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VIA OVERNIGHT MAIL

May 18, 2006
Ms. Elizabeth O'Donnell
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, Kentucky 40602-0615

Re: Case No. 2006-00045

Dear Ms. O"Donnell:

Enclosed please find the testimony of James W. Lemke and Bruce L. Sailers on behalf of Duke Energy Kentucky in the above captioned case.

Please contact me should you have any questions or concerns regarding this material.

Sincerely,

John J. Finnigan, Jr. /kms

John J. Finnigan, Jr.
Senior Counsel

cc: All Parties of Record

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OFCONSIDERATION OF THE REQUIREMENTS OF THE FEDERAL ENERGY POLICY ACT OF 2005 REGARDING TIME-BASED METERING, DEMAND RESPONSE AND INTERCONNECTION SERVICE	))))))	CASE NO. 2006-00045

DIRECT TESTIMONY OF

JAMES W. LEMKE

ON BEHALF OF DUKE ENERGY KENTUCKY

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James W. Lemke, and my business address is 1619 W. Defenbaugh, Kokomo, IN 46902.

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

A. I am a Principal Engineer for Distribution Planning in the Midwest for Duke Energy Shared Services Inc ("Duke Energy Shared Services"), a wholly-owned service company subsidiary of Duke Energy Corporation ("Duke Energy"). Duke Energy Shared Services provides various administrative services to The Union Light, Heat and Power Company d/b/a Duke Energy Kentucky ("Duke Energy Kentucky" or the "Company") and other Duke Energy affiliates.

Q. PLEASE BRIEFLY DESCRIBE YOUR DUTIES AS PRINCIPAL ENGINEER FOR DISTIBUTION PLANNING, MIDWEST OF DUKE ENERGY SHARED SERVICES.

A. As Principal Engineer for Distribution Planning in the Midwest for Duke Energy Shared Services, I am responsible for review and approval of requests to interconnect distributed generation equipment. Additionally, I participate in the IEEE 1547 Standards Working Groups.

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a Bachelor of Science Degree in Electrical Engineering from Purdue University in 1974. I am a registered Professional Engineer in the State of

Indiana. I have worked for Duke Energy Shared Services or one of its predecessor companies since 1974 in various transmission or distribution engineering roles. The majority of my experience has been in the areas of distribution system planning, distribution system protection, and distributed generation interconnection.

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

A. My testimony addresses Duke Energy Kentucky's current position with respect to interconnection opportunities currently available in the Company's service territory. I also respond to the issues raised by the Commission during its May 10, 2006, informal conference in this matter.

II. IMPLEMENTATION OF THE INTERCONNECTION STANDARD OF SECTION 1254 OF THE EPAct 2005

Q. PLEASE BRIEFLY DESCRIBE DUKE ENERGY KENTUCKY'S INTERCONNECTION.

A. Duke Energy Kentucky provides interconnection service to any customer requesting such service. The customer's generation system must meet Duke Energy Kentucky's standards for interconnection. These standards are established to ensure that the customer's generation system does not adversely impact the safety, reliability, integrity, or service quality of Duke Energy Kentucky's system. Duke Energy Kentucky enters into contracts with customers for the interconnection service, and Duke Energy Kentucky files the contracts with the Commission. Duke Energy Kentucky's interconnection policy requires the

customer to pay any costs for modifying Duke Energy Kentucky facilities to accommodate the interconnection with the customer's facilities.

Q. PLEASE IDENTIFY THE BASIS FOR THE TECHNICAL STANDARDS CURRENTLY REQURED BY DUKE ENERGY KENTUCKY FOR INTERCONNECTION.

A. Duke Energy Kentucky uses the Institute of Electrical and Electronics Engineers ("IEEE") Standard 1547 as the core of its technical interconnection requirements for customer interconnections.

