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**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

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PUCO

In the Matter of the Application of : Case Nos. 11-346-EL-SSO
Columbus southern Power Company and : 11-348-EL-SSO
Ohio Power company for Authority to :
Establish a Standard Service Offer :
Pursuant to § 4928.143, Ohio Rev. Code, :
in the Form of an Electric Security Plan. :

In the Matter of the Application of :
Columbus Southern Power Company and : Case Nos. 11-349-EL-AAM
Ohio Power company for Approval of : 11-350-EL-AAM
Certain Accounting Authority. :

**PREFILED TESTIMONY
OF
DAVID CLEAVER
ON BEHALF OF THE STAFF OF
THE PUBLIC UTILITIES COMMISSION OF OHIO
SERVICE MONITORING & ENFORCEMENT DEPARTMENT
FACILITY & OPERATIONS FIELD DIVISION**

STAFF EX. ____

August 4, 2011

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1 1. Q. Please state your name and business address.

2 A. My name is David Cleaver. My business address is 180 E. Broad Street,
3 Columbus, Ohio 43215-3793.
4

5 2. Q. By who are you employed?

6 A. I am employed by the Public Utilities Commission of Ohio (PUCO or
7 "Commission").
8

9 3. Q. What is your present position with the Public Utilities Commission of Ohio
10 and what are your duties?

11 A. I am the chief of the Facility and Operations Field Division (FOFD) of the
12 Service Monitoring and Enforcement Department (SMED). As chief, I
13 implement the objectives of the Electric, Gas Pipeline Safety, Telecom-
14 munication, and Water & Wastewater Sections. I direct the overall opera-
15 tion of the division to achieve safety, service quality enforcement and reg-
16 ulatory compliance of Ohio's regulated utilities. Through various investi-
17 gative, auditing and inspection techniques, each Section monitors the com-
18 pliance of Ohio's regulated utilities with industry minimum service and
19 safety standards. Each section also analyzes reliability and service quality
20 performance, enforces both federal and state rules for safety, reliability and
21 service quality, investigates service complaints, and monitors compliance
22 of each utility with their established maintenance programs. This includes

analyzing and assessing the electric reliability and maintenance performance of electric distribution utilities.

4. Q. Would you briefly state your educational background and work history?

A. I have Masters Degree in Business Administration (MBA) from Morehead State University (1997) and a Bachelor of Science Degree in Electrical Engineering (BSEE) from the University of Kentucky (1973). I am a registered professional engineer in the state of Ohio and Kentucky and have held certifications as an Ohio Certified Building Official and Master Plans Examiner. I have over 22 years of experience working directly in the electric utility industry. From 1973 to 1977, I was employed by Kentucky Utilities Company as an Electrical Engineer in charge of Underground Residential Distribution systems. From 1977 to 1985, I worked in the Engineering Department at Kentucky Power Company as a Distribution Engineer and later in the Customer Services Department as a Power Engineer. From 1985 to 1995, I was employed by American Electric Power Service Corporation first as a Project Management & Construction Engineer and next as a Cost Control Engineer. I then moved to the public sector in 1996 and worked for the City of Columbus in the Department of Development as the Supervisor of their Plans Examination & Inspection Section until 2002. From 2002 to 2007, I worked at the State of Ohio's Department of Industrial Compliance as an Electrical Engineering Plan Examiner.

1 From 2007 to 2009, I was employed by the Ohio Consumers' Council as
2 their Electrical Engineer – Energy Analyst where I was responsible for pre-
3 senting expert witness testimony and technical assistance on various energy
4 matters which included Advanced Metering Infrastructure (AMI) and Smart
5 Grids issues. Finally, from 2009 to the present, I have been employed at
6 the current position at the PUCO.

7
8 5. Q. Have you previously testified before the Public Utilities Commission of
9 Ohio?

10 A. Yes. I have testified in the First Energy Distribution Rate case, Case No.
11 07-551-EL-AIR, the First Energy Electric Security Plan (“ESP”) Applica-
12 tion, Case No. 08-935-EL-SSO, and the AEP ESP Application, Case No.
13 08-917-EL-SSO.

14
15 6. Q. Are there any other areas in your work experience which are relevant to this
16 proceeding?

