is called the Design Basis Document (DBD) and it sets forth the criteria,  
5           functional requirements, standards and assumptions for the design of our  
6           SmartGrid, and provides the design basis for the first phase of our deployment in  
7           Ohio, which we have referred to as "Ohio Tranche 1.0." The DBD is intended to  
8           ensure proper implementation and integration of each new project with DE-  
9           Ohio's existing infrastructure.

10   **Q.    WHAT TYPES OF INFORMATION ARE INCLUDED IN THE DBD FOR**  
11   **OHIO TRANCHE 1.0?**

12   A.    The DBD explains the purpose, the over-arching design criteria, functional  
13           requirements, business goals, and design assumptions. The DBD includes a  
14           section on each of the major SmartGrid components: telecommunications,  
15           advanced metering, distribution automation and IT systems. Each section  
16           describes the system scope, assumptions, high level design criteria, standards, and  
17           design requirements.

18   **Q.    WHAT IS A "TRANCHE" FOR PURPOSES OF SMARTGRID?**

19   A.    When we use the word "tranche", we are describing a time period and a scope of  
20           work. For example, in Ohio, we propose to deploy approximately one hundred  
21           ninety thousand electric meters, one hundred thirty thousand gas modules and  
22           associated communications networks, 16% of the Information Technology spend,  
23           as well as approximately 40% of our planned distribution automation equipment  
24           deployed through the end of 2010 – that would be considered "Tranche 1.0" for

1 Ohio.

2 **Q. WHY DID DUKE ENERGY DECIDE TO BREAK ITS OHIO**  
3 **SMARTGRID DEPLOYMENT INTO THESE TRANCHES?**

4 A. The reason for utilizing tranches as part of our deployment strategy is twofold:  
5 first, to balance the need to achieve a level of scale with vendors with the  
6 changing nature of the technology. We do not want to over-commit on any  
7 component due to the evolving nature of technology; however, we need to  
8 purchase enough product to insure that we are obtaining volume discount pricing.  
9 The second reason we are using a tranche strategy for deployment is to apply the  
10 lessons learned and improvement opportunities identified to the next tranche of  
11 deployment.

12 **Q. DO YOU VIEW THE FACT THAT THE DBD IS A “WORK IN**  
13 **PROGRESS” AS EVIDENCE THAT THE COMPANY’S PLANS ARE**  
14 **NOT FULLY DEVELOPED?**

15 A. Not at all. DE-Ohio has a fully developed vision of its planned SmartGrid  
16 deployment, but realizes that it will need to be flexible in how it attains that  
17 vision. It is important to keep in mind that no one should want the Company to  
18 have a fully developed and static vision of its five-year SmartGrid deployment  
19 today. This is new ground and the technology is ever changing and improving.  
20 That is precisely why the Company has proposed a phased-in approach to  
21 deployment with fixed tranches, each one learning from and expanding on the  
22 previous.

23 **Q. ARE THERE LESSONS ALREADY LEARNED FROM DE-OHIO’S**  
24 **INITIAL DEPLOYMENTS?**

1     A.     Yes. We have been embedding the lessons learned from our initial deployment as  
2           part of our DBD. For example, in our initial deployments, it was discovered that  
3           meter change-outs need to be completed by meter routes instead of by circuit.  
4           Meter routes do not match circuit boundaries. While this circuit-based process  
5           worked fine for a smaller deployment, it would not work with the planned scaled  
6           deployments. As another example, in one of our initial deployments, we had a  
7           case where there was a lower than expected Power Line Carrier (PLC) signal  
8           strength from one of the new smart grid meters. Soon thereafter the feeder to the  
9           meter failed. Once replaced, the PLC signal strength was much higher. DE-Ohio  
10          is now investigating if this is an opportunity to act as a predictive methodology  
11          for failures on the low voltage supply.

12    **Q.     DOES DUKE ENERGY HAVE SIGNED CONTRACTS FOR ALL THE**  
13       **COMPONENTS OF ITS SMARTGRID?**

14    A.     No. The infrastructure that we will be installing is not manufactured by multiple  
15           different manufacturers - we simply are not able to issue a request for proposal  
16           and then place an order for the standard equipment, such as pumps for a  
17           generating unit. DE-Ohio has found itself to be an industry leader in this area and  
18           is driving many of the SmartGrid components out of research and development  
19           into commercialization. However, before any piece of equipment or software  
20           makes it into our deployment plans, it must have signed contracts and be  
21           functionally tested.

22    **Q.     IS DUKE ENERGY USING A COMPETITIVE BID PROCESS TO**  
23       **ACQUIRE THE EQUIPMENT AND SOFTWARE NEEDED FOR**  
24       **SMARTGRID?**

1 A. Duke Energy went through a vendor evaluation process at the beginning of its  
2 SmartGrid planning, which was based on certain business requirements and  
3 specifications. We are currently talking to a variety of vendors in order to source  
4 the different components of the infrastructure that we believe is essential for full  
5 functionality and future flexibility. It should be noted that some of the items to be  
6 installed can and will be competitively bid. Others items, however simply do not  
7 currently exist as off-the-shelf commodity products. In every case, we are  
8 proceeding prudently to ensure that each component choice is made on a rational,  
9 thoughtful, reasonable and economic basis.

10 **III. CONCLUSION**

11 **Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

12 A. Yes.



**Attachment DHD-1**

**FILED UNDER SEAL**