Q. PLEASE BRIEFLY DESCRIBE THE INTERCONNECTION STANDARDS PROPOSED IN THE ENERGY POLICY ACT OF 2005?

A. The Energy Policy Act of 2005 includes the following standards relative to interconnection: (1) interconnection service should be available to any customer; (2) interconnection technical standards should be based on IEEE 1547; and (3) interconnection agreements and procedures should promote current best practices as stipulated in model codes adopted by NARUC and be just and reasonable, and not unduly discriminatory or preferential.

Q. ARE DUKE ENERGY KENTUCKY'S INTERCONNECTION REQUIREMENTS CONSISTENT WITH THOSE STANDARDS?

A. Yes, Duke Energy Kentucky's interconnection requirements are consistent with those standards as follows: (1) Duke Energy Kentucky offers interconnection service to any customer; (2) Duke Energy Kentucky uses IEEE 1547 as the core of its technical interconnection requirements; and (3) the Interconnection

Agreements used by Duke Energy Kentucky are very similar to those contained in the "Model Interconnection Procedures and Agreement for Small Distributed Generation Resources" adopted by NARUC.

III. DUKE ENERGY KENTUCKY'S POSITION ON IEEE 1547

Q. PLEASE DESCRIBE DUKE ENERGY KENTUCKY'S POSITION WITH RESPECT TO WHETHER THE COMMISSION SHOULD ESTABLISH A STATEWIDE STANDARD FOR INTERCONNECTION?

A. Duke Energy Kentucky believes its voluntary interconnection practice is consistent with the requirements in the Energy Policy Act of 2005. To be consistent with other State practices and the Energy Policy Act of 2005, there may be value in a statewide standard established by the Commission. This would promote uniform interconnection practices that are consistent within Kentucky and can be consistent with best practices that are evolving nationally. This will also result in transparent interconnection standards. Should the Commission decide a statewide standard is warranted, Duke Energy Kentucky suggests the Commission consider a high level and flexible approach which is adaptable to the individual circumstances of both the customer and the utility An interconnection standard that is very rigid or overly complicated and intricate will likely result in a standard that discourages participation, is operationally difficult to implement and inefficient to maintain.

Q. IF THE COMMISSION WERE TO ESTABLISH A STATEWIDE STANDARD, WHAT SHOULD BE INCLUDED AT A MINIMUM?

A. A minimum standard should include (1) a requirement to provide interconnection service; (2) a requirement to base technical requirements on IEEE 1547; and (3) a requirement for the customer to pay for any costs to modify Duke Energy Kentucky's system to accommodate the generator's interconnection.

Q. IF THE COMMISSION WERE TO ESTABLISH A STATEWIDE STANDARD, WHAT SHOULD BE INCLUDED AT A MAXIMUM?

A. Additional components of an overall standard could include (1) requirements for Interconnection Agreements; and (2) a process for review and approval of interconnection requests. However, Duke Energy Kentucky believes that its current informal review and approval process has been very successful in meeting customer expectations and schedules. Considering the small number of customers applying for interconnection, a more formal process is unwarranted and unnecessary and may make the process less efficient and more burdensome for all parties.

Q. ARE THE STANDARDS SET FORTH IN IEEE 1547 SUFFICIENT OR IS MORE REQUIRED?

A. Although the IEEE 1547 Standard contains the minimum technical requirements to design most interconnection systems, there are some important issues that are not addressed and must be included in an overall interconnection technical requirement. Several of those issues are as follows: (1) IEEE 1547 does not address impacts on the utility's overcurrent protection system; (2) IEEE 1547 does not address the maximum amount of distributed generation that can be connected at a particular location; (3) IEEE 1547 does not address redundancy in

the design of an interconnection protection system; and (4) IEEE 1547 does not specify which methods are acceptable ways to meet requirements.