17 A. Yes. As the Electrical Engineer – Energy Analyst for the Ohio Consumers'
18 Counsel (OCC), I provided the technical/engineering assistance to OCC
19 management regarding various energy issues such as renewable energy
20 resources, energy efficiency, demand side management and new emerging
21 technologies in the electrical power industry such as AMI and the Smart
22 Grid. In addition, I have also provided staff comments concerning Distri-

1 bution Automation (DA) and Substation Automation (SA) in two other pro-
2 ceedings which have involved smart grid proposals, the FirstEnergy Case
3 No. 09-1820-EL-ATA and the Dayton Power and Light ESP Case No. 08-
4 1094-EL-SSO. Finally, at my direction the FOFD field staff has field veri-
5 fied the installation of smart grid components as part of two on-going pro-
6 grams approved by the Commission for Duke-Energy Ohio (Case No. 10-
7 867-GE-RDR) and American Electric Power (Case No. 11-1353-EL-RDR)

8
9
10 7. Q. What is the purpose of your testimony in this case?

11 A. My testimony concerns Columbus Southern Power's and Ohio Power's
12 (collectively, AEP Ohio) proposal for the continuation of the current
13 gridSMART Rider and to expand gridSMART system wide in Ohio over a
14 10 year period. My testimony will focus primarily on the Distribution
15 Automation (DA) and Substation Automation (SA) components of AEP's
16 gridSMART project. Other aspects of the AEP gridSMART Project are
17 addressed in Staff witness Gregory C. Scheck's direct testimony. My
18 testimony will also clarify Staff's expectations that DA and SA components
19 of AEP's gridSMART must be used and useful before the cost of those
20 components is included in rates.

1 8. Q. What is Staff's concern with the Companies' proposal to maintain status
2 quo with the current rider and expanding gridSMART system wide in
3 Ohio?

4 A. Staff believes that it is unacceptable conceptually to agree to expand AEP's
5 gridSMART program prior to a thorough evaluation of the Phase I Pilot
6 project which won't be completed until December 31, 2013. In addition,
7 the scope of the pilot has been expanded beyond that which the Commis-
8 sion approved in AEP's ESP filing and has become more complex.

9 According to the company, the scope was expanded in order to successfully
10 compete for American Reinvestment Recovery Act (ARRA) Smart Grid
11 Demonstration Project funding. Staff believes that the costs, benefits, and
12 lessons learned from the original and the expanded scope of the pilot pro-
13 gram need to be evaluated before the program is expanded system wide.
14 From a DA and SA perspective, it is my belief that we need to review the
15 results of Phase I to determine what has worked well and what components
16 of the pilot program could be improved before we progress to a wider
17 deployment.

18
19 9. Q. What are the new components which were added to the original scope of
20 AEP's Phase I Pilot Program?

21 A. AEP Ohio added Community Energy Storage (CES), a Cyber Security
22 Operations Center, additional time-differentiated consumer programs such

1 as RTP-da, Plug-in Electric Vehicles (PEV), smart appliances, and inter-
2 operability, simulation, metrics and benefits reporting. [See Staff witness
3 Gregory C. Scheck's direct testimony for additional discussion concerning
4 the expanded Phase I Pilot Program scope].
5

6 10. Q. Where does AEP propose to expand the gridSMART program system wide
7 *found in the instant filing?*

8 A. On page 9 of AEP witness Kirkpatrick's testimony, he states that it is
9 AEP's intent to expand elements of a gridSMART program throughout the
10 AEP Ohio service territory as a part of normal business through the DIR.
11

12 11. Q. Which elements of the gridSMART program does AEP plan to expand sys-
13 tem wide and what is the timing of the deployment for each?

14 A. According to the company's response to data requests, the elements
15 deployed would include Advanced Meter Infrastructure (AMI), Home Area
16 Network (HAN) equipment, Distribution Automation (DA), Integrated
17 Volt/VAR Control (IVVC), and supporting communications infrastructure.
18 The installation of AMI meters, distribution automation and HAN equip-
19 ment is expected to be the early focus of the gridSMART program.
20

21 12. Q. Does AEP intend to begin the system wide deployment prior to having
22 completed and evaluated the gridSMART Phase I?