Q. THE COMMISSION HAS INDICATED THAT IN ITS OPINION, THE ENERGY POLICY ACT OF 2005 REQUIRES UTILITIES TO PROVIDE INTERCONNECTION SERVICE TO ANYONE THAT REQUESTS IT, BUT THE STANDARD REALLY FOCUSES ON DISTRIBUTED GENERATION OF 10 MVA OR LESS, AND REQUIRES THAT IEEE 1547 BE FOLLOWED. DO YOU AGREE WITH THIS?

A. Since no IEEE based standard currently exists for distributed generator systems larger than 10MVA, the best we can do to establish consistent practice is to use the existing IEEE Standard 1547 when it is applicable. Duke Energy Kentucky does not believe that lack of a standard for systems greater than 10MVA has caused any problems in providing interconnection service to those customers. As a practical reality, these are typically too large to interconnect to a distribution system and will be interconnected at a transmission level. Also, Draft IEEE Standard 1547.5 is under development and will apply to those systems larger than 10MVA when completed.

Q. IS DUKE ENERGY KENTUCKY CURRENTLY IN COMPLIANCE WITH THE COMMISSION'S INTERPRETATION OF THE INTERCONNECTION REQUIREMENTS OF THE ENERGY POLICY ACT OF 2005?

A. Yes, as explained earlier, Duke Energy Kentucky provides interconnection service to any customer, regardless of size, and uses IEEE 1547, where applicable, as the core of its technical interconnection requirements.

Q. IS THERE ANY REASONABLE PROGRAM THAT CAN BE DEVELOPED TO TAKE ADVANTAGE OF THE CUSTOMER-OWNED OPEN TRANSITION GENERATION IN CASE OF A DIRE EMERGENCY?

A. Any customer with generation can participate in Duke Energy Kentucky's Rider PLM, Peak Load Management program, which includes a Generation Sell Back Option for distributed generation. The method used by a customer to connect a generator, whether it is through open-transition switching or through a parallel capable device requiring interconnection service, is not an issue from Duke Energy Kentucky's standpoint. However, Duke Energy Kentucky currently sees almost no participation from customers with open-transition switching connecting their generator and believes there are several characteristics of open-transition switching that inhibit participation. First, an open-transition switch will cause two momentary interruptions in service for every event – one to move load to the generator and one to move load back to the utility after the event is over. Second, many back-up generators connected with open-transition switching are not large enough to handle the customer's entire load. Therefore, any event they participate in would cause a loss of service for part of their load for the duration of the event. Although the Commission's definition of a "dire emergency" may be different

than those currently included in Rider PLM events, voluntary customer participation may be limited for the same reasons.

IV. CONCLUSION

Q. PLEASE BREIFLY SUMMARIZE DUKE ENERGY KENTUCKY'S POSITION ON CONFORMANCE WITH INTERCONNECTION PROVISIONS OF THE ENERGY POLICY ACT OF 2005 IN KENTUCKY.

A. Duke Energy Kentucky believes its voluntary interconnection practice is consistent with the requirements in the Energy Policy Act of 2005. Duke Energy Kentucky also supports the national use of IEEE 1547 as the basis of technical interconnection standards. Should the Commission decide a statewide standard is warranted, Duke Energy Kentucky suggests the Commission consider a high level and flexible approach with minimum detail. An interconnection standard that is very rigid or overly complicated and intricate will likely result in a standard that discourages participation, is operationally difficult to implement and inefficient to maintain.

Q. DOES THAT CONCLUDE YOUR PREFILED DIRECT TESTIMONY?

A. Yes, it does.

VERIFICATION

State of)
)
County of)

SS:

The undersigned, James W. Lemke, being duly sworn, deposes and says that he is the Principal Engineer for District Planning in the Midwest, that he has personal knowledge of the matters set forth in the foregoing testimony, and that the answers contained therein are true and correct to the best of his information, knowledge and belief.

James W. Lemke

James W. Lemke, Affiant

Subscribed and sworn to before me by Teresa L. Long on this 11th day of May, 2006.

Teresa L. Long

NOTARY PUBLIC

My Commission Expires: 3/9/2009