1 A. Yes. AEP has stated that they are evaluating the operational and financial
2 benefits associated with AMI, DA, IVVC, and HAN in this deployment and
3 in other installations across the AEP system. Based on preliminary evalua-
4 tion AEP Ohio is planning additional deployments which would occur in
5 the near term. AEP's next rollouts would occur in urban areas that would
6 yield similar benefits as those experienced in the northeast central Ohio and
7 other AEP pilots.

8
9 13. Q. Why does staff believe that AEP's plans may be premature?

10 A. In addition to the fact that the Phase I Pilot has not been completed, the
11 enhanced scope due to the ARRA funding requirements has added both
12 complexity and uncertainty to the project.¹ In response to a staff data
13 request, the Company stated that the additional initiatives represent emerg-
14 ing technologies and that AEP Ohio needs additional time to study the ben-
15 efits and customer acceptance of CES, smart appliances, and in-home tech-
16 nologies to support real time pricing. AEP Ohio also stated that it needs
17 additional research and experience with advanced consumer programs, like
18 RTP-da, before expanding those offerings.

19

¹ See testimony of Staff witness Gregory C. Scheck for additional discussion of the
enhanced project scope of the Phase I Pilot due to the ARRA funding requirements.

1 14. Q. What are the projected improvements to AEP's reliability standards SAIFI
2 and CAIDI over the next ten years as the system wide deployment of the
3 gridSMART program is completed?

4 A. AEP Ohio has stated that the gridSMART program should result in a reduc-
5 tion in customer outages as measured by SAIFI and customer minutes inter-
6 rupted as measured by SAIDI. However, AEP Ohio goes on to say that it is
7 too early to quantify any projected improvements to its reliability perfor-
8 mance and that continuation and completion of the gridSMART Phase I
9 project and subsequent review of performance should allow better projec-
10 tions of reliability indices with system wide deployment.

11
12 15. Q. Has AEP Ohio established detailed design parameters for the system wide
13 deployment of Distribution Automation?

14 A. The AEP Ohio gridSMART Phase I Pilot project has allowed the Company
15 to design and test many of the components required for a modern smart
16 grid. The Company has stated that they have established key design
17 parameters, however much of the system wide design is still undefined at
18 this point in time. For example, AEP Ohio believes that all substations are
19 candidates for DA and SA consideration, but has not prioritized the order in
20 which the stations will be completed. The Company also believes all cir-
21 cuits are candidates for automation, but the type and level of automation
22 will depend on circuit characteristics such as location, loading, and configu-

1 ration. AEP Ohio is in the process of identifying the total cost to deploy
2 distribution automation over the next ten year period, however the Com-
3 pany has not defined the total number of reclosers for a state wide deploy-
4 ment, does not know the number of required pole replacements at this time,
5 and has not prioritized the circuits to be implemented in any given year.

6
7 16. Q. What is staff's recommendation concerning AEP Ohio's proposal for the
8 continuation of the current gridSMART Rider and to expand gridSMART
9 system wide in Ohio over a 10 year period?

10 A. Staff believes that AEP Ohio should complete the gridSMART Phase I
11 Pilot project first and then analyze the results before seeking Commission
12 approval for a system wide smart grid deployment.

13
14 17. Q. What is Staff's expectation concerning the point at which the DA and/or
15 SA equipment installed on a circuit is to be considered used and useful?

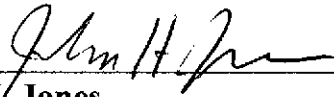
16 A. Staff considers DA and SA equipment to be used and useful after the circuit
17 with DA and/or SA installed has been commissioned.

18
19 18. Q. What is meant by "commissioned"?

20 A. According to the Company's own definition, a circuit has been "commis-
21 sioned" after thorough testing of the equipment and its operation, including

PROOF OF SERVICE

I hereby certify that a true copy of the foregoing **Prefiled Testimony of David Cleaver**, submitted on behalf of the Staff of the Public Utilities Commission of Ohio, was served by regular U.S. mail, postage prepaid, or hand-delivered, upon the following Parties of Record, this 4th day of August, 2011.



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